METHOD OF CONVERTING HEAVY MOTOR VEHICLE LOADS INTO EQUIVALENT DESIGN LOADS ON THE BASIS OF MAXIMUM BENDING MOMENTS

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FOREWORD

The cost of bridges and other highway structures is not only a function of the sizes and weights of the heavier motor vehicle loads to which they are subjected but also the frequencies with which the various intensities of these loads are applied.

More accurate knowledge concerning the stress producing effects of the various heavy vehicle types and loadings, and their expected frequencies, should contribute toward a reduction in the cost of these structures through the establishment of minimum design standards which are consistent with practical needs.

Certain of the complexities involved in these problems have been removed.

Trucks and bridges can be brought to a common denominator. The method presented for accomplishing this and all pertinent data along with a discussion on estimating the occurrence of various weight concentrations in traffic appear in this publication.

It is hoped that the technical and nontechnical publics whose problems touch on these fields shall avail themselves of it.

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SUMMARY

The rating of heavy motor vehicle types and loadings—such as those reported by a local, state, or national loadometer survey—in terms of equivalent H truck loadings, equivalent H design loadings, equivalent concentrated loads or any other convenient standardized loads can be accomplished by evaluating some stress producing effect on a bridge type and then finding the gross weight required on a standard vehicle to produce the same effect.

Tables and charts are provided for rating most any type of heavy vehicle—irrespective of its wheel base length, number and spacing of axles, or distribution of load among the axles—ordinarily encountered in highway traffic, in terms of standardized equivalent loads.

It was observed that the Poisson distribution yields mathematical answers which are sufficiently accurate in many practical situations for estimating the frequencies of various intensities of highway loads or loading equivalencies, and for evaluating their stress producing effects on simple span bridges and other highway structures.

INTRODUCTION

This bulletin has been prepared for the convenience of those who are concerned with one or more problems associated with the sizes, weights, and frequencies of heavy motor vehicles commonly used for heavy trucking operations in present-day highway traffic. It was prepared in response to the long-standing and increasing needs of engineers and others for factual information, principles, and methods that might be used as an approach to the analysis and solution of certain of these problems.

In recognition of these needs, and as a partial contribution toward their fulfillment, it presents the results obtained from a rather extensive investigation of highway loads and their stress producing effects (based on maximum bending moment) on simple span bridges of various lengths, and undertakes to show how this information may be used for analyzing and solving several types of these problems. And, by way of showing how this approach is related to certain other elements which must be taken into account in the study of heavy motor vehicle problems and their influence on highway and bridge provision requirements, it also presents a brief discussion of some of the more important considerations involved in the establishment of minimum standards for the design, construction, or rating of highways and bridges for given traffic conditions.

The results of these studies not only provide the means for solving several interesting problems pertaining to the stress producing characteristics of the more common heavy vehicle types and loadings and for measuring their effects in terms of equivalent loads, but they also include a wide variety of basic data that should prove to be of value in the study of similar or related problems that are not considered in this report. The problems selected here for special consideration will be discussed later in more detail.

It requires but little reflection to appreciate the fact that the problems associated with the sizes, weights, and frequencies of heavy motor vehicles ordinarily encountered in highway traffic are both numerous and varied. Their influence not only extends into practically every phase of highway design, construction, maintenance, and administration, but also into the fields of highway economics and motor transport, and even into the design and manufacture of heavy motor vehicles and other transportation equipment. The scope of this bulletin, however, is limited to a comparatively small segment of these problems; namely, those whose solutions are related in one way or another to the stress producing characteristics of highway loads or their effects on the load carrying capacity of simple span bridges of various lengths.

The main objectives of this work are:

- 1. To furnish, arrange, and catalogue the factual information and other background material required for quickly and accurately determining the stress producing characteristics of the more common heavy vehicle types and loadings on simple span bridges of various lengths.
- 2. To outline and discuss the method proposed for converting a given heavy vehicle loading into an equivalent load whose stress producing effects on various span lengths are the same as those for the given vehicle loading. For this purpose, heavy vehicle loads may be converted into equivalent H truck loadings, equivalent H-S truck loadings, equivalent concentrated loads, or equivalent loads based on any other standardized design vehicle or arbitrary loading that might prove to be desirable as a basis of measure or comparison.
- 3. To illustrate how the use of equivalent loads provide a simple yet rational means for analyzing the relative frequencies, or frequency distribution, of various intensities of heavy vehicle loads for given traffic conditions.

- 4. To show how the frequency distributions of various intensities of equivalent loads obtained from the heavy vehicle data reported by a local, state, or national loadometer survey provide a quantitative measure of the level or levels of heavy motor vehicle operation at those stations or on those routes covered by such surveys.
- 5. To introduce and explain the use of some of the more elementary statistical methods which have been found appropriate for determining the frequencies of various intensities of equivalent vehicle loadings for given traffic conditions.
- 6. To point out and discuss certain potential uses for the above mentioned data that are not specifically covered by the foregoing objectives.

The substance of these objectives may be summarized rather briefly by saying that the over-all objective of this bulletin is to develop a mathematical procedure, based on accepted engineering principles, for the rating of the more common heavy vehicle types and loadings in terms of standardized equivalent loads; and to show how the frequency distributions of various intensities of these equivalent loads provide a simple precise and yet rational means for measuring the level or levels of heavy motor vehicle operation corresponding to various traffic conditions.

Since the principal function of this bulletin is to serve as a reference, handbook, or catalogue of highway loads, and their stress (moment) producing effects on simple spans, and for the rating of heavy vehicle types and loadings in terms of equivalent loads, more than half the volume is devoted to the presentation of tables and charts for these purposes. The major portion of the remaining half consists of tables and charts pertaining to the analysis of heavy motor vehicle operation in 1942. The frequency distributions of equivalent H truck loadings and equivalent concentrated loads shown in these studies were based on the sizes and weights of the heavy vehicles reported by the special loadometer survey of 1942. For these reasons, the text material has been purposely held to a minimum, most of which is in explanatory articles of Part I and Part III.

For convenience, the presentation and discussion of this material has been divided into six parts. Part I deals with the development and use of equivalent loads as a means for measuring heavy motor vehicle operation. Part II presents the reference tables and charts for the identification and rating of heavy vehicle types and loadings in terms of equivalent loads, and for determining the maximum moment produced by such vehicles on simple span bridges of various lengths. Part III undertakes to show how the Poisson distribution formula correlates with the measurement of the frequency distribution of various intensities of equivalent heavy motor vehicle loads on various spans and how the results of such studies provide a quantitative measure of heavy motor vehicle operation. Part IV presents a study of the observed frequency distributions of equivalent H truck loadings, as obtained from the heavy vehicle data reported by the 1942 loadometer survey, and compares the results with the calculated frequencies based on the Poisson frequency distribution formula as discussed in Part III. In a similar manner, Part V presents a study of the observed and calculated frequency distributions of equivalent concentrated loads based on the same heavy vehicle data as that used to obtain the frequency distributions given in Part IV. In fact, the only difference between Parts IV and V is that the observed and calculated frequency distributions given in Part IV. The bulletin then closes with the brief summary and conclusions given in Part IV. The

Part I

DEVELOPMENT AND USE OF EQUIVALENT LOADS FOR MEASURING HEAVY MOTOR VEHICLE OPERATION

1. PERMISSIBLE VEHICLE WEIGHTS ON ROADWAYS AND BRIDGES

1.1 General

The over-all objective of this bulletin, as was discussed in some detail in the introduction, is to develop a rapid yet simple and accurate mathematical procedure for the rating of heavy motor vehicle types and loadings, such as those reported by a loadometer survey, in terms of equivalent H truck loadings or any other convenient standardized equivalent loads; and to show how the frequency distributions of these equivalent loads provide a rational means for measuring the level or levels of heavy motor vehic'e operation corresponding to given traffic conditions. In order to accomplish these ends, it is first necessary to find a satisfactory method of converting a given heavy vehicle loading into an equivalent design load.

This may be accomplished by evaluating some stress producing effect, such as maximum moment or shear, caused by the given vehicle on, say, a 40-foot simple span bridge and then finding the gross weight required on, say, a standard H truck to produce the same effect. For example, if the given vehicle caused a maximum moment on this 40-foot span of 259.5 kipfeet (see AASHO moment table) it would produce the same maximum bending stress as an H 15 truck. On this basis, therefore, the given vehicle would be rated as an equivalent H 15 truck loading on a 40-foot simple span bridge. In a similar manner, the given vehicle could be rated in terms of an equivalent H-S truck loading, equivalent concentrated load, or any other standardized equivalent load as may be desired. Moreover, since the maximum moment produced by any given standardized vehicle or loading on a given span bears a constant relationship to the maximum moment produced by any other standardized loading on the same span, any given vehicle that has been converted into either an equivalent H truck loading, an equivalent H-S truck loading, or an equivalent concentrated load, on a given span, can easily be rated in terms of either of the other two equivalent loadings simply by using the conversion coefficients as explained in Article 13.

Owing to the fact that it is the bending stresses that ordinarily determine the load carrying capacity of simple span bridges, the maximum moments produced by heavy vehicle types and loadings on simple spans of various lengths are used in this bulletin as a basis for the determination of equivalent loads. The tables and charts given in Part II provide the means for quickly determining the maximum moment produced by heavy vehicle types and loadings on various spans and also for converting them into equivalent loads. The use of this material will be more fully explained in Article 5.

Another important use of equivalent loads is that of determining permissible vehicle weights on bridges of various lengths and design designations. If the H loading equivalent of a given vehicle on a 40-foot span were known, for example, it would then be a simple matter to decide whether or not it should be permitted to pass over, say, an H 15 bridge of that length. The over-all problem of determining permissible vehicle weights on roadways and bridges, however, is not a simple one. And though no attempt will be made here to cover all the elements involved, it is believed that a brief review of some of the more important considerations which must be taken into account in the study of these problems will contribute toward a better appreciation

of their importance. Such a review is given in the remaining sections of this article.

1.2 The Need For Better Understanding of Heavy Motor Vehicle Problems

The maximum size and weights of heavy motor vehicles that should be permitted to operate over the Nation's highways and bridges are subjects that have been of major importance for many years to highway officials, legislative bodies, commercial truckers, and the manufacturers of heavy motor vehicles and other transportation equipment. An almost inconceivable amount of very careful and painstaking study and experimental work has been done on these subjects, particularly during the past thirty or forty years. The importance of these subjects has been increasing year by year along with and at a pace which approximately parallels the rapid increases in commercial trucking operations that have taken place since the end of the first World War. Many able investigators have made valuable contributions to our present store of information on these subjects, but much more research and study will be required to find the ultimate answers to many of the problems pertaining to the sizes and weights of heavy motor vehicles and their effects on the construction and maintenance costs for safe and adequate highway facilities.

For the benefit of those who are not altogether familiar with these problems or the developments leading up to present-day regulation of motor vehicle sizes and weights, it should be explained that many elements of these problems are of a highly controversial nature. And owing to the fact that certain of these matters are of a controversial nature, it should be further explained that the reason for discussing them here is to contribute, if possible, toward a better understanding of some of the issues involved rather than to arrive at any specific recommendations concerning the economic justification of any particular level of permissible axle loads and gross loads that should obtain for given traffic conditions.

The reasons for controversy, however, are not difficult to find since they arise mainly from the different points of view and conflicting interests of (1) those whose business would benefit from either heavier permissible axle loads or gross vehicle weights or both and (2) those (mainly highway officials and legislative bodies) who are charged with the duty and responsibility of providing protection for existing as well as new highway facilities in such ways as to insure their maximum economic life.

In the planning of new facilities, for example, highway officials must not only decide on the maximum permissible axle loads and gross loads to be accommodated, but they must also estimate or otherwise determine the expected frequencies of various intensities of these loads before the actual design of such facilities can even be started. After these matters have been settled and a new facility has been built, it is then the duty of some appropriate regulatory body to see to it that loads in excess of those for which the facility was designed are not permitted.

From a practical point of view, even the layman will agree that thicker pavements and stronger bridges are required to support or sustain heavier loads, and, as a consequence, that highway and bridge provision will cost more to accommodate the heavier loads than would otherwise be required for light loads. In general, what he fails to understand is that the cost of highway and bridge provision is not only a function of permissible axle loads and gross loads, but is also a function of the anticipated frequencies of various intensities of these loads. If the truth of these facts, which are accepted as commonplace by highway and bridge engineers, could be explained to the layman in such a way as to leave no doubt of their validity in his mind, one of the major sources of misunderstanding and controversy concerning the necessity of imposing maximum limitations on axle loads and gross loads would automatically be eliminated.

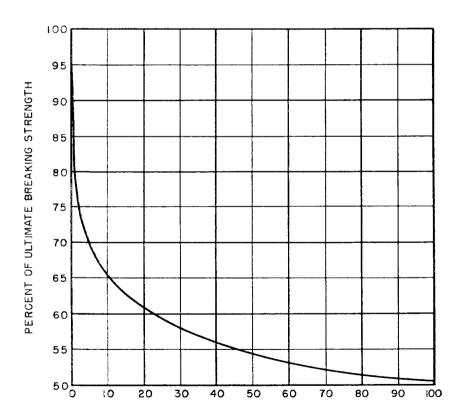
¹H. S. Fairbank, "Sizes and Weights of Motor Vehicles Require Economic Study." CIVIL ENGINEERING, June, 1949, pp. 40-43.

1.3. Effects of Heavy Axle Loads on Roadway Surfaces and Foundations

Insofar as the design of roadway surfaces and foundations are concerned, the deteriorating effects of repeated excessive axle loads can be explained rather easily by briefly describing the procedure recommended by competent highway authorities for evaluating the effects of repeated applications of various intensities of these loads. Concrete, for example, like other structural materials, is affected more by repeated critical stresses than by a single stress of the same magnitude. This effect, for want of a better name has been called "fatigue." Figure 1.1 shows the fatigue behavior of concrete subjected to repeated bending stresses such as those which occur in pavements during

FATIGUE OF CONCRETE IN FLEXURE

RELATION BETWEEN ULTIMATE FLEXURAL STRENGTH OF CONCRETE
AND NUMBER OF STRESS REPETITIONS TO INDUCE FATIGUE FAILURE



NUMBER OF LOAD REPETITIONS TO INDUCE FAILURE - THOUSANDS

Figure 1.1

the passage of a heavy axle load. This curve is in agreement with Illinois Highway Department studies, which are the most extensive studies available on the fatigue behavior of full-sized concrete specimens under repetitions of flexural stress, and it is also in agreement with current pavement design practice. This curve shows the relationship between ultimate strength and the number of stress repetitions required to induce failure in a concrete pavement.

Perhaps the best way to explain the meaning of this curve (Figure 1.1) would be to avoid the complications involved in an actual design by applying it to an overly simplified illustration. The vertical scale shows the value of flexural stress measured in terms of percent of ultimate flexural strength of concrete and the horizontal scale shows the number of stress repetitions to The ultimate flexural strength of concrete ordinarily used induce failure. for pavements is somewhere in the neighborhood of 700 psi. So if 700 psi concrete were used, then 700 psi would represent 100 percent of its ultimate flexural strength. In connection with this fatigue strength curve (Figure 1.1) it will be noted that a concrete pavement can withstand an indefinitely large number of stress repetitions provided the stress does not exceed about 50 percent of its ultimate strength. In the case of 700 psi concrete, this means that it would not fail from repeated load applications so long as the stress resulting from such loads does not exceed 350 psi, which would be the design stress on about 50 percent of its ultimate strength. On the other hand, if the repeated load were increased to such an extent that each application would result in a stress equal to 60 percent of the ultimate strength, or 420 psi, a fatigue failure would be expected to occur after about 22,000 repetitions of this load. Now if this repeated load were increased still further so that each application produced a stress equal to 75 percent of the ultimate strength or $700 \times .75 \stackrel{.}{=} 525$ psi, it would require only about 2,000 repetitions to cause a fatigue failure.

If this illustration were expressed in terms of a 700 psi concrete pavement that had been designed for an indefinitely large number of applications of 18,000-pound axle loads based on a design stress equal to 50 percent of the concrete's ultimate strength or 350 psi, then it would not fail as a result of fatigue, irrespective of how many applications of load were applied to it provided they did not exceed the 18,000-pound axle load for which it was designed. Another way of describing this pavement would be to say that its strength was such that a single application of a certain excessive axle load would produce a stress equal to 100 percent of its ultimate strength, or 700 psi; and if such a load were actually applied to this pavement it would be expected to fail the first time. The significant thing to note in connection with this pavement design, though, is that even comparatively small increases in axle loads in excess of the 18,000 pounds for which it was designed would rather quickly induce fatigue failure.

With respect to fatigue action, therefore, it can be stated more specifically that, as the applied load on a pavement increases from the design load to a load which is of sufficient magnitude to cause failure in a single application, the resulting stresses increase. Then, for each stress increase that is above or beyond the design stress provided, there is an accompanying decrease in the number of load applications which will induce fatigue failure.

Although it would be out of place here to undertake a detailed discussion of pavement design, the relationship between repeated loads and fatigue action, as indicated in Figure 1.1, can be illustrated by analogy rather simply. For example, suppose that a plain concrete member, such as a simply supported rectangular beam, is made of such size that a single 18,000-pound concentrated load applied at its mid-span will produce a maximum flexural stress equal to 50 percent of its ultimate strength. If it is now assumed for the purpose of this example that the curve in Figure 1.1 represents the relationship between repeated loads and fatigue action for isolated beams of this kind, then if a number of them were tested in the laboratory it would be found that they could withstand an indefinitely large number of repetitions of the 18,000-

pound load without causing a fatigue failure. On the other hand, if the applied load were increased to a point where it produced a maximum flexural stress equal to 60 percent of the concrete's ultimate strength, it will be seen that about 22,000 repetitions of this load would be expected to induce a fatigue failure. Similarly, if the applied load were increased to a point where it would produce a maximum flexural stress equal to 75 percent of the concrete's ultimate strength, only about 2,000 repetitions would be required to cause a fatigue failure.

The above examples—even though they are overly simplified—will not only serve to illustrate the most up-to-date thought on pavement design practice but also to demonstrate the serious damage to roadway foundations and pavements that can result from axle loads which are but a few percent in excess of those used for their design.

In order to avoid complicating the discussion of these examples, nothing was said about "pumping" and its deteriorating effects on concrete pavements and their supporting foundations or subgrades. Pumping is defined as the ejection of water and subgrade soil through joints, cracks and along the edges of pavements caused by downward slab movement actuated by the passage of heavy axle loads over the pavement after the accumulation of free water on or in the subgrade. No attempt will be made here to go into the details of pumping action and how it contributes to the structural failure of concrete pavements and subgrades. For the present purpose of this discussion it is only necessary to point out that pumping failures do not occur on roads where there are no heavy axle loads. This was one of the conclusions reported by the Highway Research Board which was arrived at after about six years of research studies by a committee of outstanding engineers under the chairmanship of Harold Allen, Principal Materials Engineer, Public Roads Administration. On this point, the committee's report says: "The data collected show conclusively that the repeated passage of heavy axle loads is the primary activating element in pumping at joints and cracks in concrete pavements." Specific cases pertaining to the effects of heavy axle loads on pumping could be cited at almost any length but the following quotation from this committee's report will suffice since it is typical:

"The general effect of traffic on pumping has been demonstrated in a number of ways. On many of the four-lane highways surveyed practically all of the pumping was found in the outside lanes which are used by the slower, heavily loaded trucks, whereas little if any pumping was found in the inner lanes used by the faster and lighter traffic. This effect is further evidenced by instances where heavy traffic on one lane of a two-lane highway has produced pumping, while the lighter traffic on the other lane has produced none. An outstanding example of this was found on US 81 near Salina, Kansas. On this road and the northbound traffic was composed of loaded tank trucks from a refinery area and the southbound lane carried the returning empty trucks. Practically all of the pumping was found on the northbound lane where an average daily commercial axle count was 349 axles under 10,000 lb. and 275 axles over 10,000 lb., of which 155 were over 14,000 lb. and 10 were over 18,000 lb. Almost no pumping was found on the southbound lane where the average daily commercial axle count was 506 axles under 10,000 lb. and only 38 axles over 10,000 lb. of which but 17 were over 14,000 lb. and 3 were over 18,000 lb."

Other authoritative evidence running into hundreds of pages could be given concerning the design, construction, and maintenance of roadway surfaces and foundations, but the preceding discussion should be sufficient to demonstrate conclusively that both the minimum standards for highway pro-

², ³Final Report of Committee on Maintenance of Concrete Pavements as Related to the Pumping Action of Slabs, Highway Research Board, Vol. 28, heavy axle loads are the primary activating element in pumping at joint and cracks in concrete pavements, pp. 281-310.

vision and the useful life of a given facility are not only a function of permissible axle loads but are also a function of the anticipated frequencies of various intensities of these loads.

1.4 Permissible Vehicle Weights on Simple Span Bridges

The vehicles that are of particular interest in connection with these studies are the various types of heavy-axle trucks and other vehicle combinations whose axle-loads, axle-group loads, or gross weights are considered sufficiently heavy to influence the design of bridges and other highway structures. Heavy vehicles are defined as those with one or more axles weighing 18,000 pounds or more; or, based on gross weight, all single-unit trucks weighing 26,000 pounds or more, and all other combinations weighing 34,000 pounds or more. These were the gross weights used in the 1942 loadometer survey as the dividing line between light-freight vehicles and heavy-freight vehicles by the Planning Survey Divisions of the several State Highway Departments and the Bureau of Public Roads.

After many years of study, the American Association of State Highway Officials formulated a "Policy Concerning Maximum Dimensions, Weights and Speeds of Motor Vehicles to Be Operated Over the Highways of the United States" which was adopted April 1, 1946. The standards recommended by this policy are as follows:

(1) WIDTH

No vehicle, unladen or with load, shall have a total outside width in excess of 96 inches.

(Note: It is recognized that certain conditions inherent in the design of vehicles suggest the desirability of 102 inches as a standard of maximum width. The existence of numerous bridges and a large mileage of highways too narrow for the safe accommodation of vehicles of such width precludes the present adoption of the higher standard of width. The State Highway Departments and Public Roads Administration are urged to give consideration to the desirability of eventual provision for the accommodation of vehicles 102 inches in width in planning the reconstruction of Federal-aid and State highways.)

(2) HEIGHT

No vehicle, unladen or with load, shall exceed a height of 12 feet, 6 inches.

(3) LENGTH

- (a) No single truck, unladen or with load, shall have an over-all length, inclusive of front and rear bumpers, in excess of 35 feet.
- (b) No single bus, unladen or with load, shall have an over-all length, inclusive of front and rear bumpers, in excess of 40 feet, provided that a bus in excess of 35 feet in over-all length shall not have less than 3 axles.
- (c) No combination of truck-tractor and semi-trailer, unladen or with load, shall have an over-all length, inclusive of front and rear bumpers, in excess of 50 feet.
- (d) No other combination of vehicles shall consist of more than two units, and no such combination of vehicles, unladen or with load, shall have an over-all length, inclusive of front and rear bumpers, in excess of 60 feet.

(4) SPEED

(a) Minimum speed. No motor vehicle shall be unnecessarily driven at such slow speed as to impede or block the normal and reasonable movement

of traffic. Exception to this requirement shall be recognized when reduced speed is necessary for safe operation or when a vehicle or combination of vehicles is necessarily or in compliance with law or police direction proceeding at reduced speed.

- (b) Maximum speed. No truck shall be operated at a speed greater than 45 miles per hour. Passenger vehicles may be operated at such speeds as shall be consistent at all times with safety and the proper use of the roads.
- (c) Vehicles equipped with solid rubber or cushion tires shall be operated at a speed not in excess of 10 miles per hour.

(5) PERMISSIBLE LOADS

(a) No axle shall carry a load in excess of 18,000 pounds.

(Note: An axle load shall be defined as the total load transmitted to the road by all wheels whose centers may be included between two parallel traverse vertical planes 40 inches apart, extending across the full width of the vehicle.)

- (b) No group of axles shall carry a load in pounds in excess of the value given in the following table corresponding to the distance in feet between the extreme axles of the group, measured longitudinally to the nearest foot. The loads shown in Table 1.1 are based on the equation $W=1025\ (L+24)-3L^2$.
- (c) The maximum axle and axle-group loads recommended in paragraphs (a) and (b) above are subject to reasonable reduction in the discretion of the appropriate highway authorities during periods when road subgrades have been weakened by water saturation or other cause.
- (d) The operation of vehicles or combinations of vehicles having dimensions or weights in excess of the maximum limits herein recommended shall be permitted only if authorized by special certificate issued by an appropriate State authority.

The extent to which the above axle load limitations are recognized officially is indicated by the fact that in 1949 the axle load limit of 18,000 pounds was fixed by law in 34 states. In the remaining states and the District of Columbia the legal axle load limit varied from 19,000 to 22,400 pounds.

According to Section 5(b) of the present AASHO policy, which includes the permissible axle-group loads shown in Table 1.1, it will be seen that the maximum permissible load on any individual axle is recommended not to exceed 18,000 pounds and on tandem or dual axles about 4 feet apart the permissible gross load is limited to 32,000 pounds. These loads were established because it is generally agreed that roadway foundations and pavements can be protected against undue overstress, fatigue failure, or other premature injury simply by limiting the load that may be carried on a single axle or on tandem axles which are about 4 feet apart. For roadway foundations and pavements, therefore, the problem of permissible loads is mainly concerned with the load carried by single and by tandem axles, irrespective of the total gross load carried by the entire vehicle.

The problem of determining permissible vehicle weights for bridges, however, is not as simple as it is for roadway foundations and pavements. This is because the critical stresses produced in bridges by heavy vehicle loads are influenced by a number of other factors beside the permissible loads that may be carried by single and tandem axles. These variables not only include the number and spacing of axles and the distribution of gross vehicle weight among the several axles and groups of axles, but they also include the span length of the bridge. And since the critical stresses in bridges are influenced by so large a number of variables, it will be readily seen that the problem of determining permissible axle-group loads and gross vehicle weights, that will

I EKMISSIBLI	L LUADS AS K	ECOMMENDED	DI AASBU FU	LICI ADOLLED	ATRIE 1, 1540
Distance L in feet between the extremes of any group of axles	Maximum load W in pounds carried on any group of axles	Distance L in feet between the extremes of any group of axles	Maximum load W in pounds carried on any group of axles	Distance L in feet between the extremes of any group of axles	Maximum load W in pounds carried on any group of axles
4	32,000	22	45.700	40	60,800
5	32,000	23	46,590	41	61,580
6	32,000	24	47.470	42	62,360
4 5 6 7 8 9	32,000	25	48,350	43	63,130
8	32,610	26	49,220	44	63,890
9	33,580	27	50,090	45	64,650
10	34,550	28	50,950	46	65,400
11	35,510	29	51,800	47	66,150
12	36,470	30	52,650	48	66,890
13	37,420	31	53.490	49	67,620
14	38,360	32	54.330	50	68,350
15	39,300	33	55,160	51	69,070
16	40,230	34	55,980	52	69,790
17	41,160	35	56,800	53	70,500
18 19	42,080	36	57,610	54	71,200
19	42,990	37	58,420	55	71,900
20	43,900	38	59,220	56	72,590
21	44,800	39	60,010	57	73,280

Table 1.1
PERMISSIBLE LOADS AS RECOMMENDED BY AASHO POLICY ADOPTED APRIL 1, 1946

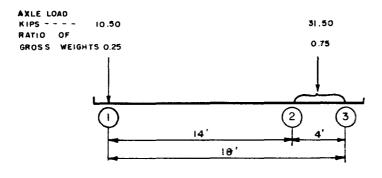
not produce stresses in excess of those permitted by design specifications, resolves itself into one that is anything but simple.

After long and careful consideration of all the factors entering into this problem, the permissible axle-group loads, as given by Table 1.1 in accordance with the recommendations of present AASHO policy, were established at such a level that they will not only result in maximum stresses which will not exceed those presently specified for use in the design of new bridges but, at the same time, will not endanger the safety of existing bridges or produce excessive overstresses that would result in premature injury or unduly shorten their economic life as a result of fatigue. And though this table of permissible axle-group loads and gross vehicle weights provides a practical guide for heavy motor vehicle operation, it gives no clue as to the actual stresses produced by any particular vehicle type or loading on a bridge of given length.

The method developed herein for converting heavy vehicle loads into equivalent loads, however, not only provides a rational procedure for rating a given heavy vehicle in terms of its stress producing effects on a simple span bridge of any particular length, but it also furnishes the means for determining permissible vehicle weights on bridges of various lengths and design designations. The essential features of the method can be outlined and explained rather briefly by discussing them in connection with the equivalent load rating of a particular vehicle, and its stress producing effects on a particular bridge of given length and design designation.

Suppose, for example, that a Type 3 truck, having a gross vehicle weight of 42.0 kips and whose axle loads and spacings are as shown in Figure 1.2, is under consideration. And for this truck, suppose it is desired to know the H-equivalency rating of this vehicle and also whether or not it should be permitted to pass over a particular two-lane simple span bridge, 60 feet in length, that had been designed for an H 15 loading in accordance with the 1949 AASHO Standard Specifications.

In order to rate this truck in terms of an equivalent H truck loading it is only necessary to find the weight of a standard H truck that will produce



TYPE 3 TRUCK NUMBER 18

NOTE: SEE INDEX TABLE 6.2 MAXIMUM MOMENTS

PRODUCED BY THIS TRUCK ARE GIVEN IN TABLE 7.2 AND 8.2

Figure 1.2

the same maximum moment on a 60-foot span as the given vehicle. By making the detailed calculations or by consulting Table 7.2, it will be found that the given vehicle will produce a moment of 525.8 kip-feet on a 60-foot span. And since it would require an H-truck weighing 38.6 kips or 19.3 tons to produce the same moment on this span, the given vehicle would be rated as an equivalent H 38.6 (kip) truck loading or an equivalent H 19.3 (ton) truck loading on a 60-foot span.

By referring to the AASHO policy permissible axle-group loads given by Table 1.1, it will be found that the truck shown in Figure 1.2 does not exceed the axle-group loads indicated and, therefore, would be permitted to pass over the 60-foot bridge of H 15 loading design. This, in spite of the fact that the given vehicle has an equivalent rating of 19.8/15.0 = 1.32 times or 32 percent more than that of an H 15 truck, immediately raises the question: How does one arrive at the conclusion that it would be permissible for an equivalent H 19.8 truck to pass over a 60-foot bridge of H 15 loading design? This seemingly contradictory situation may be explained by saying that all bridges, designed in accordance with AASHO specifications, are constructed in such a way as to include a certain stipulated reserve load carrying capacity as a safety precaution against unintentional or illegal overloads and also to provide for legal but infrequent heavy loads such as those indicated by the permissible axle-group loads in Table 1.1.

Perhaps it would contribute to a better understanding of overloads and their effects on bridges if it were explained that an increase of, say, 40 percent in the live load and impact moments on a given bridge does not result in so large an increase in the total moment. This is because the dead load moment, which in most cases is a considerable part of the total moment, for a given span always remains the same and, therefore, a given percent increase in only the live load and impact moments would not result in so great a percent increase in the total moment. And though this line of reasoning provides a qualitative answer to the question, it is not sufficiently specific for one to arrive at a rational conclusion concerning the actual amount of overstress that may be involved in any particular situation. In other words, though the qualitative answer is satisfactory so far as it goes, it gives no information as to the degree in which the reserve load carrying capacity of a given bridge is called upon to function during the passage of any particular heavy vehicle load. Once the H-equivalency of a given vehicle on a particular span has been determined, however, its numerical rating will provide a satisfactory

answer for most practical cases but, even so, it is still not sufficiently specific to indicate the probable magnitude of overstress involved in any particular situation.

Owing to the fact that the dead load of a bridge varies with both the span and the type of construction, it is not possible to relate the H-equivalency of a given vehicle with a specific amount of overstress that would be exact for all types of construction. However, if the amount of overstress for a given span and H-equivalency is determined on the basis of the lightest possible type of construction, the answer would be exact in the sense that it would represent the maximum possible magnitude of overstress since it would not be exceeded in another heavier type bridge of the same span.

For example, suppose it is desired to know the amount of overstress produced by the Type 3 truck, shown in Figure 1.2, on the above described 60-foot bridge of H 15 loading design. If it is now assumed that this bridge is of a light construction type, consisting of a concrete deck supported by simple span steel stringers, the dead load moment would account for about 50 percent of the total design moment.

For a 60-foot span, the AASHO moment table shows that the H 15 lane loading would control and produce a maximum live load moment of 418.5 kip-feet per lane, to which a 27 percent allowance must be added for impact. The total moment for which this bridge must be designed, therefore, would be as follows:

H 15 loading design moments in kip-feet for 60-foot span

Live load moment	$\mathbf{M}_{\scriptscriptstyle \mathrm{LL}}$	==	418.5	
Impact moment = $.27 \times 418.5 =$	$\mathbf{M}_{\scriptscriptstyle \mathrm{I}}$	=	113.0	
Dead load moment $= 418.5 + 113.0 =$	$\mathbf{M}_{\scriptscriptstyle \mathrm{DL}}$	=	531.5	
Total design moment	M _{Tot} .	==	1063.5	

This design moment may now be compared with the total moment produced by the 21 ton Type 3 truck shown in Figure 1.2 which is as follows:

Live load moment	$M_{\scriptscriptstyle m LL}~=~525.8$
Impact moment $= .27 \times 525.8 =$	$M_{\rm I} = 142.0$
Dead load moment = $418.5 + 113.0 =$	$\mathbf{M}_{ ext{DL}} = 531.5$
Total moment	$M_{\text{Tot.}} = 1199.3$

The given vehicle, together with the allowance shown for impact, therefore, produces bending stresses which are 1199.3/1063.5 = 1.13 times or 13 percent in excess of the basic design stresses. On this basis, it could be concluded that the given vehicle would not cause an overstress in excess of 13 percent on any 60-foot simple span bridge that was designed in accordance with the 1949 AASHO specifications. Even though it is not within the province of this report to recommend any particuler percent of overstress that should not be exceeded, it would be safe to say that a 13 percent overstress caused by an infrequent heavy vehicle load would not be considered as an undue encroachment on the reserve load carrying capacity of a bridge whose reserve capacity compared favorably with that required by present-day design specifications.

One of the more important points brought out by this example, however, is that even though the given vehicle has an H-equivalency of 32 percent in excess of an H 15 truck, it would cause no more than a 13 percent overstress on a 60-foot bridge of H 15 loading design. This will, in some measure, explain the reason why the present AASHO policy has established the level of permissible axle-group loads in Table 1.1 at a point where the maximum live load and impact moments resulting from them will not be more than about 43 percent in excess of those caused by an H 15 design loading. In other words, the permissible axle-group loads in Table 1.1 establish the maximum level of heavy motor vehicle operation at a point where the maximum live load and impact moments produced by them on any span will

AXLE - GROUP - LOADS ON BRIDGES OF H LOADING DESIGN

GRAPH SHOWS MAXIMUM PERMISSIBLE WEIGHTS ON ANY GROUP OF AXLES WHICH, FOR ANY NORMAL DISTRIBUTION OF LOAD, WILL NOT PRODUCE MORE MOMENT ON ANY SPAN THAN THE H LOADING INDICATED

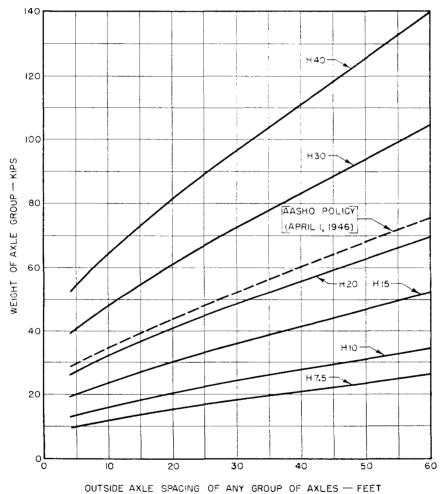


Figure 1.3

not exceed those required for an H 21.5 loading design. A comparison of the permissible axle-group loads in Table 1.1 with other H loading designations is shown graphically by the dashed line in Figure 1.3. The proper interpretation of this figure, however, requires a little explanation.

Explanation of Figure 1.3 and Table 1.2

In connection with this investigation of heavy vehicle loads, it was found, for any normal distribution of gross load among the several axles of a group, that the maximum permissible weight on any group of axles, such that it would not produce more moment on any span than a standard H design loading of given designation, could be estimated rather accurately by use of the following equation;

$$W = [\sqrt{C + La/4} + \sqrt{La/4}]^2$$
 1.1

in which

W = Maximum weight in kips on any group of axles such that it will not produce more live load moment on any span than a standard H design loading corresponding with the lane loading constants, C and a, in Equation 1.1.

L = Distance in feet between the extremes of any group of axles. C = Concentrated load in kips corresponding to H lane loading

designation under consideration.

= Uniform load in kips per foot corresponding to H lane loading designation under consideration.

If pounds instead of kips are used for the constants C and a, in Note: Equation 1.1, the weight, W, will also be in pounds.

Table 1.2 VEHICLE WEIGHTS ON BRIDGES OF H LOADING DESIGN

Ayle Group—Loads—Kins

Dist. Retween Extremes of	Critical	Designed Standard H. Loading					
Any Group of Axles L Feet	Span S Feet	10	15	20	30	40	50
4	12.80	13.10	19.65	26.20	39.30	52.40	65.5
6	16 33	14.23	21.35	28.46	42.69	56.92	71.1
8	19.53	15.25	22.88	30.50	45.75	61.00	76.2
10	22.50	16.20	24.30	32.40	48.60	64.80	81.0
12	25.33	17.11	25.67	34.22	51.33	68.44	85.5
14	28.05	17.98	26.97	35.96	53.94	71.92	89.96
16	30.68	18.82	28.23	37.64	56.46	75.28	94.10
18	33.24	19.64	29.46	39.28	58.92	78.56	98.20
20	35.74	20.44	30.66	40.88	61.32	81.76	102.20
22	88.21	21.23	31.85	42.46	63.69	84.92	106.1
24	40.62	22.00	33,00	44.00	66.00	88.00	110.0
26	43.00	22.76	34.14	45.52	68.28	91.04	113.8
28	45.37	23.52	35.28	47.04	70.56	94.08	117.6
30	47.69	24.26	36.39	48.52	72.78	97.04	121.30
32	50.00	25.00	37.50	50.00	75.00	100.00	125.0
34	52,30	25.74	38.61	51.48	77.22	102.96	128.7
36	54.56	26.46	39.69	52.92	79.38	105.84	132.3
38	56.82	27.18	40.77	54.36	81.54	108.72	135.9
40	59.06	27.90	41.85	55.80	83.70	111.60	139.50
42	61.28	28.61	42.92	57.22	85.83	114.44	143.03
44	63.50	29.32	43.98	58.64	87.96	117.28	146.60
46	65.69	30.02	45.03	60.04	90.06	120.08	150.10
48	67.90	30.73	46.10	61.46	92.19	122.92	153.6
50	70.06	31.42	47.13	61.84	94.26	125.68	157.10
52	72.03	31.93	47.90	63.86	95.72	127.72	159.6
54	74.41	32.81	49 22	65.62	98.43	131.24	164.0
56	76 58	33.51	50.27	67.02	100.53	134.04	167.5
58	78.73	34.20	51.30	68.40	102,60	136.80	171.00
60	80.87	34.88	52.32	69.76	104.64	139.52	174.40

Note: For any normal distribution of load among the individual axles, this table shows the maximum gross weights which may be carried on any group of axles such that they will not produce more moment on any span than the design standard H loading indicated. The critical span S, in this table, is the span on which the moment produced by the axle-group load indicated becomes more nearly equal to that produced by the corresponding H loading. On all other spans, less or greater than S, the moment produced by the axle-group load indicated is always less than that produced by the corresponding H loading.

⁴Henson K. Stephenson, "Determination of Permissible Vehicle Weights on Bridges of H Loading Design," AASHO Proceedings, Washington, D.C., 1949, pp. 144-185. AASHO Proceedings, Washington, D.C., 1949, pp. 144-185.

Equation 1.1, therefore, is the general expression used for determining the solid line axle-group load curves shown in Figure 1.3. In fact, Equation 1.1 was first used to determine the axle-group loads for each of the H loading designations shown in Table 1.2 and then plotted in Figure 1.3.

In Figure 1.3, it will be noted that the permissible axle-group-loads recommended by the AASHO policy (dashed line), throughout the entire range of wheel base lengths, are about 1.43 times or about 43 percent more than those indicated for the H 15 loading. In other words, the present AASHO policy permits axle-group loads and gross vehicle weights which will not produce live load and impact moments on any span in excess of those that would result from an H 21.5 design loading.

In the second column of Table 1.2, it will be noted that the critical span, S in feet, is given for all loads, irrespective of magnitude, that may be carried on a given length of wheel base. This critical span S is the span on which the maximum live load moment produced by the axle-group load indicated becomes more nearly equal to that caused by the corresponding H design loading and, on all other spans, less or greater than S, the moment produced by the axle-group load indicated will always be less than that caused by the H design loading of corresponding designations. Perhaps the most interesting thing to note in this connection is that the length of the critical span is not influenced by the magnitude of load but only by the wheel base length of the axle-group on which the load is carried.

From a practical standpoint this means that if a given heavy vehicle were being investigated to determine its most serious stress (moment) producing effects on bridges of various lengths and H loading design, only those critical spans corresponding to the wheel base lengths of its various axle-groups need be considered. On all other spans, less or greater than the critical span for each axle-group load, the reserve load carrying capacity would be greater than that for the length corresponding to the critical span.

1.5 Closure

The preceding discussion of permissible vehicle weights on roadways and bridges, though it is in no sense complete, will serve in a general way to indicate the nature of several of the more important problems associated with the sizes, weights, and frequencies of heavy vehicle types and loadings, and how they are related to highway and bridge provision. It will also serve to outline the method suggested here for the rating of heavy vehicles in terms of equivalent loads as an approach to the problem of correlating heavy motor vehicle operation with highway and bridge provision. The development and use of the tables and charts given herein for converting heavy vehicles into equivalent loads will be discussed in more detail in Article 5.

2. AXLE LOAD AND GROSS LOAD TRENDS

From a very small beginning in about 1900 the use of motor vehicles has increased almost continously ever since. Motor vehicle registrations were but 78,800 in 1905, passed 10 million in 1921, crossed the 20 million mark in 1926, exceeded 30 million in 1939, and numbered more than 40 million in 1949. Although no figures are available as yet for this year, the number of registrations will probably pass the 50 million mark in 1951. A breakdown of these registrations from 1920 through 1949 into passenger cars, buses, and trucks is shown in Table 2.1.

Since it is the growth in use of motor freight vehicles that is of particular interest in connection with these studies, the important thing to note in Table 2.1 is the relative increase in the number of truck registrations as compared with total registrations. In column 5 of this table it will be seen that trucks accounted for 12.0 percent of all registrations in 1920 and increased

 ${\footnotesize \mbox{Table 2.1}}$ MOTOR VEHICLE REGISTRATIONS IN UNITED STATES

(Excluding publicly owned vehicles)

Total	Trucks		Euses	Passenger	Year
	% of total	Number		Cars	100.
9,239,161	12.0	1,107,639	(1)	8,131,522	1920
19,940,724	12.5	2,483,215	17,808	17,439,701	1925
26,531,999	13.3	3,518,747	40,507	22,972,745	1930
26,229,743	14.0	3,675,865	58.994	22,494,884	1935
32,035.424	14.3	4.590.386	72.641	27,372,397	1940
30.638,429	15.8	4.834.742	112,253	25,691,434	1945
33,945,817	16.9	5,725,692	119,937	28,100,188	1946
37,360,463	17.4	6.512.628	128,983	30.718.852	1947
40,622,264	17.8	7,227,380	133,430	33,261,454	1948
44,670,588	18.0	$8.099,914^2$	137,000	36,433,674	1949

Source: Bureau of Public Roads MV-1 tables.

steadily year by year through 1949 when trucks accounted for 18.0 percent of all motor vehicle registrations. These percentage increases, however, do not tell the full story. It would be more significant, perhaps, to point out that the 8,099,914 trucks registered in 1949 represent a 740 percent increase over the 1,107,639 registered in 1920, whereas the 36,433,674 passenger car registrations in 1949 represent but a 448 percent increase over the 8,131,522 registered in 1920.

Referring again to Table 2.1, it not only shows that the total number of trucks continues to increase but the ratio of trucks among total registrations also continues to increase. However, it is not so much the increasing numbers of trucks as it is the continued increases in their sizes, gross loads, and axle loads that accounts for the growing concern in the subject of permissible vehicle weights and how they are related to highway and bridge provision.

These comparisons will not only serve to establish the present trend in the use of motor freight vehicles but also to emphasize the need for more and better information for dealing with the problems associated with their sizes, weights, and frequencies.

There was some concern during the early twenties over the damage being done to the highways by what was then considered to be heavily loaded trucks.⁵ Relatively few of the gross vehicle loads or axle loads recorded in truckweighing operations conducted during this period, however, would be considered serious in accordance with present standards. Most of these loads were carried on solid tires which were more damaging than the pneumatic tire of today, and also legislation had not yet been enacted which would permit wide use of vehicle combinations with multiple axles. The advent of the pneumatic tire, the enactment of favorable legislation, and the design and construction of thicker pavements virtually eliminated this earlier concern and by 1931 there were rarely any loads carried on the highways heavy enough to over tax their structural capacity.

State-wide highway planning surveys were started in 1935 and during the period 1936-37 nearly all of the States conducted truck-weighing operations giving for the first time comprehensive data from which an accurate analysis could be made of the frequency of occurrence of heavy gross loads and axle loads operating on our highways.

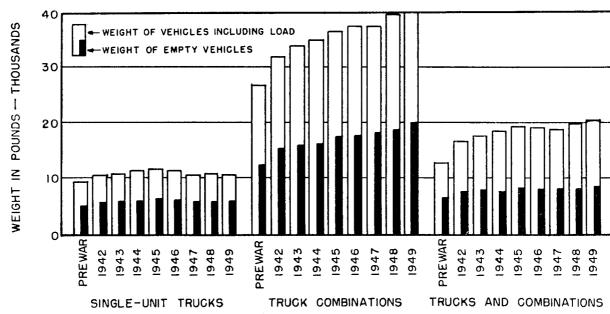
During the years 1938-41 only fragmentary data were collected concerning truck weights and axle loads, but with the beginning of World War II the

⁽¹⁾ Registration of buses not recorded separately.

²F'ercentage based on an estimated 137,000 buses among the 8,236,914 buses and trucks reported.

⁵J. T. Lynch and T. B. Dimmick, "Axle Loads and Gross Load Trends," PUBLIC ROADS, Vol. 25, No. 12, February, 1950.

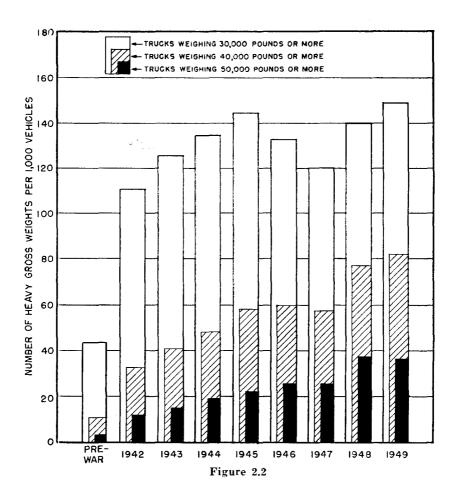
AVERAGE WEIGHTS OF LOADED AND OF EMPTY TRUCKS AND COMBINATIONS IN THE SUMMERS OF 1942-49 AND TRUCK A CORRESPONDING PERIOD OF A PREWAR YEAR



increased loadings on trucks began to cause again collected on a nation-wide scale in 1942 since that time. Figure 2.1some concern and so data were and have been collected annually

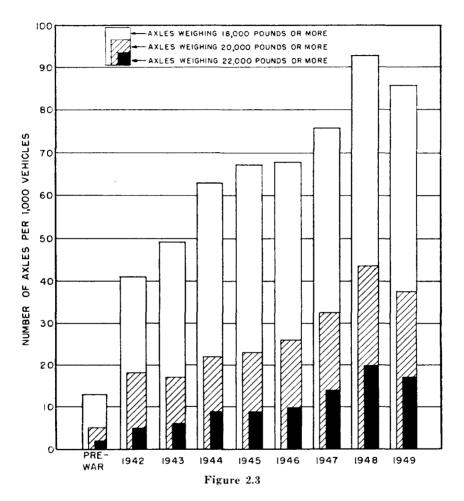
The trends⁶ indicated by the analysis of this data are shown graphically in Figures 2.1, 2.2, and 2.3 which were taken from Public Roads for December 1950. Figure 2.1 gives the average weight for loaded and empty trucks and truck combinations for a prewar year, generally 1936 or 1937, and for the years 1942 through 1949 inclusive. It can be seen that the single unit trucks gradually increased in weight from the prewar period until about 1945 and then leveled off or declined slightly during the following years so that the over-all increase in average weight for the years reported amounted to only about 12 percent. On the other hand the average weight of the truck

NUMBER OF HEAVY GROSS WEIGHTS PER 1,000 TRUCKS AND TRUCK COMBINATIONS (EMPTIES INCLUDED) IN THE SUMMERS OF 1942-49 AND A PREWAR YEAR



⁶T. B. Dimmick, "Traffic Trends on Rural Roads in 1949," PUBLIC ROADS, Vol. 26, No. 5, December, 1950.

NUMBER OF HEAVY AXLE LOADS PER 1,000 TRUCKS AND TRUCK COMBINATIONS (EMPTIES INCLUDED) IN THE SUMMERS OF 1942-49 AND A PREWAR YEAR



combinations, both loaded and empty, has consistently increased from the 1936-37 period through 1949 for an increase of almost 50 percent. The increase for single unit trucks and truck combinations for the same period was approximately 57 percent, a higher percentage than for either type separately because of the larger proportion of truck combination in the latter years.

Figure 2.2 shows for the United States as a whole the number of gross weights of 30,000 pounds or more, 40,000 pounds or more and 50,000 pounds or more per 1,000 vehicles from the prewar years (generally 1936 or 1937) through 1949. The trend of frequency of these loads continues to climb upward although there was some decrease in the frequency of the 50,000 pound

loads or more in 1949 as compared with 1948. For the period of this study it can be seen from Figure 2.2 that there was a 12 percent increase in the gross loads of 50,000 pounds or more, a 7 percent increase in the gross loads of 40,000 pounds or more, and a $3\ 1/2$ percent increase in the gross loads of 30,000 pounds or more.

Along with the tremendous increase in the number of heavy trucks and the frequency of gross loads of 30,000 pounds or more, there has been a similar rise in the frequency of heavy axle loads. This can be seen from figure 2.3 which shows the number of axle loads of 18,000 pounds or more, 20,000 pounds or more and 22,000 pounds or more per 1,000 vehicles for a prewar year and for the years 1942 to 1949 inclusive. And it can be seen that the frequency for each of the three groups of axle load increased steadily through 1948 and then declined slightly in 1949. The axle loads of 18,000 to 20,000 pounds showed significant increases in frequency of occurrence, but the greatest increase in frequency was for axle loads of 22,000 pounds or more. These axle loads (22,000 pounds or more) increased in frequency from 2 per 1,000 vehicles in the prewar period to 17 per 1,000 vehicles in 1949 for an increase of 750 percent.

A study of heavy axle load frequencies by regions indicates that the most favorable situation exists in the Western regions while the worst conditions, at the present time, exist in the New England and Middle Atlantic regions. Legislation in the Western regions permits the advantageous distribution of loads on vehicle combinations of five or more axles whereas in the Eastern parts of the United States legislation is such as not to be conducive to the use of more than three or four axles. This is illustrated in Figure 2.4^8 which gives the cumulative frequency of axle loads whose gross weights were equal to or greater than stated values based on the loadmeter surveys of 1942. For example, it can be seen from Figure 2.4 that over 32 percent of the heavy vehicle axles in the East weighed 18,000 pounds or more as compared with about 7 percent in the West. Similarly it shows that about 13 percent of the heavy vehicle axles in the East weighed 21,200 pounds or more as compared with only about 1 percent in the West. For the United States as a whole it will be seen that about 20 percent of the heavy vehicle axles weighed 18,000 pounds or more and that 5 percent of the heavy vehicle axles weighed 21,200 pounds or more. The analysis of later surveys substantiates the findings given in Figure 2.4.

Concern over the tremendous increases in the frequencies of the various intensities of these heavier axle loads stems from the fact that all but an insignificant part of our present highway system was not designed to accomodate either the magnitude or the frequencies of these loads, as shown in Figure 2.3, which have characterized heavy motor vehicle operation in the United States since about the beginning of the second World War. It would seem, therefore, that the only way in which our present highway facilities can be adequately protected is to regulate the maximum axle load and gross loads which will be permitted to operate and, at the same time, provide for some effective means of enforcement. Legislation which would permit lengths to be such as to encourage wider use of vehicle combinations with multiple axles would undoubtedly do much to alleviate the present condition. Legislation which would encourage the use of vehicle combinations with multiple axles would not only tend to reduce the weights carried on individual axles out.

⁷, ⁵Henson K. Stephenson and A. A. Jakkula, "Highway Loads and Their Effects on Highway Structures Based on Traffic Data of 1942," Texas Engineering Experiment Station Bulletin No. 116, 1950.

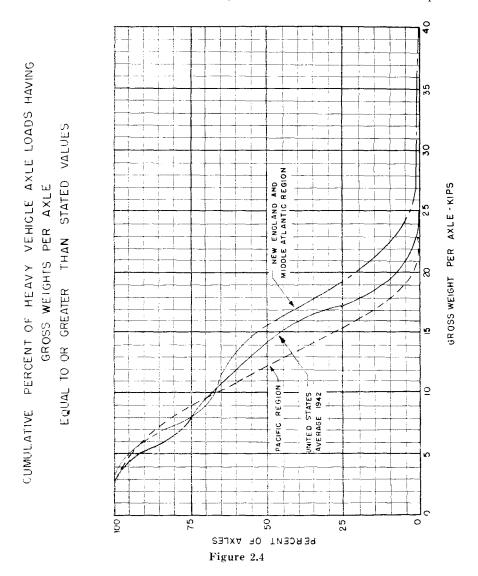
⁹J. T. Lynch and T. B. Dimmick, "Axle Loads and Gross Load Trends," PUBLIC ROADS, Vol. 25, No. 12, February, 1950.

¹⁰Henson K. Stephenson and A. A. Jakkula, "Highway Loads and Their Effects on Highway Structures Based on Traffic Data of 1942," Texas Engineering Experiment Station Bulletin No. 116, Part III, 1950, pp. 113-127.

at the same time, it would permit the realization of reasonable increases in pay load that would not be detrimental to either our present roadways or bridges.

3. INFLUENCE OF HEAVY MOTOR VEHICLE OPERATION ON HIGH-WAY AND BRIDGE PROVISION

Earlier in this report, it was pointed out that many elements of the problems associated with the sizes, weights, and frequencies of heavy motor vehicles, and their respective effects on the costs of building and maintaining highways and bridges, are of a highly controversial nature. It was also point-



ed out that since certain of these matters are of a controversial nature, the reason for discussing them here is to contribute, if possible, toward a better understanding of some of the issues involved rather than that of arriving at any specific recommendations concerning the economic justification of any particular level of permissible axle loads and gross loads that should obtain for given facilities or traffic conditions.

Practically everyone, including the advocates of larger and heavier vehicles, will agree that more substantial subgrades, thicker pavements, and stronger bridges are required to support the heavier loads than would be required to accommodate the lighter loads. But there is still another element which must be taken into account in the design of highways and bridges that is not so well-known or understood. This element for want of a better name has been called "fatigue." This term is used to describe the ability of a structural material to withstand repeated applications of various intensities of load. The curve shown in Figure 1.1, for example, shows the number of repetitions of a given stress required to produce a fatigue failure in a concrete pavement. And though the number of stress repetitions required to produce a fatigue failure would not necessarily be the same as shown in Figure 1.1, the fatigue curves for other structural materials are quite similar.

The curve in Figure 1.1, for example, shows that a concrete pavement can withstand an indefinitely large number of stress repetitions provided the stress does not exceed about 50 percent of its ultimate flexural strength. It also shows that but a comparatively small number of stress repetitions in excess of this amount is required to produce a fatigue failure. More specifically, it will be seen from this curve that if the repeated stress were increased only to, say, 60 percent of the concrete's ultimate flexural strength, it would be expected to fail in fatigue after about 22,000 applications of the load producing this stress. Other examples could be cited, of course, but they would only differ in detail. The main point to be brought out here is that the design of highway facilities—whether they be subgrades, pavements, bridges, or other structures—is not only a function of the maximum axle loads and gross loads to be accommodated but is also a function of the expected frequencies of various intensities of these loads. Therefore, if the truth of these facts, which are well-known to highway and bridge engineers, could be effectively explained to the layman, it is believed that one of the principal sources of misunderstanding would be measurably lessened or perhaps eliminated entirely.

This assignment, however, will not be so simple as it might appear at first glance. To the trucking operator, for example, who is accustomed to hauling excessive loads, the idea of fatigue failure might seem farfetched indeed. This would not be an unnatural reaction because he has actually seen many heavy loads pass over both pavements and bridges without their producing any visible signs of distress or failure. However, if some way could be devised that would clearly explain to him the truth of fatigue failure and certain other deteriorating effects of excessive overloads, he would at least be in a better position to understand that certain limitations on maximum axle loads and gross loads are necessary in the public interest to insure the maximum economic life of the Nation's highway facilities.

The relationship between excessive loads and fatigue failure is one of the more important elements involved in the over-all problem of permissible vehicle sizes and weights, but there are others that are quite as important for which a better understanding is also urgently needed. The deteriorating effects of pumping, for example, is another of these elements that should be more clearly explained. An authoritative report¹¹ on this subject was briefly discussed in Article 1.3. The effects of vehicle sizes on geometric design and highway capacity are also among these elements but their influence on the

¹¹Final Report of Committee on Maintenance of Concrete Pavements as Related to the Pumping Action of Slabs, Highway Research Board, Vol. 28, heavy axle loads are the primary activating element in pumping at joint and cracks in concrete pavements, pp. 281-310.

cost of highway and bridge provision is somewhat more involved and therefore more difficult to determine than those previously mentioned.

Although the above discussion is in no sense complete it is believed to be sufficient to indicate some of the major sources of controversy and misunderstanding pertaining to the determination of, and the necessity for, the regulation or limitation of maximum permissible vehicle sizes and weights. In the final analysis, however, the solution of these problems will depend in large measure on evaluating the effects of heavy motor vehicle operation on the costs of highway and bridge provision, and apportioning those costs in an equitable manner among the various classes of highway users. A vast amount of work has already been done and is still being done along these lines both in the fields of engineering research and highway economics, but much more will be required to find equitable answers that will be acceptable to everyone concerned.

Some indication as to the nature of these problems and the effects of heavy motor vehicle operation on the cost of highway and bridge provision may be had from a report recently submitted to the United States Senate. This report includes the results of two different studies made by the Colorado and New Jersey State Highway Departments respectively which clearly reflects the road damage resulting in these States from heavy truck operation. The results of the studies made by the Colorado Highway Department were as follows:

"ROAD DAMAGE BY TRUCKS IN COLORADO

Mr. A. V. Williamson,

District Engineer, Public Roads Administration, New Customs House, Denver, Colo.

Dear Sir: The following information in connection with damage to highways by heavy loads is transmitted for your information.

At the outbreak of World War II the legal load limits on Colorado highways were 18,000 pounds on a single axle, 24,000 pounds on a two-axle vehicle, 34,000 pounds on a three-axle vehicle, and $W=700\ (L+40)$ on a combination of vehicle and trailer with a gross load of 63,000 pounds.

On September 18, 1943, the Governor of Colorado on account of war necessities by proclamation granted permission for the issuance of certificates of operation for vehicles to carry extra legal weights on Colorado highways. By January 20, 1944, 493 such certificates had been issued. These certificates included some for axle loads up to 23,655 pounds and some for gross loads up to 84,000 pounds.

Early in 1944 maintenance superintendents started to complain that these heavy loads were severely damaging the road surfaces, and as the months passed by their complaints grew louder.

In the late fall of 1944 the task of determining exactly what damage was being done by these overloads was assigned to the maintenance division.

After considerable study it was decided that the concrete pavements presented definite means of determining whether or not damage was actually being caused. It was further determined that definite data could be secured by making parallel crack surveys on pairs of concrete sections comparable as

¹²Thomas H. MacDonald, "A Factual Discussion of Metortruck Operations," Dept. of Commerce, Bureau of Public Roads, Superintendent of Documents, U. S. Govt. Printing Office, Washington, D. C.

¹⁵Thomas H. MacDenald, "A Factual Discussion of Mctortruck Operations," Dept of Commerce, Bureau of Public Roads, Superintendent of Documents, U. S. Govt. Printing Office, Washington, D. C., Appendix II, pp. 76-79.

regards bases, design, age, strengths of pavement concrete, and other pertinent characteristics. Of each pair, one was to have few or no permitted overloads in regular operation. The other was to have as many regular overloads in operation as possible. It could reasonably be assumed that each would develop about the same percentage of cracks from common causes, and it could also reasonably be assumed that those sections bearing the overloaded vehicle would develop a larger percentage of cracks than the one that had no overloads. After considerable detailed investigation four such pairs of comparable sections were decided upon, the crack surveys were made and the results of those surveys shown in the accompanying tabulation speak for themselves and confirm the prognosis.

A big percentage of the surveyed slabs carrying overloads was on State Highway 2 between Sterling and Julesburg. On this section for the years 1941, 1942, and 1943 the average cost of surface maintenance was \$29.36 per mile per year. On the same road the average cost of surface maintenance for 1944, 1945, and 1946 was \$59.59 per mile per year.

A notable example of damage from heavy loads to bituminous surfaces was on State Highway 13 from Craig, north, to the Wyoming State line. A 1 1/2" x 20' bituminous surface was placed on this road in 1938 and gave generally good service until 1945. In 1945 major developments started in the Rangely oil field, and a big percentage of the oil well drilling equipment was transported from Wyoming to Rangely. This movement continued throughout the winter of 1945-46, and by the spring of 1946 this road was in a deplorable condition. The base had failed over all the road, which had not been previously stabilized, and the bituminious surface was in exceedingly bad condition. The road was in such condition that during the summer of 1946 it was necessary to stabilize the base and relay the surface. The new surface being a 2" mat 22' wide.

The following costs indicate clearly the damage this road suffered:

Maintenance costs for 38 miles

1945	Normal routine main	tenance\$	8,381.37
1945	Special maintenance	(betterments)	6,888.99
	Total		15,270.36
1946	Normal maintenance		6,261.17
1946	Special maintenance	(betterments)	193,059.77
	Total		199.320.94

Trusting this information may have some value, I am,

Very truly yours,

James D. Bell, Assistant State Highway Engineer.

D. N. Stewart, Maintenance Engineer."

Various agencies of other states have made studies similar to that of the Colorado Highway Department which differ somewhat in the details of their findings; however, these studies do agree that heavy vehicles may be held responsible for a large percentage of the total costs of building and main-

Table 3.1

COLORADO STATE HIGHWAY DEPARTMENT—TABULATION SHOWING COMPARATIVE RATES OF PROGRESSIVE CRACKING IN CONCRETE PAVING SLABS. EACH PAIR CONSISTS OF PROJECTS OF COMPARABLE CHARACTERISTICS, ONE OF WHICH CARRIES MANY OVERLOADS DAILY. THE OTHER CARRYING ONE OR LESS

MANY OVERLOADS DAIL	I, TH	E OTHE	R CARI	CYING	ONE OR	LESS				
Project and location	I	Trucks and Busses	1944 daily extra legal loads allowed by permits	Number of days between original and first check survey	Percentage of slabs showing new or extended cracks between original and first cheek survey	Rate of increase each 10 days in number of slabs showing new or extended cracks developing becrease original and first check survey	Number of days between first and second check surveys	Percentage of slabs showing new or extended cracks between first and second check surveys	Rate of increase each 10 days in number of slabs showing new or extended cracks developing between first and second these surveys	Number of slabs
Pair No. 1:					Percent	Percent		Percent	Percent	
FAP 287-A-3 on State Highway 2 between Wiggins and Fort Morgan. Slabs 18 feet wide, 60 feet long, with deformed metal center joints dowelled. Built in 1928. FAP 251-C on State Highway 7 east of Boulder, Slabs are 18 by 60 feet with weakened plane center joint, no steel. Built in 1928.	998 1 505	47 645	45 1	84 95	79 7.5	9.4	33 23	53.77 5.1	16.3 2.2	305 412
Pair No. 2: FAP 286-E between Eaton and Ault on State Highway 2. Slabs 18 by 60 feet with center joint, without steel. Built in 1931		428	37	70	28.8	4.1	48	34.6	7.2	360
SP 766-1931 on State Highway 14 east of Fort Collins. Same section and age as above	560	190	0	85	1.43	.168	45	.95	.21	210
Pair No. 3; FAP 122-R-3 on State Highway 2 between Ovid and Julesburg. Same section as above except that slabs are 20 feet wide. Built in 1933	535	165	42	50	30.7	6.1	44	34.9	7.9	321
FAP 79-BR on State Highway 4 between Colorado Springs and Peterson Field, Same section as above. Built in 1933	2 340	960	1	49	0	0	59	3.03	.513	165
Pair No. 4:	,0.0	000	•		•	v	•••	0.00	.019	100
FAP 175-AR-6 on State Highway 2 between Crook and Red Lion, 20 feet wide, expansion joints 90 feet apart, dummy joints 30 feet apart making slabs 30 feet long with center joint. All joints dowelled. Built in 1937.	380	120	42	90	18.8	2.1	42	19.8	4.7	1,349
Weld County 3 percent project built on 11th Ave. in Greeley in 1935. Same section as next above with a little less steel. This is a busy city street		*50	0	58	0	0	63	4.7	.73	87

*Busses only.

NOTES.—No. 1. All slabs are 6 1/2 inches thick at center, 9 inches thick at edges. No. 2. All surveys were made between Dec. 1, 1944, and July 1, 1945. No. 3. All cracks found on original survey were recorded on same sketches. Tabulation was calculated from these sketches. Figures unchecked and subject to revision.

taining highway facilities. It is beyond the scope of this bulletin, however, to undertake to pass judgment on these findings. They are submitted here merely to indicate the studied conclusions that have been arrived at as a result of authoritative investigations into the effects of heavy motor vehicle operation on the cost of highway and bridge provision.

4. EQUIVALENT LOADS PROVIDE THE MEANS FOR RATING HEAVY MOTOR VEHICLE TYPES AND LOADINGS

Since about the beginning of the second World War, both the numbers and weights of heavy axle loads and gross loads have increased at such a rapid rate (see Figures 2.1, 2.2, 2.3), it has become more and more urgent that suitable procedures and techniques be devised for dealing with certain of the problems, associated with the operation of heavy motor vehicles and their effects on the design, construction, maintenance, and economic life of our present and future highway facilities. In recognition of these needs and as a partial contribution toward their fulfillment, it was pointed out in Article 1.1 that the over-all objective of this bulletin is to develop a simple yet accurate mathematical procedure for the rating of the stress producing effects of heavy vehicle types and loadings in terms of some convenient but standardized equivalent loads, and to show how the frequency distributions of these equivalent loads provide a rational means for measuring the level or levels of heavy motor vehicle operation corresponding to given traffic conditions such as those reported by a local, state, or national loadometer survey.

It was also pointed out that in order to accomplish these ends, it is first necessary to find a satisfactory way for converting a given heavy vehicle loading into an equivalent load, and that this could be done by evaluating some stress producing effect—such as maximum moment, shear, or floor beam reaction—caused by the given vehicle on a simple span bridge of definite length and then finding the gross weight required on, say, a standard H truck to produce the same effect. For example, if a given vehicle caused a maximum moment of say 445.6 kip-feet (see AASHO moment table) on a 50-foot span it would be the same as that produced by an H 20 truck. And on this basis, the given vehicle would be rated as an equivalent H20 truck loading on a 50-foot span. The given vehicle could quite as easily be rated similarly in terms of an equivalent H-S truck loading, equivalent concentrated load, or any other standardized equivalent load that might prove advantageous as a basis of comparison for the particular purpose under consideration. The simplest procedure, however, would be to first convert the given vehicle into an equivalent H truck loading for the span under consideration, and then rate it in terms of either of the other standardized equivalent loadings by use of the conversion coefficients given and explained in Article 13.

Perhaps it should be mentioned again also that another of the more important uses of equivalent loads is that of determining maximum permissible vehicle weights on bridges of various lengths and design designation. For example, it would be but a simple matter to determine whether or not a given vehicle should be permitted to pass over an H15 bridge of given length if the H loading equivalent of the given vehicle were known.

The method described in Article 1.1 for converting heavy vehicle types and loadings into equivalent loads, or for determining permissible vehicle weights, is the principal subject for this bulletin and is presented here for the first time. It gives answers which are mathematically correct for the 10,424 cases covered by the tables and charts presented in Part II, and answers which compare favorably with slide-rule accuracy for those cases where values are obtained by interpolation. The basis upon which the method is developed together with the tables and charts that have been prepared to facilitate its use are discussed in some detail and more fully explained in the articles of Part II which follow immediately.

Part II

METHOD FOR RATING HEAVY VEHICLE LOADS IN TERMS OF EQUIVALENT LOADS

5. BASIS FOR CONVERTING HEAVY VEHICLE LOADS INTO EQUIVALENT LOADS

5.1 General

As pointed out in the preceding articles, it is generally agreed that road-way subgrades and pavements can be protected against undue overstress, pumping, fatigue failure, or other premature injury simply by limiting the load that may be carried on a single axle, or on tandem axles which are less than about 4 feet apart. For roadway subgrades and pavements, then, the problem of permissible loads is fairly simple since it is mainly concerned with the loads carried by single axles and by tandem axles of about 4 feet spacing, irrespective of the total gross load of the vehicle.

On the other hand though, the problem of determining permissible loads for bridges is somewhat more involved. This is due to the fact that the critical stresses produced in bridges by heavy vehicle loads are influenced by no less than six variables, whereas the stresses in subgrades and pavements are influenced mainly by the intensity of single or tandem axle loads. The six variables which must be taken into account in the calculation of critical stresses for simple span bridges are as follows:

- 1. Span length of bridge
- 2. Gross weight of vehicle
- 3. Wheel base length of vehicle
- 4. Number of axles
- 5. Spacing of axles
- 6. Distribution of gross weight among the axles.

If all of these variables are taken into account by use of conventional methods, the only way in which the stress producing characteristics or effects of various heavy vehicle types and loadings on a given bridge can be determined accurately is by making a complete analysis of the stresses, for that particular bridge, produced by each individual vehicle under consideration. And though such an analysis for any particular vehicle or loading on a given span is not difficult, it is, to say the least, tedious and time consuming. The unfortunate thing about such analyses, however, is that the results obtained from them cannot be translated readily into general conclusions which can be used for determining the stress producing characteristics of, or the permissible vehicle weights for, other vehicle types and loading or for spans of different length.

What is needed, therefore, is a simplified method for evaluating the stress producing effects of heavy vehicle types and loadings, or their permissible weights, by which usable answers of any desired accuracy might be obtained without having to resort to the tedious and time consuming procedures required by the presently available conventional methods. As a result of the

investigations that have been carried out as a part of the research work on this project, a method has been developed for solving certain of these problems by which usable answers may be obtained without making any calculations at all in many cases, and but a few simple calculations in others, depending on the particular problem under consideration and the degree of accuracy desired.

5.2 Basis For Method of Converting Heavy Motor Vehicle Loads Into Equivalent Design Loads

This method is based on the fact that it is the bending stresses which ordinarily determine the load carrying capacity of simple span bridges. Therefore, any convenient procedure that may be used for finding the maximum bending moment produced by a particular heavy vehicle or loading on a given span, provides a simple yet effective means for measuring the stress producing effects of this particular vehicle or loading on the given span. Thus, after the bending moment produced by a particular vehicle on a given span has been determined, this moment can then be compared with that produced by one of the AASHO standard design trucks, or that produced by a single concentrated load, thereby converting the given vehicle into an equivalent H truck loading, equivalent H-S truck loading, or an equivalent concentrated load as may be desired.

The method provides answers which are exact for the 1300 odd trucks and combinations upon which the tables and charts in the present bulletin are based; and very closely approximate answers for any other vehicle for which values are obtained by interpolation. These tables and charts deal with the stress producing effects caused by 14 of the more common heavy vehicle types ordinarily encountered in present day highway traffic (see Figure 6.1) on simple span bridges up to 100 feet in length. These include the 2- and 3-axle single unit trucks; 6 types of truck-tractor semitrailer combinations with from 3 to 6 axles each; 4 types of truck-trailer combinations with from 4 to 6 axles each; and 2 types of truck-tractor semitrailer trailer combinations with 5 and 8 axles, respectively. All of these heavy vehicles, with the exception of the 8-axle truck-tractor semitrailer trailer combination, were reported in the 1942 loadometer survey. The 8-axle combination was included for two reasons. First, it represents a realistic possibility, that is, it is quite probable that a vehicle of this type may be employed at present or in future trucking operation; and second, the stress producing characteristics of all other combinations having 5 to 8 axles, which may be encountered and which were omitted from this discussion due to their relatively infrequent occurrence, may be closely approximated by interpolation between the 5 and 8 axle combinations included in this analysis.

Owing to the fact that the six variables previously listed, which must be taken into account in the calculation of critical stresses for simple span bridges, may have an infinite number of values and may be combined with each other in an infinite number of ways, it is obvious that the maximum moment produced by any particular vehicle on a given span would represent but one of an infinite number of possible values. For this reason, it would not be practical to undertake to determine the maximum moments that would result from all possible combinations of these variables. These difficulties may be overcome, however, by grouping certain of the variables in such a way as to cover all of the practical cases likely to be encountered and then separate these groups into cells that are close enough together to give accurate results, either directly or by interpolation, and yet far enough apart to keep the total number of cells as small as possible consistent with the degree of accuracy desired.

¹⁴Henson K. Stephenson and A. A. Jakkula, "Highway Loads and Their Effects on Highway Structures Based on Traffic Data of 1942," Texas Engineering Experiment Station Bulletin No. 116, January, 1950.

In accordance with this procedure, the 14 heavy vehicle types mentioned above, and shown in Figure 6.1, were selected for special study. A breakdown of each vehicle type was then made by varying wheel base length, spacing of axles, and the axle load ratios—that is, the ratios or percentages of gross vehicle weight carried by the several axles—in such a way as to cover all types and variations of practical trucks and combinations encountered in ordinary highway traffic. It will be noticed that, with the exception of the 2- and 3-axle trucks, the number of axle load ratios has been limited to three, irrespective of the number of axles included in the vehicles under consideration. This was done since, in the preliminary examination of a large number of each of the heavy vehicle types, it was established that the use of more than three axle load ratios did not significantly change the resulting maximum moments. The reason for this obtains from the fact that, as the number of axles increases and the ratio of gross load on each axle decreases, the maximum moment produced by such a vehicle on a given span approaches, as a limit, the maximum moment produced by a load of equal weight on the same span which is uniformly distributed over a length equal to the wheel base length of the given vehicle. 15 Also, any increase in the number of axle load ratios over the three used would have increased the number of cells to a point where there would have been a prohibitive number of calculations as well as a set of tables and charts that would prove to be too voluminous for practical use.

Gross vehicle weight is then eliminated as a variable by the use of these axle load ratios or percentages of the gross vehicle weight carried on the several axles, in lieu of the use of actual weight, thus permitting the use of unit weights or vehicles weighing one kip each. This simplification is possible since the maximum moment produced by a particular vehicle on a given span is directly proportional to its gross weight, therefore, moments produced by a particular vehicle on a given span may be obtained merely by multiplying the moment in kip-feet for a vehicle of unit weight by the gross weight of the same vehicle in kips.

The breakdown for the Type 2 truck (2-axle single-unit truck), for example, is covered by the 36 variations of wheel base length and loading distribution shown in Index Table 6.1. This table shows 6 different lengths of wheel base, varying in 2-foot increments from 10 to 20 feet, and for each wheel base there are 6 different percentage distributions of gross weight between the two axles, making a total of 36 variations or cells. Thus, if the wheel-base length and the percentages of gross weight on each axle were known for any practical 2-axle truck, it could be classified by fitting it into one of the 36 cells or by interpolation between the two cells nearest to it. To use a simple illustration, suppose it was desired to classify a Type 2 truck reported by a loadometer survey as follows: wheel-base length of 18 feet; gross vehicle weight of 24,000 pounds with 7,200 and 16,800 pounds on front and rear axles, respectively. Since this truck carries 30 percent or .30 of the gross load on the front axle and 70 percent or .70 on the rear, it would be classified by Table 6.1 as a Type 2 truck, Number 28, hereafter designated as a 2-28. To further illustrate, suppose it is desired to classify a Type 2 truck reported by a loadometer survey having a wheel base length of 17 feet and a gross vehicle weight of 24,000 pounds, with 6,480 and 17,520 pounds on the front and rear axles, respectively. In this case the truck carries 27 percent or .27 of the gross load on the front axles and 73 percent or .73 on the rear axle. Referring again to Table 6.1 it is found that the .25 - .75 loading distribution to the front and rear axles respectively, more nearly approximates the given vehicle than any other, so that for a 17-foot wheel base the given truck would be classified as a 2-23 or a 2-29. The final choice would be a 2-23. This results from the fact that the shorter wheel base will give a somewhat greater moment than the given truck and would be on the side of

¹⁶Henson K. Stephenson, "Determination of Permissible Vehicle Weights on Bridges of H Loading Design," AASHO Proceedings, Washington 4, D. C., 1949, pp. 144-185.

safety, whereas a 2-29 with a longer wheel base would give a somewhat lesser moment than the given truck.

A breakdown similar to this was made for each of the 14 heavy vehicle types as shown in the identification index Tables 6.1-6.14. The breakdown for the Type 3 truck, given in Table 6.2, has 42 cells; the Type 2-S1 truck has 126 cells, and so on, and all 14 vehicle types account for a total of 1303 cells from which to choose when undertaking to identify and classify any particular vehicle of known wheel-base length, number and spacing of axles and loading distribution.

Span lengths of 10, 20, 30, 40, 50, 60, 80, and 100 feet were then decided upon and the maximum moment produced by each of the 1303 vehicles on each length of span was calculated. Thus, the general problem of determining the maximum moments produced by heavy vehicle types and loadings on simple span bridges is reduced by this procedure to consideration of 10,424 cells for each of which the maximum moments have been calculated. These 10,424 moments are included in Tables 7.1-7.14. In addition to giving the maximum moment for each of the 10,424 cases, these tables also give the axle group which produces the moment, the axle number under which the maximum moment occurs, and the distance this critical axle is placed to the right or left of the mid-span for obtaining the maximum moment. Tables 7.1-7.14—one for each of the 14 vehicle types considered—provide the fundamental information for determining the stress producing effects of heavy vehicle types and loadings on spans of various lengths, which in turn provides the means of rating them in terms of equivalent H truck loadings, equivalent H-S truck loadings, or equivalent concentrated loads, as may be desired. These tables, as well as the other tables and charts included in Parts II, III, IV, and V, and how they are used, will be more fully explained in the remaining sections of this article. For the time being, however, the above discussion is believed to be sufficient to outline the procedure employed herein for measuring the stress producing effects of heavy vehicles and converting them into equivalent loadings.

The ratings of heavy vehicle types and loadings in terms of equivalent H or H-S truck loadings, or equivalent concentrated loads not only provide a simple yet accurate means for determining permissible vehicle weights for bridges of various lengths and design designations but they also provide a convenient and rapid means for analyzing the frequency distributions of various intensities of heavy vehicle loading equivalents on bridges of different lengths. Such frequency distributions as these, which have been determined from the heavy vehicle data reported by a loadometer survey, furnish a quantitative measure for evaluating the level or levels of heavy motor vehicle operation associated with various traffic conditions. In turn, these distributions may be interpreted as an index to highway transport for correlating the various levels of heavy motor vehicle operation with minimum standards for highway and bridge provision. The results of such an analysis are given and discussed in Parts IV and V which include the observed and calculated frequencies of equivalent thruck loadings, and also the observed and calculated frequencies of equivalent concentrated loads, based on the heavy vehicle data reported by the special loadometer survey of 1942.

5.3 Description of Tables And Charts For Converting Heavy Vehicles Into Equivalent Loads

The tables and charts in Part II are concerned with the maximum moments, equivalent H truck loadings, equivalent H-S truck loadings, equivalent concentrated loads, and permissible vehicle weights associated with 14 of the more common heavy vehicle types, ordinarily encountered in present-day highway traffic, on simple span brides up to 100 feet in length. A drawing of each of these 14 vehicle types is shown in Figure 6.1 and a break-down of each

Vehicle Type	No. of Cells	Table Number	Vehicle Type	No. of Cells	Table Number
2	36	6.1	3-S3	105	6.8
3	42	6.2	2-2	144	6.9
2-S1	126	6.3	2-3	90	6.10
2-S2	108	6.4	3-2	90	6.11
2-S3	90	6.5	3-3	99	6.12
3-S1	90	6.6	2-S1-2	96	6.13
3-S2	112	6.7	3-S2-3	84	6.14

type into cells or variants is given by the identification index Tables 6.1-6.14, as follows:

Total Number of Cells = 1303

It will be noted that each of the 1303 trucks listed in these tables is of unit weight and may be thought of as weighing one kip (1000 pounds) each. In fact, all of the tables and charts in Part II are based on vehicles of unit weight or vehicles weighing one kip each. This elimination of gross vehicle weight as a variable is made possible by the fact that the maximum moment produced by a given vehicle on a simple span bridge is directly proportional to its gross weight. In other words, once the maximum moment caused by a particular vehicle of unit weight on a given span is known, the actual moment produced by it on that span is obtained simply by multiplying the unit weight moment by the gross weight of the vehicle under consideration.

After a given vehicle has been classified as to vehicle type and truck number in Tables 6.1-6.14, its stress producing characteristics and effects may then be determined from one or more of the remaining tables of Part II. Before undertaking to discuss the use of these tables and charts, however, a list of their titles is included here for convenient reference and also because they are somewhat self explanatory. They are as follows:

Tables 7.1 - 7.14; Controlling Conditions for Maximum Moments on Simple Span Bridges

Tables 8.1 - 8.14; Summary of Maximum Moments Produced by Vehicles of Unit Weight on Simple Span Bridges

Figures 9.1 - 9.14; Maximum Moments and Equivalent H Truck Loadings for Vehicles of Unit Weight on Simple Span Bridges

Tables 10.1 - 10.14; Equivalent H Truck Loadings for Vehicles of Unit Weight on Simple Span Bridges

Tables 11.1 - 11.14; Gross Load Required for Various Truck Types and Loadings to Produce Same Moment As Standard H Truck of Unit Weight on Simple Span Bridges

Tables 12.1 - 12.14; Equivalent Concentrated Loads Required to Produce Same Moment as Heavy Vehicle Types of Unit Weight on Simple Span Bridges

Table 13.1 and Figure 13.1; Conversion Coefficients for Equivalent Loadings on Simple Spans of Various Lengths

Equivalent H truck loadings, equivalent H-S truck loadings, and equivalent concentrated loads may be converted from any one of these to either of the other by using the proper conversion coefficient as given by Table 13.1 or Figure 13.1.

5.4 Use of Tables and Charts For Converting Heavy Vehicles Into Equivalent Loads

Perhaps the simplest way to explain the use of the tables and charts described above would be to investigate several typical situations that could easily arise in connection with some particular heavy vehicle loading. Suppose, for example, that the vehicle in question is a 3-axle truck-tractor semitrailer combination (Type 2-S1 truck) having a gross weight of 45,000 pounds with 9,000 pounds on the front axle and 18,000 pounds on each of the other two, and with axle spacing front to rear of 8 feet and 16 feet, respectively, making an over-all wheel-base length of 24 feet. The first step toward answering questions concerning this vehicle would be to identify it in accordance with the index Tables 6.1-6.14. Thus in Table 6.3, a Type 2-S1 truck having the same axle spacings as this vehicle, with 20 percent of its gross weight on the front axle and 40 percent on each of the other two will be found among the 126 variations for this vehicle type. In the fourth column from the left it will be seen that Truck Nos. 8 through 14 are for a vehicle with a 24-foot wheel base and axle spacings front to rear of 8 feet and 16 feet, respectively. In the next three columns to the right (columns 5, 6, and 7) it will be seen that Truck No. 13 is the one that fits the vehicle described above with 20 percent of the gross load on the front axle and 40 percent on each of the other two. So this vehicle would be classified as a Type 2-S1 truck—No. 13. In Table 6.3 it will be noted that there are a total of 126 variations of wheelbase lengths, axle spacings, and distributions of load among the axles which are arranged in such a way as to approximate almost any practical Type 2-S1 truck that might be encountered in highway traffic.

Now, suppose it is desired to know the maximum moment produced by this Type 2-S1-13 (Type 2-S1 truck—No. 13) on several different span lengths; say on 30-, 50-, and 80-foot simple span bridges. This information will be found for Type 2-S1-13 in Table 7.3. For the 30-foot span it shows that a truck like this one will produce a maximum bending moment of 3.734 kip-feet for each thousand pounds of gross vehicle weight. It also shows that this maximum moment would occur when axles 1 and 2 are on the span and when axle 2 is placed 1.333 feet to the right of the mid-span. For the 50- and 80foot spans, similarly, it will be seen that the maximum moment occurs under axle 2 in each case when all three axles are on the span and axle 2 is placed 2.400 feet to the left of the mid-span; the maximum moments being 8.615 kip-feet and 16.072 kip-feet, respectively. In most cases, however, it is only the maximum moment caused by a vehicle on a given span that would be of interest. For this reason, as well as that of making the study of this information more convenient, the maximum moments for all the vehicle types and loadings shown in Tables 7.1-7.14 are summarized in Tables 8.1-8.14, respectively. For example, the maximum moments for the Type 2-S1-13, as given in Table 7.3, are summarized in Table 8.3.

It might be added that Tables 7.1-7.14 and Tables 8.1-8.14 are sufficiently extensive to cover practically any vehicle type, number of axles, wheel-base length, and loading distribution among the axles ordinarily encountered in present-day highway traffic. From these tables the maximum moment caused by any of these vehicles on spans up to 100 feet in length may be rapidly and accurately determined. In many cases, it is only desired to know the maximum moment caused by a particular heavy vehicle on a given span. In other cases, however, just knowing the maximum moment caused by a vehicle on a given span would not be too informative. But if this maximum moment were measured in terms of the load required on a standard H truck to produce the same moment on the same span it could be readily interpreted in terms of an equivalent H truck loading, which would be very informative. This operation of converting a given truck into equivalent H truck loading is accomplished simply by dividing the maximum moment produced by the given truck on a given span by the maximum moment produced by the standard H truck on the same span. For example suppose it is desired to know the equivalent H truck loading on the 100-foot span for a Type 2-S1 truck weighing 30,000 pounds with 6,000 pounds on the front axle and 12,000 pounds on each of the other two, and an axle spacing front to rear of 8 feet and 12 feet resulting in an over-all wheel base of 20 feet. Without any other information it would be necessary to calculate the maximum moment produced by the given vehicle on the 100-foot span, which in this case is found to be 654.78 foot-kips, and the moment produced by the standard H truck weighing 30 kips on the 100-foot span is found to be 708.60 foot-kips. The equivalent H truck loading for the given truck when determined as outlined above would be EHTL = $654.78 \div 708.60 = .924$, which means that the standard H truck would only have to be loaded with $.924 \times 30$ kips = 27.72 kips to produce as much moment as the given truck. In other words, the given truck would be rated as an H13.86 truck with respect to its stress producing characteristics based on moment. A summary of the equivalent H truck loadings for all the heavy vehicle types, loadings, and span lengths are given in Tables 10.1-10.14 and a brief explanation of their use follows immediately.

As an example in the use of Tables 10.1-10.14, suppose it is desired to know the equivalent load rating for a gross vehicle weight of 45,000 pounds on the Type 2-S1-13 (Type 2-S1 truck—No. 13) on the 30-, 50-, and 80-foot spans. The equivalent H truck loadings for this vehicle based on a gross load of one kip are to be found in Table 10.3 and for the spans in question they are as follows:

Equivalent H Truck Loadings in Kips for a Type 2-S1 Truck—No. 13 Weighing 45,000 Pounds

Gross Vehicle	Span Leng	th Feet	
Weight-Kips	3(50	80
1.60	.606	.773	.863
45.00	27.2	34.8	38.8

This means that the Type 2-S1-13 weighing one kip would produce as much moment on a 30-foot span as a standard H truck weighing 0.606 times as much as the given vehicle, or 606 pounds. In other words it would produce 60.6 percent as much moment as a standard H truck of the same weight. Or, better perhaps, it would produce the same moment on a 30-foot span as a standard H truck weighing 60.6 percent as much. The given Type 2-S1-13, therefore, would produce as much moment on a 30-foot span as a standard H truck weighing 45,000 x 0.606 = 27.2 kips = 13.6 tons; and, for this span it would be rated as an equivalent H13.6 truck loading. On the 50- and 80-foot spans, similarly, it would be rated as an equivalent H17.4 truck loading and an equivalent H19.4 truck loading, respectively.

Similar information, concerning maximum moments and the rating of heavy vehicle types and loadings in terms of equivalent H truck loadings on spans up to 100 feet in length, may be obtained graphically from Figures 9.1-9.14. No further discussion of these charts are believed to be necessary here, however, since they are explained in some detail in the text of Article 9.

In addition to the rating of heavy vehicle types and loadings on various spans in terms of equivalent H truck loadings, as was done in the preceding examples, there is another type of typical problem that often arises in connection with the load carrying capacity of certain bridges of given length and design designation. This is the problem of determining the maximum gross weight that should be permitted on any particular vehicle such that it might safely pass over a simple span bridge of given length and design rating. There are a number of variations to this problem of permissible vehicle weight, of course, but a few illustrative examples is all that is believed to be necessary to show how the tables may be used.

Example 5.1. Use of Tables 7.1-7.14 for Rating Heavy Vehicles

Given: A simple span bridge 50 feet long has a load carrying capacity such that it should not be subjected to a greater moment than that caused by an H20 truck. Suppose it is desired to know the maximum gross load that may be carried over this bridge by a Type 3-S2 truck with axle spacing, front to rear, of 12 feet, 4 feet, 12 feet, and 4 feet, respectively, making an overall wheel-base length of 32 feet, if it is assumed that the gross weight is so distributed that each of the 5 axles will be equally loaded.

By consulting the identification index Table 6.7, it will be seen that this vehicle would be classified as a Type 3-S2-48 (Type 3-S2 truck—No. 48). The

problem here is to find the gross weight that might be carried by this vehicle such that it would not produce more moment on a 50-foot span than an H20 truck. By consulting an AASHO moment table it will be found that an H20 truck causes a moment of 445.6 kip-feet on a 50-foot span. And in Table 7.7 it will be found that one kip on the above Type 3-S2-48 moving from right to left produces a moment of 7.713 kip-feet on this span when all 5 axles are on the span and axle No. 3 is placed .800 feet to the left of the mid-span This shows that a gross weight of 445.6/7.713 = 57.6 kips on this vehicle, or 11.52 kips per axle, produce the same moment as an H20 truck. The gross vehicle weight thus indicated is more than would ordinarily be permitted by the AASHO policy (see Table 1.1) but this policy is designed to protect many of the older bridges that are not capable of safely supporting a vehicle load such as this one. However, insofar as this particular bridge is concerned, the permissible gross weight for the Type 3-S2-48 under consideration would be 57.6 kips. And thus loaded, this vehicle would be rated as an equivalent H20 truck loading.

Example 5.2 Use of Tables 8.1-8.14 for Rating Heavy Vehicles

Given: A simple span bridge 50 feet long, the same as for Example 5.1, has a load carrying capacity such that it should not be subjected to a greater moment than that caused by an H20 truck. Suppose it is desired to know the maximum gross load that may be carried over this bridge by the Type 3-S2-48, described in Example 5.1, such that it would be rated as an equivalent H20 truck loading.

In Table 8.7 it will be seen that a one kip load on a Type 3-S2-48 will produce a moment of 7.713 foot-kips on a 50-foot span and the AASHO moment tables show that an H20 truck will produce a moment of 445.6 kip-feet on the same span. Therefore, a gross weight of 445.6/7.713 = 57.6 kips on this vehicle would cause it to be rated as an equivalent H20 truck loading.

Example 5.3 Use of Tables 10.1-10.14 for Rating Heavy Vehicles

Suppose it is desired to know the gross load for a Type 3-S2-48 (Type 3-S2 truck—No. 48) as described in Example 5.1, that would cause it to be rated as an equivalent H20 truck loading on a 50-foot span.

Tables 10.1-10.14 show the equivalent H truck loadings which result from various heavy vehicle types and loadings of unit weight on spans up to 100 feet in length. In Table 10.7 it will be found that a gross vehicle weight of one kip for Type 3-S2-48 on a 50-foot span produces the same moment as 0.692 kips on a standard H truck. Therefore, a gross load of 40.0/.692 = 57.6 kips on this vehicle will produce the same moment as an H20 truck, and for this load the above Type 3-S2-48 would be rated as an equivalent H20 truck loading on a 50-foot span.

Example 5.4 Use of Tables 11.1-11.14 for Rating Heavy Vehicles

Suppose it is desired to know the gross load for a Type 3-S2-48 (Type 3-S2 truck—No. 48) as described in Example 5.1, that would result in its being rated as an equivalent H20 truck loading on a 50-foot span.

Tables 11.1-11.14 show the gross loads required for various heavy vehicle types and loadings to produce the same moment on simple spans as a standard H truck weighing one kip. And in Table 11.7 it will be found that a gross vehicle weight of 1.445 kips for the Type 3-S2-48 on a 50-foot span produces the same moment as 1.000 kip on an H truck. Therefore, a gross load of $40 \times 1.445 = 57.6$ kips on this vehicle will produce the same moment as an H20 truck, and for this load the above Type 3-S2-48 would be rated as an equivalent H20 truck loading on a 50-foot span.

Use of Equivalent Concentrated Loads

In the preceding discussion it was shown how the tables presented herein may be used for converting heavy vehicle types and loadings into equivalent H truck loading on simple span bridges up to 100 feet in length. The dis-

cussion thus far has been confined to equivalent H truck loadings because it is but a simple matter to convert a given heavy vehicle into an equivalent H-S truck loading once its H truck loading equivalent has been determined for any particular span. The coefficients for converting one type of equivalent load into another on various spans are given in Table 13.1 and Figure 13.1, and their use will be taken up immediately after the present discussion of equivalent concentrated loads.

Although the use of either the H or the H-S truck loading equivalents will provide a convenient means for measuring the stress producing effects of heavy vehicle types and loadings on simple spans of various lengths, there are certain advantages associated with the use of equivalent concentrated loads that might also be worthy of consideration when selecting an appropriate basis for comparison. The maximum moment produced by a single concentrated load on a simple span, for example, can be expressed by a very simple equation; namely,

 $\underline{\mathbf{M}} = \mathrm{PS}/4 \qquad 5.1$

in which

M = maximum moment in kip-feet P = concentrated load in kips

S = span length in feet

In this equation, it will be noted for any given load, P, the maximum moment, M, is a continuous function which varies directly with the span length, S. On the other hand, the maximum moments produced by the H and H-S trucks on simple spans are neither continuous functions nor do the moments vary directly with the span. This is owing to the fact that the wheel-base length, spacing of axles, and the distribution of load among the axles must all be taken into account when arriving at an expression for maximum moment for either of the design trucks. For these reasons, equivalent concentrated loads not only provide an absolute basis for comparing the stress producing characteristics of one vehicle with those of another on the same span, but they also permit direct comparisons of these effects from one span to another that would not be so simple if the effects were measured in terms of the H or H-S truck or other arbitrary loading.

The use of the H or H-S truck as a basis for comparison, though, would not only have the advantage of being familiar to everyone but also of coinciding with presently used design loadings and bridge ratings. However, if these design loadings should be changed in the future—and it is possible that they will—their present advantages would not be so great. On the other hand, comparisons based on the use of equivalent concentrated loads would not be affected by one or more future changes in either the loads or procedures used for design.

It is possible of course to rate bridges—irrespective of their design designations—as well as heavy vehicles in terms of any standardized loading that might be selected for the purpose. As to whether one loading or another should be used as a basis for comparison in any particular case, however, is a matter that can only be determined after all the advantages and disadvantages associated with each of them, respectively, have been very carefully considered. At this stage, it is perhaps too early to say whether one or the other of the above mentioned loadings would ultimately prove to be the more satisfactory. For sake of uniformity, though, if it should develop that but one loading be selected as a standard for comparisons, it would seem from this discussion that the use of equivalent concentrated loads might well be included among those chosen for further investigation.

For those who would like to investigate the relative merits of using one or another of these loadings, the frequency distributions of equivalent loadings given in Parts IV and V, which were obtained from the loadometer survey data of 1942, should prove to be of special interest. The frequency distributions given in Part IV are based on equivalent H truck loadings and those in Part V are based on equivalent concentrated loads.

The information required for measuring the stress producing effects of heavy vehicle types and loadings on simple spans in terms of equivalent concentrated loads is given by Tables 12.1-12.14. The use of these tables will be explained by applying them to a simple illustrative example.

Example 5.5 Use of Tables 12.1-12.14 for Rating Heavy Vehicles in Terms of Equivalent Concentrated Loads

For the Type 3-S2-48 (Type 3-S2 truck—No. 48) having a gross weight of 57.6 kips described in Example 5.1, suppose it is desired to know the equivalent concentrated load that would produce the same maximum moment as this vehicle on a 50-foot span.

In Table 12.7 it will be found that a Type 3-S2-48 weighing 1.00 kip will produce the same maximum moment on a 50-foot span as a single concentrated load of 0.617 kips. Therefore, a single concentrated load of 57.6 x .617 = 35.5 kips would produce the same moment as the given vehicle and, on this basis, it would be rated as an equivalent 35.5 kip concentrated load on a 50-foot span.

Incidentally, it was shown in Example 5.1 that this vehicle would produce the same moment on a 50-foot span as an H20 truck. In other words, the given vehicle weighing 57.6 kips would produce the same maximum moment on a 50-foot span as 40.0 kips on a standard H truck or a single concentrated load of 35.5 kips.

6. IDENTIFICATION INDEX OF HEAVY VEHICLE TYPES AND LOADINGS

The tables and charts given in Articles 6-13 (Part II) are concerned with the maximum moments, equivalent H truck loadings, equivalent H-S truck loadings, and equivalent concentrated loads associated with the numerous possible variations in wheel-base lengths, numbers and spacings of axles, and the distribution of gross vehicle weight among the axles, for 14 of the more commonly used heavy vehicle types, ordinarily encountered in present-day highway traffic, on simple span bridges up to 100 feet in length. Each of these 14 vehicle types, together with the standardized notation used for their identification, is shown in Figure 6.1.

The numerals used in this notation, which is shown opposite and to the left of each diagram, indicate the number of axles in each of the one or more units within a given vehicle assembly. When a semitrailer is included within a vehicle, it is identified by the letter S, followed by the numeral which indicates its number of axles. The Type 2 truck and the Type 3 truck, for example, are single-unit trucks with 2 and 3 axles each, respectively. Double-unit vehicles may be one of the truck-tractor semitrailer combinations or one of the truck-trailer combinations; the three-unit vehicles may be one of the truck-tractor semitrailer trailer combinations. The Type 3-S2 truck, for example, consists of a 3-axle truck-tractor with a 2-axle semitrailer; and the Type 3-S2-3 truck is made up of a 3-axle truck-tractor with a 2-axle semitrailer followed by a 3-axle trailer.

A breakdown of each of these 14 vehicle types into cells or variants is given by Tables 6.1-6.14, as follows:

Table Number	Vehicle Types	No. of Cells	Table Number	Vehicle Typ∈s	No. of Cells
6.1	2	36	6.8	3-S3	105
6.2	3	42	6.9	2-2	144
6.3	2-S1	126	6.10	2-3	90
6.4	2-S2	108	6.11	3-2	90
6,5	2-S3	90	6.12	3-3	90
6.6	3-S1	90	6.13	2-S1-2	96
6.7	3-S2	112	6.14	3-S2-3	84

Total Number of Cells = 1303

IDENTIFICATION OF FREIGHT VEHICLE TYPES

TYPE	TYPICAL VEHICLE	TYPE	TYPICAL VEHICLE
2	A B WHEEL BASE	3 -\$3	A B C D E F WHEEL BASE
3	A B C	2-2	A B C D WHEEL BASE
2-51	A B C	2-3	A B C D E WHEEL BASE
2-52	A B C D WHEEL BASE	3-2	A B C D E WHEEL BASE
2-53	A B C D E WHEEL BASE	3-3	A B C D E F WHEEL BASE
3-SI	A B C D WHEEL BASE	2-51-2	A B C D E WHEEL BASE
3-S2	A B C D E WHEEL BASE	3-S2-3	A B C D E F G H WHEEL BASE

Figure 6.1

A detailed description used is given in Articl

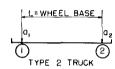
identification

tables

and how

they

Truck numbers 1 to 36 represent 36 combinations of various wheel base lengths and axle loadings.

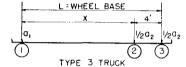


Truck Number	Wheel Base	Load on A Ki	xles	Truck Number	Wheel Base	on A	ding Axles ips
ΕZ	B≹	a ₁	a 2	FZ	≱mi	a 1	a2
1	10	.45	.55	19	16	.45	.55
2	10	.40	.60	20	16	.40	.60
3	10	.35	.65	21	16	.35	.65
4	10	.30	.70	22	16	.30	.70
ŏ	10	.25	.75	23	16	.25	.75
6	10	.20	.80	24	16	.20	.80
7	12	.45	.55	25	18	.45	.55
8	12	.40	.60	26	18	.40	.60
9	12	.35	.65	27	18	.35	.65
10	12	.30	.70	28	18	.30	.70
11	12	.25	.75	29	18	.25	.75
12	12	.20	.80	30	18	.20	.80
13	14	.45	.55	31	20	.45	.55
14	14	.40	.60	32	20	.40	.60
15	14	.35	.65	33	20	.35	.65
16	14	.30	.70	34	20	.30	.70
17	14	.25	.75	35	20	.25	.75
18	14	.20	.80	36	20	.20	.80

Table 6.2

INDEX TO THE TYPE 3 TRUCKS WEIGHING ONE KIP EACH

Truck numbers 1 to 42 represent 42 combinations of various wheel base lengths, axle spacings, and axle loadings.

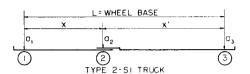


				TYPE	3 TRUCK				
Truck Number	and	Base Axle cing	on a	iding Axles ips	Truck	Wh. and Space	Axle	on	ding Axles ips
ΕZ	X	L	aı	82	ĔŹ	X	L	a ₁	a 2
1	10	14	.40	.60	22	16	20	.40	.60
2	10	14	.35	.65	23	16	20	.35	.65
3	10	14	.30	.70	24	16	20	.30	.70
4	10	14	.25	.75	25	16	20	.25	.75
5	10	14	.20	.80	26	16	20	.20	.80
6	10	14	.15	.85	27	16	20	.15	.85
7	10	14	.10	.90	28	16	20	.10	.90
8	12	16	.40	.60	29	18	22	.40	.60
9	12	16	.35	.65	30	18	22	.35	.65
10	12	16	.30	.70	31	18	22	.30	.70
11	12	16	.25	.75	32	18	22	.25	.75
12	12	16	.20	.80	33	18	22	.20	.80
13	12	16	.15	.85	34	18	22	.15	.85
14	12	16	.10	.90	35	18	22	.10	.90
15	14	18	.40	.60	36	20	24	.40	.60
16	14	18	.35	.65	37	20	24	.35	.65
17	14	18	.30	.70	38	20	24	.30	.70
18	14	18	.25	.75	39	20	24	.25	.75
19	14	18	.20	.80	40	20	24	.20	.80
20	14	18	.15	.85	41	20	24	.15	.85
21	14	18	.10	.90	42	20	24	.10	.90

Table 6.3

INDEX TO THE TYPE 2-S1 TRUCKS WEIGHING ONE KIP EACH

Truck numbers 1 to 126 represent 126 combinations of various wheel base lengths, axle spacings, and axle loadings.

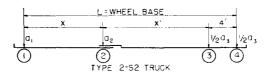


Truck Number	Wheel Base Load O and Axle Axles Spacing Ft. Kips						Truck Number		eel E			oad O	n	Truck Number		eel E		L	oad (
uc.	Spa	acing	Ft.		Kips		uc m		cing			Kips		uc]		cing			Kips	
ĔŹ	X	X'	L	a ₁	\mathbf{a}_2	a 3	Ėž	X	X'	L	aı	\mathbf{a}_2	a 3	Ėź	X	X'	L	a ₁	a 2	a 3
1	8	12	20	.10	.30	.60	43	12	12	24	.10	.30	.60	85	16	8	24	.10	.30	.60
2	8	12	20	.10	.40	.50	44	12	12	24	.10	.40	.50	86	16	8	24	.10	.40	.50
3	8	12	20	.10	.45	.45	45	12	12	24	.10	.45	.45	87	16	8	24	.10	.45	.45
4	-8	12	20	.10	.50	.40	46	12	12	24	.10	.50	.40	88	16	8	24	.10	.50	.40
5	8	12	20	.20	.30	.50	47	12	12	24	.20	.30	.50	89	16	8	24	.20	.30	.50
6	8	12	20	.20	.40	.40	48	12	12	24	.20	.40	.40	90	16	8	24	.20	.40	.40
7	8	12	20	.20	.50	.30	49	12	12	24	.20	.50	.30	91	16	8	24	.20	.50	.30
8	8	16	24	.10	.30	.60	50	12	16	28	.10	.30	.60	9.	16	12	28	.10	.30	.60
9	8	16	24	.10	.40	.50	5 1	12	16	28	.10	.40	.50	9;	16	12	28	.10	.40	.50
10	8	16	24	.10	.45	.45	52	12	16	28	.10	.45	.45	94	16	12	28	.10	.45	.45
11	8	16	24	.10	.50	.40	53	12	16	28	.10	.50	.40	95	16	12	28	.10	.50	.40
12	8	16	24	.20	.30	.50	54	12	16	28	.20	.30	.50	96	16	12	28	.20	.30	.50
13	8	16	24	.20	.40	.40	55	12	16	28	.20	.40	.40	97	16	12	28	.20	.40	.40
14	8	16	24	.20	.50	.30	56	12	16	28	.20	.50	.30	98	16	12	28	.20	.50	.30
15	8	20	28	.10	.30	.60	57	12	20	32	.10	.30	.60	99	16	16	32	.10	.30	.60
16	8	20	28	.10	.40	.50	58	12	20	32	.10	.40	.50	100	16	16	32	.10	.40	.50
17	8	20	28	.10	.45	.45	59	12	20	32	.10	.45	.45	101	16	16	32	.10	.45	.45
18	8	20	28	.10	.50	.40	60	12	20	32	.10	.50	.40	102	16	16	32	.10	.50	.40
19	8	20 20	28 28	.20	.30	.50	61	12	20	32	.20	.30	.50	103	16 16	16	$\frac{32}{32}$.20	.30 .40	.50 .40
$\frac{20}{21}$	8 8	20	28	.20 .20	.40	.40	62	12	20 20	32 32	.20	.40	.40	104 105	16	16 16	32	.20	.50	.30
22	8	24	32		.50 .30	.30	63	12 12	24	36		.50 .30	.30	106	16	20	36	.10	.30	.60
23	8	24	32	.10	.40	.60 .50	64 65	12	24	36	.10	.40	.60 .50	106	16	20	36	.10	.40	.50
24	- 8	24	32	.10	.45	.45	66	12	24	36	.10	.45	.45	108	16	20	36	.10	.45	.45
25	8	24	32	.10	.50	.40	67	12	24	36	.10	.50	.40	109	16	20	36	.10	.50	.40
26	8	24	32	.20	.30	.50	68	12	24	36	.20	.30	.50	110	16	20	36	.20	.30	.50
27	8	24	32	.20	.40	.40	69	12	24	36	.20	.40	.40	111	16	20	36	.20	.40	.40
28	8	24	32	.20	.50	.30	70	12	24	36	.20	.50	.30	112	16	20	36	.20	.50	.30
29	8	28	36	.10	.30	.60	71	12	28	40	.10	.30	.60	113	16	24	40	.10	.30	.60
30	8	28	36	.10	.40	.50	72	12	28	40	.10	.40	.50	114	16	24	40	.10	.40	.50
31	8	28	36	.10	.45	.45	73	12	28	40	.10	.45	.45	115	16	24	40	.10	.45	.45
32	8	28	36	.10	.50	.40	74	12	28	40	.10	.50	.40	116	16	24	40	.10	.50	.40
33	8	28	36	.20	.30	.50	75	12	28	40	.20	.30	.50	117	16	24	40	.20	.30	.50
34	8	28	36	.20	.40	.40	76	12	28	40	.20	.40	.40	118	16	24	40	.20	.40	.40
35	8	28	36	.20	.50	.30	77	12	28	40	.20	.50	.30	119	16	24	40	.20	.50	.30
36	12	8	20	.10	.30	.60	78	12	32	44	.10	.30	.60	120	16	28	44	.10	.30	.60
37	12	8	20	.10	.40	.50	79	12	32	44	.10	.40	.50	121	16	28	44	.10	.40	.50
38	12	8	20	.10	.45	.45	80	12	32	44	.10	.45	.45	122	16	28	44	.10	.45	.45
39	12	8	20	.10	.50	.40	81	12	32	44	.10	.50	.40	123	16	28	44	.10	.50	.40
40	12	8	20	.20	.30	.50	82	12	32	44	.20	.30	.50	124	16	28	44	.20	.30	.50
41	12	8	20	.20	.40	.40	83	12	32	44	.20	.40	.40	125	16	28	44	.20	.40	.40
42	12	8	20	.20	.50	.30	84	12	32	44	.20	.50	.30	126	16	28	44	.20	.50	.30
42	12	0	20	.20	.00	.50	54	14	94	44	.20	.50	.00	120	10	40	44	.20	.50	

Table 6.4

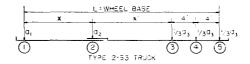
INDEX TO THE TYPE 2-S2 TRUCKS WEIGHING ONE KIP EACH

Truck numbers 1 to 108 represent 108 combinations of various wheel base lengths, axle spacings, and axle loadings.



Truck Number		eel B		L	oad C		er	Whe				ad O		e.		el B			oad C	
mb		d Ax			Axles Kips		n kg	Spa	d Ax cing			Axles Kips	,	ruek umber		d Ax cing			Axle: Kips	š
TruN	X	X'	L	a 1	a ₂	a 3	Truck Number	X	X'	L	aı	a2	a 3	Truck Numbe	X	X'	L	a 1	a ₂	a 3
1	8	8	20	.10	.30	.60	37	12	8	24	.10	.30	.60	73	16	8	28	.10	.30	.60
2	8	8	20	.10	.40	.50	38	12	8	24	.10	.40	.50	74	16	8	28	.10	.40	.50
3	8	8	20	.10	.50	.40	39	12	8	24	.10	.50	.40	75	16	8	28	.10	.50	.40
5	8	8	20	.20	.40	.40	41	12	8	24	.20	.30	.50	76	16	8	28	.20	.30	.50
4	8	8	20	.20	.30	.50	40	12	8	24	.20	.40	.40	77	16	8	28	.20	.40	.40
6	8	8	20	.20	.50	.30	42	12	8	24	.20	.50	.30	78	16	8	28	.20	.50	.30
7	8	12	24	.10	.30	.60	43	12	12	28	.10	.30	.60	79	16	12	32	.10	.30	.60
8	8	12	24	.10	.40	.50	44	12	12	28	.10	.40	.50	80	16	12	32	.10	.40	.50
9	8	12	24	.10	.50	.40	45	12	12	28	.10	.50	.40	81	16	12	32	.10	.50	.40
10	8	12	24	.20	.30	.50	46	12	12	28	.20	30	.50	82	16	12	32	.20	.30	.50
11	8	12	24	.20	.40	.40	47	12	12	28	.20	.40	.40	83	16	12	32	.20	.40	.40
12	8	12	24	.20	.50	.30	48	12	12	28	.20	.50	.30	84	16	12	32	.20	.50	.30
13	8	16	28	.10	.30	.60	49	12	16	32	.10	.30	.60	85	16	16	36	.10	.30	.60
14	8	16	28	.10	-40	.50	50	12	16	32	.10	.40	.50	86	16	16	36	.10	.40	.50
15	8	16	28	.10	.50	.40	51	12	16	32	.10	.50	.40	87	16	16	36	.10	.50	.40
16	8	16	28	.20	.30	.50	52	12	16	32	.20	.30	.50	88	16	16	36	.20	.30	.50
17	8	16	28	.20	.40	.40	53	12	16	32	.20	.40	.40	89	16	16	36	.20	.40	.40
18	8	16	28	.20	.50	.30	54	12	16	32	.20	.50	.30	90	16	16	36	.20	.50	.30
19	8	20	32	.10	.30	.60	55	12	20	36	.10	.30	.60	91	16	20	40	.10	.30	.60
20	8	20	32	.10	.40	.50	56	12	20	36	.10	.40	.50	92	16	20	40	.10	.40	.50
21	8	20	32	.10	.50	.40	57	12	20	36	.10	.50	.40	93	16	20	40	.10	.50	.40
22	8	20	32	.20	.30	.50	58	12	20	36	.20	.30	.50	94	16	20	40	.20	.30	.50
23 24	8	20 20	$\frac{32}{32}$.20	.40 .50	.40	59 60	12 12	20 20	36 36	.20 .20	.40 .50	.40	95 96	16 16	20 20	40 40	.20	.40	.40
25	8	24	32 36	.10	.30	.60	61	12	24	40	.10	.30	.60	96	16	24	44	.10	.50 .30	.60
26	8	24	36	.10	.40	.50	62	12	24	40	.10	.40	.50	98	16	24	44	.10	.40	.50
27	8	24	36	.10	.50	.40	63	12	24	40	.10	.50	.40	99	16	24	44	.10	.50	.40
28	8	24	36	.20	.30	.50	64	12	24	40	.20	.30	.50	100	16	24	44	.20	.30	.50
29	8	24	36	.20	.40	.40	65	12	24	40	.20	.40	.40	101	16	24	44	.20	.40	.40
30	8	24	36	.20	.50	.30	66	12	24	40	.20	.50	.30	102	16	24	44	.20	.50	.30
31	8	28	40	.10	.30	.60	67	12	28	44	.10	.30	.60	103	16	28	48	.10	.30	.60
32	8	28	40	.10	.40	.50	68	12	28	44	.10	.40	.50	104	16	28	48	.10	.40	.50
33	8	28	40	.10	.50	.40	69	12	28	44	.10	.50	.40	105	16	28	48	.10	.50	.40
34	8	28	40	.20	.30	.50	70	12	28	44	.20	.30	.50	106	16	28	48	.20	.30	.50
35	8	28	40	.20	.40	.40	71	12	28	44	.20	.40	.49	107	16	28	48	.20	.40	.40
36	8	28	40	.20	.50	.30	72	12	28	44	.20	.50	.30	108	16	28	48	.20	.50	.30

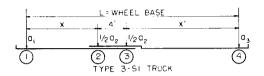
Truck numbers 1 to 90 represent 90 combinations of various wheel base lengths, axle spacings, and axle loadings.



Truck Number	Wheel Base and Axle Spacing Ft. Load On Axle Kips Load On Axles Kips Axles				Truck Number	Space	l Ax	le Ft.		ad O Axles Kips		Truck Number	Spa	d Ax cing	le Ft.		oad O Axles Kips			
						a:;		X	Χ'	L	a:	as	as		X	X'	L	a ₁	a ₂	a 3
1	8	8	24	.10	.225	.675	31	12	8	28	.10	.225		61	16	3	32	.10	.225	.675
2	8	8	24	.10	.30	.60	32	12	8	28	.10	.30	.60	62	16	8	32	.10	.30	.60
3	8	8	24	.10	.40	.50	33	12	8	23	.10	.40	.50	63	16	8	32	.10	.40	.50
4	8	8	24	.20	.20	.60	34	12	8	28	.20	.20	.60	64	16	8	32	.20	.20	.60
5	8	8	24	.20	.30	.50	35	12	8	28	.20	.30	.50	65	16	8	32	.20	.30	.50
6	8	8	24	.20	.40	.40	36	12	8	28	.20	.40	.40	66	16	8	32	.20	.40	.40
7	8	12	28	.10	.225	.675	37	12	12	32	.10	.225		67	16	12	36	.10	.225	.675
8	8	12	28	.10	.30	.60	38	12	12	32	.10	.30	.60	68	16	12	36	.10	.30	.60
9	8	12	28	.10	.40	.50	39	12	12	32	.10	.40	.50	69	16	12	36	.10	.40	.50
10	8	12	28	.20	.20	.60	40	12	12	32	.20	.20	.60	70	16	12	36	.20	.20	.60
11	8	12	28	.20	.30	.50	41	12	12	32	.20	.30	.50	71	16	12	36	.20	.30	.50
12	8	12	28	.20	.40	.40	42	12	12	32	.20	.40	.40	72	16	12	36	.20	.40	.40
13	8	16	32	.10	.225	.675	43	12	16	36	.10	.225	.675	73	16	16	40	.10	.225	.675
14	8	16	32	.10	.30	.60	44	12	16	36	.10	.30	.60	74	16	16	40	.10	.30	.60
15	8	16	32	.10	.40	.50	45	12	16	36	.10	.40	.50	75	16	16	40	.10	.40	.50
16	8	16	32	.20	.20	.60	46	12	16	36	.20	.20	.60	76	16	16	40	.20	.20	.60
17	8	16	32	.20	.30	.50	47	12	16	36	.20	.30	.50	77	16	16	40	.20	.30	.50
18	8	16	32	.20	.40	.40	48	12	16	36	.20	.40	.40	78	16	16	40	.20	.40	.40
19	8	20	36	.10	.225	.675	49	12	20	40	.10	.225		79	16	20	44	.10	.225	.675
20	8	20	36	.10	.30	.60	50	12	20	40	.10	.30	.60	80 .	16	20	44	.10	.30	.60
21	8	20	36	.10	.40	.50	51	12	20	40	.10	.40	.50	81	16	20	44	.10	.40	.50
22	8	20	36	.20	.20	.60	52	12	20	40	.20	.20	.60	82	16	20	44	.20	.20	.60
23	8	20	36	.20	.30	.50	53	12	20	40	.20	.30	.50	83	16	20	44	.20	.30	.50
24	8	20	36	.20	.40	.40	54	12	20	40	.20	.40	.40	84	16	20	44	.20	.40	.40
25	8	24	40	.10	.225	.675		12	24	44	.10	.225		85	16	24	48	.10	.225	.675
26	8	24	40	.10	.30	.60	56	12	24	44	.10	.30	.60	86	16	24	48	.10	.30	.60
27	8	24	40	.10	.40	.50	57	12	24	44	.10	.40	.50	87	16	24	48	.10	.40	.50
28	8	24	40	.20	.20	.60	58	12	24	44	.20	.20	.60	88	16	24	48	.20	.20	.60
29	8	24	40	.20	.30	.50	59	12	24	44	.20	.30	.50	89	16	24	43	.20	.30	.50
30	8	24	40	.20	.40	.40	60	12	24	44	.20	.40	.40	90	16	24	48	.20	.40	.40

Table 6.6 INDEX TO THE TYPE 3-S1 TRUCKS WEIGHING ONE KIP EACH

Truck numbers 1 to 90 represent 90 combinations of various wheel base lengths, axle spacings, and axle loadings.

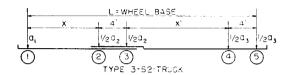


Truck Number				oad C Axles Kips a ₂		Truck Number	an	el B d Ax cing	le		oad O Axles Kips	n	Truck Number	an	el B d Ar cing	cle		oad C Axles Kips		
1	8	12	24	.10	.40	.50	31	12	12	28	.10	.40	.50	61	16	12	32	.10	.40	.50
2	8	12	24	.10	.50	.40	32	12	12	28	.10	.50	.40	62	16	12	32	.10	.50	.40
3	8	12	24	.10	.60	.30	33	12	12	28	.10	.60	.30	63	16	12	32	.10	.60	.30
4	8	12	24	.20	.40	.40	34	12	12	28	.20	.40	.40	64	16	12	32	.20	.40	.40
5	8	12	24	.20	.50	.30	35	12	12	28	.20	.50	.30	65	16	12	32	.20	.50	.30
6	8	12	24	.20	.534	.266	36	12	12	28	.20	.534	.266	66	16	12	32	.20	.534	.266
7	8	16	28	.10	.40	.50	37	12	16	32	.10	.40	.50	67	16	16	36	.10	.40	.50
8	8	16	28	.10	.50	.40	38	12	16	32	.10	.50	.40	68	16	16	36	.10	.50	.40
9	8	16	28	.10	.60	.30	39	12	16	32	.10	.60	.30	69	16	16	36	.10	.60	.30
10	8	16	28	.20	.40	.40	40	12	16	32	.20	.40	.40	70	16	16	36	.20	.40	.40
11	8	16	28	.20	.50	.30	41	12	16	32	.20	.50	.30	71	16	16	36	.20	.50	.30
12	8	16	28	.20	.534	.266	42	12	16	32	.20	.534	.266	72	16	16	36	.20	.534	.266
13	8	20	32	.10	.40	.50	43	12	20	36	.10	.40	.50	73	16	20	40	.10	.40	.50
14	8	20	32	.10	.50	.40	44	12	20	36	.10	.50	.40	74	16	20	40	.10	.50	.40
15	8	20	32	.10	.60	.30	45	12	20	36	.10	.60	.30	75	16	20	40	.10	.60	.30
16	8	20	32	.20	.40	.40	46	12	20	36	.20	.40	.40	76	16	20	40	.20	.40	.40
17	8	20	32	.20	.50	.30	47	12	20	36	.20	.50	.30	77	16	20	40	.20	.50	.30
18	8	20	32	.20	.534	.266	48	12	20	36	.20	.534	.266	78	16	20	40	.20	.534	.266
19	8	24	36	.10	.40	.50	49	12	24	40	.10	.40	.50	79	16	24	44	.10	.40	.50
20	8	24	36	.10	.50	.40	50	12	24	40	.10	.50	.40	80	16	24	44	.10	.50	.40
21	8	24	36	.10	.60	.30	51	12	24	40	.10	.60	.30	81	16	24	44	.10	.60	.30
22	8	24	36	.20	.40	.40	52	12	24	40	.20	.40	.40	82	16	24	44	.20	.40	.40
23	8	24	36	.20	.50	.30	53	12	24	40	.20	.50	.30	83	16	24	44	.20	.50	.30
24	8	24	36	.20	.534	.266	54	12	24	40	.20	.534	.266	84	16	24	44	.20	.534	.266
25	8	28	40	.10	.40	.50	55	12	28	44	.10	.40	.50	85	16	2 8	48	.10	.40	.50
26	8	28	40	.10	.50	.40	56	12	28	44	.10	.50	.40	86	16	28	48	.10	.50	.40
27	8	28	40	.10	.60	.30	57	12	28	44	.10	.60	.30	87	16	28	48	.10	.60	.30
28	8	28	40	.20	.40	.40	58	12	28	44	.20	.40	.40	88	16	2 8	48	.20	.40	.40
29	8	28	40	.20	.50	.30	59	12	28	44	.20	.50	.30	89	16	28	48	.20	.50	.30
30	8	28	40	.20	.534	.266	60	12	28	44	.20	.534	.266	90	16	28	48	.20	.534	.266

Table 6.7

Truck numbers 1 to 112 represent 112 combinations of various wheel base lengths, axle spacings, and axle loadings.

INDEX TO THE TYPE 3-S2 TRUCKS WEIGHING ONE KIP EACH

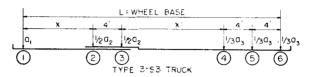


Truck Number	Spa	d A:	xle	L	oad C Axle Kips	s	Truck Number	Spa	d Ax	:le		ad O Axles Kips		Truck Number	an Spa		cle	L	oad (Axle Kips	s
ΕZ	X	X'	L	aı	\mathbf{a}_2	\mathbf{a}_3	ΞŻ	X	X'	L	aı	\mathbf{a}_2	\mathbf{a}_3	ΕŽ	X	Χ'	L	a ₁	a ₂	a 3
1	8	12	28	.10	.30	.60	43	12	12	32	.10	.30	.60	85	16	16	40	.10	.30	.60
2	8	12	28	.10	.40	.50	44	12	12	32	.10	.40	.50	86	16	16	40	.10	.40	.50
3	8	12	28	.10	.45	.45	45	12	12	32	.10	.45	.45	87	16	16	40	.10	.45	.45
4	8	12	28	.10	.50	.40	46	12	12	32	.10	.50	.40	88	16	16	40	.10	.50	.40
5	8	12	28	.20	.30	.50	47	12	12	32	.20	.30	,50	89	16	16	40	.20	.30	.50
6 7	8	12 12	28 28	.20	.40 .50	.40	48 49	12 12	12 12	32 32	.20	.40 .50	.40	90 91	16 16	16 16	40 40	.20	.40 .50	.40 .30
8	8	16	32	.10	.30	.60	49 50	12	16	32 36	.10	.30	.60	92	16	20	44	.10	.30	.60
9	8	16	32	.10	.40	.50	51	12	16	36	.10	.40	.50	93	16	20	44	.10	.40	.50
10	8	16	32	.10	.45	,45	52	12	16	36	.10	.45	.45	94	16	20	44	.10	.45	.45
11	8	16	32	.10	.50	.40	53	12	16	36	.10	.50	.40	95	16	20	44	.10	.50	.40
12	8	16	32	.20	.30	.50	54	12	16	36	.20	.30	.50	96	16	20	44	,20	.30	.50
13	8	16	32	.20	.40	.40	55	12	16	36	.20	.40	.40	97	16	20	44	.20	.40	.40
14	8	16	32	.20	.50	.30	56	12	16	36	.20	.50	.30	98	16	20	44	.20	.50	.30
15	8	20	36	.10	.30	.60	57	12	20	40	.10	.30	.60	99	16	24	48	.10	.30	.60
16	8	20	36	.10	.40	.50	58	12	20	40	.10	.40	.50	100	16	24	48	.10	.40	.50
17	8	20	36	.10	.45	.45	59	12	20	40	.10	.45	.45	101	16	24	48	.10	.45	.45
18	8	20	36	.10	.50	.40	60	12	20	40	.10	.50	.40	102	16	24	48	.10	.50	.40
19	8	20	36	.20	.30	.50	61	12	20	40	.20	.39	.50	103	16	24	48	.20	.30	.50
20	8	20	36	.20	.40	.40	62	12	20	40	.20	.40	.40	104	16	24	48	.20	.40	.40
21	8	20	36	.20	.50	.30	63	12	20	40	.20	.50	.80	105	16	24	48	.20	.50	.30
22 23	8	24 24	40 40	.10	.30 $.40$.60 .50	64 65	12 12	$\frac{24}{24}$	44 44	.10	.30	.60	106	16 16	28 28	52 52	.10	.30	.60 .50
24	8	24	40	.10	.45	.45	66	12	24	44	.10	.40 .45	.50 $.45$	$\frac{107}{108}$	16	28	52 52	.10	.45	.45
25	8	24	40	.10	.50	.40	67	12	24	44	.10	.50	.40	109	16	28	52	.10	.50	.40
26	8	24	40	.20	.30	.50	68	12	24	44	.20	.30	.50	110	16	28	52	.20	.30	.50
27	8	24	40	.20	.40	.40	69	12	24	44	.20	.40	.40	111	16	28	52	.20	.40	.40
28	8	24	40	.20	.50	.30	70	12	24	44	.20	.50	.30	112	16	28	52	.20	.50	.30
29	8	28	44	.10	.30	.60	71	12	28	48	.10	.30	.60							
30	8	28	44	.10	.40	.50	72	12	28	48	.10	.40	.50							
31	8	28	44	.10	.45	.45	73	12	28	48	.10	.45	.45							
32	8	28	44	.10	.50	.40	74	12	28	48	.10	.50	.40							
33	8	28	44	.20	.30	.50	75	12	28	48	.20	.30	.50							
34	8	28	44	.20	.40	.40	76	12	28	48	.20	.40	.40							
35	8	28	44	.20	.50	.30	77	12	28	48	.20	.50	.30							
36	12	8	28	.10	.30	.60	78	16	12	36	.10	.30	.60							
37	12	8	28	.10	.40	.50	79	16	12	36	.10	.40	.50							
38	12	8	28	.10	.45	.45	80	16	12	36	.10	.45	.45							
39	12	8	28	.10	.50	.40	81	16	12	36	.10	.50	.40							
40	12	8	28	.20	.30	.50	82	16	12	36	.20	.30	.50							
41 42	12 12	8	28 28	.20	.40 .50	.40	83 84	16 16	12 12	36 36	.20	.40	.40 .30							
		3	48	.20	.50	.50	- 54	10	14	90	.40	.50	.50							

Table 6.8

INDEX TO THE TYPE 3-S3 TRUCKS WEIGHING ONE KIP EACH

Truck numbers I to 105 represent 105 combinations of various wheel base lengths, axle spacings, and axle loadings.

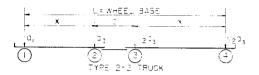


Truck Number	an	eel I	хle	L	oad (Axle	s	Truck Number	an	el B	:le] .	ad O Axles		Truck Number	an	eel B	tle	L	oad (Axle	s
je in	Spa X	cing X'	Ft.	a ₁	Kips a ₂	a 3	L'ruy Yun	Spa X	eing X'	Ft.	a;	Kips a ₂	a 3	ru's and	Spa X	cing X'	Ft.	a ₁	Kips a2	
1	8		32							36		.30								.60
2	8	12 12	32	.10	.30 .36	.60 .54	36 37	12 12	12 12	36	.10	.36	.60 .54	$\frac{71}{72}$	16 16	12 12	40 40	.10	.30	.54
3	8	12	32	.10	.40	.50	38	12	12	36	.10	.40	.50	73	16	12	40	.10	.40	.50
4	8	12	32	.10	.50	.40	39	12	12	36	.10	.50	.40	74	16	12	40	.10	.50	.40
5	8	12	32	.20	.30	.50	40	12	12	36	.20	.30	.50	75	16	12	40	.20	.30	.50
6	8	12	32	.20	.40	.40	41	12	12	36	.20	.40	.40	76	16	12	40	.20	.40	.40
7	8	12	32	.20	.50	.30	42	12	12	36	.20	.50	.30	77	16	12	40	.20	.50	.30
8	8	16	36	.10	.30	.60	43	12	16	40	.10	.30	.60	78	16	16	44	.10	.30	.60
9	8	16	36	.10	.36	.54	44	12	16	40	.10	.36	.54	79	16	16	44	.10	.36	.54
10	8	16	36	.10	.40	.50	45	12	16	40	.10	.40	.50	80	16	16	44	.10	.40	.50
11	8	16	36	.10	.50	.40	46	12	16	40	.10	.50	.40	81	16	16	44	.10	.50	.40
12	8	16	36	.20	.30	.50	47	12	16	40	.20	.30	.50	82	16	16	44	.20	.30	.50
13	8	16	36	.20	.40	.40	48	12	16	40	.20	.40	.40	83	16	16	44	.20	.40	.40
14	8	16	36	.20	.50	.30	49	12	16	40	.20	.50	.30	84	16	16	44	.20	.50	.30
15	8	20	40	.10	.30	.60	50	12	20	44	.10	.30	.60	85	16	20	48	.10	.30	.60
16	8	20	40	.10	.36	.54	51	12	20	44	.10	.36	.54	86	16	20	48	.10	.36	.54
17	8	20	40	.10	.40	.50	52	12	20	44	.10	.40	.50	87	16	20	48	.10	.40	.50
18	8	20	40	.10	.50	.40	53	12	20	44	.10	.50	.40	88	16	20	48	.10	.50	.40
19	8	20	40	.20	.30	.50	54	12	20	44	.20	.30	.50	89	16	20	4 8	.20	.30	.50
20	8	20	40	.20	.40	.40	55	12	20	44	.20	.40	.40	90	16	20	48	.20	.40	.40
21	8	20	40	.20	.50	.30	56	12	20	44	.20	.50	.30	91	16	20	48	.20	.50	.30
22	8	24	44	.10	.30	.60	57	12	24	48	.10	.30	.60	92	16	24	52	.10	.30	.60
23	8	24 24	44	.10	.36	.54	58	12	24	48	.10	.36	.54	93	16	24	52	.10	.36	.54
24 25	8	24	44 44	.10	.40 .50	.50	59	12 12	24 24	48 48	.10	.40	.50	94	16	24 24	$\frac{52}{52}$.10	.40	.50
26 26	- 8 - 8	24	44	.20	.30	.40 .50	60 61	12	24	48	.20	.30	.50	95 96	16 16	24	52 52	.20	.30	.40 .50
27	8	24	44	.20	.40	.40	62	12	24	48	.20	.40	.40	97	16	24	52	.20	.40	.40
28	8	24	44	.20	.50	.30	63	12	24	48	.20	.50	.30	98	16	24	52	.20	.50	.30
29	8	28	48	.10	.30	.60	64	12	28	52	.10	.30	.60	99	16	28	56	.10	.30	.60
30	8	28	48	.10	.36	.54	65	12	28	52	.10	.36	.54	100	16	28	56	.10	.36	.54
31	8	28	48	.10	.40	.50	66	12	28	52	.10	.40	.50	101	16	28	56	.10	.40	.50
32	8	28	48	.10	.50	.40	67	12	28	52	.10	.50	.40	102	16	28	56	.10	.50	.40
33	8	28	48	.20	.30	.50	68	12	28	52	.20	.30	.50	103	16	28	56	.20	.30	.50
34	8	28	48	.20	.40	.40	69	12	28	52	.20	.40	.40	104	16	28	56	.20	.40	.40
35	8	28	48	.20	.50	.30	70	12	28	52	.20	.50	.30	105	16	28	56	.20	.50	.30

Table 6.9

INDEX TO THE TYPE 2-2 TRUCKS WEIGHING ONE KIP EACH

Truck numbers 1 to 144 represent 144 combinations of various wheel base lengths, axle spacings, and axle loadings.

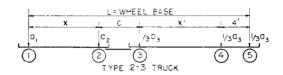


Truck Number	W	hcel and	Axle	2		ad (Axle	s	uck		hee ind				oad (Axle		ruck		hee and			L	cad (Axle	
200	S	acii	ng F	`t		Kips		Truck		pacii	ng F			Kips	\$. 25	S	paci		τ		Kip:	3
ΞZ	X	Χ'	С	L	\mathbf{a}_1	\mathbf{a}_2	a :;	Ez'	X	X	С	L	ai	\mathbf{a}_2	a:	ΞZ	X	\mathbf{X}'	C	L	aı	\mathbf{a}_2	a 3
1	12	В	8	28	.10	.20	.70	49	16	8	8	32	.10	.20	.70	97	20	8	3	36	.10	.20	.70
2	12	8	- 8	28	.10	.30	.60	50	16	8	8	32	.10	.30	.60	98	20	- 3	8	36	.10	.30	.60
3	12	8	8	28	.10	.40	.50	51	16	8	- 8	32	.10	.40	.50	99	20	- 8	8	36	.10	.40	.50
4	12	8	8	28	.20	.20	.60	52	16	8	3	32	.20	.20	.60	100	20	8	8	36	.20	.20	.60
5	12	- 8	- 8	28	.20	.30	.50	53	16	- 8	8	32	.20	.30	.50	101	20	- 8	3	36	.20	.30	.50
6	12	8	8	28	.20	.40	.40	54	16	8	3	32	.20	.40	.40	102	20	엉	3	36	.20	.40	.40
7	12	12	8	32	.10	.20	.70	55	16	12	3	36	.10	.20	.70	103	20	12	- 8	40	.10	.20	.70
8	12	12	- 8	32	.10	.30	.60	56	16	12	ક્	36	.10	.30	.60	104	20	12	- 8	40	.10	.30	.60
9	12	12	- 8	32	.10	.40	.50	57	16	12	3	36	.10	.40	.50	105	20	12	- 8	40	.10	.40	.50
1·) 11	12 12	$\frac{12}{12}$	- 8 - 8	$\frac{32}{32}$.20	.20 .30	.60	58 59	$\frac{16}{16}$	12 12	3	36	.20	.20	.60	106	20	$\frac{12}{12}$	- 8	40	.20	.20	.60
12	12	12	- 8	32	.20 .20	.40	.50	60	16	12	3	36 36	.20	.30	.50 .40	$\frac{107}{108}$	$\frac{20}{20}$	12	- 8 - 8	40	.20	.30 .40	$.50 \\ .40$
13	12	16	- 8	36	.10	.20	.70	61	16	16	- 8	40	.10	.20	.70	109	20	16	- 3	44	.10	.20	.70
14	12	16	8	36	.10	.30	.60	62	16	16	3	40	.10	.30	.60	110	20	16	3	44	.10	.30	.60
15	12	16	8	36	.10	.40	.50	63	16	16	3	40	.10	.40	.50	111	20	16	8	44	.10	.40	.50
16	12	16	8	36	.20	.20	.60	64	16	16	ಕ	40	.20	.20	.60	112	20	16	-8	44	.20	.20	.60
17	12	16	8	36	.20	.30	.50	65	16	16	8	40	.20	.30	.50	113	20	16	-8	44	.20	.30	.50
18	12	16	8	36	.20	.40	.40	66	16	16	3	40	.20	.40	.40	114	20	16	8	44	.20	.40	.40
19	12	20	- 8	40	.10	.20	.70	67	16	20	8	44	.10	.20	.70	115	20	20	- 8	48	.10	.20	.70
20	12	20	8	40	.10	.30	.60	68	16	20	- 8	44	.10	.30	.60	116	20	20	- 8	48	.10	.30	.60
21 22	12 12	20 20	8	40	.10	.40	.50 .60	69 70	16 16	$\frac{20}{20}$	8	44 44	.10	.40	.50	$\frac{117}{118}$	$\frac{20}{20}$	$\frac{20}{20}$	8	48 48	.10	$.40 \\ .20$.50 $.60$
23	12	20	- 8	40	.20	.30	.50	71	16	20	8	44	.20	.30	.50	119	20	20	- 3	48	.20	.30	.50
24	12	20	8	40	.20	.40	.40	72	16	20	8	44	.20	.40	.40	120	20	20	8	48	.20	.40	.40
25	12	8	12	32	.10	.20	.70	73	16	-8	12	36	.10	.20	.70	121	20	-8	12	40	.10	.20	.79
26	12	8	12	32	.10	.30	.60	74	16	8	12	36	.10	.30	.60	122	20	8	12	40	.10	.30	.60
27	12	- 8	12	32	.10	.40	.50	75	16	- 8	12	36	.10	.40	50	123	20	8	12	40	.10	.40	.50
28	12	- 8	12	32	.20	.20	.60	76	16	- 8	12	36	.20	.20	.60	124	20	8	12	40	.20	.20	.60
29	12	- 8	12	32	.20	.30	.50	77	16	8	12	36	.20	.30	.50	125	20	- 8	12	40	.20	.30	.50
$\frac{30}{31}$	12 12	$\frac{8}{12}$	12 12	32 36	.20	.40	$.40 \\ .70$	78 79	16 16	$\frac{8}{12}$	12 12	36 40	.20	.40 .20	.40	$\frac{126}{127}$	$\frac{20}{20}$	8 12	12 12	40	.20	.40	.40 .70
32	12	12	12	36	.10	.30	.60	80	16	12	12	40	.10	.30	.60	128	20	12	12	44	.10	.30	.60
33	12	12	12	36	.10	.40	.50	81	16	12	12	40	.10	.40	.50	129	20	12	12	44	.10	.40	.50
34	12	12	12	36	.20	.20	.60	82	16	12	12	40	.20	.20	.60	130	20	12	$\overline{12}$	44	.20	.20	.60
35	12	12	12	36	.20	.30	.50	83	16	12	12	40	.20	.30	.50	131	20	12	12	44	.20	.30	.50
36	12	12	12	36	.20	.40	.40	84	16	12	12	40	.20	.40	.40	132	20	12	12	44	.20	.40	.40
37	12	16	12	40	.10	.20	.70	85	16	16	12	44	.10	.20	.70	133	20	16	12	48	.10	,20	.70
38	12	16	12	40	.10	.30	.60	86	16	16	12	4.4	.10	.30	.60	134	20	16	12	48	.10	.30	.60
39	12 12	16	12	40	.10	.40	.50	87	16	16	12	44	.10	.40	.50	135	20	16	12	48	.10	.40	.50
40 41	12	16 16	12 12	40	.20 .20	.20	.60 .50	88 89	16 16	16 16	12 12	44	.20 .20	.20	.60 .50	$\frac{136}{137}$	$\frac{20}{20}$	$\frac{16}{16}$	12 12	48 48	.20 .20	.20 .30	.60 .50
42	12	16	12	40	.20	.40	.40	90	16	16	12	44	.20	.40	.40	138	20	16	12	48	.20	.40	.40
43	12	20	12	44	.10	.20	.70	91	16	20	12	48	.10	.20	.70	139	20	20	12	52	.10	.29	.70
44	12	20	12	44	.10	.30	.60	92	16	20	12	48	.10	.30	.60	140	20	20	12	52	.10	.30	.60
45	12	20	12	44	.10	.40	.50	93	16	20	12	48	.10	.40	.50	141	20	20	12	52	.10	.40	.50
46	12	20	12	44	.20	.20	.60	94	16	20	12	48	.20	.20	.60	142	20	20	12	52	.20	.20	.60
47	12	20	12	44	.20	.30	.50	95	16	20	12	48	.20	.30	.50	143	20	20	12	52	.20	.30	.50
48	12	20	12	44	.20	.40	.40	96	16	20	12	48	.20	.40	.40	144	20	20	12	52	.20	.40	.40

Table 6.10

INDEX TO THE TYPE 2-3 TRUCKS WEIGHING ONE KIP EACH

Truck numbers 1 to 90 represent 90 combinations of various wheel base lengths, axle spacings, and axle leadings.

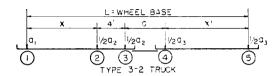


Truck Number	Sr X	heel and a acir	Axle	,	,	ad C Axles Kips	S	Truck Number	8	ind.	Bas Axle ng F	,	J	ad C Axles Kips a ₂	;	Truck Number	a	heel ind z acir	Axl∈			oad (Axle Kips	s
1	12	8	8	32	.10	.20	.70	31	16	8	-8	36	.10	.20	.70	61	20	8	8	40	.10	.20	.70
2	12	8	8	32	.10	.30	.60	32	16	8	8	36	.10	.30	.60	62	20	8	8	40	.10	.30	.60
3	12	8	8	32	.10	.40	.50	33	16	8	8	36	.10	.40	.50	63	20	8	8	40	.10	.40	,50
4	12	8	8	32	.20	.20	.60	34	16	8	8	36	.20	.20	.60	64	20	8	8	40	.20	.20	.60
5	12	8	8	32	.20	.30	.50	35	16	8	8	36	.20	.30	.50	65	20	8	8	40	.20	.30	.50
6	12	12	8	36	.10	.20	.70	36	16	12	8	40	.10	.20	.70	66	20	12	8	44	.10	.20	.70
7	12	12	8	36	.10	.30	.60	37	16	12	8	40	.10	.30	.60	67	20	12	8	44	.10	.30	.60
8	12	12	8	36	.10	.40	.50	38	16	12	8	40	.10	.40	.50	68	20	12	8	44	.10	.40	.50
9	12	12	8	36	.20	.20	.60	39	16	12	8	40	.20	.20	.60	69	20	12	8	44	.20	.20	.60
10	12	12	8	36	.20	.30	.50	40	16	12	8	40	.20	.30	.50	70	20	12	8	44	.20	.30	.50
11	12	16	8	40	.10	.20	.70	41	16	16	8	44	.10	.20	.70	71	20	16	8	48	.10	.20	.70
12	12	16	8	40	.10	.30	.60	42	16	16	8	44	.10	.30	.60	72	20	16	8	48	.10	.30	.60
13	12	16	- 8	40	.10	.40	.50	43	16	16	8	44	.10	.40	.50	73	20	16	8	48	.10	.40	.50
14	12	16	8	40	.20	.20	.60	44	16	16	8	44	.20	.20	.60	74	20	16	8	48	.20	.20	.60
15	12	16	8	40	.20	.30	.50	45	16	16	8	44	.20	.30	.50	75	20	16	8	48	.20	.30	.50
16	12	8	12	36	.10	.20	.70	46	16	8	12 12	40	.10	.20	.70	76 57	20	8	12	44	.10	.20	.70
17 18	12 12	8 8	12 12	36 36	.10	.30	.60	47	16 16	8	12	40	.10	.30	.60	77 78	20	8 8	12 12	44 44	.10	.30	.60 .50
19	12	8	12	36	.20	.20	.60	48 49	16	- 8 - 8	12	40	.20	.20	.60	79	20	8	12	44	.20	.20	.60
20	12	8	12	36	.20	.30	.50	50	16	8	12	40	.20	.30	.50	80	20	8	12	44	.20	.30	.50
21	12	12	12	40	.10	.20	.70	51	16	12	12	44	.10	.20	.70	81	20	12	12	48	.10	.20	.70
22	12	12	12	40	.10	.30	.60	52	16	12	12	44	.10	.30	.60	82	20	12	12	48	.10	.30	.60
23	12	12	12	40	.10	.40	.50	53	16	12	12	44	.10	.40	.50	83	20	12	12	48	.10	.40	.50
24	12	12	12	40	.20	.20	.60	54	16	12	12	44	.20	.20	.60	84	20	12	12	48	.20	.20	.60
25	12	12	12	40	.20	.30	.50	55	16	12	12	44	.20	.30	.50	85	20	12	12	48	.20	.30	.50
26	12	16	12	44	.10	.20	.70	56	16	16	12	48	.10	.20	.70	86	20	16	12	52	.10	.20	.70
27	12	16	12	44	.10	.30	.60	57	16	16	12	48	.10	.30	.60	87	20	16	12	52	.10	.30	.60
28	12	16	12	44	.10	.40	.50	58	16	16	12	48	.10	.40	.50	88	20	16	12	52	.10	.40	.50
29	12	16	12	44	.20	.20	.60	59	16	16	12	48	.20	.20	.60	89	20	16	12	52	.20	.20	.60
30	12	16	12	44	.20	.30	.50	60	16	16	12	48	.20	.30	.50	90	20	16	12	52	.20	.30	.50

Table 6.11

INDEX TO THE TYPE 3-2 TRUCKS WEIGHING ONE KIP EACH

Truck numbers 1 to 90 represent 90 combinations of various wheel base lengths, axle spacings, and axle loadings.

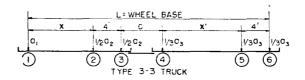


Truck Number	a	hee and aci	Axle	و	1	ad C Axles Kips	3	Truck Number	ä	ind .	Bas Axle ng F	.	ž	ad O Axles Kips		Truck Number	ε	heel ind / acir	4 x le			oad C Axle Kips	s
ÉŽ	X	X'	С	L	a 1	ae	\mathbf{a}_3	μź	X	X'	С	L	\mathbf{a}_1	\mathbf{a}_2	\mathbf{a}_3	Εź	X	X'	С	L	aı	a2	a 3
1	12	12	8	36	.10	.40	.50	31	16	12	8	40	.10	.40	.50	61	20	12	8	44	.10	.40	.50
2	12	12	8	36	.10	.50	.40	32	16	12	8	40	.10	.50	.40	62	20	12	8	44	.10	.50	.40
3	12	12	8	36	.10	.60	.30	33	16	12	8	40	.10	.60	.30	63	20	12	8	44	.10	.60	.30
4	12	12	8	36	.20	.40	.40	34	16	12	8	40	.20	.40	.40	64	20	12	8	44	.20	.40	.40
5	12	12	8	36	.20	.50	.30	35	16	12	8	40	.20	.50	.30	65	20	12	8	44	.20	.50	.30
6	12	16	8	40	.10	.40	.50	36	16	16	8	44	.10	.40	.50	66	20	16	8	48	.10	.40	.50
7	12	16	8	40	.10	.50	.40	37	16	16	8	44	.10	.50	.40	67	20	16	8	48	.10	.50	.40
8	12	16	8	40	.10	.60	.30	38	16	16	8	44	.10	.60	.30	68	20	16	8	48	.10	.60	.30
9	12	16	8	40	.20	.40	.40	39	16	16	8	44	.20	.40	.40	69	20	16	8	48	.20	.40	.40
10	12	16	8	40	.20	.50	.30	40	16	16	8	44	.20	.50	.30	70	20	16	8	48	.20	.50	.30
11	12	20	8	44	.10	.40	.50	41	16	20	8	48	.10	.40	.50	71	20	20	8	52	.10	.40	.50
12	12	20	8	44	.10	.50	.40	42	16	20	8	48	.10	.50	.40	72	20	20	8	52	.10	.50	.40
13	12	20	8	44	.10	.60	.30	43	16	20	8	48	.10	.60	.30	73	20	20	8	52	.10	.60	.30
14	12 12	20 20	8	44	.20	.40	.40	44	16 16	20 20	8	48	.20	.40	.40	74	20 20	20 20	8	52 52	.20	.40	.40
15 16	12	12	12	44	.10	.50 .40	.50	45 46	16	12	12	48	.10	.40	.50	75 76	20	12	8 12	48	.10	.50	.30 .50
17	12	12	12	40	.10	.50	.40	47	16	12	12	44	.10	.50	.40	77	20	12	12	48	.10	.50	.40
18	12	12	12	40	.10	.60	.30	48	16	12	12	44	.10	.60	.30	78	20	12	12	48	.10	.60	.30
19	12	12	12	40	.20	.40	.40	49	16	12	12	44	.20	.40	,40	79	20	12	12	48	.20	.40	.40
20	12	12	12	40	.20	.50	.30	50	16	. 12	12	44	.20	.50	.30	80	20	12	12	48	.20	,50	.30
21	12	16	12	44	.10	.40	.50	51	16	16	12	48	.10	.40	.50	81	20	16	12	52	.10	.40	.50
22	12	16	12	44	.10	.50	.40	52	16	16	12	48	.10	.50	.40	82	20	16	12	52	.10	.50	.49
23	12	16	12	44	.10	.60	.30	53	16	16	12	48	.10	.60	.30	83	29	16	12	52	.10	.60	.30
24	12	16	12	44	.20	.40	.40	54	16	16	12	48	.20	.40	.40	84	20	16	12	52	.20	.40	.40
25	12	16	12	44	.20	.50	.30	55	16	16	12	48	.20	.50	.30	85	20	16	12	52	.20	.50	.30
26	12	20	12	48	.10	.40	.50	56	16	20	12	52	.10	.40	.50	86	20	20	12	56	.10	.40	.50
27	12	20	12	48	.10	.50	.40	57	16	20	12	52	.10	.50	.40	87	20	20	12	56	.10	.50	40
28	12	20	12	48	.10	.60	.30	58	16	20	12	52	.10	.60	.30	88	20	20	12	56	.10	.60	.30
29	12	20	12	48	.20	.40	.40	59	16	20	12	52	.20	.40	.40	89	20	20	12	56	.20	.40	.40
30	12	20	12	48	.20	.50	.30	60	16	20	12	52	.20	.50	.30	90	20	20	12	56	.20	.50	.30

Table 6.12

INDEX TO THE TYPE 3-3 TRUCKS WEIGHING ONE KIP EACH

Truck numbers 1 to 90 represent 90 combinations of various wheel base lengths, axle spacings, and axle loadings.

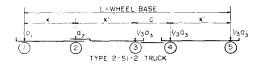


Truck Number	1	and	l Ba Axl	9		ead (s	ruck umber		and	l Ba	ē		Gad (S	Truck	1	hee and	Axl	e	L	oad Axle	28
La N	$\frac{s_1}{X}$	X	ng F C	L.	a ₁	Kips a ₂	a ₃	T L	$\frac{SI}{X}$	X	ng F C	L.	a ₁	Kips a ₂	as	La S	$\frac{S}{X}$	paci X'	ng F C	L.	a ₁	Kip a ₂	a ₃
1	12	8	12	40	_10	.30	.60	31	16	8	12	44	.10	.30	.60	61	20	8	12	48	.10	.30	.60
2	12	8	12	40	.10	.40	.50	32	16	8	12	44	.10	.40	.50	62	20	8	12	48	.10	.40	.50
3	12	8	12	40	.10	.50	.40	33	16	8	12	44	.10	.50	.40	63	20	8	12	48	.10	.50	.40
4	12	8	12	40	.20	.30	.50	34	16	8	12	44	.20	.30	.50	64	20	8	12	48	.20	.30	.50
5	12	8	12	40	.20	.40	.40	35	16	8	12	44	.20	.40	.40	65	20	8	12	48	.20	.40	.40
6	12	12	12	44	.10	.30	.60	36	16	12	12	48	.10	.30	.60	66	20	12	12	52	.10	.30	.60
7	12	12	12	44	.10	.40	.50	37	16	12	12	48	.10	.40	.50	67	20	12	12	52	.10	.40	.50
8	12	12	12	44	.10	.50	.40	38	16	12	12	48	.10	.50	.40	68	20	12	12	52	.10	.50	.40
9	12	12	12	44	.20	.30	.50	39	16	12	12	48	.20	.30	.50	69	20	12	12	52	.20	.30	.50
10	12	12	12	44	.20	.40	.40	40	16	12	12	48	.20	.40	.40	70	20	12	12	52	.20	.40	.40
11	12	16	12	48	.10	.30	.60	41	16	16	12	52	.10	.30	.60	71	20	16	12	56	.10	.30	.60
12	12	16	12	48	.10	.40	.50	42	16	16	12	52	.10	.40	.50	72	20	16	12	56	.10	.40	.50
13	12	16	12	48	.10	.50	.40	43	16	16	12	52	.10	.50	.40	73	20	16	12	56	.10	.50	.40
14	12	16	12	48	.20	.30	.50	44	16	16	12	52	.20	.30	.50	74	20	16	12	56	.20	.30	.50
15	12	16	12	48	.20	.40	.40	45	16	16	12	52	.20	.40	.40	75	20	16	12	56	.20	.40	.40
16	12	8	16	44	.10	.30	.60	46	16	8	16	48	.10	.30	.60	76	20	8	16	52	.10	.30	.60
17	12	8	16	44	.10	.40	.50	47	16	8	16	48	.10	.40	.50	77	20	8	16	52	.10	.40	.50
18	12	8	16	44	.10	.50	.40	48	16	8	16	48	.10	.50	.40	78	20	8	16	52	.10	.50	.40
19	12	8	16	44	.20	.30	.50	49	16	8	16	48	.20	.30	.50	79	20	8	16	52	.20	.30	.50
20	12	8	16	44	.20	.40	.40	50	16	8	16	48	.20	.40	.40	80	20	8	16	52	.20	.40	.40
21	12	12	16	48	.10	.30	.60	51	16	12	16	52	.10	.30	.60	81	20	12	16	56	.10	.30	.60
22	12	12	16	48	.10	.40	.50	52	16	12	16	52	.10	.40	.50	82	20	12	16	56	.10	.40	.50
23	12	12	16	48	.10	.50	.40	53	16	12	16	52	.10	.50	.40	83	20	12	16	56	.10	.50	.40
24	12	12	16	48	.20	.30	.50	54	16	12	16	52	.20	.30	.50	84	20	12	16	56	.20	.30	.50
25	12	12	16	48	.20	.40	.40	55	16	12	16	52	.20	.40	.40	85	20	12	16	56	.20	.40	.40
26	12	16	16	52	.10	.30	.60	56	16	16	16	56	.10	.30	.60	86	20	16	16	60	.10	.30	.60
27	12	16	16	52	.10	.40	.50	57	16	16	16	56	.10	.40	.50	87	20	16	16	60	.10	.40	.50
28	12	16	16	52	.10	.50	.40	58	16	16	16	56	.10	.50	.40	88	20	16	16	60	.10	.50	.40
29	12	16	16	52	.20	.30	.50	59	16	16	16	56	.20	.30	.50	89	20	16	16	60	.20	.30	.50
30	12	16	16	52	.20	.40	.40	60	16	16	16	56	.20	.40	.40	90	20	16	16	60	.20	.40	.40

Table 6.13

INDEX TO THE TYPE 2-S1-2 TRUCKS WEIGHING ONE KIP EACH

Truck numbers 1 to 96 represent 96 combinations of various wheel base lengths, axle spacings, and axle loadings.

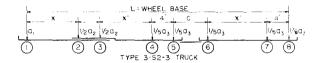


Truck Number	2	heel and pacin	Axle jg F			ad C Axle Kips	s	Truck Number	а	ınd .	Bas Axle ng F		1	ad C Axles Kips	3	Truck Number	2	heel and acir	Axle	9		oad (Axle Kips	s
EZ	X	X	C	L	a ₁	a 2	a 3	ĘΖ	X	X'	С	L	a 1	82	a 3	Ęz	X	X'	C	L	a ₁	a 2	a 3
1	8	10	8	36	.10	.20	.70	33	12	10	8	40	.10	.20	.70	65	16	16	8	56	.10	.20	.70
2	8	10	8	36	.10	.30	.60	34	12	10	8	40	.10	.30	.60	66	16	16	8	56	.10	.30	.60
3	8	10	8	36	.20	.20	.60	35	12	10	8	40	.20	.20	.60	67	16	16	8	56	.20	.20	.60
4	8	10	8	36	.20	.30	.50	36	12	10	8	40	.20	.20	.50	68	16	16	8	56	.20	.30	.50
5	8	12	8	40	.10	.20	.70	37	12	12	8	44	.10	.20	.70	69	16	18	8	60	.10	.20	.70
6	8	12	8	40	.10	.30	.60	38	12	12	8	44	.10	.30	.60	70	16	18	8	60	.10	.30	.60
7	8	12	8	40	.20	.20	.60	39	12	12	8	44	.20	.20	.60	71	16	18	8	60	.20	.20	.60
8	8	12	8	40	.20	.30	.50	40	12	12	8	4.4	.20	.30	.50	72	16	18	8	60	.20	.30	.50
9	8	14	8	44	.10	.20	.70	41	12	14	8	48	.10	.20	.70	73	16	20	8	64	.10	.20	.70
10	8	14	8	44	.10	.30	.60	42	12	14	8	48	.10	.30	.60	74	16	20	8	64	.10	.30	.60
11	8	14	8	44	.20	.20	.60	43	12	14	8	48	.20	.20	.60	75	16	20	8	64	.20	.20	.60
12	8	14	8	44	.20	.30	.50	44	12	14	8	48	.20	.30	.50	76	16	20	8	64	.20	.30	.50
13	8	16	- 8	48	.10	.20	.70	45	12	16	8	52	.10	.20	.70	77	16	22	8	68	.10	.20	.70
14	- 8	16	8	48	.10	.30	.60	46	12	16	8	52	.10	.30	.60	78	16	22	8	68	.10	.30	.60
15	8	16	8	48	.20	.20	.60	47	12	16	8	52	.20	.20	.60	79	16	22	8	68	.20	.20	.60
16	- 8	16	8	48	.20	.30	.50	48	12	16	8	52	.20	.30	.50	80	16	22	8	68 72	.20	.30	.50 .70
17	8	18	8	52	.10	.20	.70	49	12	18	8	56	.10	.20	.70 .60	81 82	16 16	24 24	- 8 - 8	72	.10	.30	.60
18 19	- 8 - 8	18 18	8 8	52 52	.10	.30	.60	50 51	12 12	18 18	8	56 56	.10	.30	.60	83	16	24	8	72	.20	.20	.60
20	8	18	8	52	.20	.30	.50	52	12	18	8	56	.20	.30	.50	84	16	24	8	72	.20	.30	.50
21	8	20	- 8	56	.10	.20	.70	53	12	20	8	60	.10	.20	.70	85	16	26	8	76	.10	.20	.70
22	8	20	8	56	.10	.30	.60	54	12	20	8	60	.10	.30	.60	86	16	26	8	76	.10	.30	.60
23	8	20	8	56	.20	.20	.60	55	12	20	8	60	.20	.20	.60	87	16	26	8	76	.20	.20	.60
24	8	20	8	56	.20	.30	.50	56	12	20	8	60	.20	.30	.50	88	16	26	8	76	.20	.30	.50
25	8	22	8	60	.10	.20	.70	57	12	22	8	64	.10	.20	.70	89	16	28	8	80	.10	.20	.70
26	8	22	8	60	.10	.30	.60	58	12	22	8	64	.10	.30	.60	90	16	28	8	80	.10	.30	.60
27	8	22	8	60	.20	.20	.60	59	12	22	8	64	.20	.20	.60	91	16	28	8	80	.20	.20	.60
28	8	22	8	60	.20	.30	.50	60	12	22	8	64	.20	.30	.50	92	16	28	8	80	.20	.30	.50
29	8	24	8	64	.10	.20	.70	61	12	24	8	68	.10	.20	.70	93	16	30	8	84	.10	.20	.70
30	8	24	8	64	.10	.30	.50	62	12	24	8	68	.10	.30	.50	94	16	30	8	84	.10	.30	.50
31	8	24	8	64	.20	.20	.60	63	12	24	8	68	.20	.20	.60	95	16	30	8	84	.20	.20	.60
32	8	24	8	64	.20	.30	.50	64	12	24	8	68	.20	.30	.50	96	16	30	8	84	.20	.30	.50

Table 6.14

INDEX TO THE TYPE 3-S2-3 TRUCKS WEIGHING ONE KIP EACH

Truck numbers 1 to 84 represent 84 combinations of various wheel base lengths, axle spacings, and axle loadings.



Truck Number	a	heel and pacin	Axle	e		oad (Axle Kips	On S S	Truck Number	2	heeland . pacin	Axle	•		oad (Axles Kips	On S	Truck Number	W Si	heel and a acir	Axl∈	3		oad (Axle Kip:	±S
1	8	8	8	44	.05	.20	.75	29	12	8	8	48	.05	.20	.75	57	16	12	8	60	.05	.20	.75
2	8	8	8	44	.05	.30	.65	30	12	8	8	48	.05	.30	.65	58	16	12	8	60	.05	.30	.65
3	8	8	8	44	.10	.20	.70	31	12	8	8	48	.10	.20	.70	59	16	12	8	60	.10	.20	.70
4	8	8	8	44	.10	.30	.60	32	12	8	8	48	.10	.30	.60	60	16	12	8	60	.10	.30	.60
5	8	10	8	48	.05	.20	.75	33	12	10	8	52	.05	.20	.75	61	16	14	8	64	.05	.20	.75
6	8	10	8	48	.05	.30	.65	34	12	10	8	52	.05	.30	.65	62	16	14	8	64	.05	.30	.65
7	8	10	8	48	.10	.20	.70	35	12	10	8	52	.10	.20	.70	63	16	14	8	64	.10	.20	.70
8	8	10	8	48	.10	.30	.60	36	12	10	8	52	.10	.30	.60	64	16	14	8	64	.10	.30	.60
9	8	12	8	52	.05	.20	.75	37	12	12	8	56	.05	.20	.75	65	16	16	8	68	.05	.20	.75
10	8	12	8	52	.05	.30	.65	38	12	12	8	56	.05	.30	.65	66	16	16	8	68	.05	.30	.65
11	8	12	8	52	.10	.20	.70	39	12	12	8	56	.10	.20	.70	67	16	16	8	68	.10	.20	.70
12	8	12	8	52	.10	.30	.60	40	12	12	8	56	.10	.30	.60	68	16	16	8	68	.10	.30	.60
13	8	14	8	56	.05	.20	.75	41	12	14	8	60	.05	.20	.75	69	16	18	8	72	.05	.20	.75
14	8	14	8	56	.05	.30	.65	42	12	14	8	60	.05	.30	.65	70	16	18	8	72	.05	.30	.65
15	8	14	8	56	.10	.20	.70	43	12	14	8	60	.10	.20	.70	71	16	18	8	72	.10	.20	.70
16	8	14	8	56	.10	.30	.60	44	12	14	8	60	.10	.30	.60	72	16	18	8	72	.10	.30	.60
17	8	16	8	60	.05	.20	.75	45	12	16	8	64	.05	.20	.75	73	16	20	8	76	.05	.20	.75
18	8	16	8	60	.05	.30	.65	46	12	16	8	64	.05	.30	.65	74	16	20	8	76	.05	.30	.65
19	8	16	8	60	.10	.20	.70	47	12	16	8	64	.10	.20	.70	75	16	20	8	76	.10	.20	.70
20	8	16	8	60	.10	.30	.60	48	12	16	8	64	.10	.30	.60	76	16	20	8	76	.10	.30	.60
21	8	18	8	64	.05	.20	.75	49	12	18	8	68	.05	.20	.75	77	16	22	8	80	.05	.20	.75
22	8	18	8	64	.05	.30	.65	50	12	18	8	68	.05	.30	.65	78	16	22	8	80	.05	.30	.65
23	8	18	8	64	.10	.20	.70	51	12	18	8	68	.10	.20	.70	79	16	22	8	80	.10	.20	.70
24	8	18	8	64	.10	.30	.60	52	12	18	8	68	.10	.30	.60	80	16	22	8	80	.10	.30	.60
25	8	20	8	68	.05	.20	.75	53	12	20	8	72	.05	.20	.75	81	16	24	8	84	.05	.20	.75
26	8	20	8	68	.05	.30	.65	54	12	20	8	72	.05	.30	.65	82	16	24	8	84	.05	.30	.65
27	8	20	8	68	.10	.20	.70	55	12	20	8	72	.10	.20	.70	83	16	24	8	84	.10	.20	.70
28	8	20	8	68	.10	.30	.60	56	12	20	8	72	.10	.30	.60	84	16	24	8	84	.10	.30	60

7. CONTROLLING CONDITIONS FOR MAXIMUM MOMENTS ON SIMPLE SPAN BRIDGES

Tables 7.1-7.14 give the maximum moments produced by the 1303 variations of the 14 heavy vehicle types shown in the identification index Tables 6.1-6.14 on simple spans of 10, 20, 30, 40, 50, 60, 80, and 100 feet in length. The maximum moments produced by each of the 1303 heavy vehicle types and loadings on 8 different span lengths makes a total of 10,424 maximum moments recorded in the 14 Tables 7.1-7.14. The table number corresponding to each of the 14 heavy vehicle types is as follows:

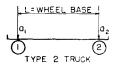
Table No.	Vehicle Type	Table No.	Vehicle Type
7.1	2	7.8	3-S3
7.2	3	7.9	2-2
7.3	2-S1	7.10	2-3
7.4	2-S2	7.11	3-2
7.5	2-S3	7.12	3-3
7.6	3-S1	7.13	2-S1-2
7.7	3-S2	7.14	3-S2-3

In addition to giving the maximum moment for each of the 10,424 cases of vehicle type, loading, and span length, these tables also indicate in each case: (1) the axle group which produces the maximum moment; (2) the axle number under which the maximum moment occurs; and (3) the distance this critical axle is placed to the right or left of the mid-span to coincide with the position for maximum moment.

A detailed description of these tables and how they are used is given in Article 5.

 ${\bf Table~7.1}$ CONTROLLING CONDITIONS AND MAXIMUM MOMENTS IN SIMPLE SPANS

CONTROLLING CONDITIONS AND MAXIMUM MOMENTS IN SIMPLE SPANS PRODUCED BY THE TYPE 2 TRUCKS WEIGHING ONE KIP EACH



Thirty-six variations in the Type 2 truck are given in this Table. Each truck number, from 1 to 36, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

Tru	ck No).	1	2	3	4	5	6	7	8	9	10
Wh.	Base	L	10	10	10	10	10	19	12	12	12	12
	d On	aı	.45	.40	.35	.30	.25	.26	.45	.40	.35	.30
Axl	es	a 2	55	.60	.65	.70	.75	.80	.55	.60	.65	.70_
		G	2	2	2	2	2	2	2	2	2	2
	10	N	2	2	2	2	2	2	2	2	2	2
1		B M	$0 \\ 1.375$	$\frac{0}{1.500}$	$0 \\ 1.625$	$\begin{array}{c} 0 \\ 1.750 \end{array}$	$\frac{0}{1.875}$	$\frac{0}{2.000}$	$\frac{0}{1.375}$	$\frac{0}{1.500}$	0 1,625	0 1.750
-												
,	20	G N	$_{2}^{1-2}$	1-2 2	$\frac{1-2}{2}$	$\frac{1-2}{2}$	$\frac{1-2}{2}$	$\frac{1-2}{2}$	2 2	2 2	2 2	2 2
1	20	В	2.250R	2.000R	1.750R	1.500R	1.250R	1.000R	0	0	6	0
-		M	3.003	3.200	3.403	3.613	3.828	4,050	2,750	3.000	8.250	3.500
-		G	1.2	1-2	1-2	1-2	1-2	$-\frac{1}{1}\frac{3}{2}$	1-2	1 - 2	1-2	1-2
	30	N	2	2	2	2	2	9	2	2	2	2
	50	B	2.250R	2.000R	1.750R	1.500R	1.250R	1.000R	2.700R	2.400R	2.100R	1.800R
1		M	5.419	5.633	5.852	6.075	6.302	6,533	5.043	5.292	5.547	5.808
į-	-	G	1 2	1-2	12	1-2	1-2	1-2	1-2	1-2	1-2	1 -2
ابد	40	N	2	2	2	2	2	2	2	2	2	2
ee		В	$2.250\mathbf{R}$	2.000R	1.750R	1.500R	1.250R	1.000R	2.700R	2.400R	2.100R	1.800R
F-		M	7.877	8.100	8.327	8.556	8.789	9.025	7.482	7.744	8.010	8.281
Span-Feet		\mathbf{G}	1-2	1 -2	1-2	1 -2	$1\cdot 2$	1 -2	1-2	1-2	1 -2	1-2
Sp.	50	N	2	2	2	2	2	2	2	2	2	2
		В	2.250R	2.000R	1.750R	1.500R	1.250R	1.000R	2.700R	2.400R	2.100R	1.800R
- 1-		M	10.350	10.580	10.810	11.050	11.280	$\frac{11.520}{}$	9.946	10.220	10.490	10.760
	CO	G N	$^{1-2}_{2}$	$\frac{1}{2}$	1-2 2	$\frac{1-2}{2}$	12 2	1-2 2	1-2	1 -2 2	1-2	1-2
- 1	60	B	2.250R	2.000R	1.750R	1.500R	1.250R	1.000R	$^{2}_{2.700R}$	2.400R	2 2,100R	$^{2}_{1.800R}$
-		M	12.830	13.070	13.300	13.540	13.780	14.020	12.420	12.700 K	12.970	13.250
-		G	1-2	1-2	1-2	1-2	12	1-2	1-2	1-2	1-2	1-2
	80	N	2	2	2	2	2	2	2	2	2	2
	00	B	2.250R	2.000R	1.750R	1.500R	1.250R	1.000R	2.700R	2.400R	2.100R	1.800R
- 1		M	17.810	18.050	18.290	18.530	18.770	19.010	17.390	17.670	17.960	18.240
-		G	1-2	1 2	${1-2}$	1-2	1-2	1-2	1-2	1-2	1-2	1-2
- 1	100	Ñ	2	2	2	2	2	2	2	2	2	2
-		В	2.250R	2.000R	1.750R	1.500R	1.250R	1.000R	2.700R	2.400R	2.100R	1.800R
		M	22.800	23.040	23.280	23,520	23.770	24.010	22.370	22.660	22.940	23.230

All dimensions are in feet and moments are in kip-feet.

a1 and a2-Represent the ratio of gross vehicle weight on axles.

G-Axle group causing maximum moment, thus, 1-2 means axles 1 and 2.

N-Number of critical axle under which maximum moment occurs.

B-Distance to right or left of mid-span to point of maximum moment.

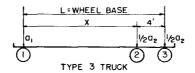
M-Maximum moment.

_	uck N		Continue 11	12	13	14	15	16	17	18	19	20
	h. Bas		12	12	14	14	14	14	14	14	16	16
	ad On les	\mathbf{a}_1 \mathbf{a}_2	.25 $.75$.20 .80	.45 .55	.40 .60	.35 .65	.30 $.70$	$.25 \\ .75$.20 .80	.45 .55	.40 .60
	10	G N B	2 2 0	2 2 0	2 2 0	2 2 0	2 2 0	2 2 0	2 2 0	2 2 0	2 2 0	2 2 0
		- <u>M</u> - G	$\frac{1.875}{2}$	$\frac{2.000}{2}$	$\frac{1.375}{2}$	1.500	1.625	$\frac{1.750}{2}$	1.875	$\frac{2.000}{2}$	1.375	1.50
	20	N B	$\frac{2}{0}$	$\frac{2}{0}$	$\frac{2}{0}$	$\frac{2}{0}$ 3.000	2 0	$\frac{2}{0}$	$\frac{2}{0}$	$\frac{2}{0}$	$\begin{array}{c} 2 \\ 0 \\ 2.750 \end{array}$	2 0 3.00
		- M G	$\frac{3.750}{1-2}$	1-2	$\frac{2.750}{1-2}$	1-2	3.250	3.500	$\frac{3.750}{1-2}$	4.000 1-2	1-2	1-
	30	N B M	$^2_{1.500 m R}_{6.075}$	$^2_{1.200\mathrm{R}}_{6.348}$	2 3.150R 4.681	2 2.800R 4.961	2 2.450R 5.250	2 2.100R 5.547	2 1.750R 5.852	$\begin{array}{c} 2 \\ 1.400 \mathrm{R} \\ 6.165 \end{array}$	2 3.600R 4.332	3.200 4.64
	40	G N	1-2 2	1-2 2	1-2 2	1–2 2	1-2	1-2	1-2	1-2	1-2 2	1-
opan-r eet	40	B M	1.500R 8.556	1,200R 8.836	3.150R 7.098	2.800R 7.396	2.450R 7.700	2.100R 8.010	1.750R 8.327	1.400R 8.649	3.600R 6.724	3.200 7.0
Spar	50	G N	$\frac{1-2}{2}$	$\frac{1-2}{2}$	$^{1-2}_{2}$	$^{1-2}_2$	1-2 2	$\overset{1-2}{2}$	$^{1-2}_{2}$	$^{1-2}_{2}$	$^{1-2}_2$	1- 2
		B M	1.500R 11.050	1.200R 11.330	3.150R 9.548	2.800R 9.857	2.450R 10.170	2.100R 10.490	1.750R 10.810	1.400R 11.140	3.600R 9.159	3.200 9.50
	60	G N	$\frac{1-2}{2}$	1-2 2	1-2	1-2		1-2	1-2	1-2	1-2	1-
		B M	1.500R 13.540	1,200R 13.820	3.150R 12.020	2.800R 12.330	2.450R 12.650	2.100R 12.970	1.750R 13.300	1.400R 13.630	$\begin{array}{c} 2 \\ 3.600 \mathrm{R} \\ 11.620 \end{array}$	3.200 11.97
	80	G N	$\frac{1-2}{2}$	1-2 2	1-2 2	$^{1-2}_2$	1-2 2	1-2 2	$\frac{1-2}{2}$	1-2 2	1-2 2	1-
		B M	1.500R 18.530	1.200R 18.820	3.150R 16.970	2.800R 17.300	2.450R 17.630	2.100R 17.960	1.750R 18,290	1.400R 18.620	3.600R 16.560	3.200 16.93
	100	G N	1-2 2	1-2 2	$\frac{1-2}{2}$	1-2	1-2	1-2	1-2 2	1-2 2	1-2	1
	100	B	1.500R 23.520	1.200R 23.810	3.150R 21.950	2.800R 22.280	2.450R 22.610	2.100R 22.940	1.750R 23.280	1.400R 23.620	3.600R 21.530	3.200 21.90
Γr	uck N	o.	21	22	23	24	25	26	27	28	29	30
_	h. Bas		16	16	16	16	18	18	18	18	18	18
	ad On :les	\mathbf{a}_1 \mathbf{a}_2	.35 .65	.30 .70	.25 .75	.20 .80	.45 .55	.40 .60	.35 .65	.30 .70	.25 .75	.20 .80
	10	G N B	2 2 0	2 2 0	2 2 0	2 2 0	2 2 0	2 2 0	2 2 0	2 2 0	2 2 0	2 2 0
		M G	1.625	$\frac{1.750}{2}$	1.875	$\frac{2.000}{2}$	1.375	1.500	1.625	1.750	1.875	2.0
	20	N B	2 0	2 0	$\frac{2}{0}$	$\frac{2}{0}$	$\frac{2}{0}$	2	$\frac{2}{0}$	$\frac{2}{0}$	2 0	0
		M. G	$\frac{3.250}{1-2}$	$\frac{3.500}{1-2}$	3.750 1-2	4.000	2.750	$-\frac{3.000}{2}$	3.250	3.500	3.750 2	4.0
	30	N B	$^{2}_{2.800 m R}$	$\frac{2}{2.400}$ R	$^2_{2.000 m R}$	$\frac{2}{0}$	2 9	2 0	$\frac{2}{0}$	$\frac{2}{0}$	$\frac{2}{0}$	2
		M G	4.961 1-2	5.292 1-2	$\frac{5.633}{1-2}$	$\frac{6.000}{1-2}$	4.125 1-2	$\frac{4.500}{1-2}$	4.875 1-2	$\frac{5.250}{1-2}$	5.625 1-2	6.00
	40	N	2.800R	2 2,400R	2 2.000R	1.600R	2 4.050R	$^2_{3.600 m R}$	$^2_{3.150\mathrm{R}}$	$^{2}_{2.700\mathrm{R}}$	$^{2}_{2.250\mathrm{R}}$	1.800 8.23
reet	40	В					6 960	6791	7 008			
an-reet		G	7.396 1–2	$\frac{7.744}{1-2}$	8.100 1-2	8.464 1–2	6.360 1-2	$\frac{6.724}{1-2}$	$\frac{7.098}{1-2}$	$\frac{-7.482}{1-2}$	$\frac{7.877}{1-2}$	1-
Span-r eet	50	M	7.396	7.744	8.100	8.464						
Span-reeu	50	G N B M	7.396 1-2 2 2.800R 9.857 1-2	7.744 1-2 2 2.400R 10.220 1-2	8.100 1-2 2 2.000R 10.580 1-2	8.464 1-2 2 1.600R 10.950 1-2	1-2 2 4.050R 8.778 1-2	1-2 2 3.600R 9.159 1-2	1-2 2 3.150R 9.548 1-2	1-2 2 2.700R 9.946 1-2	1-2 2 2.250R 10.350 1-2	1- 2 1.800 10.79
Span-reeu		G N B	7.396 1-2 2 2.800R 9.857	7.744 1-2 2 2.400R 10.220	8.100 1-2 2 2.000R 10.580	8.464 1-2 2 1.600R 10.950	1-2 2 4.050 R 8.778	1-2 2 3.600R 9.159	1-2 2 3.150R 9.548	1-2 2 2.700R 9.946	1-2 2 2.250R 10.350	1- 2 1.800 10.79 1- 2 1.800
Span-r eet	5 0	G N B M G N B M	7.396 1-2 2.800R 9.857 1-2 2.800R 12.330 1-2	7.744 1-2 2 2.400R 10.220 1-2 2 2.400R 12.700 1-2	8.100 1-2 2.000R 10.580 1-2 2.000R 13.070 1-2	8.464 1-2 2 1.600R 10.950 1-2 2 1.600R 13.440 1-2	1-2 2 4.050R 8.778 1-2 2 4.050R 11.220 1-2	1-2 2 3.600R 9.159 1-2 2 3.600R 11.620	1-2 2 3.150R 9.548 1-2 2 3.150R 12.020 1-2	1-2 2 2.700R 9.946 1-2 2 2.700R 12.420 1-2	1-2 2 2.250R 10.350 1-2 2 2.250R 12.830 1-2	1- 2 1.800 10.70 1- 2 1.800 13.2
Span-reeu	50	G N B M G N B M	7.396 1-2 2.800R 9.857 1-2 2.800R 12.330 1-2 2.800R 17.300	7.744 1-2 2.400R 10.220 1-2 2.400R 12.700 1-2 2 2.400R 17.670	8.100 1-2 2 2.000R 10.580 1-2 2 2.000R 13.070	8.464 1-2 2 1.600R 10.950 1-2 2 1.600R 13.440 1-2 2 1.600R 18.430	1-2 2 4.050R 8.778 1-2 2 4.050R 11.220	1-2 2 3.600R 9.159 1-2 2 3.600R 11.620	1-2 2 3.150R 9.548 1-2 2 3.150R 12.020	1-2 2 2.700R 9.946 1-2 2 2.700R 12.420	1-2 2 2.250R 10.350 1-2 2 2.250R 12.830 1-2 2 2.250R 17.810	1- 2 1.800 10.7 1- 2 1.800 13.2
Span-reet	5 0	G N B M G N B M	7.396 1-2 2 2.800R 9.857 1-2 2.800R 12.330 1-2 2.800R	7.744 1-2 2 2.400R 10.220 1-2 2.400R 12.700 1-2 2 2.400R	8.100 1-2 2 2.000R 10.580 1-2 2 2.000R 13.070 1-2 2 2.000R	8.464 1-2 2 1.600R 10.950 1-2 2 1.600R 13.440 1-2 2 1.600R	1-2 2 4.050R 8.778 1-2 2 4.050R 11.220 1-2 2 4.050R	1-2 2 3.600R 9.159 1-2 2 3.600R 11.620 1-2 2 3.600R	1-2 2 3.150R 9.548 1-2 2 3.150R 12.020 1-2 2 3.150R	1-2 2 2.700R 9.946 1-2 2 2.700R 12.420 1-2 2 2.700R	1-2 2 2.250R 10.350 1-2 2 2.250R 12.830 1-2 2 2.250R	1-2 1.806 10.7 1-2 1.806 13.2 1-2 1.806

Truc	ck No).	31	32	33	34	35	36
Wh.	Base	L	20	20	20	20	20	20
Loa	d On	aı	.45	-40	.35	.30	.25	.20
Axle	28	\mathbf{a}_2	.55	.60	.65	.70	.75	.80
		G	2		2	2	2	2
	10	N	2	2	2	2	2	2
		В	0	0	0	0	0	0
_		M	1.375	1.500	1.625	1.750	1.875	2.000
		G	2	2	2	2	2	2
	20	N	2	2	2	2	2	2
		В	0	0	0	0	0	0
-		M	2.750	3.000	3.250	3.500	3.750	4.000
		G	2	2	2	2	2	2
	30	N	2	2	2	2	2	2
		B M	$0 \\ 4.125$	$\frac{0}{4.500}$	0 4.875	$\frac{0}{5.250}$	$_{5.625}^{0}$	0
- 1-								6.000
		G	1-2	1-2	1-2	1-2	1-2	1-2
4	40	N B	2 4.500R	2 4.000R	2 3.500R	$\frac{2}{3.000R}$	$^{2}_{2.500R}$	2 2.000R
Span-Feet		M	6.00K	6.400 K	5.500R 6.806	7.225	7,656	8.100
글 [-								
8	50	G N	$^{1-2}_{2}$	$^{1-2}_2$	1-2 2	$\frac{1-2}{2}$	$\frac{1-2}{2}$	1-2
∞	90	В	4.500R	4.000R	3.500R	3.000R	2.500R	2.000R
		M	8.405	8.820	9.245	9.680	10.130	10.580
		G	1-2	1-2	1-2	1-2	1 2	1-2
- 1	60	Ň	2	2	2	2	2	2
	00	В	4.500R	4.000R	3.500R	3.000R	2.500R	2.000R
		M	10.840	11,270	11.700	12.150	12.600	13.070
-		G	1-2	1-2	1-2	1-2	1.2	1-2
-	80	Ñ	2	2	2	2	2	2
İ		В	4.500R	4.000R	3.500R	3.000R	2.500R	2.000R
- 1		M	15.750	16.200	16.650	17.110	17.580	18.050
1				4.0	1 0	1-2	1-2	1-2
-		G	1-2	1-2	1-2			
-	100	N	2	2	2	2	2	2
-	100							

Table 7.2

CONTROLLING CONDITIONS AND MAXIMUM MOMENTS IN SIMPLE SPANS PRODUCED BY THE TYPE 3 TRUCKS WEIGHING ONE KIP EACH



Forty-two variations in the Type 3 truck are given in this Table. Each truck number, from 1 to 42, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

m	1 37										-	
	uck No		1	2	3	4	5	6	7	8	9	10
	h. Base	· L	14	14	14	14	14	14	14	16	16	16
Az Sp	lle acing	x	10	10	10	10	10	10	10	12	12	12
Lo	ad On	a ₁	.40	.35	.30	.25	.20	.15	.10	.40	.35	.30
Ax	les	\mathbf{a}_2	.60	.65	.70	.75	.80	.85	.90	.60	.65	.70
	1	G	1	2-3	2-3	2-3	2-3	2–3	2-3	1	2-3	2-3
	10	N	1	3	3	3	3	3	3	1	3	3
		В	0	1.000R	1.000R	1.000R	$1.600\mathbf{R}$	1.000R	1.000R	0	1.000R	$1.000\mathbf{R}$
		M	1.000	1.040	1.120	1.200	1.280	1.360	1.440	1.000	1.040	1.120
		G	1-3	1-3	2-3	2-3	2-3	2-3	2-3	2-3	2-3	2-3
	20	N	2	2	3	3	3	3	3	3	3	3
		\mathbf{B}	1.400R	1.100R	1.000R	1.000R	1.000R	1.000R	$1.000\mathbf{R}$	1.000R	1.000R	$1.000\mathbf{R}$
		M	2.498	2.661	2.835	3.038	3.240	3.443	3.645	2.430	2.633	2.835
		G	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3
	30	N	2	2	2	2	2	2	2	2	2	2
		В	1.400R	1.100R	$.800\mathbf{R}$.500R	.200R	.100L	.400L	.800R	1.450R	1.190R
		M	4.965	5.140	5.321	5.508	5.701	5.900	6.105	4.608	4.820	5.040
		G	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3
تب	40	N	2	2	2	2	2	2	2	2	2	2
ee		В	1.400R	1.100R	.800R	$.500\mathbf{R}$	$.200\mathbf{R}$.100L	.400L	.800R	1.450R	1.100R
4		M	7.449	7.630	7.816	8.006	8.201	8.400	8.604	7.081	7.303	7.530
Span-Feet		G	1-3	1-3	1-3	1-3	13	1-3	1-3	1-3	1-3	1-3
Sp	50	N	2	2	2	2	2	2	2	2	2	2
••		В	1.400R	1.100R	.800R	.500R	.200R	.100L	.400L	.800R	1.450R	1.100R
		M	9.939	10.120	10.310	10.510	10.700	10.900	11.100	9.565	9.792	10.020
		G	1-3	1-3	1-3	1-3	1-3	13	1-3	1-3	1-3	1-3
	60	N	2	2	2	2	2	2	2	2	2	2
		B M	1.400R	1.100R	.800R	.500R	.200R	.100L	.400L	.800R	1.450R	1.100R
			12.430	12.620	12.810	13.000	13.200	13.400	13.600	12.050	12.290	12.520
		\mathbf{G}	1 3	1-3	1-3	13	1-3	1-3	1-3	1-3	1-3	1-3
	80	N	2	2	2	2	2	2	2	2	2	2
		B M	1.400R 17.430	1.100R	.800R	.500R	.200R	.100L	.400L	.800R	1.450R	1.100R
				17.620	17.810	18.000	18.200	18.400	18.600	17.040	17.280	17.520
	100	G	1-3	13	1-3	1-3	1-3	1-3	1-3	1–3	1-3	1-3
	100	N B	$^2_{1.400 m R}$	2 1.100R	$^{2}_{.800R}$	2	2	2	2	2	2	2
		M	1.400R 22.420	22.610	.800R 22.810	.500R	.200R 23.200	.100L	.400L	.800R	1.450R 22.270	1.100R
		74.T	22.420	24.010	44.610	23.000	20.200	23.400	23,600	22.030	22.270	22.510

All dimensions are in feet and moments are in kip-feet.

a₁ and a₂—Represent the ratio of gross vehicle weight on axles.

G-Axle group causing maximum moment, thus, 1-3 means axles 1, 2, and 3.

N-Number of critical axle under which maximum moment occurs.

B-Distance to right or left of mid-span to point of maximum moment.

M-Maximum mcment.

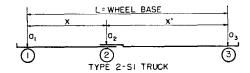
TA	BI.	E	7.2 - 6	Contin	ued)

TA	BLE	7.2	Continue	d)								
_	uck No		11	12	13	14	15	16	17	18	19	20
	ı. Base	L	16	16	16	16	18	18	18	18	18	18
Ax	le acing	X	12	12	12	12	14	14	14	14	14	14
	ad On	a ₁	.25	.20	.15	10	.40	.35	.30	.25	.20	.15
Ax		a 2	.75	.80	.85	-90	.60	.65	.70	.75	.80	.85
	10	G	23	2-3	2-3	2 3	1	2 3	2-3	2-3	2-3	2-3
	10	N B	1.000R	$^3_{1.000 m R}$	3 1.000R	$^{3}_{1.000R}$	0	1.000R	$^3_{1.000 m R}$	$^{3}_{1.000R}$	1.000R	$1.000\mathbf{R}$
		M	1.200	1.280	1.360	1.440	1.000	1.040	1.120	1.200	1.280	1.360
		G	2-3	2-3	2–3	2-3	2-3	2-3	2-3	2-3	2 -3	2-3
ĺ	20	N B	1.000R	3 $1.000R$	$1.000\mathbf{R}$	3 1.000R	3 1.000R	$^{3}_{1.000R}$	3 1.000R	$^{3}_{1.000\mathrm{R}}$	$^{3}_{1.000 m R}$	$\frac{3}{1.000}$ R
		M	3.038	3.240	3.443	3.645	2.430	2.633	2.835	3.038	3.240	3.443
		G	1-3	1-3	1–3	1-3	1-3	1-3	1-3	1-3	1-3	1-3
	30	N B	$^2_{.750 m R}$	2 .400R	.050R	.300L	$^2_{2.200 m R}$	$^2_{1.800\mathrm{R}}$	$^{2}_{1.400R}$	$\frac{2}{1.000\mathrm{R}}$	$^2_{.690R}$	$^{2}_{.200R}$
		M	5.269	5.505	5.750	6.003	4.261	4.508	4.765	5.033	5.312	5.601
		G	1-3	1-3	1-3	1-3	1-3	13	1-3	13	1-3	1-3
et.	40	N B	$^2_{.750\mathrm{R}}$	$^2_{.400 m R}$.050R	2 .300 L	2.200R	$^2_{1.800 m R}$	$^2_{1.400\mathrm{R}}$	$^{2}_{1.000R}$	$^2_{.600\mathrm{R}}$	$^2_{.200 m R}$
Ę.		M	7.764	8.004	8.250	8.502	6.721	6.981	7.249	7.525	7.809	8.101
Span-Feet		G	1-3	1-3	1-3	13	1-3	1-3	1 -3	1-3	1-3	1-3
တ္ထ	50	N B	$^2_{.750 m R}$	$^2_{.400 m R}$	$^2_{.050\mathrm{R}}$	$^2_{.300 m L}$	2.200R	1,800R	2 1.400R	$\frac{2}{1.000R}$.600R	$^{2}_{.200\mathrm{R}}$
		M	10.260	10,500	10.750	11.000	9.197	9.465	9.739	10.020	10.310	10.600
i		G	1 -3	1-3	1-3	1-3	1-3	1-3	1.3	1-3	1-3	1-3
	60	N B	2 .750 ${f R}$	$^2_{.400R}$.050R	$^{2}_{.300 \rm L}$	$^2_{2,200\mathrm{R}}$	2 1,800R	$^{2}_{1.400 m R}$	$\frac{2}{1.000R}$	$^2_{.600\mathrm{R}}$.200R
1		M	12.760	13.000	13.250	13.500	11.680	11.950	12.230	12.520	12.810	13.100
		G	1-3	1-3	1-3	1-3	13	1-3	1-3	1-3	13	1-3
	80	N B	$^2_{.750 m R}$	$^2_{.400 m R}$	$^2_{.050\mathrm{R}}$	$^{2}_{.300L}$	$2.200\mathbf{R}$	$^2_{1.800 m R}$	2 1.400R	$\frac{2}{1.000 \mathrm{R}}$	$^2_{.600 m R}$.200 R
		M	17.760	18.000	18.250	18.500	16.660	16.940	17.230	17.510	17.810	18.100
		G	1 -3	1-3	1-3	1-3	13	1 -3	1-3	1-3	1-3	1-3
	100	N B	$^{2}_{.750R}$	$^2_{.400\mathrm{R}}$.050R	.300L	$\begin{array}{c} 2 \\ 2.200 \mathrm{R} \end{array}$	$^2_{1.800\mathrm{R}}$	$\frac{2}{1.400R}$	2 1.000R	$\frac{2}{.600R}$	$^{2}_{.200R}$
		M	22.760	23.000	23.250	23.500	21.650	21.930	22.220	22.510	22.800	23.100
Tr	uck N	0	21	22	23	24	25	26	27	28	29	30
	uck No		21 18	22	23 20	24 20	25 20	26 20	27	28 20	29	30
$\frac{\overline{\mathbf{W}}}{\mathbf{A}\mathbf{x}}$	n. Base le	e L	18	20	20	20	20	20	20	20	22	22
Wi Ax Sp	n. Base le acing	e L X	18	20 16	20 16	20 16	20 16	20 16	20 16	20	22 18	22 18
Wi Ax Sp Lo	n. Base le acing ad On	e L X aı	18 14 .10	20 16 .40	20 16 .35	20 16 .30	20 16 .25	20 16 .20	20 16 .15	20 16 .10	18 .40	18 -35
Wi Ax Sp	n. Base le acing ad On	e L X a ₁ a ₂	18	20 16	20 16	20 16	20 16	20 16	20 16	20	22 18	22 18
Wi Ax Sp Lo	n. Base le acing ad On	X a ₁ a ₂ G N	18 14 .10 .90 2-3 3	16 .40 .60	20 16 .35 .65 2-3 3	20 16 .30 .70 2-3 3	20 16 .25 .75 2 3 3	20 16 .20 .80 2-3 3	20 16 .15 .85 2-3 3	20 16 .10 .90 2-3 3	18 .40 .60 1	22 18 .35 .65 2-3 3
Wi Ax Sp Lo	le acing ad On les	X a1 a2 G N B	18 14 .10 .90 2-3 3 1.000R	16 .40 .60 1 1	20 16 .35 .65 23 3 1.000R	20 16 .30 .70 2-3 3 1.000R	20 16 .25 .75 2 3 3 1.000R	20 16 .20 .80 2-3 3 1.000R	20 16 .15 .85 2-3 3 1.000R	20 16 .10 .90 2-3 3 1.000R	18 .40 .60 1 1	22 18 .35 .65 2-3 1.000R
Wi Ax Sp Lo	le acing ad On les	X A1 A2 G N B M	18 14 .10 .90 2-3 3	16 .40 .60	20 16 .35 .65 2-3 3	20 16 .30 .70 2-3 3	20 16 .25 .75 2 3 3	20 16 .20 .80 2-3 3	20 16 .15 .85 2-3 3	20 16 .10 .90 2-3 3	18 .40 .60 1	22 18 .35 .65 2-3 3
Wi Ax Sp Lo	le acing ad On les	X A1 A2 G N B M G N	18 14 .10 .90 2-3 3 1.000R 1.440 2-3 3	20 16 .40 .60 1 0 1.000 2-3 3	20 16 .35 .65 23 3 1.000R 1.040 23 3	20 16 .30 .70 2-3 3 1.000R 1.120 2-3 3	20 16 .25 .75 2 3 3 1.000R 1.200 2-3 3	20 16 .20 .80 2-3 3 1.000R 1.280 2-3 3	20 16 .15 .85 2-3 3 1.000R 1.360 2-3 3	20 16 .10 .90 2-3 3 1.000R 1.440 2-3 3	18 .40 .60 1 1 0 1.000 2-3 3	22 18 .35 .65 2-3 3 1.000R 1.040 2-3 3
Wi Ax Sp Lo	n. Base le acing ad On les	a ₁ a ₂ G N B M G N B	18 14 .10 .90 2-3 3 1.000R 1.440 2-3 3 1.000R	16 .40 .60 1 1 0 1.000 2-3 3 1.000R	20 16 .35 .65 23 3 1.000R 1.040 2.3 3 1.000R	16 .30 .70 2-3 3 1.000R 1.120 2-3 3 1.000R	20 16 .25 .75 2 3 3 1.000R 1.200 2-3 3 1.000R	20 16 .20 .80 2-3 3 1.000R 1.280 2-3 3 1.000R	20 16 .15 .85 2-3 3 1.000R 1.360 2-3 3 1.000R	20 16 .10 .90 2-3 3 1.000R 1.440 2-3 3 1.000R	18 .40 .60 1 1 0 1.000 2-3 3 1.000R	18 .35 .65 2-3 3 1.000R 1.040 2-3 3 1.000R
Wi Ax Sp Lo	n. Base le acing ad On les	G N B M G N B M	18 14 .10 .90 2-3 3 1.000R 1.440 2-3 3 1.000R 3.645	20 16 .40 .60 1 1 0 1.000 2-3 3 1.000R 2.430	20 16 .35 .65 23 3 1.000R 1.040 2.3 3 1.000R 2.633	20 16 .30 .70 2-3 3 1.000R 1.120 2-3 3 1.000R 2.835	20 16 .25 .75 2 3 3 1.000R 1.200 2-3 3 1.000R 3.038	20 16 .20 .80 2-3 3 1.000R 1.280 2-3 3 1.000R 3.240	20 16 .15 .85 2-3 3 1.000R 1.360 2-3 3 1.000R 3.3443	20 16 .10 .90 2-3 3 1.000R 1.440 2-3 3 1.000R 3.645	18 .40 .60 1 1 0 1.000 23 1.000R 2.430	18 .35 .65 2-3 3 1.000R 1.040 2-3 3 1.000R 2.633
Wi Ax Sp Lo	n. Base le acing ad On les	an an G N B M G N B M G N	18 14 .10 .90 2-3 3 1.000R 1.440 2-3 3 1.000R 3.645 1-3 2	20 16 .40 .60 1 1 0 1.000 2-3 3 1.000 R 2.430 1-3 2	20 16 .35 .65 2-3 3 1.000R 1.040 2-3 3 1.000R 2.633 2-3 3	20 16 .30 .70 2-3 3 1.000R 1.120 2-3 3 1.000R 2.835 2-3 3	20 16 .25 .75 2 3 1.000 R 1.200 2-3 3 1.000 R 3.038 2-3 3	20 16 .20 .80 2-3 3 1.000 R 1.280 2-3 3 1.000 R 2-3 3 2-3 3	20 16 .15 .85 2-3 3 1.900 R 1.360 2-3 3 1.900 R 3.443 2-3 3	20 16 .10 .90 2-3 3 1.000 R 1.440 2-3 3 1.000 R 3.645	22 18 .40 .60 1 1 0 1.000 23 3 1.000R 2.430 23 3	18 .35 .65 2-3 1.090R 1.040 2-3 3 1.000R 2.633 2-3 3
$\frac{\mathbf{W}}{\mathbf{A}\mathbf{x}}$ $\frac{\mathbf{S}\mathbf{p}}{\mathbf{L}\mathbf{o}}$	n. Base le acing ad On les 10	an a	18 14 .10 .90 2-3 3 1.000R 1.440 2-3 3 1.000R 3.645 1-3 2 .200L	16 .40 .60 1 1 0 1.000 2-3 3 1.000R 2.430 1-3 2 2.600R	16 .35 .65 2-3 3 1.000R 1.040 2-3 3 1.000R 2.633 2-3 3	16 .30 .70 2-3 3 1.000R 1.120 2-3 3 1.000R 2.835 2-3 3	20 16 .25 .75 .23 3 1.000R 1.200 2-3 3 1.000R 3.038 2-3 3 1.000R	16 .20 .80 2-3 3 1.000R 1.280 2-3 3 1.000R 3.240 2-3 3 1.000R	16 .15 .85 2-3 3 1.000R 1.360 2-3 3 1.000R 3.443 2-3 3 1.000R	20 16 .10 .90 2.3 3 1.000R 1.440 2.3 3 1.000R 3.645 2.3 3 1.000R	18 .40 .60 1 1 0 1.000 2.3 3 1.000R 2.430 2.3 3 1.000R	22 18 .35 .65 2-3 3 1.000R 1.040 2-3 3 1.000R 2.633 2-3 3 1.000R
Wi Ax Sp Lo	n. Base le acing ad On les 10	a1 a2 G N B M G N B M G N B M G N B M	18 14 .10 .90 2-3 3 1.000R 1.440 2-3 3 1.0045 1-3 2 200L 5.901	20 16 .40 .60 1 1 0 1.000 2-3 3.000R 2.430 1-3 2.600R 3.925	20 16 .35 .65 2.3 3 1.000R 1.040 2-3 3.000R 2.633 2-3 1.000R 4.246	20 16 .30 .70 2-3 3 1.000R 1.120 2-3 3.000R 2.835 2-3 1.000R 4.573	20 16 .25 .75 2 3 3 1.000R 1.200 2-3 3.038 2-3 1.000R 4.900	20 16 .20 .80 2-3 3 1.000R 1.280 2-3 3 1.000R 3.240 2-3 1.000R 5.226	20 16 .15 .85 2-3 3 1.900R 1.360 2-3 3 1.000R 3.443 2-3 3 1.000R 5.553	20 16 .10 .90 2-3 3 1.000R 1.440 2-3 3 1.000R 3.645 2 3 3 1.000R 5.880	22 18 40 .60 1 1 0 1.000 2.3 3 1.000R 2.430 2.3 1.000R 3.920	22 18 .35 .65 2-3 3 1.090R 1.040 2-3 3 1.000R 2.633 2-3 3 1.000R 4.246
WI Axx Sp Lo Ax	n. Base le acing ad On les 10	aı aı G N B M G N B M G N B M	18 14 .10 .90 2-3 3 1.000R 1.440 2-3 3 1.000R 1.440 5.901 1-3 2 2.00L 5.901 1-3 2	20 16 .40 .60 1 1 0 1.000 2-3 3 1.000 R 2.430 1-3 2 2.600 R 3.925 1-3 2	20 16 .35 .65 2.3 3.000R 1.040 2-3 3.1.000R 2.633 2-3 3.1.000R 4.246 1-3 2	20 16 .30 .70 2-3 31.000R 1.120 2-3 31.000R 2.835 2-3 31.000R 4.573 1-3 2	20 16 .25 .75 .75 .23 .000R 1.200 2-3 1.000R 3.038 2-3 1.000R 4.900 1-3 2	20 16 .20 .80 2-3 3 1.000R 1.280 2-3 3 1.000R 3.240 2-3 3 1.000R 5.226 1-3 2	20 16 .15 .85 2-3 3 1.000R 1.360 2-3 3 1.000R 3.443 2-3 3 1.000R 5.553 1-3 2	20 16 .10 .90 2 - 3 1.000R 1.440 2-3 3 1.000R 3.645 2 3 1.000R 5.880 1 - 3 2	22 18 .40 .60 .60 1 1 0 1.000 2-3 3 1.000R 2.430 2-3 3 1.000R 3.920 1-3 2	22 18 .35 .65 2-3 1.000R 1.040 2.3 1.000R 2.633 2-3 3 1.000R 4.246 1-3 2
WI Axx Sp Lo Ax	a. Base le acing ad On les 10 20	E L X A1 A2 G N B M G N B M G N B M G N B M G N B B M B B B M B B B B B B	18 14 .10 .90 2-3 3 1.000R 1.440 2-3 3.1.000R 3.645 1-3 2 2.001L 5.901 1-3 2 2.200L	20 16 .40 .60 1 1 0 1.000 2-3 3 1.000R 2.430 1-3 2 2.600R 3.925 1-3 2.600R	20 16 .35 .65 2-3 3 1.000R 1.040 2-3 1.000R 2.633 3 1.000R 4.246 1-3 2.150R	20 16 .30 .70 2-3 3 1.000R 1.120 2-3 1.0000R 2.835 2-3 3 1.000R 4.573 1-3 2 1.700R	20 16 .25 .75 .75 .3 .1.000R 1.200 2-3 1.000R 3.038 2-3 3 1.000R 4.900 1-3 2 1.250R	20 16 .20 .80 2-3 3 1.000R 1.280 2-3 3 1.000R 3.240 2-3 3 1.000R 5.226 1-3 2.800R	20 16 .15 .85 2-3 3 1.000R 1.380 2-3 1.000R 3.443 2-3 3 1.000R 5.553 1-3 2 .350	20 16 .10 .90 2-3 3 1.000R 1.440 2-3 1.000R 3.645 2 3 3 1.000R 3.645 2 3 3 1.000R 2.100 2.100 2.100 2.100 2.100 3.0000 3.000 3.000 3.000 3.000 3.000 3.000 3.000 3.000 3.0	22 18 .40 .60 1 1 0 1.000 2.3 3 1.000R 2.430 3 1.000R 3.920 1.3 2.3 3.000R	22 18 .35 .65 2-3 3 1.090R 1.040 2.3 1.000R 2.633 2-3 3 1.000R 2.633 2-3 3 2-3 3 2.000 2.500
WI Axx Sp Lo Ax	a. Base le acing ad On les 10 20	E L X a1 a2 G N B M G N B M G N B M B M B M M M M M M M M M M M M M M M M M M M M	18 14 .10 .90 2-3 3 1.000R 1.440 2-3 3 1.000R 3.645 1-3 2 2.200L 5.901 8.401	20 16 .40 .60 1 1 1 0 1.000 2-3 3 1.000R 2.430 1-3 2 2.600R 3.925 1-3 2.600R 6.369	20 16 .35 .65 2.3 3 1.000R 1.040 2.3 1.000R 2.633 2.3 1.000R 4.246 1-3 2 2.150R 6.666	20 16 .30 .70 2-3 3 1.000R 1.120 2-3 1.000R 2.835 2-3 3 1.000R 4.573 1-3 2 1.700R	20 16 .25 .75 .75 2 3 1.000R 1.200 2-3 1.000R 3.038 2-3 3 1.000R 4.900 1-3 2 1.250R 7.289	20 16 .20 .80 2-3 3 1.000R 1.280 2-3 3 1.000R 3.240 2-3 3 1.000R 3.240 2-3 3 1.000R 7.280 2-3 3 1.000R 7.280 2-3 3 7.000R 7	20 16 .15 .85 2-3 3 1.000R 1.360 2-3 1.000R 3.43 2-3 3 1.000R 5.558 1-3 2 350R 7.953	20 16 .19 .90 2-3 3 1.000R 1.440 2-3 1.000R 3.645 2-3 1.000R 3.645 2-3 1.000R 3.1000R	22 18 .40 .60 1 1 1 0 1.000 2.3 1.000R 2.430 2.3 3 1.000R 2.430 1.03 2.3 3 1.000 2.3 3 1.000 2.3 3 1.000 2.0000 2.0000 2.000 2.000 2.000 2.0000 2.0000 2.0000 2.0000 2.0000 2.0000 2.0000 2.	22 18 .35 .65 2-3 3 1.000R 1.040 2-3 3 1.000R 2.633 2-3 3 1.000R 2.633 2-3 2-3 2-3 2-3 2-3 2-3 2-3 2
WI Axx Sp Lo Ax	a. Base le acing ad On les 10 20	a L X a 1 a 2 G N B M G N B M G N B M G N B M G N B M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M M G N M B M M M M M M M M M M M M M M M M M	18 14 .10 .90 2-3 3 1.000R 1.440 2-3 3.1.000R 3.645 1-3 2.200L 5.901 1-3 2.200L 8.401 1-3 2 2.200L 8.401	20 16 .40 .60 1 1 0 1.000 2-3 3 1.0000R 2.430 1-3 2 2.600R 3.925 1-3 2 2.600R 6.369 1-3 2	20 16 .35 .65 .65 2.3 3 1.000R 1.040 2.3 1.000R 2.633 2.633 3 4.246 1.3 2 2.150R 6.666 1.3 2	20 16 .30 .70 2-3 3 1.000R 1.120 2-3 1.0009R 2.835 2-3 3 1.000R 4.573 1-3 2 1.700R 6.972 1-3 2	20 16 .25 .75 .75 .3 1.000R 1.200 2-3 1.000R 3.038 2-3 3 1.000R 4.900 1-3 2 1.250R 7.289 1-3 2	20 16 .20 .80 2-3 3 1.000R 1.280 2-3 3.000R 3.240 2-3 3.000R 5.226 1-3 2.800R 7.616 1-3 2	20 16 .15 .85 .85 2-3 3 1.000R 1.380 2-3 3.000R 3.443 3 1.000R 5.553 1-3 2 .350R 7.953 1-3 2	20 16 .10 .90 2-3 3 1.000R 1.440 2-3 3.0408 3.645 2-3 3.000R 5.880 1-3 2 .100L 8.300 1-3 2	22 18 .40 .60 1 1 0 1.000 2.3 3 1.000R 2.430 3.920 1.3 2.3 3.920 1.3 2.3 3.920 1.3 2.3 3.000R 3.	22 18 .35 .65 2-3 3 1.000R 1.040 2.3 1.000R 2.633 2-3 3 1.000R 2.633 2-3 3 2.000R 4.246 1.3 2 2.500R 6.356
$\frac{\mathbf{W}}{\mathbf{A}\mathbf{x}}$ $\frac{\mathbf{S}\mathbf{p}}{\mathbf{L}\mathbf{o}}$	n. Base le acing ad On les 10 20 30	E L X A1 A2 G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M B B	18 14 .10 .90 2-3 3 1.000R 1.440 2-3 3.1.000R 3.645 1-3 2 2.200L 5.901 1-3 2 2.00L 8.401 1-3 2 2.00L	20 16 .40 .60 1 1 1 0 1.000 2-3 3 1.000R 2.430 1-3 2 2.600R 6.369 1-3 2 2.600R	20 16 .35 .65 2.3 3 1.000R 1.040 2.3 1.000R 2.633 2.3 1.000R 4.246 1-3 2 2.150R 6.666 1-3 2 2.150R	20 16 .30 .70 2-3 3 1.000R 1.120 2-3 3.1.000R 2.835 2-3 3.1.000R 4.573 1.700R 6.972 1-3 2.1.700R	20 16 .25 .75 .75 .23 1.000R 1.200 2-3 1.000R 3.038 2-3 1.000R 1.250R 7.289 1-3 2 1.250R	20 16 .20 .80 2-3 3 1.000R 1.280 2-3 1.000R 3.240 2-3 1.000R 3.240 2-8 1.000R 1.000R 3.240 2-8 2.800R	20 16 .15 .85 2-3 3 1.000R 1.360 2-3 3.1.000R 3.443 2-3 3.1.000R 3.45 2-3 3.50R 7.953 1-3 2 3.50R	20 16 .19 .90 2-3 3 1.000R 1.440 2-3 3 1.000R 3.645 2 3 3 1.000R 5.880 1-3 2 1.001 1-3 2 1.001 1-3 2 1.001	22 18 .40 .60 1 1 1 0 1.000 2.3 3 1.000R 2.430 2.3 3 1.000R 2.430 2.3 3 3 1.000 2.3 3 1.000 2.3 3 1.000 2.3 3 1.000 2.00 2.00 3 3 1.000 2.00 3 3 1.000 2.00 3 3 1.000 2.00 3 3 1.000 2.00 3 3 3 1.000 3 1.0000 1.000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.000	22 18 .35 .65 2-3 3 1.000R 1.040 2-3 1.000R 2.633 2-3 3 1.000R 4.246 1-3 2 2.500R 6.356 1-3 2.500R
WI Axx Sp Lo Ax	n. Base le acing ad On les 10 20 30	E L X A1 A2 G N B M G N B M G N B M G N B M G N B M M G N B M M G N B M M M M M M M M M M M M M M M M M M	18 14 .10 .90 2-3 3 1.000R 1.440 2-3 3 1.000R 1.440 1-3 2-000L 5.901 1-3 2 2.000L 8.401 1-3 2 2.001 1-3 2 2.001 1-3 2 2.001 1-3 2 2.001 1-3 2 2.001 1-3 2 2.001 1-3 2 2.001 1-3 2 2.001 1-3 2 2.001 1-3 2 2.001 1-3 2 2.001 1-3 2 2.001 1-3 2 2.001 1-3 2 2.001 1-3 2 2.001 1-3 2 2.001 1-3 2	20 16 .40 .60 1 1 1 0 1.000 2-3 3 1.000R 2.430 1-3 2.600R 6.369 1-3 2 2.600R 6.369 1-3 2 2.600R 8.835	20 16 .35 .65 2.3 1.000R 1.040 2-3 3 1.000R 2.633 2-3 1.000R 4.246 1-3 2.150R 6.666 1-3 2 2.150R 9.142	20 16 .30 .70 2-3 3 1.000R 1.120 2-3 3 1.000R 2.835 2-3 3 1.000R 4.573 1-3 2 1.700R 6.972 1-3 2 1.700R 9.458	20 16 .25 .75 .75 .3 1.000R 1.200 2-3 3.000R 3.038 2-3 1.000R 4.900 1-3 2 1.250R 7.289 1-3 2 1.250R 7.289	20 16 .20 .80 2-3 3 1.000 R 1.280 2-3 3 1.000 R 3.240 2-3 3 1.000 R 5.226 1-3 2 .800 R 7.616 1-3 2 .800 R	20 16 .15 .85 2-3 3 1.000R 1.360 2-3 3 1.000R 5.553 1-3 2 .350R 7.953 1-3 2 .350R 10.450	20 16 .10 .90 2-3 3 1.090R 1.440 2-3 3 1.090R 3.645 2 3 3 1.090R 5.880 1-3 2 1.00L 8.300 1-3 2 1.00L 8.300 1-3 2 1.00L	22 18 .40 .60 1 1 0 1.000 2-3 3 1.000R 2.430 2-3 3 1.000R 3.920 1-3 2.300R 6.025 1-3 2.3000R 6.025	22 18 .35 .65 2-3 3 1.000R 1.040 2-3 3 1.000R 2-633 2-3 3 1.000R 4.246 1-3 2 2.500R 6.356 1-3 2 2.500R 8.825
WI Axx Sp Lo Ax	n. Base le acing ad On les 10 20 30	E L X A1 A2 G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M B B	18 14 .10 .90 2-3 3 1.000R 1.440 2-3 3.1.000R 3.645 1-3 2 2.200L 5.901 1-3 2 2.00L 8.401 1-3 2 2.00L	20 16 .40 .60 1 1 1 0 1.000 2-3 3 1.000R 2.430 1-3 2 2.600R 6.369 1-3 2 2.600R	20 16 .35 .65 2.3 3 1.000R 1.040 2.3 1.000R 2.633 2.3 1.000R 4.246 1-3 2 2.150R 6.666 1-3 2 2.150R	20 16 .30 .70 2-3 3 1.000R 1.120 2-3 3.1.000R 2.835 2-3 3.1.000R 4.573 1.700R 6.972 1-3 2.1.700R	20 16 .25 .75 .75 .23 1.000R 1.200 2-3 1.000R 3.038 2-3 1.000R 1.250R 7.289 1-3 2 1.250R	20 16 .20 .80 2-3 3 1.000R 1.280 2-3 1.000R 3.240 2-3 1.000R 3.240 2-8 1.000R 1.000R 3.240 2-8 2.800R	20 16 .15 .85 2-3 3 1.000R 1.360 2-3 3.1.000R 3.443 2-3 3.1.000R 3.45 2-3 3.50R 7.953 1-3 2 3.50R	20 16 .19 .90 2-3 3 1.000R 1.440 2-3 3 1.000R 3.645 2 3 3 1.000R 5.880 1-3 2 1.001 1-3 2 1.001 1-3 2 1.001	22 18 .40 .60 1 1 1 0 1.000 2.3 3 1.000R 2.430 2.3 3 1.000R 2.430 2.3 3 3 1.000 2.3 3 1.000 2.3 3 1.000 2.3 3 1.000 2.00 2.00 3 3 1.000 2.00 3 3 1.000 2.00 3 3 1.000 2.00 3 3 1.000 2.00 3 3 3 1.000 3 1.0000 1.000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.000	22 18 .35 .65 2-3 3 1.000R 1.040 2-3 1.000R 2.633 2-3 3 1.000R 4.246 1-3 2 2.500R 6.356 1-3 2.500R
WI Axx Sp Lo Ax	n. Bassannannannannannannannannannannannanna	E L X A1 A2 G N B M B M G N B M B M G N B M B B	18 14 .10 .90 2-3 3 1.000R 1.440 2-3 3 1.000R 1.440 1-3 2-00L 5.901 1-3 2 200L 8.401 1-3 2 200L 1.0900 1-3 2 200L	20 16 .40 .60 1 1 1 0 1.000 2-3 3 1.0008 2.430 1-3 2.600R 6.369 1-3 2.600R 8.833 1-3 2 2.600R 2.600R	20 16 .35 .65 2.3 3 1.000R 1.040 2-3 3 1.000R 2.633 2-3 3 1.000R 4.246 1-3 2 2.150R 6.666 1-3 9.142 2.2.150R	20 16 .30 .70 2-3 3 1.000R 1.120 2-3 3 1.000R 2.885 2-3 3 1.000R 4.573 1-3 2 1.700R 6.972 1-3 2 1.700R 9.458 1-3 2 1.700R	20 16 .25 .75 .75 .8 .000R 1.200 2-3 .8 .000R 3.038 2-3 .000R 4.900 1-3 2.1.250R 7.289 1-3 2 1.250R 1-3 2 1.250R	20 16 .20 .80 2-3 3 1.000R 1.283 3 1.000R 2-3 3 1.000R 5.226 1-3 2 .800R 7.616 1-3 2 .800R 10.110 1-3 2 .800R	20 16 .15 .85 2-3 3 1.000R 1.360 2-3 3 1.000R 5.553 1-3 2 3.50R 7.953 1-3 2 1.00450 1-3 2 3.50R	20 16 .10 .90 2-3 3 1.090R 1.440 2-3 3 1.090R 3.645 2 3 3 1.090R 5.880 1-3 2 1.090L 8.300 1-3 2 1.090L 1-3 2 1.090L 1-3 2 1.090L	22 18 .40 .60 .60 .1 .00 .1000 .2-3 .3 .000R .2.430 .2-3 .3.000R .920 .1-3 .2 .3.000R .6.025 .1-3 .2 .3.000R .8.480 .1-3 .2 .3.000R	22 18 .35 .65 2-3 3 1.000R 1.0400 2-3 3 1.000R 2.633 2-3 3 1.000R 4.246 1-3 2 2.500R 6.356 1-3 2 2.500R 8.825 1-3 2 2.500R
WI Axx Sp Lo Ax	n. Bassannannannannannannannannannannannanna	E L X A 1 A 2 A 2 A 2 A 2 A 2 A 2 A 2 A 2 A 2	18 14 .10 .90 2-3 3 1.000R 1.440 2-3 3.000R 1.440 1-3 2.200L 5.901 1-3 2 2.200L 1.0900 1-3 2 2.200L 1.0900 1-3 2 2.200L 1.0900 1-3 2 2.200L 1.3400	20 16 .40 .60 1 1 0 1.000 2-3 3 1.0008 2.480 1-3 2.600R 3.925 1-3 2 2.600R 8.835 1-3 2 2.600R 8.835 1-3 2 2.600R	20 16 .35 .65 .65 2.3 3 1.000R 1.040 2-3 3 1.0008 2.633 2-3 3.000R 4.246 1-3 2 2.150R 9.142 1-3 2 2.150R 9.142 1-3 2 2.150R 9.142	20 16 .30 .70 .70 2-3 3 1.000R 1.120 2-3 3 1.000R 2.885 2-3 3 1.000R 4.573 1-3 2 1.700R 6.972 1-3 2 1.700R 9.458 1-3 2 1.700R 11.950	20 16 .25 .75 .75 .3 1.000R 1.200 2-3 3 1.000R 3.038 2-3 3 1.000R 4.900 1-3 2 1.250R 7.289 1-3 2 1.250R 9.781 1-3 2 1.250R 1.250R 1.250R	20 16 .20 .80 2-3 3 1.000R 1.280 2-3 3 1.000R 3.240 2-3 3.000R 5.226 1-3 2 .800R 7.616 1-3 2 .800R 10.110 1-3 2 .800R 12.610	20 16 .15 .85 .85 2-3 3 1.000R 1.360 2-3 3.4043 2-3 3.000R 5.553 1-3 2 .350R 7.953 1-3 2 .350R 10.450 1-3 2 .350R 10.450 1-3 2 350R 10.450 1-3 2 350R 12.950	20 16 .10 .90 2-3 3 1.000R 1.440 2-3 3 1.000R 5.880 1-3 2 .100L 8.300 1-3 2 1.0080 1-3 2 1.080 1-3 2 1.080 1.33 2 1.080 1.33 2 1.080 1.33 2 1.080 1.33 2 1.080 1.33 2 1.080 1.33 2 1.080 1.33 2 1.080 1.33 2 1.080 1.33 2 1.080 1.33 2 1.080 1.33	22 18 .40 .60 1 1 1 0 1.000 2-3 3 1.000R 2.43 3.920 1-3 2 3.000R 6.025 1-3 2 3.000R 8.480 1-3 2 2 3.000R 10.950	22 18 .35 .65 2-3 3 1.000R 1.040 2-3 3 1.000R 2.633 2-3 3 1.000R 4.246 1-3 2 2.590R 6.356 1-3 2 2.500R 8.825 1-3 2 2.500R 8.825 1-3 2 2.500R
WI Axx Sp Lo Ax	n. Bassannannannannannannannannannannannanna	E L X A1 A2 G N B M B M G N B M B M G N B M B B	18 14 .10 .90 2-3 3 1.000R 1.440 2-3 3 1.000R 1.440 1-3 2-00L 5.901 1-3 2 200L 8.401 1-3 2 200L 1.0900 1-3 2 200L	20 16 .40 .60 1 1 1 1 0 1.000 2-3 3 1.0008 2.430 1-3 2.600R 6.369 1-3 2 2.600R 8.835 1-3 2 2.600R 11.310 1-3 2	20 16 .35 .65 2.3 3 1.000R 1.040 2-3 3 1.000R 2.633 2-3 3 1.000R 4.246 1-3 2 2.150R 6.666 1-3 9.142 2.2.150R	20 16 .30 .70 2-3 3 1.000R 1.120 2-3 3 1.000R 2.885 2-3 3 1.000R 4.573 1-3 2 1.700R 6.972 1-3 2 1.700R 9.458 1-3 2 1.700R	20 16 .25 .75 .75 .8 .000R 1.200 2-3 .8 .000R 3.038 2-3 .000R 4.900 1-3 2.1.250R 7.289 1-3 2 1.250R 1-3 2 1.250R	20 16 .20 .80 2-3 3 1.000R 1.283 3 1.000R 2-3 3 1.000R 5.226 1-3 2 .800R 7.616 1-3 2 .800R 10.110 1-3 2 .800R	20 16 .15 .85 2-3 3 1.000R 1.360R 2-3 3.448 2-3 3.000R 5.553 1-3 2 .350R 7.953 1-3 2 .350R 7.958 1-3 2 .350R 7.958 1.	20 16 .10 .90 2-3 3 1.090R 1.440 2-3 3 1.090R 3.645 2 3 3 1.090R 5.880 1-3 2 1.090L 8.300 1-3 2 1.090L 1-3 2 1.090L 1-3 2 1.090L	22 18 .40 .60 .60 .1 .00 .1000 .2-3 .3 .000R .2.430 .2-3 .3.000R .0025 .1-3 .2 .3.000R .8.480 .1-3 .2 .3.000R	22 18 .35 .65 2-3 3 1.000R 1.0400 2-3 3 1.000R 2.633 2-3 3 1.000R 4.246 1-3 2 2.500R 6.356 1-3 2 2.500R 8.825 1-3 2 2.500R
WI Axx Sp Lo Ax	n. Bass le acing ad On les 10 20 30 40 50 60	E L X A1 A2 A2 A3 A3 A3 A3 A3 A4	18 14 .10 .90 2-3 3 1.000R 1.440 2-3 3.000R 3.645 1-3 2 2.000L 8.401 1-3 2 2.000L 10.900 1-3 2 2.001 10.900 1-3 2 2.001 10.900 1-3 2 2.001 13.400 1-3 2 2.000L 13.400	20 16 .40 .60 1 0 1.000 2-3 3 1.0008 2.430 1-3 2.600R 3.925 1-3 2.600R 8.8355 1-3 2.600R 8.8355 1-3 2.600R 8.1310 1-3 2.600R	20 16 .35 .65 .65 2.3 3 1.000R 1.040 2.3 3 1.000R 2.633 2.633 2.3 1.000R 4.246 1.3 2 2.150R 9.142 1.3 2 2.150R 9.142 2.2.150R 11.630 1.3 2 2.150R 2.2 2.150R 2.2 2.150R 2.2 2.150R 2.2 2.150R 2.2 2.150R 2.2 2.150R	20 16 .30 .70 2-3 3 1.000R 1.120 2-3 3 1.000R 2.835 2-3 3 1.000R 4.573 1-3 2 1.700R 6.972 1-3 2 1.700R 9.458 1-3 2 1.700R 9.11,950 1-3 2 1.700R	20 16 .25 .75 .75 .3 .000R 1.200 2-3 .0008 3.038 2-3 .3 1.000R 7.289 1-3 2 1.250R 9.781 1-3 2 1.250R 1.32 1.250R 1.32 1.250R 1.32 1.250R	20 16 20 .80 2-3 3 1.000R 1.280 2-3 3 1.000R 3.240 2-3 3 1.000R 5.226 1-3 2 .800R 7.616 1-3 2 .800R 10.110 1-3 2 .800R 12.610 1-3 2 .800R	20 16 .15 .85 .85 2-3 3 1.000R 1.380 2-3 3 1.000R 5.553 1-3 2 .350R 7.953 1-3 2 .350R 10.450 1-3 2 .350R 12.950 1-3 2 .350R	20 16 .10 .90 2-3 3 1.000R 1.440 2-3 3 1.000R 5.880 1-3 2 .100L 8.300 1-3 2 .100L 10.800 1-3 2 .100L 11.3300 1-3 2 .100L	22 18 .40 .60 1 1 1 1 0 1.000 2.3 3 1.000R 2.430 3.920 1.3 2 3.000R 6.025 1.3 2 3.000R 8.480 1.3 2 3.000R 8.490 1.3 2 3.000R 8.490 1.3 2 3.000R	22 18 .35 .65 2-3 3 1.000R 1.040 2 3 3 1.000R 2.633 2-3 3 1.000R 4.246 1-3 2 2.500R 8.825 1-3 2 2.500R 8.825 1-3 2 2.500R 1.300
WI Axx Sp Lo Ax	n. Bass le acing ad On les 10 20 30 40 50 60	E L X A1 A2 G N B M	18 14 .10 .90 2-3 3 1.000R 1.440 2-3 3.1000R 3.645 1-3 2 2.200L 8.401 1-3 2 2.200L 10.900 1-3 2 2.200L 13.400 1-3 2 2.200L 13.400 1-3 2 2.200L 13.400	20 16 .40 .60 1 1 1 0 1.0000 2-3 3 1.0000R 2.430 1-3 2 2.6000R 6.369 1-3 2 2.600R 8.835 1-3 2 2.600R 8.11.310 1-3 2 2.600R 11.310 1-3 2 2.600R	20 16 .35 .65 2.3 3 1.000R 1.040 2.3 3 1.000R 2.633 3 2.93 4.246 1-3 2.150R 9.142 1-3 2.150R 11.630 1-3 2 2.150R 11.630 1-3 2 2.150R 11.630 1-3 2 2.150R 11.630	20 16 .30 .70 .70 2-3 3 1.000R 1.120 2-3 3.000R 2.835 2-3 3.000R 4.573 1-3 2.1.700R 9.458 1-3 2 1.700R 11.950 1-3 2 1.700R 11.950 1-3 2 1.700R	20 16 .25 .75 2 3 1.000R 1.200 2-3 1.000R 3.038 2-3 1.000R 4.900 1-3 1.250R 7.289 1-3 1.250R 9.781 1-3 2 1.250R 1.258 1-3 2 1.250R 1.258 1-3 1.250R 1.258 1.250R	20 16 .20 .80 2-3 3 1.000R 1.280 2-3 3.000R 3.240 2-3 3.000R 5.226 1-3 2.800R 7.616 1-3 2.800R 10.110 1-3 2.800R 11.610	20 16 .15 .85 2-3 3 1.000R 1.380 2-3 3.000R 3.443 3 1.000R 5.553 1-3 2 350R 10.450 1-3 2 .350R 12.950 1-3 2 350R 17.950	20 16 .19 .90 2-3 3 1.000R 1.440 2-3 3.000R 3.645 2-3 3.000R 5.880 1-3 2 1.00L 8.300 1-3 2 1.00L 10.800 1-3 2 1.00L 13.300 1-3 2 1.00L 13.300 1-3 2 1.00L 13.300	22 18 .40 .60 1 1 1 0 1.000 2.3 3 1.000R 2.430 3.920 1-3 2.3.000R 6.025 1-3 2.3.000R 8.480 1-3 2.3.000R 1-3.2 3.000R 1-3.2 3.000R 1-3.2 3.000R 1-3.2 3.000R	22 18 .35 .65 2-3 3 1.090R 1.040 2.3 1.000R 2.633 2-3 3 1.000R 4.246 1-3 2.500R 8.825 1-3 2.500R 1.3 2.500R 1.3 2.500R 1.3 2.500R 1.3 2.500R 1.3 2.500R
WI Axx Sp Lo Ax	10 20 30 60 80 80	E L X A1 A2 G G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G G N B M G G N B M G G N B M G G N B M G G G N B M G G G N B M G G G G G G G G G G G G	18 14 .10 .90 2-3 3 1.000R 1.440 2-3 3 1.000R 1.440 1-3 2-00L 5.901 1-3 2 200L 8.401 1-3 2 200L 13.400 1-3 2 200L 13.400 1-3 2 13.400 1-3 2 18.400 1-3 2 18.400 1-3	20 16 .40 .60 1 1 1 0 1.000 2-3 3 1.0008 2.430 1-3 2.600R 6.369 1-3 2.600R 8.833 1-3 2 2.600R 1.310 1-3 2 2.600R 1.310 1-3 2 1.000R 1.310 1-3 2 1.000R 1.310 1-3 2 1.000R 1.310 1-3	20 16 .35 .65 2.3 3 1.000R 1.040 2-3 3 1.000R 2.633 2-3 3 1.000R 4.246 1-3 2 2.150R 6.666 1-3 2 2.150R 11.630 1-3 2 2.150R 11.630 1-3 2 1.150R 11.630 1-3	20 16 .30 .70 2-3 3 1.000R 1.120 2-3 3 1.000R 2.835 2-3 3 1.000R 4.573 1-3 2.1700R 6.972 1-3 2 1.700R 1.950 1-3 2 1.700R 11.950 1-3 2 1.700R 11.950 1-3 2 1.700R 11.950 1-3	20 16 .25 .75 .75 .3 1.000R 1.200 3.038 2.3 1.000R 4.900 1-3 2.1.250R 7.289 1.3 2 1.250R	20 16 .20 .80 2-3 3 1.000R 1.280 2-3 3 1.000R 5.226 1-3 2 .800R 7.616 1-3 2 .800R 12.610 1-3 2 .800R 17.610 1-3	20 16 .15 .85 2-3 3 1.000R 1.360R 2-3 3 1.000R 5.553 1-3 2.350R 7.953 1-3 2 350R 12.950 1-3 2 350R 17.950	20 16 .10 .90 2-3 3 1.090R 1.440 2-3 3 1.090R 5.880 1-3 2 .100L 8.300 1-3 2 .100L 13.300 1-3 2 .100L 18.300 1-3 2 .100L 18.300 1-3 2 .100L	22 18 .40 .60 .60 .1 .00 .1000 .2-3 .3 .000R .920 .1-3 .3.00R .8.480 .1-3 .2 .3.000R .1-3 .2 .3.000R .1-3 .2 .3.000R .1-3 .5.910 .1-3 .1-3 .1-3 .1-3 .1-3 .1-3 .1-3 .1-3	22 18 .35 .65 2-3 3 1.000R 1.0400 2-3 3 1.000R 2-633 2-3 3 1.000R 4.246 1-3 2 2.500R 6.356 1-3 2 2.500R 1.300 1-3 2.500R 1.300 1-3 2.500R 1.300 1-3
WI Axx Sp Lo Ax	n. Bass le acing ad On les 10 20 30 40 50 60	E L X A1 A2 G N B M	18 14 .10 .90 2-3 3 1.000R 1.440 2-3 3.1000R 3.645 1-3 2 2.200L 8.401 1-3 2 2.200L 10.900 1-3 2 2.200L 13.400 1-3 2 2.200L 13.400 1-3 2 2.200L 13.400	20 16 .40 .60 1 1 1 0 1.0000 2-3 3 1.0000R 2.430 1-3 2 2.6000R 6.369 1-3 2 2.600R 8.835 1-3 2 2.600R 8.11.310 1-3 2 2.600R 11.310 1-3 2 2.600R	20 16 .35 .65 2.3 3 1.000R 1.040 2.3 1.000R 2.633 2.3 1.000R 2.633 2.150R 6.666 1.3 2 2.150R 9.142 1.3 2 2.150R 11.630 1.3 2 2.150R 11.630 1.63666	20 16 .30 .70 .70 2-3 3 1.000R 1.120 2-3 3.000R 2.835 2-3 3.000R 4.573 1-3 2.1.700R 9.458 1-3 2 1.700R 11.950 1-3 2 1.700R 11.950 1-3 2 1.700R	20 16 .25 .75 2 3 1.000R 1.200 2-3 1.000R 3.038 2-3 1.000R 4.900 1-3 1.250R 7.289 1-3 1.250R 9.781 1-3 2 1.250R 1.258 1-3 2 1.250R 1.258 1-3 1.250R 1.258 1.250R	20 16 .20 .80 2-3 3 1.000R 1.280 2-3 3.000R 3.240 2-3 3.000R 5.226 1-3 2.800R 7.616 1-3 2.800R 10.110 1-3 2.800R 11.610	20 16 .15 .85 2-3 3 1.000R 1.380 2-3 3.000R 3.443 3 1.000R 5.553 1-3 2 350R 10.450 1-3 2 .350R 12.950 1-3 2 350R 17.950	20 16 .19 .90 2-3 3 1.000R 1.440 2-3 3.000R 3.645 2-3 3.000R 5.880 1-3 2 1.00L 8.300 1-3 2 1.00L 10.800 1-3 2 1.00L 13.300 1-3 2 1.00L 13.300 1-3 2 1.00L 13.300	22 18 .40 .60 1 1 1 0 1.000 2.3 3 1.000R 2.430 3.920 1-3 2.3.000R 6.025 1-3 2.3.000R 8.480 1-3 2.3.000R 1-3.2 3.000R 1-3.2 3.000R 1-3.2 3.000R 1-3.2 3.000R	22 18 .35 .65 2-3 3 1.090R 1.040 2.3 1.000R 2.633 2-3 3 1.000R 4.246 1-3 2.500R 8.825 1-3 2.500R 1.3 2.500R 1.3 2.500R 1.3 2.500R 1.3 2.500R 1.3 2.500R

	ick No		Continue 31	32	33	34	35	36	37	38	39	40
Wh	ı. Base		22	22	22	22	22	24	24	24	24	24
Ax	le acing	x	18	18	18	18	18	20	20	20	20	20
Los	ad On	a ₁	.30	.25	.20	.15	.10	.40	.35	.30	.25	.20
Ax	les	G G	2-3	.75 2-3	$\frac{.80}{2-3}$	$\frac{.85}{2-3}$.60	.65 2-3	$\frac{.70}{2-3}$	$\frac{.75}{2-3}$.80 2-3
	10	N B	3 1.000R	3 1.000R	3 1.000R	1.000R	3 1.000R	1	3 1.000R	3 1.000R	3 1,000R	3 1.000R
		M	1.120	1.200	1.280	1.360	1.440	1.000	1.040	1.120	1.200	1.280
	20	G N	$^{2-3}_3$	2-3	$\substack{2-3\\3}$	$^{2-3}_3$	$\substack{2-3\\3}$	$^{2-3}_3$	$^{2-3}_3$	2-3 3	$_{3}^{2-3}$	$^{2-3}_{3}$
		B M	1.000R 2.835	1.000R 3.038	1.000R 3,240	1.000R 3.443	1.000R 3.645	1.000R 2.430	1.000R 2,633	1.000R 2.835	1.000R 3.038	1.000R 3.240
- -		G	2-3	2-3	2-3	2-3	2-3	2-3	2-3	2-3	2-3	2-3
	30	N B	$^3_{1.000 m R}$	$^3_{1.000 m R}$	$^{3}_{1.000R}$	$^{3}_{1.000R}$	$^3_{1.000\mathrm{R}}$	1.000R	$^3_{1.000 m R}$	$^{3}_{1.000R}$	$1.000\mathbf{R}$	3 1.000R
		M	4.573	4.900	5.226	5,553	5.880	3.920	4.246	4.573	4.900	5,226
4	40	G N	$^{1-3}_2$	1-3 2	$^{1-3}_{2}$	$^{1-3}_{2}$	$\substack{1-3\\2}$	$^{1-3}_2$	$^{1-3}_{2}$	$^{1-3}_{2}$	$\substack{1-3\\2}$	$^{1-3}_{2}$
Span-Feet		B M	$2.000\mathbf{R} \\ 6.700$	1.500R 7.056	1.000R 7.425	500R 7.806	$\substack{0\\8.200}$	3.400R 5.689	2.850R 6.053	2.300R 6.432	$^{1.750 m R}_{6.827}$	1.200R 7.236
Jan-		_G_	1-3	1–3	1-3	1-3	1-3	1-3	1-3	13	1-3	1-3
N.	50	N B	$^{2}_{2.000R}$	$^2_{1.500 m R}$	$^2_{1.000 m R}$	$^2_{.500 m R}$	$\frac{2}{0}$	$^2_{3.400 m R}$	$^{2}_{2.850\mathrm{R}}$	$\frac{2}{2.300}$ R	$^2_{1.750 m R}$	2 1.200R
1		_M G	9.180	$\frac{9.545}{1-3}$	$\frac{9.920}{1-3}$	$\frac{10.310}{1-3}$	$\frac{10.700}{1-3}$	8,131 1–3	$\frac{8.512}{1-3}$	$\frac{8.906}{1-3}$	$\frac{9.311}{1-3}$	$\frac{9.729}{1-3}$
	60	N B	2 2.000R	2 1.500R	2 1.000R	.500R	2 0	3.400R	2	2 2.300R	2 1.750R	2
		M	11.670	12.040	12.420	12.800	13.200	10.590	2.850R 10.990	11.390	11.800	1.200R 12.220
	80	G N	$^{1-3}_{2}$	$^{1-3}_2$	1-3 2	1-3 2	1-3 2	$^{1-3}_{\ 2}$	1-3 2	1-3 2	1-3 2	1-3 2
İ		B M	2.000R 16.650	1.500R 17.030	1.000R 17.410	.500R 17.800	$ar{0}$ 18.200	3.400R 15.550	2.850R	2.300R 16.370	1.750R	1.200R 17.220
ŀ		- <mark>m</mark>	1-3	1-3	1-3	1 -3	1-3	1-3	$\frac{15.950}{1-3}$	1-3	16.790 1-3	1-3
	100	N B	$\frac{2}{2.000 \mathrm{R}}$	$^2_{1.500\mathbf{R}}$	$\frac{2}{1.000R}$	$\frac{2}{.500 \mathrm{R}}$	2	$\frac{2}{3.400}$ R	$^{2}_{2.850\mathrm{R}}$	$\frac{2}{2.300}$ R	$^2_{1.750\mathrm{R}}$	2 1.200R
		M	21.640	22.020	22.410	22.800	23,200	20.520	20.930	21.350	21.780	22.210
	uck N		41	42								
$\frac{\mathbf{W}\mathbf{h}}{\mathbf{A}\mathbf{x}}$	ı. Base le	L	24	24								
Spa	acing	X	20	20								
la Lx	ad On les	\mathbf{a}_1	.15 .85	.10 .90								
	10	G N	2-3	2-3								
	10	В	1.000R	1.000R								
	-	M G	$\frac{1.360}{2-3}$	1.440 2-3								
	20	N B	$1.000\mathbf{R}$	3 1.000R								
		M	3.443	3.645								
	30	G N	$^{2-3}_{3}$	$\frac{2-3}{3}$								
		B M	1.000R 5.553	1.000R 5.880								
		G	2-3	23								
eet	40	N B	$^3_{1.000 m R}$	1.000R								
pan-Feet		M G	$\frac{7.671}{1-3}$	8.123								
Spa	50	N	2	2								
-		B M	.650R 10.160	100R 10.600								
	60	G	1~3	1-3				111				
	ซบ	N B	.650R	.100R								
		$\frac{\mathbf{M}}{\mathbf{G}}$	12.660	$\frac{13.100}{1-3}$								
	80	N	2	2								
		B M	.650R 17.660	.100R 18.100								
	100	G N	13	1-3 2						-		
	100	\mathbf{B}	.650R	.100R								
		M	22.650	23.100								

Table 7.3

CONTROLLING CONDITIONS AND MAXIMUM MOMENTS IN SIMPLE SPANS PRODUCED BY THE TYPE 2-S1 TRUCKS WEIGHING ONE KIP EACH



One hundred twenty-six variations in the Type 2-S1 truck are given in this Table. Each truck number, from 1 to 126, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

Tr	uck No	Э.	1	2	3	4	5	6	7	8	9	10
W	h. Base	e L	20	20	20	20	20	20	20	24	24	24
Ax	le	X	8	8	8	8	8	8	8	8	8	8
Sp	acing	\mathbf{X}'	12	12	12	12	12	12	12	16	16	16
Lo	ad	a ₁	.10	.10	.10	.10	.20	.20	.20	.10	.10	.10
On		\mathbf{a}_2	.20	.40	.45	.50	.30	.40	.50	.30	.40	.45
Ax	les	аз	.60	.50	.45	.40	.50	.40	.30	.60	.50	.45
		G	3	3	3	2	3	3	2	3	3	3
	10	N	3	3	3	2	3	3	2	3	3	3
		В	0	0	0	0	0	0	0	0	0	0
		M	1,500	1.250	1.125	1.250	1.250	1.000	1.250	1.500	1.250	1.125
		G	3	3	1-2	1-2	3	1-2	1-2	3	3	1-2
	20	N	3	3	2	2	3	2	2	3	3	2
		В	0	0	.725R	.667R	0	1.335R	1.145R	0	0	.730R
		M	3.000	2.500	2.363	2.614	2.500	2.252	2.745	3.000	2.500	2.363
	۱	G	2-3	$^{2-3}$	1-3	1-3	2-3	1-3	1-3	2-3	2-3	1–3
	30	N	$^{3}_{2.000R}$	$^{3}_{2.665R}$	2	2 2.000L	$^3_{2,250\mathrm{R}}$	2 1.600L	$^{2}_{1.000L}$	$^{3}_{2.665R}$	3 3.555R	2 3.200L
		B M	5.070	2.665 4.565	$\frac{2.300L}{4.576}$	4.833	4.335	4.385	4.933	2.665 4.565	3.555 K	3.841
	40	G N	$_{3}^{1-3}$	$^{1-3}_{3}$	13 2	$\frac{1-3}{2}$	$^{1-3}_{3}$	1 -3 2	13 2	$^{2-3}_{3}$	$_{3}^{2-3}$	$^{1-3}_{2}$
et	40	В	2.800R	3,400R	2.300L	2.000L	3.800R	1.600L	1.000L	2.665R	3.555R	3.200L
Span-Feet		M	7.396	6.889	7.032	7.300	6.561	6.864	7.425	6.762	6.085	6.256
Ė		G	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3
ã	50	Ñ	3	์ 3	2	2	3	2	2	3	3	2
02		В	2.800R	3.400R	2.300L	2.000L	3.800R	1.600L	1.000L	3.600R	4.400R	3.200L
		M	9.857	9.331	9.506	9.780	8.989	9.351	9,920	9.159	8.487	8.705
i		G	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3
	60	N	3	3	2	2	3	2	2	3	3	2
	ļ	В	2.800R	3.400R	2.300L	2.000 L	3.800R	1.600L	1.000L	3.600R	4.400R	3.200L
		M	12.331	11.793	11.988	12.267	11.441	11.843	12.417	11.616	10.923	11.171
		G	1-3	1-3	13	1-3	1-3	1-3	1-3	1-3	1-3	1-3
	80	N	3	3	2	2	3	2	2	3	3	2
	ì	В	2.800R	3.400R	2.300L	2.000L	3.800R	1.600L	1.000L	3.600R	4.400R	3.200 L
	l	M	17.298	16.745	16.966	17.250	16.381	16.832	17.413	16.562	15.842	16.128
1		G	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3
	100	N	3	3	2	2	3	2	2	3	3	2
		В	2.800R	3.400R	2.300L	2.000L	3.800R	1.600L	1.000L	3.600R	4.400R	3.200L
	·	M	22.278	21.716	21.953	22.240	21.344	21.826	22.410	21.530	20.794	21.102

All dimensions are in feet and moments are in kip-feet.

a1, a2, and a3-Represent the ratio of gross vehicle weight on axles.

G-Axle group causing maximum moment, thus, 1-3 means axles 1, 2, and 3.

N-Number of critical axle under which maximum moment occurs.

B-Distance to right or left of mid-span to point of maximum moment.

M-Maximum moment.

				Continue									
Akale													
Spacing X			_										
OR Nets a: 5.0 30 4.0 .50 .30 .40 .45 .40 .30 .40 Ales A A 4.0 .50 .40 .50 .50 .40 .30 .40 I G 2 3 3 2 3 3 3 2 3 3 2 3 3 2 3 3 2 3 3 2 3 3 2 3 3 2 3 3 2 3 3 2 3 1 2 2 3 1 2 2 3 1 2 2 3 1 2 2 3 1 2 2 3 2 2 3 2 2 3 2 2 3 2 2 3 2 2 3 2 2 3 2 2 3 2 2 3	Spa	acing		16	16	16	16	20	20	20	20	20	20
Axless													
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B		10											
The color of the			В	0	0	0	0	0	0	0	0	0	0
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R		20											
The color of the		90	В	2.800 L	3.000R	1.333R	1.145R	0	0	.730R	.667R	0	1.335R
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$\begin{array}{c c c c c c c c c c c c c c c c c c c $	S.	50											
$\begin{array}{c c c c c c c c c c c c c c c c c c c $			M	9.057	8,161	8.615	9.351	8.487	7.683	7.936	8.359	7.373	7.905
$\begin{array}{c c c c c c c c c c c c c c c c c c c $		60											
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$			В			2.400L		3.333R	5.400R			5.800R	
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	l												
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$\begin{array}{ c c c c c c c c c c c c c c c c c c c$				16,498	15.488						15.762		15.328
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10	AX		\mathbf{a}_2	.50	.30	.40	.45	.50	.30	.40	.50	.30	.40
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$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	n-Feet	10 20 30	ag ag G N B M G N B M G N B M G N B M	.50 .30 2 2 0 1.250 1.42 2 2.745 1-2 2.745 1-2 2 1.145R 4.479 1-3 2.200L 6.321	.30 .60 3 3 0 1.500 3 3 0 3.000 3 3 0 4.500 3 3 0 6 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	.40 .50 3 3 0 1.250 3 3 0 2.500 3 3 0 3.750 3 0 3.750	.45 .45 .3 .3 .0 1.125 1-2 2.730R 2.363 1-2 2.730R 3.733 1-2 2.730R 5.106	.50 .40 2 2 0 1.256 1 2 2 .667R 2.614 1-2 2 .667R 4.110 1-2 2 .667R 5.608	.30 .50 .50 .3 .0 1.250 .3 .3 .0 2.500 .3 .750 .3 .0 3.750	.40 .40 .3 .3 .0 .1.000 1-2 .2 1.335R 2.252 1-2 .1.335R 3.734 1-2 .1.335R 5.226	.50 .30 2 2 0 1.250 1.25 2 1.145 R 2.745 1-2 2 1.145 R 4.479 1-2 2 1.145 R	30 .60 3 3 0 1.500 3 3 0 3.000 3 3 0 4.500 3 0 6.000	.40 .50 3 0 1.250 3 3 0 2.500 3 3 0 3 0 2.500 3 3 0 0 2.500 3 3 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
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$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	O. 1	10 20 30 40 50	a2 a3 G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M M G N B M M M M M M M M M M M M M M M M M M	.50 .30 2 2 0 1.250 1.250 1.250 2.745 1.145R 4.479 1-3 2.200L 6.321 1-3 2.200L 8.797 1-3	30 .60 3 3 0 1.500 3 3 0 3.000 3 3 0 4.500 3 3 0 6.000 2-3 3 4.000 1.500	.40 .50 3 3 0 1.250 3 3 0 2.500 3.750 3 3 0 5.000 2-3 3 5.335R 6.961 1 3	.45 .45 .45 .3 .3 .0 .1.125 .730R 2.363 1-2 .730R 3.733 1-2 .2 .730R 5.106 1-3 .2 5.000L 7.200	.50 .40 2 2 0 1.256 1.2 2.667R 2.614 1-2 2.667R 4.110 1-2 2.667R 5.668 1-3 2 4.400L 7.687	.30 .50 3 3 0 1.250 3 3 0 2.500 3 3 0 3.750 3 3 4.5000 2-3 3 4.5000 6.724 1-3	.40 .40 .3 3 0 1.000 1-2 2 1.335R 2.252 1-2 2 1.335R 3.734 1-2 2 1.335R 5.226 1-3 2 4.000L 7.220	.50 .30 2 2 0 1,250 1-2 1.145R 2,745 1-2 1.145R 4,479 1-2 1.145R 6,222 1-3 2.800L 8,257 1-3	30 -60 3 3 0 1.500 3 3 0 3.000 3.000 3 0 4.500 3 0 6.000 3 0 0 0 0 0 0 0 0 0 0 0 0 0	3 3 0 1.250 3 3 0 2.500 3 3 0 3.750 3 6.220R 6.349 1-3
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	O. 1	10 20 30 40 50	ag ag ag G N B M M G N B M M M G N B M M M G N B M M M M M M M M M M M M M M M M M M	.50 .30 2 2 0 1.250 1-2 1.145 R 2.745 1-2 1.145 R 4.479 1-3 2 2.200 L 8.797 1-3 2 2.200 L 8.797	.30 .60 3 3 0 1.500 3 3 0 3.000 3 3 0 4.500 2-3 3 4.000R 7.938	.40 .50 3 3 0 1.250 3 3 0 2.500 3 3 0 5.000 2-3 3 5.335R 6.961 1 3	.45 .45 .45 .3 0 1.125 1-2 2.730R 2.363 1-2 2.730R 3.733 1-2 2.730R 5.106 1-3 2.5.000L 7.200	.50 .40 2 2 0 1.256 1.256 2 2 2.667R 2.614 1-2 2.667R 4.110 1-2 2.667R 5.608 1-3 2 4.400L 7.687	.30 .50 .50 3 3 0 1.250 3 3 0 2.500 3 3 0 5.000 2-3 3 4.500R 6.724 1-3 3	.40 .40 .40 .3 3 0 1.000 1-2 2.1.335R 2.252 1-2 2.835R 3.734 1-2 2 1.335R 5.226 1-3 2 4.000L 7.220	.50 .30 2 2 0 1.250 1.250 1.2 2 1.145R 2.745 1-2 1.145R 4.479 1-2 2 1.145R 6.222 1-3 2 2.800L 8.257	30 30 1.500 3 3 0 1.500 3 0 3.000 3 0 4.500 3 3 0 6.000 7.500 2-3 3	.40 .50 3 3 0 1.250 3 3 0 2.500 3 3 0 5.000 2-3 3 6.220R 6.349
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	O. 1	10 20 30 40 50	a2 a3 GNBM GNBM GNBM GNBM GNBM BM GNBM BM M GNBM BM M GNBM BM	.50 .30 2 2 0 1.250 1.250 1.250 2.745 1.145R 4.479 1-3 2.200L 6.321 1-3 2.200L 8.797 1-3 2.200L 1.350 2.200L	.30 .60 3 3 0 1.500 3 3 0 3.000 3 3 0 4.500 3 3 4.500 2-3 3 4.000 8 7.938 1-3 3 3 0.000 1.500	.40 .50 3 3 0 1.250 3 3 0 2.500 3.750 3 3 0 5.000 2-3 3 5.335R 6.961 1 3 3 6.400R	.45 .45 .45 .3 .3 .0 .1.125 .730R 2.363 1-2 .2 .730R 3.733 1-2 .2 .730R 5.106 1.3 .2 5.000L 7.200 1-3 .2 5.000L 9.617	.50 .40 2 2 0 1.256 1.2 2.667R 2.614 1-2 2.667R 4.110 1-2 2.667R 5.608 1-3 2 4.400L 7.687 1-3 2 4.400L	.30 .50 .50 .3 .3 .0 .1.250 .3 .3 .0 .2.500 .3 .750 .3 .3 .0 .5.000 .2-3 .3 .4.5000R .6.724 .1-3 .6.800R .8.971	.40 .40 .3 3 0 1.000 1-2 2 1.335R 2.252 1-2 2 1.335R 5.252 1-2 2 1.335R 5.226 1-3 2 4.000L 7.220 1-3 2 4.000L 9.667	.50 .30 2 2 0 1.250 1.250 1.22 2.1.145R 4.479 1-2 1.145R 6.222 1.3 2 2.800L 8.257 1-3 2.800L 8.257	30 -60 3 3 0 1.500 3 3 0 3.000 3 3 0 4.500 3 3 0 6.000 2-3 3 4.665R 9.628	.40 .50 3 3 0 1.250 3 3 0 2.500 3 3 0 3.750 3 3 6.220R 6.349 1-3 3 7.400R 8.513
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	O. 1	10 20 30 40 50	a2 a3 GNB MGNB MGNB MGNB MGNB MGGNB	.50 .30 2 2 0 1.250 1-2 1.145 R 2.745 1-2 1.145 R 4.479 1-3 2 2.200 L 8.797 1-3 2 2.200 L 8.797 1-3 2 2.200 L 1.250 1.25	.30 .60 3 3 0 1.500 3 3 0 3.000 3 3 0 4.500 2-3 3 4.000R 7.938 1-3 5.200R 10.251 1-3	.40 .50 3 3 0 1.250 3 3 0 2.500 3 3 0 5.000 2-3 3 0 5.000 2-3 3 6.4008 9.283 1-3	.45 .45 .45 .3 3 0 1.125 1-2 .730R 2.363 1-2 2 .730R 5.106 1-3 2 5.000L 7.200 1-3 2 5.000L 7.200 1-3 2 5.000L 7.200	.50 .40 2 2 0 1.256 1.256 1.256 2.667R 2.614 1-2 2.667R 4.110 1-2 2 4.400L 7.687 1-3 2 4.400L 1.0123 1-3 2 4.40123	.30 .50 .50 3 3 0 1.250 3 3 0 2.500 3 3 0 5.000 2-3 3 4.500R 6.724 1-3 6.800R 8.971 1-3	.40 .40 .40 .3 3 3 0 1.000 1-2 2.1.335R 2.252 1-2 1.335R 5.226 1-3 2 4.000L 7.220 1-3 2 4.000L 9.664 9.664	.50 .30 2 2 2 0 1.250 1 · 2 2 1.145 R 2.745 1-2 1.145 R 4.479 1-2 2 1.145 R 6.222 1-3 2 2.800 L 8.257 1-3 2 2.800 L 8.257	30 .600 3 3 0 1.500 3 0 3.000 3 0 4.500 3 3 0 6.000 3 4.665R 9.628 1-3	.40 .50 3 3 0 1.250 3 3 0 2.500 3 3 0 5.000 2-3 3 6.220R 6.349 1-3 7.400R 8.513
100 N 2 3 3 2 2 3 2 2 3 3 2 2 3 3 3 3 2 2 2 3 3 2 2 3	O. 1	10 20 30 40 50	a2 a3 GNB M	.50 .30 2 2 0 1.250 1.250 1.250 2.745 1.2 2.1.45 R 2.745 1.3 2 2.200 L 6.321 1.3 2 2.200 L 8.797 1.3 2 2.200 L 8.797 1.3 2 2 2.200 L 8.797 1.3 2 2 2 2.200 L 8.797 1.3 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	.30 .60 3 3 0 1.500 3 3 0 3.000 3 3 0 4.500 2-3 3 4.000R 7.938 1-3 3 5.200R	.40 .50 3 3 0 1.250 3 3 0 2.500 3 3.750 3 3 0 5.000 2-3 3 3 6.400R 9.283 1-3 3 6.400R	.45 .45 .45 .3 3 0 1.125 1-2 2 .730R 2.363 1-2 2 .730R 5.106 1-3 2 5.000L 7.200 1-3 2 5.000L 7.3001 1-3 2 5.000L 7.3001 1-3 2 5.0001 1-3 5.00001 1-3 5.000000000000000000000000000000000000	.50 .40 2 2 0 1.256 1 2 2 .667R 2.614 1-2 2.667R 5.608 1-3 2 4.400L 7.687 1-3 2 4.400L 1-3 2 4.400L 1-3 2 4.400L	.30 .50 .50 3 3 0 1.250 3 3 0 2.500 3 3.750 3 3 0 5.000 2-3 4.500R 6.724 1-3 3 6.800R 8.971 1-3 6.800R	.40 .40 .40 .3 3 0 1.000 1-2 2 1.335R 2.252 1-2 2 1.335R 5.226 1-3 2 4.000L 7.220 1-3 2 4.000L 7.200 1-3 2	.50 .30 2 2 2 0 1.250 1 · 2 2 1.145 R 2.745 1 · 2 2 1.145 R 6.222 1 · 3 2 2.800 L 8.257 1 · 3 2 2.800 L 1.0731 1 · 3 2 2.800 L 1.0731 1 · 3 2 2.800 L 1.0731 2 · 3 2 · 3 3 · 3	30 .60) 3 3 0 1.500 3 3 0 3.000 3 3 0 4.500 3 3 0 6.000 3 3 4.500 3 4.500 3 3 6.000 3 6.000 3 6.000 7.500 8 8 9 9 1.500 8 9 1.500 8 9 1.500 8 1	.40 .50 .50 .50 .50 .50 .50 .50 .50 .60 .50 .60 .60 .60 .60 .60 .60 .60 .60 .60 .6
	O. 1	10 20 30 40 50	a2 a3 GNB MG MG GNB MG GNB MG	.50 .30 2 2 0 1.250 1-2 1.145 R 2.745 1-2 1.145 R 4.479 1-3 2 2.200 L 8.797 1-3 2 2.200 L 8.797 1-3 2 2.200 L 11.281 1-3 2 2.200 L 8.797 1-3 2 2.200 L 8.797 1-3 1-3 1-3 1-3 1-3 1-3 1-3 1-3 1-3 1-3	.30 .60 3 3 0 1.500 3 3 0 3.000 3 3 0 4.500 2-3 3 4.000R 7.938 1-3 5.200R 10.251 1-3 3 5.200R 15.138	.40 .50 3 3 0 1.250 3 3 0 2.500 3 3 0 5.000 2-3 3 0 5.000 2-3 3 6.400R 9.283 3 1-3 6.400R 14.112	.45 .45 .45 .3 3 0 1.125 1-2 2.730R 2.363 1-2 2.730R 5.106 1-3 2 5.000L 7.200 1-3 2 5.000L 9.617 1-3 2 5.000L 1-3 2	.50 .40 2 2 0 1.256 1.256 2.2 2.667R 2.614 1-2 2.667R 5.608 1-3 2 4.400L 7.687 1-3 2 4.400L 10.123 1-3 2 4.400L 10.123	.30 .50 .50 3 3 0 1.250 3 3 0 2.500 3 3 0 5.000 2-3 3 4.500R 6.724 1-3 6.800R 8.901 1 1-3 3 6.800R	.40 .40 .40 .3 3 0 1.000 1-2 1.335R 2.252 1-2 1.335R 5.226 1-3 2 4.000L 7.220 1-3 2 4.000L 9.667 1-3 2 4.000L 9.664 9.66	.50 .30 2 2 0 1.250 1 · 2 2 1.145R 2.745 1-2 1.145R 4.479 1-2 2.145R 6.222 1-3 2 2.800L 8.257 1-3 2 2.800L 1-3 2 2.800L 1-3 2.800L 1-3 2.800L 1-3 2.800L 1-3 2.800L 1-3 2.800L 1-3 2.800L 1-3 2.800L 1.6000 1.6000	30 .60 3 3 3 0 1.500 3 3 3 0 0 4.500 3 3 3 0 0 7.500 2-3 3 4 .665R 9.628 1-3 3 6.000L 14.450	.40 .50 3 3 0 1.250 3 3 0 2.500 3 3 0 5.000 2-3 3 6.220R 6.349 1-3 7.400R 8.513 1-3 3 7.400R
	O. 1	10 20 30 40 50 60 80 80	a: a: GNBM GNBM GNBM GNBM GNBM GNBM GNBM GNBM	.50 .30 .30 .2 2 0 1.250 1.250 1.145 R 2.745 1-2 2 1.145 R 2.245 1-3 2 2.200 L 8.797 1-3 2 2.200 L 8.797 1-3 2 2.200 L 1.1281 1-3 2 2.200 L 1.1281 1-3 2 2.200 L 1.1281	.30 .60 3 3 0 1.500 3 3 0 3.000 3 3 0 4.500 2-3 3 4.000 2-3 3 4.000 8.7938 1-3 3 5.200R 15.138	.40 .50 .50 .50 .50 .50 .50 .50 .50 .50 .5	.45 .45 .45 .3 3 0 1.125 1-2 2 .730R 2.363 1-2 2 .730R 5.106 1-3 2 5.000L 7.200 1-3 2 5.000L 7.3001 1-3 2 5.000L 1-3 2 5.000L 1-3 2 5.0001 1-3 1 5.0001 1-3 1 5.0001 1-3 1 5.0001 1-3 1 5.0001 1-3 1 5.0001 1-3 1 5.0001 1-3 1 5.0001 1-3 1 5.0001 1-3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	.50 .40 2 2 0 1.256 1 2 2 .667R 2.614 1-2 .667R 5.608 1-3 2 4.400L 7.687 1-3 2 4.400L 1-3 2 4.400L 15.042	.30 .50 .50 .50 .50 .50 .50 .50 .50 .50 .5	.40 .40 .40 .3 3 0 1.000 1-2 2 1.335R 2.252 1-2 2 1.335R 5.226 1-3 2 4.000L 7.220 1-3 2 4.000L 7.200 1-3 2 4.000L 1-3 2 4.000L 1-3 2 4.000L 1-3 2 2 4.000L 1-3 2 2 4.000L 1-3 2 2 4.000L 1-3 2 2 4.000L 1-3 2 4.000L 1-3 2 2 4.000L 1-3 2 2 4.000L 1-3 2 2 4.000L 1-3 2 4.000L 1-3 2 2 4.000L 1-3 2 2 4.000L 1-3 2 2 4.000L 1-3 2 2 4.000L 1-3 2 4.000L 1-3 2 4.000L 1-3 2 4.000L 1-3 2 4.000L 1-3 2 2 4.000L 1-3 2 4.000L 1-3 2 4.000L 1-3 2 4.000L 1-3 2 4.000L 1-3 2 4.000C 1-3 1 4.000C 1-3 1 4.000C 1-3 1 4.000C 1-3 1 4.000C 1-3 1 4.000C 1 1 4.000C 1 1 4.000C 1 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	.50 .30 2 2 2 0 1.250 1 · 2 2 1.145 R 2.745 1 · 2 2 1.145 R 4.479 1 · 2 2 2.800 L 8.257 1 · 3 2 2.800 L 1.0,731 1 · 3 2 2.800 L 1.6,98 1 · 3 2 2 2.800 L 1.6,98 1 · 3 2 2 2 3 3 3 4 4 4 5 1 · 3 2 2 3 3 4 4 4 5 1 · 3 2 2 3 2 3 4 4 4 5 1 · 3 2 2 3 4 4 4 5 1 · 3 2 2 2 3 3 4 4 4 5 4 5 1 · 3 2 2 3 4 4 5 4 5 5 1 · 3 2 2 3 4 5 4 5 5 5 5 6 5 7 1 · 3 2 2 2 3 3 4 5 1 · 3 2 2 3 2 3 3 3 3 4 3 4 3 4 5 3 5 3 4 5 3 2 3 3 3 3 4 3 3 4 3 3 3 3 3 3 3 3 3 3	30 .60) 3 3 0 1.500 3 3 0 3.000 3 3 0 4.500 3 3 0 6.000 3 3 4.500 3 3 0 7.500 3 3 6.000 1 3 1 1 1 1 1 1 1 1 1 1 1 1 1	.40 .50 .50 .50 .50 .50 .50 .50 .50 .50 .5

60 METHOD OF CONVERTING HEAVY MOTOR VEHICLE LOADS

TABLE 7.3 (Continued)

Truck No. 31 32 33 34 35 36 37 38 39 40

Tr	ick No	٠.	31	32	33	34	35	36	37	38	39	40
-	. Base		36	36	36	36	36	20	20	20	20	20
Ax		X.	8	8	8	8	- 8	12	12	12	12	12
-	icing	X'	28	28	28		28	8	8	8	8	$\frac{8}{.20}$
Lo: On	ad	\mathbf{a}_1	.10 .45	.10 .50	.20 .30	.20 $.46$.20 .50	.10 .30	.10 .40	.10 .45	.10 .50	.30
Ax	les	a 3	.45	.40	.50	.40	.30	.60	.50	.45	.40	.50
		G	3	2	3	3	2	3	3	3	2	3
	10	N	3	2	3	3	2	3	3	3	2	3
		B M	$0 \\ 1.125$	$\frac{0}{1.250}$	$0 \\ 1.250$	$0 \\ 1.000$	$0 \\ 1.250$	$0 \\ 1.500$	$\substack{0\\1.250}$	$0 \\ 1.125$	$^{0}_{1.250}$	$0 \\ 1.250$
		G	12	1-2	3	1-2	1-2	2-3	2-3	2-3	2-3	2-3
	20	Ň	2	2	3	2	2	3	3	3	2	3
		В	$.730\mathbf{R} \ 2.363$.667R	0	1.335R 2.252	1.145R	1.335R	$1.780\mathbf{R} \\ 3.040$	2.000R	$1.780L \\ 3.040$	1.500R 2.890
		<u>M</u> _	1-2	$\frac{2.614}{1-2}$	2.500	1-2	2.745	$\frac{3.379}{2-3}$	2-3	$\frac{2.880}{1-3}$	1-3	2-3
	30	G N	2	$\frac{1-2}{2}$	3	2	2	3	3	2	2	3
		\mathbf{B}	$.730\mathbf{R}$.667R	0	1.335R	1.145R	1.335R	$1.780\mathbf{R}$	1.200L	1.000L	1.500R
		M	3.733	4.110	3.750	3.734	4.479	5.602	5.243	5.148	5.333	4.860
	40	G N	1-2 2	$\frac{1-2}{2}$	3 3	$_{2}^{1-2}$	$^{1-2}_2$	$^{1-3}_3$	$^{1-3}_3$	$^{1-3}_2$	1-3 2	$^{1-3}_{3}$
et	40	В	.730R	$.6\overline{67}$ R	0	1.335R	1.145R	2.200R	2.600R	1.200L	1.000L	3.200R
ᄠ		M	5.106	5.608	5.000	5.226	6.222	7.921	7.569	7.636	7.825	7.056
Span-Feet		G	1-3	1-2	3	1-2	1-2	1-3	1-3	1-3	1-3	1–3
$^{\mathrm{g}}$	50	N B	5.900L	$^2_{.665 m R}$	3 0	2 1.335R	$\frac{2}{1.145R}$	$^3_{2.200\mathrm{R}}$	3 2.600R	$^{2}_{1.200L}$	2 1.000L	3 3.200 R
		M	6.496	7.106	6.250	6.721	7.967	10.397	10.035	10.129	10.320	9.505
		G	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3
	60	N	2	2	3	2	2	3	3	2	2	3
		B M	5.900L 8.880	5.200L 9.451	7.800R 8.214	4.800L 8.984	3.400L 10.193	2.200R 12.881	2.600R 12.513	1.200L 12,624	1.000L 12.817	3.200R 11.971
		G	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3
	80	Ň	2	2	3	2	2	8	3	2	2	3
		В	5.900L 13.735	5.200L	7.800R	4.800L	3.400L	2.200R 17.861	2.600R	1.200L	1.000L	3.200R
		<u>M</u> G	1-3	14.338	12.961	13.888	15.145 1-3	1-3	17.485	17.618	17.813 1–3	$\frac{16.928}{1-3}$
	100	N	$\frac{1-3}{2}$	2	3	2	2	3	3	2	$\frac{1-3}{2}$	3
		В	5.900L	5.200L	7.800R	4.800L	3.400L	2.200R	2.600R	1.200L	1.000L	3.200R
	<u> </u>	M	18.648	19.270	17.808	18.830	20.116	22.848	22.468	22.614	22.810	21.902
	uck N		41	42	43	44	45	46	47	48	49	50
$\overline{\mathbf{w}}$	n. Bas	e L	20	20	24	24	24	24	24	24	24	28
W Ax	h. Base le	e L X	20 12	20 12	24 12	24 12	24 12	24 12	24 12	24 12	24 12	28 12
Wi Ax Sp	n. Base le acing	e L X X'	20 12 8	20 12 8	24 12 12	24 12 12	24 12 12	24 12 12	24 12 12	24 12 12	24 12 12	28 12 16
Ax Sp Lo On	n. Base le acing ad	e L X	20 12 8 .20 .40	20 12 8 .20 .50	12 12 12 .10 .30	12 12 12 .10 .40	24 12 12 .10 .45	24 12	24 12	24 12	24 12 12 .20 .50	28 12
Ax Sp Lo On	h. Base le acing ad	e L X X' a ₁ a ₂ a ₃	20 12 8 .20 .40 .40	20 12 8 .20 .50 .30	24 12 12 .10 .30 .60	24 12 12 .10 .40 .50	24 12 12 .10 .45 .45	24 12 12 .10 .50 .40	24 12 12 .20 .30 .50	24 12 12 12 .20 .40 .40	24 12 12 .20 .50 .30	28 12 16 .10 .30 .60
Ax Sp Lo On	h. Basele acing ad les	e L X X' a ₁ a ₂ a ₃ G	20 12 8 .20 .40 .40	20 12 8 .20 .50 .30	24 12 12 .10 .30 .60	24 12 12 .10 .40 .50	24 12 12 .10 .45 .45	24 12 12 .10 .50 .40	24 12 12 .20 .30 .50	24 12 12 .20 .40 .40	24 12 12 .20 .50 .30	28 12 16 .10 .30 .60
Ax Sp Lo On	n. Base le acing ad	e L X X' a ₁ a ₂ a ₃	20 12 8 .20 .40 .40	20 12 8 .20 .50 .30	24 12 12 .10 .30 .60	24 12 12 .10 .40 .50	24 12 12 .10 .45 .45	24 12 12 .10 .50 .40	24 12 12 .20 .30 .50	24 12 12 .20 .40 .40 .3 3	24 12 12 .20 .50 .30	28 12 16 .10 .30 .60
Ax Sp Lo On	h. Basele acing ad les	E L X X X' a1 a2 a3 G N B M	20 12 8 .20 .40 .40 .3 3 0 1.000	20 12 8 .20 .50 .30 2 2 0 1.250	24 12 12 .10 .30 .60 3 3 0 1.500	24 12 12 .10 .40 .50	24 12 12 .10 .45 .45	24 12 12 .10 .50 .40	24 12 12 .20 .30 .50	24 12 12 .20 .40 .40	24 12 12 .20 .50 .30	28 12 16 .10 .30 .60
Ax Sp Lo On	h. Basele acing ad les	e L X X' a1 a2 a3 G N B M	20 12 8 .20 .40 .40 .3 3 0 1.000	20 12 8 .20 .50 .30 2 2 0 1.250 2-3	24 12 12 .10 .30 .60 3 3 0 1.500	24 12 12 .10 .40 .50 3 0 1.250	24 12 12 .10 .45 .45 3 0 1.125	24 12 12 .10 .50 .40 2 2 0 1.250	24 12 12 .20 .30 .50 3 0 1.250	24 12 12 .20 .40 .40 .3 3 0 1.000	24 12 12 .20 .50 .30 2 2 0 1.250	28 12 16 .10 .30 .60 3 3 0 1.500
Ax Sp Lo On	h. Basele acing ad les	e L X X' a1 a2 a3 G N B M	20 12 8 .20 .40 .40 .3 3 0 1.000 2-3 3	20 12 8 .20 .50 .30 2 2 0 1.250 2-3 2	24 12 12 .10 .30 .60 3 0 1.500	24 12 12 .10 .40 .50 3 0 1.250	24 12 12 .10 .45 .45 3 3 0 1.125	24 12 12 .10 .50 .40 2 2 0 1.250 2	24 12 12 .20 .30 .50 3 0 1.250	24 12 12 .20 .40 .40 .3 3 0 1.000	24 12 12 .20 .50 .30 2 2 0 1.250	28 12 16 .10 .30 .60 3 0 1.500 3 3
Ax Sp Lo On	h. Basele acing ad les	e L X X' a1 a2 a3 G N B M	20 12 8 .20 .40 .40 .3 3 0 1.000	20 12 8 .20 .50 .30 2 2 0 1.250 2-3	24 12 12 .10 .30 .60 3 3 0 1.500	24 12 12 .10 .40 .50 3 0 1.250	24 12 12 .10 .45 .45 3 0 1.125	24 12 12 .10 .50 .40 2 2 0 1.250	24 12 12 .20 .30 .50 3 0 1.250	24 12 12 .20 .40 .40 .3 3 0 1.000	24 12 12 .20 .50 .30 2 2 0 1.250	28 12 16 .10 .30 .60 3 3 0 1.500
Ax Sp Lo On	h. Baselle acing ad les 10	E L X X X A1 A2 A3 G N B M G N B M G O O O O O O O O O O O O O O O O O O	20 12 8 .20 .40 .40 3 3 0 1.000 2-3 3 2.000R 2.560 1-3	20 12 8 .20 .50 .30 2 2 0 1.250 2-3 2 1.500L 2.890 1-3	24 12 12 .10 .30 .60 3 3 0 1.500 3 3 0 3.000	24 12 12 10 .40 .50 3 3 0 1.250 2.500 2–3	24 12 12 .10 .45 .45 .3 3 0 1.125 3 0 2.250	24 12 12 .10 .50 .40 2 2 0 1.250 2	24 12 12 .20 .30 .50 3 3 0 1.250	24 12 12 .20 .40 .40 .3 3 0 1.000	24 12 12 .20 .50 .30 2 2 0 1.250 2 2	28 12 16 .10 .30 .60 3 0 1.500 3 0
Ax Sp Lo On	h. Basele acing ad les	E L X X X A1 A2 A3 G N B M G N B M G N B M	20 12 8 20 .40 .40 .3 3 0 1.000 2-3 3 2.000R 2.560 1-3 2	20 12 8 .20 .50 .30 2 2 0 1.250 2-3 2 1.500L 2.890 1-3	24 12 12 10 .30 .60 3 3 0 1.500 3 3 0 2 3 0	24 12 12 10 .40 .50 3 3 0 1.250 2.500 2-3 3	24 12 12 .10 .45 .45 .45 .3 0 1.125 3 3 0 2.250	24 12 12 .10 .50 .40 2 2 0 1.250 2 2 0 2.500	24 12 12 20 .30 .50 3 3 0 1.250 3 3 0 2.500	24 12 12 .20 .40 3 3 0 1.000 3 3 0 2.000	24 12 12 .20 .50 .30 2 0 1.250 2 0 2.500 1-350 1-350	28 12 16 .10 .30 .60 3 0 1.500 3 3 0 0 2.30 0 2.30 0 3.30 0 0 0
Ax Sp Lo On	h. Baselle acing ad les 10	E L X X X' a1 a2 a3 G N B M G N B M G N B B M G N B B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M B M G N B M G N B M G N B M G N B M B M G N B M B M G N B M B M G N B M B M G N B M B M G N B M B M G N B M B M B M G N B M B M B M G N B M B M B M B M B M B M B M B M B M B	20 12 8 .20 .40 .40 3 3 0 1.000 2-3 3 2.000R 2.560 1-3 2.400L	20 12 8 .20 .50 .30 2 2 0 1.250 2-3 2 1.500L 2.890 1-3 2	24 12 12 .10 .30 .60 3 3 0 1.500 3 .000 2-3 3 2.000R	24 12 12 .10 .40 .50 3 3 0 1.250 2.500 2-3 3 2.665R	24 12 12 .10 .45 .45 3 3 0 1.125 3 0 2.250 1-3 2	24 12 12 .10 .50 .40 2 2 0 1.250 2 2 0 2.500 1-3 2 1.800L	24 12 12 .30 .50 3 3 0 1.250 3 0 2.500 2-3 3 2.250R	24 12 12 .20 .40 .40 3 3 0 1.000 3 3 0 2.000 1-3 2	24 12 12 20 .50 .30 2 2 0 1.250 2 2 0 2.500 1.250 2 .500 2.500 1.250 2 .500 2.500 2.500 1.250 2.500 2.5	28 12 16 .10 .30 .60 3 3 0 1.500 3 3 0 3.000 2-3 2.665R
Ax Sp Lo On	h. Baselle acing ad les 10	A L L L L L L L L L L L L L L L L L L L	20 12 8 .20 .40 .40 .3 3 0 1.000 2-3 3 2.000R 2.560 1-3 2.400L 4.705	20 12 8 .50 .50 .30 2 2 0 1.250 2-3 2 1.500L 2.890 1-3 0 5.100	24 12 12 .10 .30 .60 3 3 0 1.500 3 3 0 3.000 2-3 2.000R 5.070	24 12 12 .10 .40 .50 3 0 1.250 2.500 2-3 3 2.665R 4.565	24 12 12 10 .45 .45 .45 3 0 1.125 3 0 2.250 1-3 2 2.100L 4.347	24 12 12 10 .50 .40 2 0 1.250 2 2 0 1.250 1-3 2 1.800I 4.608	24 12 12 .20 .30 .50 3 0 1.250 3 0 2.500 2-3 3 2.250R 4.335	24 12 12 20 .40 .40 .3 3 0 1.000 3 3 0 2.000 1-3 2 1.2001L 3.948	24 12 12 20 .50 .30 2 2 0 1.250 2 2 0 2.500 1-3 2 6.600L 4.512	28 12 16 .10 .30 .60 3 0 1.500 3 0 3.000 2-3 3 2.665R 4.565
WY Ax Sp Lo On Ax	h. Baselle acing ad les 10	a1 a2 a3 G N B M B M G N B M B M B M B M B M B M B M B M B M B	20 12 8 .20 .40 .40 .40 .3 3 0 0 1.000 2-3 3 2.000R 2.560 1-3 2.400L 4.705	20 12 8 .50 .50 .30 2 2 0 1.250 2-3 2 1.500L 2.890 1-3 2 0 5.100	24 12 12 10 30 60 3 3 0 1.500 3 3 0 3.000 2-3 2.000R 5.070	24 12 12 10 .40 .50 3 3 0 1.250 2.500 2-3 2.665R 4.565 2-3 3	24 12 12 12 .10 .45 .45 3 0 1.125 3 3 0 2.250 1-3 2 2.100L 4.347 1-3 2	24 12 12 12 .50 .40 2 2 0 1.250 2 2 0 2.500 1-3 2 1.800L 4.608	24 12 12 20 .30 .50 3 3 0 1.250 3 3 0 2.500 2-3 2.250R 4.335 2-3 3	24 12 12 20 .40 .40 .3 3 0 1.000 3 3 0 2.000 1-3 2 1.200L 3.948	24 12 12 20 .50 .30 2 2 0 1.250 2 2 0 2.500 1.250 2 2 0 2.500 1.250 1.250 2 1.250 1.	28 12 16 .10 .30 .60 3 3 0 1.500 3 3 0 2-3 3 2.665R 4.565 2-3 3
WY Ax Sp Lo On Ax	h. Basele acing ad les 10 20 30	E L X X A1 A2 A3 G N B M B M G N B M B M G N B M B M G N B M B M B M B M B M B M B M B M B M B	20 12 8 .20 .40 .40 3 3 0 1.000 2-3 3 2.000R 2.560 1-3 2 .400L 4.705 1-3 2.400L	20 12 8 .20 .50 .30 2 2 0 1.250 2-3 2 1.500L 2.890 1-3 2 0 5.100 1-3 2 0	24 12 12 10 30 60 3 3 0 1.500 2-3 3.000 2-3 3.000 2-3 3.000 2-3 3.000 2-3 3.000 2-3 3.000 2-3 3.000	24 12 12 10 .40 .50 3 0 1.250 2.500 2-3 3.665R 4.565 2-3 2.665R	24 12 12 10 .45 .45 .45 3 0 1.125 3 0 2.250 1-3 2.100L 4.347 1-3 2 2.100L	24 12 12 10 .50 .40 2 2 0 1.250 2 2 2 0 1.250 1-3 2 1.800L 4.608 1-3 2 1.800L	24 12 12 .20 .30 .50 3 3 0 1.250 3 3 0 2.500 2-3 3 3 0 2.250R 4.335	24 12 12 20 .40 .40 .3 3 0 1.000 3 3 2 1.2001 1-3 2 1.2001 1-3 2 1.2001	24 112 12 20 .50 .30 2 2 0 1.250 2 2 0 2.500 1-3 2 .600L 4.512 1-3 2 .600L	28 12 16 .10 .30 .60 3 3 0 1.500 3 3 2.665R 4.565 2-3 2.665R
WY Ax Sp Lo On Ax	h. Basele acing ad les 10 20 30	e L X X X a1 a2 a3 G N B M G N B M G N B M G N B M G N B M G N B M M G N B M M G N B M M M M M M M M M M M M M M M M M M	20 12 8 .20 .40 .40 3 3 0 1.000 2-3 3 2.000R 2.560 1-3 2 4.00L 4.705 1-3 2 4.00L 7.204	20 12 8 .20 .50 .30 2 2 0 1.250 2-3 2 1.500L 2.890 1-3 2 0 5.100	24 12 12 10 30 .60 3 3 0 1.500 3 2.000R 5.070 2-3 3 2.000R 7.290	24 12 12 10 .40 .50 3 3 0 1.250 2.500 2-3 3 2.665R 4.565 2-3 3 2.666R 6.762	24 12 10 .45 .45 .45 .3 3 0 1.125 3 2 2.250 1-3 2 2.100L 4.347 1-3 2 2.100L 6.810	24 12 12 12 10 .50 .40 2 2 2 0 1.250 2 2 1.800 1-3 2 1.800 1-3 2 1.800 1-3 7.061	24 12 12 20 .30 .50 .50 3 3 0 1.250 2.500 2-3 3 2.250R 4.335 2-3 3 2.250R 6.302	24 12 12 12 20 .40 .40 .3 3 0 1.000 3 3 2 1.2001 3.948 1-3 2 1.2001 6.436	24 12 12 12 20 .50 .50 .30 2 2 2 0 1.250 2 2 .6001 4.512 1-3 2 .600L 7.009	28 12 16 .10 .30 .60 3 3 0 1.500 3 .000 2-3 2.665R 4.565 2-3 3 2.665R 6.762
Ax Sp Lo On	h. Basele acing ad les 10 20 30	E L X X A1 A2 A3 G N B M B M G N B M B M G N B M B M G N B M B M B M B M B M B M B M B M B M B	20 12 8 .20 .40 .40 3 3 0 1.000 2-3 3 2.000R 2.560 1-3 2 .400L 4.705 1-3 2.400L	20 12 8 .20 .50 .30 2 2 0 1.250 2-3 2 1.500L 2.890 1-3 2 0 5.100 1-3 2 0	24 12 12 10 30 60 3 3 0 1.500 2-3 3.000 2-3 3.000 2-3 3.000 2-3 3.000 2-3 3.000 2-3 3.000 2-3 3.000	24 12 12 10 .40 .50 3 0 1.250 2.500 2-3 3.665R 4.565 2-3 2.665R	24 12 12 10 .45 .45 .45 3 0 1.125 3 0 2.250 1-3 2.100L 4.347 1-3 2 2.100L	24 12 12 10 .50 .40 2 0 1.250 2 2 0 2.500 1-3 2.1.800L 4.608 1-3 2.1.800L	24 12 12 .20 .30 .50 3 3 0 1.250 3 3 0 2.500 2-3 3 3 0 2.250R 4.335	24 12 12 20 .40 .40 .3 3 0 1.000 1-3 2 1.200L 3.948 1-8 2 1.200L	24 112 12 20 .50 .30 2 2 0 1.250 2 2 0 2.500 1-3 2 .600L 4.512 1-3 2 .600L	28 12 16 .10 .30 .60 3 3 0 1.500 3 3 2.665R 4.565 2-3 2.665R
WY Ax Sp Lo On Ax	h. Basele acing ad les 10 20 30 40	ELXXX' a1 a2 a3 GNBMGNBMGNBMMGNBBMMGNBBMMBMMBMMBMMBMMBBMMB	20 12 8 .20 .40 .40 3 3 0 1.000 2-8 3 2.000R 2.560 1-3 2 4.001L 4.705 1-3 2 4.001L 7.204 1-3 2 4.001L 7.204	20 12 8 .20 .50 .30 2 2 0 1.250 2-3 2 1.500L 2.890 1-3 2 0 5.100 1-3 2 0 7.600	24 12 12 10 30 60 3 3 0 1.500 3 2.0000 2-3 3 2.0000 2-3 3 2.000R 7.290 1-3 3 3.000R	24 12 12 12 10 .40 .50 3 3 0 1.250 2.500 2-3 3 2.6665R 4.565 2-3 3 2.665R 6.762 1-3 3 3.600R	24 12 12 12 10 .45 .45 .45 .3 3 0 1.125 3 3 0 2.250 1-3 2 2.100L 4.347 1-3 2 2.100L 6.810 1-3 2 2.100L	24 12 12 12 12 10 .50 .40 2 2 2 0 1.250 2 2 1.800L 4.608 1-3 2 1.800L 1-3 2 1.800L	24 12 12 20 .30 .50 .50 0 1.250 3 3 0 2.500 2-3 2.250R 4.335 2-3 2.250R 6.302 1-3 3 4.200R	24 12 12 12 20 .40 .40 .41 3 3 0 1.000 3 3 3 0 2.000 1-3 2 1.200L 3.948 1-8 2 1.200L 6.436 1-3 2 1.200L	24 12 12 12 20 .50 .50 .30 2 2 0 1.250 2 2 0 2.500 1-3 2 .600L 7.009 1-3 2 .600L	28 12 16 .10 .30 .60 3 3 0 1.500 3 3 0 3.000 2-3 3 2.665R 4.565 2-3 3.2.665R 6.762 1-3 3.800R
WY Ax Sp Lo On Ax	h. Basele acing ad les 10 20 30 40	e L X X X Y a1 a2 a2 a3 G N B B M G N B B M G G N B B M G G N B B M G G N B B M M G G N B B M M G G N B B M M G G N B B M M G G N B B M M G G N B B M M G G N B B M M G G N B B M M M G G N B B M M M G G N B B M M M G G N B B M M M M G G N B B M M M M M M M M M M M M M M M M M	20 12 8 .20 .40 .40 .40 3 3 0 1.000 2-3 3 2.000R 2.560 1-3 2 .400L 7.204 1-3 2 .400L 7.204 1-3 2 .400L 7.204	20 12 8 8 .20 .50 .30 2 0 1.250 2-3 2 1.500L 2.890 1-3 2 0 5.100 1-3 2 0 7.600 1-3 2 0 10.100	24 12 12 10 30 .60 3 3 0 1.500 3 3 0 3.000 2-3 3 2.000R 5.070 2-3 3 2.000R 7.290 1-3 3 3.000R 9.680	24 12 12 10 .40 .50 3 3 0 1.250 2.500 2-3 3 2.665R 4.565 2-3 3 2.665R 6.762 1-3 3 3.600R 9.159	24 12 12 12 10 .45 .45 .45 .3 0 1.125 3 0 2.250 1-3 2 2.100L 4.347 1-3 2 2.100L 6.810 1-3 2 2.100L 9.288	24 12 12 12 12 10 .50 .40 2 2 0 1.250 2 2 2 1.8001 4.608 1-3 2 1.8001 7.061 1-3 2 1.8001 9.565	24 12 12 20 .30 .50 .50 3 3 0 1.250 2.500 2-3 2.250R 4.335 2.250R 6.302 1-3 3 4.206R 8.653	24 12 12 20 .40 .40 .3 3 0 1.000 3 2 1.2001 3.948 1-8 2 1.2001 6.436 1-3 2 1.2001 8.929	24 112 12 12 12 12 12 12 16 16 17 18 18 18 18 18 18 18 18 18 18 18 18 18	28 12 16 .10 .30 .60 3 3 0 1.500 3 3 0 3.000 2–3 2.665R 4.565 2.3 3.000 2.3 3.0000 3.000 3.000 3.000 3.000 3.000 3.000 3.000 3.000 3.000 3.000 3.000 3.0
WY Ax Sp Lo On Ax	n. Basselle acting ad less 10 20 30 40	E L X X X A A A A A A A A A A A A A A A A	20 12 8 .20 .40 .40 .3 3 0 1.000 2-3 3 2.000R 2.560 1-3 2 .400L 7.204 1-3 2 .400L 9.703 1-93	20 12 8 .20 .50 .30 2 0 1.250 2-3 2.50 2.890 1-3 2 0 5.100 1-3 2 0 7.600 1-3 2 0 10.100 1-3	24 12 12 11 10 .30 .60 3 .50 0 1.500 3 .00 2-3 3 2.000R 5.070 2-3 3 2.000R 7.290 1-3 3 3.000R 9.680	24 12 12 1.10 .40 .50 3 3 0 1.250 2.500 2.500 2.500 2.665R 4.565 2-3 3 2.665R 6.762 1-3 3 3.600R 9.159	24 12 12 12 10 .45 .45 3 0 1.125 3 3 0 2.250 1-3 2 2.100L 4.347 1-3 2 2.100L 6.810 1-3 2 2.100L 9.288 1-3	24 12 12 12 10 .50 .40 2 2 0 1.250 2 2 2 0 2.500 1-3 2 1.800L 4.608 1-3 2 1.800L 7.061 1-3 2 1.800L 7.061 1-3 2 1.800L 1-3 2 1.800L 7.061 1-3 2 1.800L 7.061	24 12 12 20 .30 .50 3 3 0 1.250 3 3 0 2.500 2-3 3 2.250R 4.335 2.250R 6.302 1-3 4.200R 8.300 3.0000 3.000 3.000 3.000 3.000 3.000 3.000 3.000 3.000 3.0000 3.000 3.000 3.000 3.000 3.000 3.000 3.000 3.000 3.0000 3.000 3.000 3.000 3.000 3.000 3.000 3.000 3.000 3.0000 3.0000 3.000 3.000 3.000 3.000 3.000 3.000 3.000 3.000 3.0000 3.000 3.000 3.000 3.000 3.000 3.000 3.000 3.000 3.0	24 12 12 20 .40 .40 .3 3 0 1.000 3 3 3 0 2.000 1-3 2 1.200L 3.948 1-3 2 1.200L 6.436 1-3 2 1.200L 8.929 1-3	24 12 12 12 20 .50 .30 2 2 0 1.250 2 2 2 0 2.500 1-3 2 .600L 4.512 1-3 2 .600L 7.009 1-3 2 .600L 9.507	28 12 16 .10 .30 .60 3 3 0 1.500 2-3 3 2.665R 4.565 2-3 3.800R 8.989 1-3
WY Ax Sp Lo On Ax	h. Basele acing ad les 10 20 30 40	e L X X X Y a1 a2 a2 a3 G N B B M G N B B M G G N B B M G G N B B M G G N B B M M G G N B B M M G G N B B M M G G N B B M M G G N B B M M G G N B B M M G G N B B M M G G N B B M M M G G N B B M M M G G N B B M M M G G N B B M M M M G G N B B M M M M M M M M M M M M M M M M M	20 12 8 .20 .40 .40 .40 3 3 0 1.000 2-3 3 2.000R 2.560 1-3 2 .400L 7.204 1-3 2 .400L 7.204 1-3 2 .400L 7.204	20 12 8 8 .20 .50 .30 2 0 1.250 2-3 2 1.500L 2.890 1-3 2 0 5.100 1-3 2 0 7.600 1-3 2 0 10.100	24 12 12 10 30 .60 3 3 0 1.500 3 3 0 3.000 2-3 3 2.000R 5.070 2-3 3 2.000R 7.290 1-3 3 3.000R 9.680	24 12 12 10 .40 .50 3 3 0 1.250 2.500 2-3 3 2.665R 4.565 2-3 3 2.665R 6.762 1-3 3 3.600R 9.159	24 12 12 12 10 .45 .45 .45 .3 0 1.125 3 0 2.250 1-3 2 2.100L 4.347 1-3 2 2.100L 6.810 1-3 2 2.100L 9.288	24 12 12 12 12 10 .50 .40 2 2 0 1.250 2 2 2 1.8001 4.608 1-3 2 1.8001 7.061 1-3 2 1.8001 9.565	24 12 12 20 .30 .50 .50 3 3 0 1.250 2.500 2-3 2.250R 4.335 2.250R 6.302 1-3 3 4.206R 8.653	24 12 12 20 .40 .40 .3 3 0 1.000 3 2 1.2001 3.948 1-8 2 1.2001 6.436 1-3 2 1.2001 8.929	24 112 12 12 12 12 12 12 16 16 17 18 18 18 18 18 18 18 18 18 18 18 18 18	28 12 16 .10 .30 .60 3 3 0 1.500 3 3 0 3.000 2–3 2.665R 4.565 2.3 3.000 2.3 3.0000 3.000 3.000 3.000 3.000 3.000 3.000 3.000 3.000 3.000 3.000 3.000 3.0
WY Ax Sp Lo On Ax	n. Basselle acting ad less 10 20 30 40	E L X X X X X X X X X X X X X X X X X X	20 12 8 .20 .40 .40 .40 .3 3 0 1.000 2-3 3 2.000R 2.560 1-3 2 4.00L 7.204 1-3 2 4.00L 9.703 1-3 2 4.400L 1-3 2 4.400L 1-3 2 4.400L 1-3 2 4.400L 1-3 2 4.400L 1-3 2 4.400L 1-3 2 4.400L 1-3 2 4.400L 1-3 2 4.400L 1-3 2 4.400L 1-3 2 4.400L 1-3 2 4.400L 1-3 2 4.400L 1-3 2 4.400L 1-3 2 4.400L 1-3 2 4.400L 1-3 2 4.400L	20 12 8 .20 .50 .30 2 0 1.250 2-3 2.500 1.500L 2.890 1-3 2 0 5.100 1-3 2 0 10.100 1-3 2 0 10.100 1-3 2 0 10.100 1-3 2 0 10.100	24 12 12 12 10 30 .60 3 3 0 1.500 3 3 0 3.000 2-3 3 2.000R 7.290 1-3 3.000R 9.680 1-3 3 3.000R 12.150	24 12 12 12 10 .40 .50 3 3 0 1.250 2.500 2-3 3 2.665R 4.565 2-3 3.606R 6.762 1-3 3.600R 9.159 1-3 3 3.600R 11.616	24 12 12 12 10 .45 .45 3 0 1.125 3 3 0 2.250 1-3 2 2.100L 4.347 1-3 2 2.100L 9.288 1-3 2 2.100L 1-3 1-3 2 2.100L 1-3 1-3 2 2.100L 1-3 2 2.100L 1-3 1-3 2 2.100L 1-3 1-3 2 2.100L 1-3 1-3 2 2.100L 1-3 1-3 2 2.100L 1-3 1-3 2 2.100L 1-3 1-3 2 2.100L	24 12 12 12 10 .50 .40 2 0 1.250 2 2 0 2.500 1-3 2 1.800L 7.061 1-3 2 1.800L 9.565 1-3 2 1.800L 1-3 2 1.800L 1-3 2 1.800L 1-3 2 1.800L 1-3 2 1.800L 1-3 2 1.800L	24 12 12 12 20 .30 .50 3 3 0 1.250 3 3 0 2.500 2-3 3 2.250R 4.335 2.250R 6.302 1-3 3 4.200R 8.653 1-3 3 4.200R 11.094	24 12 12 20 .40 .40 .3 3 0 1.000 3 3 3 0 2.000 1-3 2 1.200L 3.948 1-3 2 1.200L 6.436 1-3 2 1.200L 8.929 1-3 2 1.200L 1.3201 1.424	24 112 12 120 .50 .50 .30 2 0 1.250 2 2 0 2.500 1-3 2 .600L 4.512 1-3 2 .600L 7.009 1-3 2 .600L 1-3 2 .600L 1-3 2 .600L 1-3 2 .600L 1-3 2 .600L 1-3 2 .600L 1-3 2 .600L 1-3 2 .600L	28 12 16 .10 .30 .60 3 3 0 1.500 2-3 3 2.665R 4.565 2-3 3.800R 8.989 1-3 3.800R 1.3 3.800R 1.441
WY Ax Sp Lo On Ax	h. Bass. le acing ad les 10 20 30 40 60	ELXXX a1 a2 a3 GN BM GN	20 12 8 .20 .40 .40 .3 3 0 1.000 2-3 3 2.000R 2.560 1-3 2 4.001 4.705 1-3 2 4.001 9.703 1-3 2 4.001 12.203 1-3	20 12 8 .20 .50 .30 2 2 0 1.250 2-3 2 1.500L 2.890 1-3 2 0 7.600 1-3 2 0 10.100 1-3 2 0 12.600 1-3	24 12 12 10 30 60 3 3 0 1.500 3 3 0 2.0000 2-3 3 2.0000 7.290 1-3 3.0000 1-3 3.0000 1-3 3.0000 1-3 1.500	24 12 12 12 12 10 .40 .50 3 3 0 1.250 2.500 2-3 3 2.665R 4.565 2-3 3.665R 9.159 1-3 3.600R 11.616 1-3	24 12 12 10 .45 .45 .45 .3 3 0 1.125 3 3 0 2.250 1-3 2 2.100L 4.347 1-3 2 2.100L 9.288 1-3 2 2.100L 1.714 1-3	24 12 12 12 12 12 16 .50 .40 .50 .40 2 2 2 0 1.250 2 2 1.800L 4.608 1-3 2 1.800L 9.565 1-3 2 1.800L 12.054 1-3 12.054	24 12 12 12 20 .30 .50 .50 3 3 0 1.250 2.500 2.500 2.500 2.3 3 2.250R 4.335 2.250R 6.302 1-3 3 4.200R 8.653 1-3 4.200R 11.094	24 12 12 12 20 .40 .40 .40 3 3 0 1.000 3 3 2 1.2001 3.948 1-8 2 1.2001 6.436 1-3 2 1.2001 8.929 1-3 2 1.2001 1.424 1-3	24 12 12 12 20 .50 .50 .30 2 2 0 1.250 2 2 0 2.500 1-3 2 .600L 7.009 1-3 2 .600L 9.507 1-3 2 .600L 1-3 2 .600L 9.507	28 12 16 .10 .30 .60 3 3 0 1.500 3 .000 2-3 3 2.665R 4.565 2-3 3 2.665R 6.762 1-3 3.800R 8.989 1-3 3.800R 11.441 1-3
WY Ax Sp Lo On Ax	n. Basselle acting ad less 10 20 30 40	ELXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	20 12 8 .20 .40 .40 .40 .3 3 0 1.000 2-3 3 2.000R 2.560 1-3 2 4.00L 7.204 1-3 2 4.00L 9.703 1-3 2 4.400L 1-3 2 4.400L 1-3 2 4.400L 1-3 2 4.400L 1-3 2 4.400L 1-3 2 4.400L 1-3 2 4.400L 1-3 2 4.400L 1-3 2 4.400L 1-3 2 4.400L 1-3 2 4.400L 1-3 2 4.400L 1-3 2 4.400L 1-3 2 4.400L 1-3 2 4.400L 1-3 2 4.400L 1-3 2 4.400L	20 12 8 .20 .50 .30 2 0 1.250 2-3 2.500 1.500L 2.890 1-3 2 0 5.100 1-3 2 0 10.100 1-3 2 0 10.100 1-3 2 0 10.100 1-3 2 0 10.100	24 12 12 13 30 .60 3 .60 3 .50 3 .00 3 .000 2-3 3 2.000R 5.070 2-3 3 2.000R 7.290 1-3 3 3.000R 9.680 1-3 3.000R 1-3 3.000R 1-3 3.000R 1-3 3.000R 1-3 3.000R	24 12 12 12 10 .40 .50 3 0 1.250 2.500 2-3 2.665R 4.565 2-3 3.600R 9.159 1-3 3.600R 11.616 1-3 3	24 12 12 12 10 .45 .45 3 0 1.125 3 3 0 2.250 1-3 2 2.100L 4.347 1-3 2 2.100L 9.288 1-3 2 2.100L 1-3 1-3 2 2.100L 1-3 1-3 2 2.100L 1-3 2 2.100L 1-3 1-3 2 2.100L 1-3 1-3 2 2.100L 1-3 1-3 2 2.100L 1-3 1-3 2 2.100L 1-3 1-3 2 2.100L 1-3 1-3 2 2.100L	24 12 12 12 12 10 .50 .40 2 2 0 1.250 2 2 2 2 2 1.800L 4.608 1-3 2 1.800L 7.061 1-3 2 1.800L 1-3 2 1.800L 1-3 2 1.800L 1-3 2 1.800L 1-3 2 1.800L 1-3 2 1.800L 1-3 2 1.800L 1-3 2 1.800L 1-3 2 1.800L 1-3 2 1.800L 1-3 2 1.800L 1-3 2 1.800L 1-3 2 1.800L 1-3 2 1.800L	24 12 12 12 12 20 .30 .50 3 3 0 1.250 3 2.500 2-3 3 2.250R 4.335 2-3 3 2.250R 6.302 1-3 3 4.200R 11.094 1-3 3	24 12 12 12 20 .40 .40 .3 3 0 1.000 3 3 0 2.000 1-3 2 1.200L 3.948 1-3 2 1.200L 6.436 1-3 2 1.200L 1.424 1-3 2	24 12 12 12 20 .50 .50 .30 2 2 0 1.250 2 2 2 0 2.500 1-3 2 .600L 4.512 1-3 2 .600L 7.009 1-3 2 .600L 12.006 1-3 2	28 12 16 10 .30 .60 3 3 0 1.500 3 3 0 3.000 2-3 3 2.665R 4.565 2-3 3 3.800R 8.989 1-3 3.800R 11.441 1-3 3
WY Ax Sp Lo On Ax	h. Bass. le acing ad les 10 20 30 40 60	ELXXX a1 a2 a3 GN BM GN	20 12 8 .20 .40 .40 .3 3 0 1.000 2-3 3 2.000R 2.560 1-3 2 4.001 4.705 1-3 2 4.001 9.703 1-3 2 4.001 12.203 1-3 2 4.001 12.203 1-3 2 4.001 12.202	20 12 8 .20 .50 .30 2 2 0 1.250 2-3 2 1.500L 2.890 1-3 2 0 7.600 1-3 2 0 10.100 1-3 2 0 12.600 1-3 2 0 11.000 1-3 2 0 11.000 11.000 11.000 11.000 11.000	24 12 12 10 30 60 3 3 0 1.500 3 3 0 2.0000 2-3 3 2.0000 7.290 1-3 3.0000 1-3 3.0000 1-3 3.0000 1-3 1.500	24 12 12 12 12 10 .40 .50 3 3 0 1.250 2.500 2-3 3 2.665R 4.565 2-3 3.665R 9.159 1-3 3.600R 11.616 1-3	24 12 12 12 10 .45 .45 .45 .3 3 0 1.125 3 3 0 2.250 1-3 2 2.100L 6.810 1-3 2 2.100L 9.288 1-3 2 2.100L 1.774 1-3 2	24 12 12 12 12 12 16 .50 .40 .50 .40 2 2 2 0 1.250 2 2 1.800L 4.608 1-3 2 1.800L 9.565 1-3 2 1.800L 12.054 1-3 12.054	24 12 12 12 20 .30 .50 3 3 0 1.250 2.500 2.500 2.3 3 2.250R 4.335 2.250R 6.302 1-3 4.200R 8.653 1-3 4.200R 11.090R	24 12 12 12 20 .40 .40 .40 3 3 0 1.000 3 3 2 1.2001 3.948 1-8 2 1.2001 6.436 1-3 2 1.2001 8.929 1-3 2 1.2001 1.424 1-3	24 12 12 12 20 .50 .50 .30 2 2 0 1.250 2 2 0 2.500 1-3 2 .600L 7.009 1-3 2 .600L 9.507 1-3 2 .600L 1-3 2 .600L 9.507	28 12 16 .10 .30 .60 3 3 0 1.500 3 .000 2-3 3 2.665R 4.565 2-3 3 2.665R 6.762 1-3 3.800R 8.989 1-3 3.800R 11.441 1-3
WY Ax Sp Lo On Ax	10 20 30 40 60 80 80	e L XX X' a1 a2 a3 GN BM GN B	20 12 8 .20 .40 .40 .40 .3 3 0 1.000 2-3 3 2.000R 2.560 1-3 2 .400L 4.705 1-3 2 .400L 7.204 1-3 2 .400L 12.203 1-3 2 .400L 12.203 1-3 2 .400L 17.202 17.202	20 12 8 .20 .50 .30 2 0 1.250 2-3 2 1.500L 2.890 1-3 2 0 5.100 1-3 2 0 10.100 1-8 2 0 12.600 1-3 2 0 17.600 1-3	24 12 12 13 30 .60 3 3 0 1.500 3 .000 2-3 3 2.000R 5.070 2-3 3 2.000R 7.290 1-3 3.000R 9.680 1-3 3.000R 12.150 1-3 3.000R 17.113	24 12 12 12 14 16 17 18 18 18 18 18 18 18 18 18 18 18 18 18	24 12 12 12 13 10 .45 .45 .45 .3 0 1.125 .3 3 0 2.250 1-3 2 2.100L 4.347 1-3 2 2.100L 6.810 1-3 2 2.100L 11.774 1-3 2 2.100L 11.774 1-3 2 2.100L 16.755 1-3	24 12 12 12 12 12 12 16 16 17 18 18 18 18 18 18 18 18 18 18 18 18 18	24 12 12 12 20 .30 .50 3 3 0 1.250 3 2.500 2-3 3 2.250R 4.335 2.3 3 2.250R 6.302 1-3 3 4.200R 11.094 1-3 3 4.200R 11.094 1-3 1-3 1-3 1-3 1-3 1-3 1-3 1-3 1-3 1-3	24 12 12 20 .40 .40 .40 3 3 0 1.000 3 3 0 2.000 1-3 2 1.200L 3.948 1-3 2 1.200L 8.929 1-3 2 1.200L 11.424 1-3 2 1.200L 11.424 1-3 1.200L 11.424 1-3	24 12 12 12 20 .50 .50 .30 2 2 0 1.250 2 2 2 2 0 2.500 1-3 2 .600L 4.512 1-3 2 .600L 7.009 1-3 2 .600L 12.006 1-3 2 .600L 12.006 1-3 12.006 1-3 12.006 1-3 12.006 1-3 12.006 1-3 12.006 1-3 12.006 1-3 12.006 1-3 12.006 1-3 12.006 1-3 12.006 1-3 12.006 1-3 12.006 1-3 12.006 1-3 12.006 1-3 12.006 1-3 12.006	28 12 16 .10 .30 .60 3 3 0 1.500 3 .000 2-3 2.665R 4.565 2-3 3.800R 8.989 1-3 3.800R 11.441 1-3 3.800R 11.441 1-3
WY Ax Sp Lo On Ax	h. Bass. le acing ad les 10 20 30 40 60	e L XX a1 a2 a3 GNB M G	20 12 8 .20 .40 .40 .3 3 0 1.000 2-3 3 2.000R 2.560 1-3 2 .400L 7.204 1-3 2 .400L 12.203 1-3 2 .400L 17.202 1-3 2 .400L 17.202	20 12 8 .20 .50 .30 2 2 0 1.250 2-3 2 1.500L 2.890 1-3 2 0 7.600 1-3 2 0.100 1-3 2 0.12600 1-3 2 0.17.600 1-3 2 0.17.600	24 12 12 10 30 .60 3 3 0 1.500 3 0 3.000 2-3 3 2.000R 5.070 2-3 3 3.000R 7.290 1-3 3.000R 1-3 3.000R 1-3 3.000R 1-3 3.000R 1-3 3.000R 1-3 3.000R 1-3 3.000R 1-3 3.000R	24 12 12 12 10 .40 .50 3 3 0 1.250 2.500 2-3 3 2.665R 4.565 2-3 3.600R 9.159 1-3 3.600R 11.616 1-3 3.600R 11.616 1-3 3.600R 1.3 3.600R	24 12 12 12 10 .45 .45 .45 .3 3 0 1.125 3 0 2.250 1-3 2 2.100L 6.810 1-3 2 2.100L 9.288 1-3 2 2.100L 11.774 1-3 2 2.100L 16.755 1-3 2	24 12 12 12 12 10 .50 .40 .50 .40 2 2 2 0 1.250 2 2 0 2.500 1-3 2 1.800L 9.565 1-3 2 1.800L 9.565 1-3 2 1.800L 17.041 1-3 2 2 1.800L 17.041	24 12 12 20 .30 .50 .50 3 3 0 1.250 2.500 2.500 2.500 2.500 2.3 3 2.250R 4.335 2.3 4.200R 8.653 1-3 3 4.200R 11.094 11.094 1-3 3 4.200R 16.021 1-3 3	24 12 12 12 20 .40 .40 .40 .3 3 0 1.000 3 3 0 2.000 1-3 2 1.200L 8.929 1-3 2 1.200L 8.929 1-3 2 1.200L 8.948 1-3 2 1.200L 16.418 1-3 2 1.200L 16.418 1-3 2	24 12 12 12 20 .50 .50 .30 2 2 2 0 1.250 2 2 0 2.500 1-3 2 .600L 9.507 1-3 2 .600L 9.507 1-3 2 .600L 17.005 1-3 2 .600L 17.005	28 12 16 .10 .30 .60 3 3 0 1.500 3 .000 2-3 3 2.665R 4.565 2-3 3.800R 8.989 1-3 3.800R 11.441 1-3 3.800R 16.381
WY Ax Sp Lo On Ax	10 20 30 40 60 80 80	e L XX X' a1 a2 a3 GN BM GN B	20 12 8 .20 .40 .40 .40 .3 3 0 1.000 2-3 3 2.000R 2.560 1-3 2 .400L 4.705 1-3 2 .400L 7.204 1-3 2 .400L 12.203 1-3 2 .400L 12.203 1-3 2 .400L 17.202 17.202	20 12 8 .20 .50 .30 2 0 1.250 2-3 2 1.500L 2.890 1-3 2 0 5.100 1-3 2 0 10.100 1-8 2 0 12.600 1-3 2 0 17.600 1-3	24 12 12 13 30 .60 3 3 0 1.500 3 .000 2-3 3 2.000R 5.070 2-3 3 2.000R 7.290 1-3 3.000R 9.680 1-3 3.000R 12.150 1-3 3.000R 17.113	24 12 12 12 14 16 17 18 18 18 18 18 18 18 18 18 18 18 18 18	24 12 12 12 13 10 .45 .45 .45 .3 0 1.125 .3 3 0 2.250 1-3 2 2.100L 4.347 1-3 2 2.100L 6.810 1-3 2 2.100L 11.774 1-3 2 2.100L 11.774 1-3 2 2.100L 16.755 1-3	24 12 12 12 12 12 12 16 16 17 18 18 18 18 18 18 18 18 18 18 18 18 18	24 12 12 12 20 .30 .50 3 3 0 1.250 3 2.500 2-3 3 2.250R 4.335 2.3 3 2.250R 6.302 1-3 3 4.200R 11.094 1-3 3 4.200R 11.094 1-3 1-3 1-3 1-3 1-3 1-3 1-3 1-3 1-3 1-3	24 12 12 20 .40 .40 .40 3 3 0 1.000 3 3 0 2.000 1-3 2 1.200L 3.948 1-3 2 1.200L 8.929 1-3 2 1.200L 11.424 1-3 2 1.200L 11.424 1-3 1.200L 11.424 1-3	24 12 12 12 20 .50 .50 .30 2 2 0 1.250 2 2 2 2 0 2.500 1-3 2 .600L 4.512 1-3 2 .600L 7.009 1-3 2 .600L 12.006 1-3 2 .600L 12.006 1-3 12.006 1-3 12.006 1-3 12.006 1-3 12.006 1-3 12.006 1-3 12.006 1-3 12.006 1-3 12.006 1-3 12.006 1-3 12.006 1-3 12.006 1-3 12.006 1-3 12.006 1-3 12.006 1-3 12.006 1-3 12.006	28 12 16 .10 .30 .60 3 3 0 1.500 3 .000 2-3 2.665R 4.565 2-3 3.800R 8.989 1-3 3.800R 11.441 1-3 3.800R 11.441 1-3

ΤA	BLE	7.3 (Continue	d)								
	ick No		51	52	53	54	55	56	57	58	59	60
M r Ax	ı. Base	X X	28 12	$\frac{28}{12}$	28 12	$\frac{28}{12}$	28 12	28 12	32	32	32	32 12
Spa	acing	X'	16	16	16	16	16	16	20	20	20	20
Lo: On	ad	\mathbf{a}_1 \mathbf{a}_2	.10 .40	.10 $.45$.10 .50	.20 $.30$.20 .40	.20 .50	.10 $.30$.10 .40	.10	.10 $.50$
Ãx	les	\mathbf{a}_3	.50	.45	.40	.50	.40	.30	.60	.50	.45	.40
	10	G N	3	3 3	2 2	3	3 5	2 2	3	3	3	$\frac{2}{2}$
		В	0	U	0	0	0	0	0	0	0	0
		$\frac{M}{G}$	1.250	1.125 3	$\frac{1.250}{2}$	3	3	1.250	1.500 3	1.250 3	3	$-\frac{1.250}{2}$
	20	N	3	3	2	. 3	3	2	3	3	3	2
		B M	$\frac{0}{2,500}$	$\substack{0\\2.250}$	$\frac{0}{2.590}$	$\frac{0}{2.500}$	$\frac{0}{2.000}$	$\frac{0}{2.500}$	$\frac{0}{3.000}$	$\frac{0}{2.500}$	$\frac{0}{2.250}$	$\frac{0}{2.500}$
İ	90	G	2 3	23	2 3	2-3	1 2	1-2	3	3	1-2	1-2
i	30	N B	$^3_{3.555 m R}$	$^{3}_{4.000 m R}$	$^{2}_{3.555L}$	$^3_{3.000 m R}$	$\frac{2}{2.000 \mathrm{R}}$	$\frac{2}{1.715 \mathrm{R}}$	3 0	3 0	$\frac{2}{1.090R}$	$\frac{2}{1.000\mathbf{R}}$
		M	3.929	3.630	3.929	3.840	3.380	4.118	4,500	3.750	3.548	3.920
إب	40	G N	$\frac{2-3}{3}$	13 2	13 2	2 -3 3	$\frac{1-3}{2}$	$\frac{1}{2}$	2-3 3	$\frac{2-3}{3}$	1 3 2	$\frac{1-3}{2}$
Span-Feet		B M	3.555R 6.085	$\frac{3.000 \mathrm{L}}{6.025}$	$\frac{2.600 L}{6.369}$	3.000R 5.780	2.000L 5,700	1.200L 6.436	3.335R 6.249	1.445R 5.444	3.900L 5.280	3.400L 5.689
g.		G	1 3	1-3	1-3	1 3	1 3	1-3	2-3	2-3	1-3	1-3
^	50	N B	$^3_{4.600 m R}$	$\frac{2}{3.000L}$	2 2.600L	$^{3}_{5.200 m R}$	$\frac{2}{2.000}$ L	2 1.200 L	3 $3.335R$	3 4.445R	2 3.900L	2 3.400L
		M	8.323	8.480	8.835	7.841	8.180	₹.929	8.448	7.605	7.704	8.131
	60	G N	$rac{1}{3}$	$\frac{1-3}{2}$	$\frac{1-3}{2}$	1-3 3	1-3 2	$\frac{1-3}{2}$	$_{3}^{1-3}$	$\frac{1-3}{3}$	$_{2}^{1-3}$	$\frac{1-3}{2}$
		В	$4.600\mathbf{R}$	3.000 L	2.600 L	5.200R 10.251	2.000I.	1.200L	4.600R	5.600R	3.900L	3.400L
		M G	10,753 13	10.950 13	11.313	1-3	$\frac{10.867}{1-3}$	11.424 1-3	$\frac{10.753}{1-3}$	9.923	$\frac{10.154}{1.3}$	$\frac{10.593}{1-3}$
	80	N	$^3_{4.600 m R}$	2 3.000L	$^{2}_{2.600}$ L	$\frac{3}{5.200 \mathbf{R}}$	2	2 1.200L	3	3	2	2
		B M	15.665	15.913	16.285	15.138	2.000L 15.650	16.418	$4.600 { m R} \\ 15.665$	5.600R 14.792	3.900L 15.090	3.400L 15.545
İ	100	G N	1–3 3	1-3 2	1-3	1-3 3	1–3 2	1–3 2	13 3	1-3	1-3 2	1-3 2
	100	В	4.600R	3.000 L	2.600L	5.200R	2.000L	1.200L	4.600R	5.600R	3.900L	3.400 L
		M	20.612	20.890	21.267	20.070	20.640	21.414	20.612	19.714	20.052	20.516
	ick No i. Base		61 32	$\frac{-62}{32}$	63 32	36	65 36	66 	$-\frac{67}{36}$	68 36	$\frac{-69}{36}$	$\frac{70}{36}$
Ax	le	X	12	12	12	12	12	12	12	12	12	12
Spa Loa	acing	X'	.20	.20	.20	.10	.10	.10	.10	.20	.20	.20
On		\mathbf{a}_2	.30	.40	.50	.30	.40	.45	.50	.30	.40	.50
Ax	les	a ₃	.50	.40	2	3	$-\frac{.50}{3}$	3	2	.50	3	
	10	N	3	3	2	3	3	3	$\frac{\tilde{2}}{0}$	3	3	2
		B M	1.250	1.000	1.250	1.500	1.250	1.125	1.250	1.250	1.000	1.250
	20	G N	3 3	3	2 2	3	3 3	3	$\frac{2}{2}$	3	3 3	2 2
	40	В	0	0	0	0	0	0	0	0	0	0
		- <mark>M</mark> -	$\frac{2.500}{3}$	$\frac{2.000}{1-2}$	$\frac{2.500}{1-2}$	$\frac{3.000}{3}$	$\frac{2.500}{3}$	$-\frac{2.250}{1-2}$	$\frac{2.500}{1-2}$	3	$\frac{2.000}{1 \cdot 2}$	$\frac{2.500}{1-2}$
	30	N	3	2	2	3	3	2	2	3	2	2
		B M	$\frac{0}{3.750}$	$2.000R \\ 3.380$	1.715R 4.118	$\substack{0\\4.500}$	$\substack{0\\3.750}$	1.090R 3.548	$1.000 \mathbf{R} \\ 3.920$	$\substack{0\\3.750}$	$2.000R \\ 3.380$	1.715R 4.118
ب	40	G	23	1–3	1-3	3	3	1-2	1-2	3	1-2	1-2
pan-Feet	40	N B	$3 \ 3.750 \mathbf{R}$	$^{2}_{2,800L}$	$^{2}_{1.800L}$	$\frac{3}{0}$	$\frac{3}{0}$	$^{2}_{1.090R}$	$^2_{1.000\mathrm{R}}$	3 0	2 2.000 R	2 1.715 R
สม		_M	$\frac{5.282}{2.2}$	4.996	$\frac{5.881}{1.00}$	6.000	5.000	4.917	$\frac{5.415}{1-3}$	$\frac{5.000}{2-3}$	$-\frac{4.860}{1.8}$	5.851
š	50	G N	2-3 3	$\frac{1-3}{2}$	$^{1-3}_2$	$\frac{2-3}{3}$	$^{2-3}_{3}$	$^{1-3}_2$	2	3	$\overset{1-3}{2}$	${\overset{1-3}{2}}$
		B M	3.750R 7.225	2.800L 7.457	1.800L 8,365	$\frac{4.000 \mathrm{R}}{7.938}$	5.335R 6.961	4.800L 6.961	4.200L 7.453	4.500R 6.724	3.600L 6.759	2.400L 7.815
		G	1-3	1-3	1-3	23	1-3	1-3	1-3	2 -3	1-3	1-3
	60	N B	$_{6.200\mathrm{R}}^{3}$	$2 \\ 2.800 $ L	$^{2}_{1.800L}$	$^{3}_{4.000R}$	3 6.600R	$^{2}_{4.800L}$	$^2_{4.200L}$	$^3_{4.500 m R}$	3.600L	2 2.400L
		M	9.441	9.931	10.854	10.140	9.126	9.384	9.894	8.670	9.216	10.296
	80	G N	13 3	$\frac{1-3}{2}$	$^{1-3}_{2}$	13 3	$^{1-3}_{3}$	$^{1-3}_2$	$^{1-3}_2$	1-3 3	$^{1-3}_2$	$^{1-3}_{2}$
		\mathbf{B}	6.200R	2.800L	1.800L	5.400R	6.600R	4.800L	4.200L	7.200R	3.600L	2.400L
		M	14.281	14.898	15.841	14.965	13.945	14.288	14.821	13.448	14.162	15.272
		G	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1 - 3	1-3
	100	G N	3	2	2	3	3	2	2	3	2	2
	100											

62 METHOD OF CONVERTING HEAVY MOTOR VEHICLE LOADS TABLE 7.3 (Continued)

IA	BLE	7.3	Continue									
	ck No			72	73 40	74 40	75 40	76 40	77 40	78 44	79 44	80
$\frac{\mathbf{W}\mathbf{r}}{\mathbf{A}\mathbf{x}}$	ı. Base le	X	$\frac{40}{12}$	$\frac{40}{12}$	12	12	12	12	12	₁₂	12	12
Spa	cing	X'	28	28	28	28	28	28	28	32	32	32_
Lo: On	ıd.	a ₁	$.10 \\ .30$	$.10 \\ .40$.10 .45	$.10 \\ .50$	$.20 \\ .30$.20 .40	.20 .50	.10 .30	.10 .40	$.10 \\ .45$
Αx	les	a 3	.60	.50	.45	.40	.50	40	.30	.60	.50	45
	10	G N	3 3	3 3	3 3	2 2	3	3 3	$\frac{2}{2}$	3	3	3 3
		B M	$\frac{0}{1.500}$	$\frac{0}{1.250}$	$\begin{smallmatrix} 0\\1.125\end{smallmatrix}$	$\frac{0}{1.250}$	$^{0}_{1.250}$	$\frac{0}{1.000}$	$\frac{0}{1,250}$	$\frac{0}{1.500}$	$\frac{0}{1.250}$	0 1.125
		G	3	3	3	$\frac{1.250}{2}$	3	3	2	3	$-\frac{1.230}{3}$	- 3 - 3
	20	$_{ m B}^{ m N}$	3 0	3 0	3	$\frac{2}{0}$	3 0	3	$\frac{2}{0}$	3 0	3 0	$\frac{3}{0}$
		M	3.000	2.500	2.250	2.500	2.500	2.000	2.500	3.000	2.500	2.250
	30	G N	3 3	3 3	$\begin{smallmatrix}1&2\\&2\end{smallmatrix}$	$\begin{smallmatrix}1&2\\2\end{smallmatrix}$	3	$_{2}^{1-2}$	$_{2}^{1-2}$	3 3	3 3	$\frac{1-2}{2}$
		В	0	0	1.090R 3.548	1.000R	0	2.000R	1.715R	0 4,500	0	1.090R 3.548
		- M	$\frac{4.500}{3}$	3.750	1-2	$\frac{3.920}{1-2}$	$\frac{3.750}{3}$	3.380	$-\frac{4.118}{1-2}$	3	$-\frac{3.750}{3}$	1 2
eet	40	N	3	3	2	2 1.000R	3	2	2	3	3	2 1.090R
편-		B M	$\substack{0\\6.000}$	$\begin{smallmatrix} 0\\5.000\end{smallmatrix}$	1.090R 4.917	5.415	5.000	$2.000R \\ 4.860$	1.715R 5.851	6.000	5.000	4.917
Span-Feet	50	G N	3 3	2 · 3	1-2	1 2	3 3	1-2	1 2	3 3	3 3	$^{-1-2}_2$
0,1	90	В	0	6.220R	1.090R	1.000R	0	2.000R	1.715R	0	0	1.090R
		M G	$\frac{7.500}{2-3}$	6.349	$-\frac{6.289}{1-3}$	6.912	$\frac{6.250}{2.3}$	6.348 1-3	$\frac{7.591}{1-3}$	$\frac{7.500}{2-3}$	$\frac{6.250}{2-3}$	6.289
	60	N	3	3	2	2	3	2	2	3	3	2
		B M	$rac{4.665 ext{R}}{9.628}$	6.220R 8.483	$5.700L \\ 8.642$	$5.000 L \\ 9.217$	$5.250 m R \ 8.167$	4.400L 8.523	3.000L 9.750	5.333R 9.129	7.110R 7.860	$6.600 L \\ 7.926$
		G	1-3	13	1-3	1-3	1 3	1-3	13	1-3	1-3	13
	80	N B	$^3_{6.200 m R}$	$7.600 \mathrm{R}$	$\frac{2}{5.700 L}$	5.000 L	$8.200\mathrm{R}$	$\frac{2}{4.400L}$	$^2_{3.000 \rm L}$	$^3_{7.000 m R}$	$8.600\mathbf{R}$	$^{2}_{6.600L}$
		_M	$\frac{14.281}{1-3}$	13.122	$\frac{13.506}{1-3}$	$\frac{14.113}{1-3}$	12.641	13.442 1-3	$\frac{14.173}{1-3}$	$-\frac{13.613}{1-3}$	$\frac{12.325}{1-3}$	$-\frac{12.745}{1-3}$
	100	G N	3	3	2	2	3	2	2	3	3	2
		B M	6.200R 19.184	7.600R 17.978	5.700L 18.425	5.000L 19.050	8.200R 17.472	4.400L 18.394	3.000L 19.690	7.000R 18.491	8.600R 17.140	6.600L 17,636
Tr	uck N	0.	81	82	83	84	85	86	87	88	89	90
W	ı. Bas	e L	44	44	44	44	24	24	24	24	24	24
WI Ax	ı. Bas le	e L X	44 12	44 12	44 12	44 12	24 16	24 16	24 16	24 16	24 16	24 16
$\frac{\overline{\mathbf{W}}}{\mathbf{A}}$ $\frac{\mathbf{S}\mathbf{p}}{\mathbf{L}\mathbf{o}}$	n. Bas le acing ad	e L X X' a ₁	12 32 .10	12 32 .20	12 32 .20	12 32 .20	24 16 8 .10	24 16 8 .10	24 16 8 .10	24 16 8 .10	24 16 8 .20	24 16 8 .20
Will Ax Sp Lo On	n. Bas le acing ad	e L X X'	12 32	44 12 32	12 32	44 12 32	24 16 8	24 16 8	24 16 8	24 16 8	24 16 8	24 16 8
Will Ax Sp Lo On	n. Bas le acing ad les	e L X X' a ₁ a ₂ a ₃ G	12 32 .10 .50 .40	.20 .30 .50	.20 .40 .40 .3	44 12 32 .20 .50 .30	24 16 8 .10 .30 .60	24 16 8 .10 .40 .50	24 16 8 .10 .45 .45	24 16 8 .10 .50 .40	24 16 8 .20 .30 .50	24 16 8 .20 .40 .40
Will Ax Sp Lo On	n. Bas le acing ad	e L X X' a ₁ a ₂ a ₃ G N B	12 32 .10 .50 .40 2 2	.20 .30 .50	12 32 .20 .40 .40 3 3	12 32 .20 .50 .30 2 2	24 16 8 .10 .30 .60 3 3	24 16 8 .10 .40 .50 3 3	24 16 8 .10 .45 .45 .3 3	24 16 8 .10 .50 .40 2 2	24 16 8 .20 .30 .50	24 16 8 .20 .40 .40 .3 3
Will Ax Sp Lo On	n. Bas le acing ad les	e L X X' a ₁ a ₂ a ₃ G N B M	44 12 32 .10 .50 .40 2 2 0 1.250	12 32 .20 .30 .50 3 0 1.250	12 32 .20 .40 .40 3 3 0 1.000	44 12 32 .20 .50 .30 2 2 0 1.250	24 16 8 .10 .30 .60 3 3 0 1.500	24 16 8 .10 .40 .50 3 3 0 1.250	24 16 8 .10 .45 .45 .3 3 0 1.125	24 16 8 .10 .50 .40 2 2 0 1.250	24 16 8 .20 .30 .50 3 0 1.250	24 16 8 .20 .40 .40 3 3 0 1.000
Will Ax Sp Lo On	n. Bas le acing ad les	e L X X' a ₁ a ₂ a ₃ G N B M	44 12 32 .10 .50 .40 2 2 0 1.250	44 12 32 .20 .30 .50 3 0 1.250	44 12 32 .20 .40 .40 3 3 0 1.000	44 12 32 .20 .50 .30 2 2 0 1.250 2	24 16 8 .10 .30 .60 3 3 0 1.500 2-3 3	24 16 8 .10 .40 .50 3 3 0 1.250 2-3 3	24 16 8 .10 .45 .45 .45 3 0 1.125 2-3 3	24 16 8 .10 .50 .40 2 2 0 1.250 2-3 2	24 16 8 .20 .30 .50 3 0 1.250 2-3 3	24 16 8 .20 .40 .40 .3 3 0 1.000 2-3 3
Will Ax Sp Lo On	n. Bas le acing ad les	e L X X' a ₁ a ₂ a ₃ G N B M	44 12 32 .10 .50 .40 2 2 0 1.250	44 12 32 .20 .30 .50 3 0 1.250	12 32 .20 .40 .40 3 3 0 1.000	44 12 32 .20 .50 .30 2 2 0 1.250 2	24 16 8 .10 .30 .60 3 3 0 1.500 2-3	24 16 8 .10 .40 .50 3 0 1.250 2-3	24 16 8 .10 .45 .45 .3 3 0 1.125 2-3	24 16 8 .10 .50 .40 2 2 0 1.250 2-3	24 16 8 .20 .30 .50 3 0 1.250 2-3	24 16 8 .20 .40 .40 3 3 0 1.000 2-3
Will Ax Sp Lo On	le acing ad les 10 20	e L X X' a ₁ a ₂ a ₃ G N B M G N B M	44 12 32 .10 .50 .40 2 2 0 1.250 2 2 0 2.500 1-2	44 12 32 .20 .30 .50 3 3 0 1.250 3 3 0 2.500	44 12 32 .20 .40 .40 3 3 0 1.000 3 3 0 1.000 1.2	44 12 32 .20 .50 .30 2 2 0 1.250 2 2 0 2.500 1-2	24 16 8 .10 .30 .60 3 3 0 1.500 2-3 3 1.335R 3.379 2-3	24 16 8 .10 .40 .50 3 0 1.250 2-3 3 1.778R 3.040 2-3	24 16 8 .10 .45 .45 3 0 1.125 2-3 3 2.000R 2.880 2.3	24 16 8 .10 .50 .40 2 2 0 1.250 2-3 2 1.778L 3.040 2-3	24 16 8 .20 .30 .50 3 3 0 1.250 2-3 3 1.500R 2.890 2-3	24 16 8 .20 .40 .40 3 3 0 1.000 2-3 3 2.000R 2.560 2-3
Will Ax Sp Lo On	n. Bas le acing ad les	e L	44 12 32 .10 .50 .40 2 2 0 1.250 2 2 0 2.500 1-2 1.0000R	44 12 32 .20 .30 .50 3 3 0 1.250 3 3 0 2.500	3 3 0 0 1.000 1 -2 2 2.000 R	44 12 32 20 .50 .30 2 2 0 1.250 2 2 0 2.500 1.750	24 16 8 .10 .30 .60 3 3 0 1.500 2-3 3 1.335R 3.379 2-3 3 1.335R	24 16 8 .10 .40 .50 3 3 0 1.250 2-3 3 1.778R 3.040 2 3 3 1.778R	24 16 8 .10 .45 .45 .45 3 0 1.125 2-3 3 2.000R 2.880 2.3 3 2.000R	24 16 8 .10 .50 .40 2 2 0 1.250 2-3 2 1.778L 3.040 2-3 2 1.778L	24 16 8 .20 .30 .50 3 0 1.250 2–3 3 1.500R 2.890 2–3 3 1.500R	24 16 8 .20 .40 .40 .40 3 3 0 1.000 2-3 3 2.000R 2.560 2-3 3 2.000R
Will Ax Sp Lo On	le acing ad les 10 20	e L X X' a1 a2 a3 G N B M G N B M G N B M H G N B M H B M H B M B M B M B M B M B M B M	44 12 32 .10 .50 .40 2 2 0 1.250 2 2 0 2.500 1-2 2 1.000 R 3.920	44 12 32 .30 .50 3 0 1.250 3 3 0 2.500 3 3 0 2.500	44 12 32 .20 .40 .40 .3 3 0 1.000 3 3 0 2.000 12 2.000R 3.380	44 12 32 .50 .30 2 2 0 1.25e 2 2 0 2.500 1-2 2 1.715R 4.118	24 16 8 .10 .30 .60 3 3 0 1.500 2-3 3 1.335R 3.379 2 3 3 1.335R 5.602	24 16 8 .10 .40 .50 3 0 1.250 2-3 3 1.778R 3.040 2 3 3 1.778R	24 16 8 .10 .45 .45 .3 0 1.125 2-3 3 2.000R 2.880 2.3 3 3 5.070	24 16 8 .10 .50 .40 2 2 0 1.250 2-3 2 1.778L 2.3 2 1.778L 5.243	24 16 8 .20 .30 .50 3 0 1.250 2-3 3 1.500R 2.890 2-3 3 1.500R 4.860	24 16 8 .20 .40 .40 3 3 0 1.000 2-3 3 2.000R 2.560 4.506
Ax	le acing ad les 10 20	e L X X X' a1 a2 a3 G N B M G N B M G N B M G N B M G N B M G N B M O G M O G M	44 12 32 10 .50 .40 2 2 0 1.250 2 2 0 2.500 1-2 1.000R 3.920 1-2 2	44 12 32 20 .30 .50 3 0 1.250 3 3 0 2.500 3 3 0 3 0 2.500 3 3 3 3 0 0 3 3 0 3 0 3 0 0 1.250 3 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	3 3 0 1.0000 1 - 2 2.000 R 3.380 1 - 2 2	44 12 32 .50 .50 .30 2 2 0 1.250 2 2 0 2.500 1.715R 4.118 1-2 2	24 16 8 .10 .30 .60 3 3 0 1.500 2-3 3 3.379 2 · 3 1.335R 5.602 2 · 3 3	24 16 8 .10 .40 .50 3 0 1.250 2-3 3 1.778R 3.040 2 3 3 1.778R 5.243 2 3 3	24 16 8 .10 .45 .45 .45 .3 .0 .1.125 2-3 .3 .0 2.880 2.880 2.3 2.000R 5.070 1-3 2	24 16 8 .10 .50 .40 2 2 0 1.250 2–3 2 1.778L 3.040 2 -3 2 1.778L 5.243 1–3 2	24 16 8 .20 .30 .50 3 0 1.250 2–3 3 1.500R 2.890 2-3 3 1.500R 4.860 2–3 3	24 16 8 .20 .40 .40 3 3 0 1.000 2-3 3 2.000R 2.560 2-3 3 2.000R 4.506
Ax	n. Bas le acing ad les 10 20	e L X X X' a1 a2 a3 G N B M G N B M G N B M G O O O O O O O O O O O O O O O O O O	44 12 32 .10 .50 .40 2 2 0 1.250 2 2 0 2.500 1-2 1.000R 3.920 1-2	44 12 32 .20 .30 .50 3 0 1.250 3 0 2.500 3 3 0 0 2.500 3 3 0 0 2.500 3 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	32 .20 .40 .40 .40 3 3 0 1.000 3 2.000 1-2 2 2.0000R 3.380 1-2	44 12 32 .50 .50 .30 2 2 0 1.250 2 2 0 2.50 1.250 2 4.118 4.118 1.2	24 16 8 .10 .30 .60 3 3 0 1.500 2-3 3 1.335R 3.35 1.335R 3.35 2.3 3 2.3 2.3 3 2.3 3 3 3 3 4 3 3 4 3 3 3 4 3 4 3 5 6 6 6 7 8 8 8 8 8 8 8 8 8 8 8 8 8	24 16 8 .10 .40 .50 3 0 1.250 2-3 3 1.778R 3.040 2 3 3 1.778R 5.243 2 3 2 3	24 16 8 .10 .45 .45 .45 3 0 1.125 2-3 3 2.000R 2.880 2.3 2.000R 5.070 1-3	24 16 8 .10 .50 .40 2 2 0 1.250 2-3 2 1.778L 3.040 2-3 2 1.778L 5.243	24 16 8 .20 .30 .50 3 3 0 1.250 2-3 3 1.500R 2.89 2-3 3 1.500R 2-3 2-3	24 16 8 .20 .40 .40 3 3 0 1.000 2-3 3 2.0000R 2.560 2-3 3 2.0000R
Ax	acing ad les 10 20 30 40	e L	44 12 32 10 .50 .40 2 2 0 1.250 2 2 0 2.500 1–2 1.000R 3.920 1–2 1.000R 5.415 1–2	44 12 32 .20 .30 .50 3 3 0 1.250 3 3 0 2.500 3 3 0 2.500 3 3 0 5 0 5 0 0 0 0 0 0 0 0 0 0 0 0 0	44 12 32 .20 .40 .40 .3 3 0 1.000 3 3 0 2.000 1.2 2 2.0000 1.2 2 2.0000 1.2 4.0 1.000	44 12 32 20 .50 .30 2 2 0 1.250 2 2 0 2.500 1-715R 4.118 1-2 1.715R 5.851 1-2	24 16 8 .10 .30 .60 3 3 0 1.500 2-3 3 3.335R 3.379 2 · 3 1.335R 5.602 2 · 3 3 1.535R 5.750 1.535R	24 16 8 .10 .40 .50 3 3 0 1.250 2-3 3.040 2 3 1.778R 5.243 2 3 1.778R 7.469 1 3	24 16 8 .10 .45 .45 .3 3 0 1.125 2-3 3 2.000R 2.880 2.3 3 2.000R 5.070 1-3 1.000L 7.425 1.3	24 16 8 .10 .50 .40 2 2 0 1.250 2-3 2.1.778L 3.040 2-3 2 1.778L 5.243 1-3 2.800L 7.616 1 3	24 16 8 .20 .30 .50 3 3 0 1.250 2–3 3 1.500R 4.860 2–3 3 1.500R 4.860	24 16 8 .20 .40 .40 3 3 0 1.000 2-3 3 2.000R 4.506 1-3
Will Ax Sp Lo On	n. Bas le acing ad les 10 20	e L X X X' a1 a2 a3 G N B M G N B M G N B M G N B M M G N B M M M M M M M M M M M M M M M M M M	44 12 32 10 .50 .40 2 2 0 1.250 2 2 0 2.500 1-2 2 1.000R 3.920 1-2 2 1.000R 5.415 1-2 2 1.000R	44 12 32 20 30 30 50 1.250 3 3 0 2.500 3 3 0 2.500 3 3 0 0 3 0 0 0 0 0 0 0 0 0 0 0 0 0	44 12 32 .20 .40 .40 .3 3 0 1.000 3 3 0 2.000R 3.380 1-2 2.000R 3.880 1-2 2.000R	44 12 32 20 .50 .30 2 2 0 1.250 2 2 0 2.500 1-2 1.715R 4.118 1-2 1.715R 5.851	24 16 8 .10 .30 .60 3 3 0 1.500 2-3 3 1.335R 3.379 2-3 3.350 2-3 3.350 2-3 3.350 2-3 3.350 3.379 2-3 3.350 3.379 2-3 3.379 3.799 3.799 3.799 3.799 3.799 3.799 3.799 3.799 3.799 3.799 3.799 3.799 3.799 3.799 3.799 3.799 3.799 3.799	24 16 8 .10 .40 .50 3 3 0 1.250 2-3 3 1.778R 3.040 2 3 1.778R 5.243 2 3 3 1.778R 7.469	24 16 8 .10 .45 .45 .45 .3 3 0 1.125 2-3 3 2.000R 2.880 2.3 3 2.000R 1-3 2.000R 7.47 1-3 1.000L 7.425	24 16 8 .10 .50 .40 2 2 0 1.250 2-3 2 1.778L 3.040 2-3 2 1.778L 5.243 1-3 2 8.00L 7.616	24 16 8 .20 .30 .50 3 3 0 1.250 2-3 3 1.500R 2.890 2-3 1.500R 4.860 2-3 1.500R 6.845	24 16 8 .20 .40 .40 .3 3 0 1.000 2-3 3 2.000R 2.560 2-3 3 2.000R 4.500 1-3 2 0 6.800
Ax	acing ad les 10 20 30 40	e L XX X' a1 a2 a3 G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M M G N B M M M G N B M M M G N B M M M G N B M M M G N B M M M G N B M M M G N B M M M G N B M M M G N B M M M G N B M M M G N B M M M G N B M M M G N B M M M G N B M M B M M G N B M M B M M G N B M M B M M G N B M M B M M G N B M M B M M G N B M M B M M G N B M M B M M G N B M M B M M G N B M M B M B M M B M B M M B B M B M B B M B M B B M B B M B B B B M B	44 12 32 .10 .50 .40 2 2 0 1.250 2 2 0 2.500 1–2 1.000R 3.920 1–2 1.000R 5.415 1–2 1.000R 6.912	44 12 32 .20 .30 .50 3 3 0 1.250 3 3 0 2.500 3 3 0 5 0 5 0 0 0 0 0 0 0 0 0 0 0 0 0	44 12 32 .20 .40 .40 .3 3 0 1.000 3 3 0 2.000 12 2 2.000R 4.860 12 2.000R 6.348	44 12 32 20 .50 .30 2 2 0 1.250 2 2 0 2.500 1-2 2 1.715R 4.118 1-2 2 1.715F 5.851 1-2 2 1.715R 7.591	24 16 8 .10 .30 .60 3 3 0 1.500 2-3 3 3.335R 3.379 2-3 3 1.335R 5.602 2 3 1.335R 5.402 2 3 3 3 1.535R 5.602 3 3 3 3 3 3 3 3 3 3 3 3 3	24 16 8 .10 .40 .50 3 3 0 1.250 2-3 3.040 2 3 1.778R 5.243 2 3 1.778R 7.469 1 3 3 2.800R 9.857	24 16 8 .10 .45 .45 .3 3 0 1.125 2-3 3 2.000R 2.880 2.3 3 2.000R 5.070 1-3 2 1.000L 9.920	24 16 8 .10 .50 .40 2 2 0 1.250 2-3 2.1.778L 5.243 1-3 2 1.778L 5.243 1-3 2 8.800L 10.113	24 16 8 .20 .30 .50 3 3 0 1.250 2-3 3 1.500R 4.860 2-3 3 1.500R 4.860 1.500R 3 3 3 3 3 3 3 4.860 1.250 3 3 3 3 3 3 3 3 4.860 3 3 3 3 3 4.860 3 3 3 3 4.860 3 3 3 4.860 3 3 3 3 4.860 3 3 3 3 3 4.860 3 3 3 3 3 3 3 4.860 3 3 3 3 3 3 3 3 3 3 3 3 3	24 16 8 .20 .40 .40 3 3 0 1.000 2-3 3 2.000R 2.560 2-3 3 2.000R 4.506 1-3 2 0 6.800 1-3 2 0 9.800 1-3 2 0 9.800 1-3 1-3 1-3 1-3 1-3 1-3 1-3 1-3
Ax	acing ad les 10 20 30 40	e L X X a1 a2 a3 G N B M B M M G N B M B M M G N B M B M M B M B M M B M B M B M B M B	44 112 32 1.10 .50 .40 2 2 0 1.250 2 2 0 2.500 1-2 2 1.000R 3.920 1-2 2 1.000R 5.415 1-2 2 1.000R 6.912 1 3 2	44 12 32 20 30 30 50 1.250 3 3 0 2.500 3 3 0 0 0 0 0 0 0 0 0 0 0 0 0	44 12 32 20 .40 .40 .3 3 0 1.000 3 3 0 2.000 1-2 2.000R 3.380 1-2 2 2.000R 4.860 1-2 2.000R 6.348 1-3 2	44 12 32 20 .50 .30 2 2 0 1.250 2 2 0 2.500 1-2 2 1.715R 4.118R 4.118R 1.2 2.1715R 7.591 1.2 2.1715R	24 16 8 .10 .30 .60 3 3 0 1.500 2-3 3 1.335R 5.602 2 3 3 1.335R 7.839 1-3 2.400R 10.215 1-3 3	24 16 8 .10 .40 .50 3 3 0 1.250 2-3 3 1.778R 3.040 2 3 1.778R 5.243 2 3 1.778R 5.243 2 3 2 3 3 1.778R 5.243 3 2 800R 9.857 1-3 3	24 16 8 .10 .45 .45 .45 .3 3 0 1.125 2-3 3 2.000R 2.880 2 3 2.000R 1-3 2 1.000L 7.425 1 3 2.1000L 9.920 1-3 2	24 16 8 8 10 .50 .40 2 2 0 1.250 2.3 2.1.778L 3.040 2.3 2.1.778L 5.243 1.3 2 8.00L 7.616 1 3 2 8.00L	24 16 8 .20 .30 .50 3 3 0 1.250 2-3 3 1.500R 2.890 2-3 3 1.500R 6.845 1-3 3.600R 9.159 1-3	24 16 8 .20 .40 .40 .3 3 0 1.000 2-3 3 2.000R 2.560 1-3 2 0 6.800 1-3 2 0
Ax	n. Bas le acing ad les 10 20 40	e L XX X1 A1 A2 A3 GN BM GN BM GN BM GN BM GN BM GN BM GN BM GN BM GN BM GN BM GN BM BM GN BM BM GN BM BM BM BM BM BM BM BM BM BM BM BM BM	44 12 32 10 .50 .40 2 2 0 1.250 2 2 0 2.500 1-2 2.0000R 3.920 1-2 1.0000R 5.415 1-2 2 1.000R 6.912 1 3 2 5,800L	44 12 32 .20 .30 .50 3 3 0 1.250 3 3 0 2.500 3 3 0 3.750 3 0 5 0 0 0 0 0 0 0 0 0 0 0 0 0	44 12 32 .20 .40 .40 .3 3 0 1.000 3 3 0 2.000 1.2 2 2.000R 4.860 1-2 2.000R 6.348 1-3 2.5200L	44 12 32 20 .50 .50 .30 2 2 0 1.250 2 2 2 1.715R 4.118 1-2 1.715R 7.591 1-2 1.715R	24 16 8 .10 .30 .60 3 3 0 1.500 2-3 3 3.335R 3.379 2-3 3 1.335R 5.602 2 3 3 1.335R 5.602 1.500 1.500 2-3 3 3.305R 3.379 1.335R 3.00 1.335R 1.340R 1.00 1.0	24 16 8 10 40 50 3 3 0 1.250 2-3 3.040 2 3 3.1.778R 5.243 2 3 1.778R 7.469 1 3 3 2.800R 2.800R	24 16 8 .10 .45 .45 .3 3 0 1.125 2-3 3 2.000R 2.880 2.3 3 2.000R 5.070 1-3 2 1.000L 9.920 1-3 2 1.000L	24 16 8 10 .50 .40 2 2 0 1.250 2-3 2.1.778L 3.040 2-3 2 1.778L 5.243 1-3 2 8.00L 7.616 1 3 2 8.00L 10.113 1 3 2 8.00L	24 16 8 8 .20 .30 .50 3 0 1.250 2-3 3 1.500R 4.860 2-3 3.500R 6.845 1-3 3.600R 9.159 1-3 3.600R	24 16 8 20 .40 .40 3 3 0 1.000 2-3 3 2.000R 2.560 1-3 2 0 9.300 1-3 2 0
Ax	20 and 40 and 60	e L XX X' a1 a2 a3 GN BM	44 12 32 10 .50 .40 2 2 0 1.250 2 2 0 2.500 1-2 2 1.000R 3.920 1-2 2 1.000R 6.912 1 2 5.800L 8.561 1-3	44 12 32 20 30 30 3 3 0 1.250 3 3 0 2.500 3 3 0 3 0 3 0 3 0 2.500 3 3 0 0 2.500 3 3 0 0 2.500 3 3 0 0 3 0 0 0 0 0 0 0 0 0 0 0 0 0	44 12 32 .20 .40 .40 .3 3 0 1.000 3 3 0 2.000 1-2 2 2.000R 3.380 1-2 2.000R 4.860 1-2 2.000R 6.348 1-3 5.200L 7.851 1 3	44 12 32 20 .50 .50 .30 2 2 0 1.250 2 2 0 2.500 1-2 2 1.715R 4.118 1-2 1.715R 7.591 1-2 1.715R 9.384 1-3	24 16 8 .10 .30 .60 .30 .60 3 3 0 1.500 2-3 3 1.335R 3.379 2-3 3.335R 7.839 1-3 2.400R 10.215 1-3 3.2400R 12.606 1-3	24 16 8 .10 .40 .50 3 3 0 1.250 2-3 3 1.778R 3.040 2 3 1.778R 5.243 3 1.778R 7.469 1 3 3 2.800R 9.857 1-3 2.800R 12.301 1.2500R	24 16 16 10 45 45 45 45 3 3 0 1.125 2-3 3 2.000R 2.880 2.38 2.000R 7.425 1 3 2 1.000L 9.920 1-3 2 1.000L 12.417 1-3	24 16 8 8 10 .50 .40 2 2 0 1.250 2 3 1.778L 3.040 2 1.778L 5.243 1 3 2 1.77616 1 3 2 800L 10.113 1 3 2 8.00L 10.113 1 1 2 8.00L 10.113 1 1 3 2 8.00L 10.113 1 1 3	24 16 8 .20 .30 .50 3 3 0 1.250 2.890 2.890 2.890 2.890 2.890 3 1.500R 6.845 1.3 3.600R 9.159 1.3	24 16 8 .20 .40 .40 .3 3 0 1.000 2-3 3 2.000R 2.560 2-3 3 2.000R 4.500 1-3 2 0 9.300 1-3 2 0 1.300 1.0
Ax	n. Bas le acing ad les 10 20 40	e L	44 12 32 10 .50 .40 2 2 0 1.250 2 2 0 2.500 1-2 1.000R 3.920 1-2 1.000R 5.415 1-2 2 1.000R 6.912 1 3 2 5.800L 8.561 1-3 2	3 3 0 1.2500 3 3 0 0.2.5000 3 3 0 0.2.5000 3 3 0 0.2.5000 3 3 0 0.2.50000 0.2.5000 0.2.5000 0.2.5000 0.2.5000 0.2.5000 0.2.5000 0.2.5000000 0.2.5000 0.2.5000 0.2.5000 0.2.5000 0.2.5000 0.2.5000 0.2.500	44 12 32 .20 .40 .40 .3 3 0 1.000 3 3 0 2.000 1-2 2.000R 4.860 1-2 2.000R 4.860 1-2 2.000R 5.380 1-3 2 5.200L 7.851 1 3 2	44 12 32 20 .50 .50 .30 2 2 0 1.250 2 2 0 2.500 1-2 2 1.715R 4.118 1-2 2.1715R 7.591 1 2 2.1715R 9.334 1-3 2	24 16 8 .10 .30 .60 3 0 1.500 2-3 3 1.335R 3.379 2-3 1.335R 5.602 2 3 1.335R 7.839 1-3 3 2.400R 10.215 1-3 3 2.400R 12.696	24 16 8 .10 .40 .50 3 3 0 1.250 2-3 3.040 2 3 1.778R 5.243 2 3 1.778R 7.469 1 3 3 2.800R 9.857 1-3 3 1.331 1-3 3	24 16 16 10 45 10 45 3 3 0 1.125 2-3 3 2.000R 2.880 2.3 3 2.000R 5.070 1-3 2 1.000L 7.425 1.3 2 1.000L 12.417 1.3 2	24 16 8 10 .50 .40 2 2 0 1.250 2-3 2.1.778L 5.243 1-3 2 1.77616 1 3 2 800L 10.113 1 3 2 .500L 12.611 1-3 2	24 16 8 .20 .30 .50 3 0 1.250 2-3 3 1.500R 2.890 2-3 3 1.500R 4.860 2-3 3 3.600R 9.159 1-3 3.600R 11.616 1-3 3	24 16 8 20 .40 .40 3 3 0 1.000 2-3 3 2.000R 2.560 1-3 2 0 9.300 1-3 2 0 11.800 1-3 2
Ax	20 and 40 and 60	e L	12 32 .10 .50 .40 .2 2 0 1.250 2.500 1-2 2.500 1-2 2.1.000R 5.415 1-2 2.1.000R 6.912 1 3 2.5,800L 8.561 1-3 2.5,801L 8.561 1-3 2.5,801L 8.561 1-3 2.5,801L 8.561 1-3 2.5,801L	44 12 32 32 30 .50 3 3 0 1.250 3 3 0 2.500 3 3 0 5 0 3.750 3 3 0 5.000 2-3 3 6.0000R 7.6%0 1-3 9.200R 11.858	44 12 32 .20 .40 .40 .40 .3 3 0 1.000 1.000 1.2 2.000R 3.880 1-2 2.000R 4.860 1-2 2.000R 6.348 1-3 5.200L 7.851 1 3 5.200L 12.738	44 12 32 20 .50 .50 .30 2 2 0 1.250 2 2 0 2.500 1-2 2 1.715R 4.118 1 -2 1.715R 7.591 1 -2 1.715R 7.591 1 -2 1.715R 7.591 1 -2 1.715R 9.384 1-3 2 6.600L 14.162	24 16 8 .10 .30 .60 3 3 0 1.500 2-3 3 1.335R 3.379 2-3 1.335R 7.839 1-3 2.400R 10.215 1-3 2.400R 1-3 3 2.400R 17.672	24 16 8 .10 .40 .50 3 3 0 1.250 2-3 3 1.778R 3.040 2 3 1.778R 5.243 2 3 1.778R 7.469 1 3 3 2.800R 9.857 1-3 2.800R 12.33 1.230 1	24 16 16 10 45 45 45 45 3 3 0 1.125 2-3 3 2.000R 2.880 2.38 2.000R 7.425 1 3 2 1.000L 9.920 1-3 2 1.000L 9.12417 1-3 2 1.000L 17.413	24 16 8 .10 .50 .40 2 2 0 1.250 2 3 2 1.778L 3.040 2 3.7616 1 3 2 800L 10.113 1 3 2 800L 10.113 1 3 2 800L 10.1611 1-3 2 800L 12.611 1-3 2 800L 17.608	24 16 8 .20 .30 .50 3 3 0 1.250 2-3 3 1.500R 2.890 2-3 3 1.500R 4.860 2-3 3 3.600R 9.159 1-3 3.600R 11.616 1 3 3 3.600R 16.562	24 16 8 .20 .40 .40 .3 3 0 1.000 2-3 3 2.000R 2.560 2-3 3 2.000R 4.500 1-3 2 0 6.800 1-3 2 0 1.000 1.0
Ax	10	e L	12 32 10 50 40 2 2 0 1.250 2 2 0 2.500 1-2 1.000R 3.920 1-2 1.000R 5.415 1-2 2 1.000R 6.912 1 3 2 5.800L 8.561 1 1 3 2 5.800L 8.561 1 1 3 2 5.800L 8.800D 8.800L 8.800L 8.800L 8.800L 8.800L 8.800D 8.	3 3 0 0 2.500 3 3 3 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	44 12 32 20 .40 .40 .40 3 3 0 1.000 3 3 0 2.000 1-2 2.000R 4.860 1-2 2.000R 6.348 1-3 2 5.200L 7.851 1 3 2 5.200L 12.738 1 12.738	44 12 32 20 .50 .30 2 2 0 1.250 2 2 0 2.500 1-2 2 1.715R 4.118 1-2 2.1715R 7.591 1-2 2.1715R 9.384 1-3 2.600L 14.166 1-3	24 16 8 .10 .30 .60 3 3 0 1.500 2-3 3 1.335R 3.379 2-3 3 1.335R 5.602 2 3 3 2.400R 12.696 1-3 2.400R 17.672 1-3	24 16 8 .10 .40 .50 2-3 3 1.250 2-3 3 1.778R 3.040 2 3 3 1.778R 5.243 2 3 3 1.778R 5.243 2 3 2.800R 1.33 2.800R 12.331 1.33 2.800R 1.2800	24 16 16 10 45 10 45 3 3 0 1.125 2-3 3 2.000R 2.880 2.880 2.3 3 2.000R 5.070 1-3 2 1.000L 7.425 1 3 2 1.000L 12.417 1 3 2 1.000L 17.413 1-3	24 16 8 10 .50 .40 2 2 0 1.250 2-3 2.1.778L 5.243 1-3 2 1.778L 7.616 1 3 2 8.00L 10.113 1 3 2 8.00L 12.611 1-3 8.00L 17.606 1.7606	24 16 8 8 8 9 20 .30 .50 3 0 1.250 2-3 3 1.500R 2.890 2-3 3 1.500R 4.860 2-3 3 3.600R 1.3 3.600R 1.616 1.3 3.600R 1.616 1.3 3.600R 16.562	24 16 8 8 .20 .40 .40 3 3 0 1.000 2-3 3 2.000R 2.560 1-3 2 0 9.300 1-3 2 0 11.800 1-3 2 0 16.800 1-3
Ax	20 and 40 and 60	e L	12 32 .10 .50 .40 .2 2 0 1.250 2.500 1-2 2.500 1-2 2.1.000R 5.415 1-2 2.1.000R 6.912 1 3 2.5,800L 8.561 1-3 2.5,801L 8.561 1-3 2.5,801L 8.561 1-3 2.5,801L 8.561 1-3 2.5,801L	44 12 32 32 30 .50 3 3 0 1.250 3 3 0 2.500 3 3 0 5 0 3.750 3 3 0 5.000 2-3 3 6.0000R 7.6%0 1-3 9.200R 11.858	44 12 32 .20 .40 .40 .40 .3 3 0 1.000 1.000 1.2 2.000R 3.880 1-2 2.000R 4.860 1-2 2.000R 6.348 1-3 5.200L 7.851 1 3 5.200L 12.738	44 12 32 20 .50 .50 .30 2 2 0 1.250 2 2 0 2.500 1-2 2 1.715R 4.118 1 -2 1.715R 7.591 1 -2 1.715R 7.591 1 -2 1.715R 7.591 1 -2 1.715R 9.384 1-3 2 6.600L 14.162	24 16 8 .10 .30 .60 3 3 0 1.500 2-3 3 1.335R 3.379 2-3 1.335R 7.839 1-3 2.400R 10.215 1-3 2.400R 1-3 3 2.400R 17.672	24 16 8 .10 .40 .50 3 3 0 1.250 2-3 3 1.778R 3.040 2 3 1.778R 5.243 2 3 1.778R 7.469 1 3 3 2.800R 9.857 1-3 2.800R 12.33 1.230 1	24 16 16 10 45 45 45 45 3 3 0 1.125 2-3 3 2.000R 2.880 2.38 2.000R 7.425 1 3 2 1.000L 9.920 1-3 2 1.000L 9.12417 1-3 2 1.000L 17.413	24 16 8 .10 .50 .40 2 2 0 1.250 2 3 2 1.778L 3.040 2 3.7616 1 3 2 800L 10.113 1 3 2 800L 10.113 1 3 2 800L 10.1611 1-3 2 800L 12.611 1-3 2 800L 17.608	24 16 8 .20 .30 .50 3 3 0 1.250 2-3 3 1.500R 2.890 2-3 3 1.500R 4.860 2-3 3 3.600R 9.159 1-3 3.600R 11.616 1 3 3 3.600R 16.562	24 16 8 .20 .40 .40 .3 3 0 1.000 2-3 3 2.000R 2.560 2-3 3 2.000R 4.500 1-3 2 0 6.800 1-3 2 0 1.000 1.0

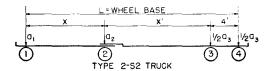
TA	BLE	7.3 (Continue	d)								
-	ick No		91	92	93	94	95	96	97	98	99	100
	ı. Base		24	28	28	28	28	28	28	28	32	32
Ax	le acing	X X'	16 8	$\frac{16}{12}$	$\frac{16}{12}$	$\frac{16}{12}$	$\frac{16}{12}$	$\begin{array}{c} 16 \\ 12 \end{array}$	$^{16}_{12}$	$\frac{16}{12}$	$\frac{16}{16}$	$\begin{array}{c} 16 \\ 16 \end{array}$
Los		a 1	.20	.10	.10	.10	.19	.20	.20	.20	.10	.10
On		\mathbf{a}_2	.50	.30	.40	.45	.50	.30	.40	.50	.30	.40
Ax	les	G G	.30	.60	.50 3	3	2	.50	3	.30	3	3
	10	N	$\frac{2}{2}$	3	3	3	$\frac{2}{2}$	3	3	2	3	3 3
		В	0	0	0	0	0	0	0	0	0	0
		_M G	$\frac{1,250}{2 \ 3}$	1.500 3	$\frac{1.250}{3}$	1.125	$\frac{1.250}{2}$	$\frac{1.250}{3}$	$-\frac{1.000}{3}$	$\frac{1.250}{2}$	$\frac{1.500}{3}$	1.250
	20	N	$\frac{2}{2}$	3	3	3	$\frac{2}{2}$	3	3 3	$\frac{2}{2}$	3	$\frac{3}{3}$
		В	1.500L	0	0	0	0	0	0	0	0	0
		M	2.890	3.000	2.500	$\frac{2.250}{2.3}$	2.500	2.500	2.000	2.500	3.000	2,500
	30	G N	2 ~3 2	$^{2-3}_3$	$^{2-3}_{3}$	2 · 3	$\frac{2\cdot 3}{2}$	$_{3}^{2-3}$	$\frac{2-3}{3}$	$\frac{2-3}{2}$	$_{3}^{2-3}$	$\frac{2-3}{3}$
		В	1.500L	2.000R	$2.665\mathbf{R}$	3.000R	2.665L	2.250R	3.000R	2.250L	2.665R	3.555R
		M	4.860	5.070	4.565	4.320	4.565	4.335	3.840	4.335	4.565	3.929
	40	G N	$^{1-3}_2$	$^{2-3}_{3}$	$\frac{2}{3}$	$^{1-3}_2$	$^{1-3}_2$	2 -3 3	13 2	$\frac{1-3}{2}$	$^{2-3}_{3}$	$\frac{2-3}{3}$
eet		В	.400R	2.000R	$2.665\mathbf{R}$	1.900L	1.600L	2.250R	.800L	.200L	2.665R	$3.555\mathbf{R}$
Span-Feet		M	7.204	7.290	6.762	6.590	6.864	6.302	6.016	6.601	6.762	6.085
par	50	G N	$^{1-3}_2$	$^{2-3}_{3}$	$^{1-3}_{3}$	${1\over 2}$	$\frac{1-3}{2}$	$^{1-3}_3$	$^{1-3}_2$	$^{1-3}_2$	$^{2-3}_{3}$	$^{2-3}_{3}$
Ś		В	.400R	2.000R	$3.800\mathbf{R}$	1.900L	1.600L	4.600R	.800 L	.200L	2.665R	$3.555\mathbf{R}$
		M _	9.703	9.522	8.989	9.072	9.351	8,323	8.513	9.101	8.979	8.278
	60	G N	$^{1-3}_2$	$egin{smallmatrix} 1 & 3 \\ 3 \end{smallmatrix}$	$^{1-3}_{3}$	$^{1-3}_{2}$	$^{1-3}_2$	$^{1-3}_3$	${1 \over 2}$	$^{1-3}_2$	1-3 3	$^{1-3}_{3}$
		В	.400R	3.200R	3.800R	1.900L	1.600L	4.600R	.800L	.200 L	4.000R	4.800R
		- <mark>M</mark>	$\frac{12.203}{1.3}$	11.971	11.441	$\frac{11.560}{1-3}$	11.843	10.753	$\frac{11.011}{1-3}$	11.601	11.267	10.584
	80	N	2	1–3 3	1–3 3	2	$\frac{1-3}{2}$	$^{1-3}_{3}$	1-3 2	1-3 2	$^{1-3}_{3}$	$^{1-3}_3$
		В	.400R	3.200R	3.800R	1.900L	1.600L	4.600R	.800L	.200L	4.000R	4.800R
		M	17.202	16.928	16.381	16.545	16.832	15.665	16.008	16.601	16.200	15.488
!	100	G N	13 2	$^{1-3}_3$	1–3 3	$^{1-3}_{2}$	$^{1-3}_2$	$^{1-3}_{3}$	$^{1-3}_2$	$^{1-3}_2$	$^{1-3}_3$	$^{1-3}_{3}$
		В	.400R	3.200R	3.800R	$1.900\mathrm{L}$	1.600L	$4.600\mathbf{R}$.800L	.200L	4.000R	4.800R
		M	22.202	21.902	21.344	21.536	21.826	20.612	21.006	21.600	21.160	20.430
_												
_	ick No		101	102	103	104	105	106	197	108	109	110_
W	ı. Base	e L	32	32	32	32	32	36	36	36	36	36
Wi Ax	ı. Base									many or a comment		
Wi Ax Sp: Lo.	n. Base le acing ad	X X' a ₁	32 16 16 .10	32 16 16 .10	32 16 16 .20	32 16 16 .20	32 16 16 .20	36 16 20 .10	36 16 20 .10	36 16 20 .10	36 16 20 .10	36 16 20 .20
What Ax Spare Lo. On	i. Base le acing ad	E L X X' a ₁ a ₂	32 16 16 .10 .45	32 16 16 .10 .50	32 16 16 .20 .30	32 16 16 .20 .40	32 16 16 .20 50	36 16 20 .10 .30	36 16 20 .10 .40	36 16 20 .10 .45	36 16 20 .10 .50	36 16 20 .20 .30
Wi Ax Sp: Lo.	i, Base le acing ad les	X X' a ₁	32 16 16 .10	32 16 16 .10 .50 .40	32 16 16 .20	32 16 16 .20 .40 .40	32 16 16 .20	36 16 20 .10	36 16 20 .10	36 16 20 .10	36 16 20 .10 .50 .40	36 16 20 .20
What Ax Spare Lo. On	i. Base le acing ad	X X' a ₁ a ₂ a ₃ G	32 16 16 .10 .45 .45	32 16 16 .10 .50 .40 2	32 16 16 .20 .30 .50	32 16 16 .20 .40 .40 .3 3	32 16 16 .20 50 .30 2 2	36 16 20 .10 .30 .60	36 16 20 .10 .40 .50	36 16 20 .10 .45 .45	36 16 20 .10 .50 .40	36 16 20 .20 .30 .50
What Ax Spare Lo. On	i, Base le acing ad les	E L X X' a ₁ a ₂ a ₃ G	32 16 16 .10 .45 .45	32 16 16 .10 .50 .40	32 16 16 .20 .30 .50	32 16 16 .20 .40 .40	32 16 16 .20 50 .30	36 16 20 .10 .30 .60	36 16 20 .10 .40 .50	36 16 20 .10 .45 .45	36 16 20 .10 .50 .40	36 16 20 .20 .30 .50
What Ax Spare Lo. On	n. Base le acing ad les	e L X X' a ₁ a ₂ a ₃ G N B M	32 16 16 .10 .45 .45 .45 3 0 1.125	32 16 16 .10 .50 .40 2 2 0 1.250	32 16 16 .20 .30 .50 3 0 1.250	32 16 16 .20 .40 .40 3 3 0 1.000	32 16 16 .20 .50 .30 2 2 0 1.250	36 16 20 .10 .30 .60 3 3 0 1.500	36 16 20 .10 .40 .50 3 0 1.250	36 16 20 .10 .45 .45 3 0 1.125	36 16 20 .10 .50 .40 2 2 0 1.250	36 16 20 .20 .30 .50 3 0 1.250
What Ax Spare Lo. On	i, Base le acing ad les	E L X X X' a1 a2 a3 G N B M G N	32 16 16 .10 .45 .45 3 3 0 1.125	32 16 16 .10 .50 .40 2 2 0 1.250	32 16 16 .20 .30 .50 3 0 1.250 3	32 16 16 .20 .40 .40 3 3 0 1.000	32 16 16 .20 50 .30 2 2 0 1.250	36 16 20 .10 .30 .60 3 3 0 1.500	36 16 20 .10 .40 .50 3 0 1.250	36 16 20 .10 .45 .45 3 0 1.125	36 16 20 .10 .50 .40 2 2 0 1.250	36 16 20 .20 .30 .50 3 0 1.250
What Ax Spare Lo. On	n. Base le acing ad les	E L X X X' A1 A2 A3 G N B M G	32 16 16 .10 .45 .45 .45 3 0 1.125	32 16 16 .10 .50 .40 2 2 0 1.250	32 16 16 .20 .30 .50 3 0 1.250	32 16 16 .20 .40 .40 3 3 0 1.000	32 16 16 .20 .50 .30 2 2 0 1.250	36 16 20 .10 .30 .60 3 3 0 1.500	36 16 20 .10 .40 .50 3 0 1.250	36 16 20 .10 .45 .45 3 0 1.125	36 16 20 .10 .50 .40 2 2 0 1.250	36 16 20 .20 .30 .50 3 0 1.250
What Ax Spare Lo. On	le le acing ad les 10 20	E L X X A1 A2 A3 G N B M G N B M	32 16 16 .10 .45 .45 .45 3 3 0 1.125 3 3 0 2.250 2-3	32 16 16 .10 .50 .40 2 2 0 1.250 2 2 0 2.500 2-3	32 16 16 .20 .30 .50 3 3 0 1.250 3 3 0 2.500 2-3	32 16 16 .20 .40 .40 3 3 0 1.000 3 3 0 2.000 2-3	32 16 16 .20 50 .30 2 2 0 1.250 2 2 0 2.500 2-3	36 16 20 .10 .30 .60 3 3 0 1.500 3 3 0	36 16 20 .10 .40 .50 3 3 0 1.250 3 3 0 2.500	36 16 20 .10 .45 .45 3 3 0 1.125 3 2.250	36 16 20 .10 .50 .40 2 2 0 1.250 2 2 0 2.500 2	36 16 20 .20 .30 .50 3 0 1.250 3 0 2.500
What Ax Spare Lo. On	n. Base le acing ad les	X X X' A1 A2 A3 G N B M G N B M	32 16 16 .10 .45 .45 .45 3 0 1.125 3 0 2.250 2-3 3	32 16 16 .10 .50 .40 2 2 0 1.250 2 2 0 2.50 2.	32 16 16 .20 .50 .50 3 3 0 1.250 3 3 0 2.500 2.500	32 16 16 .20 .40 .40 .40 3 3 0 1.000 3 3 0 2.000 2-3 3	32 16 16 .20 .30 2 2 0 1.250 2 2 0 2.500 2 2 2 2 2 2 2 2 3 2 3 3 3 3 3 3 3 3 3 3 3 3 3	36 16 20 .10 .30 .60 3 0 1.500 3 0 3.000	36 16 20 .10 .40 .50 3 3 0 1.250 3 3 0 2.500	36 16 20 .10 .45 .45 .3 3 0 1.125 3 3 0 2.250	36 16 20 .10 .50 .40 2 2 0 1.250 2 2 0 2.500	36 16 20 .20 .30 .50 3 3 0 1.250 3 0 2.500
What Ax Spare Lo. On	le le acing ad les 10 20	E L X X A1 A2 A3 G N B M G N B M	32 16 16 .10 .45 .45 .45 3 3 0 1.125 3 3 0 2.250 2-3	32 16 16 .10 .50 .40 2 2 0 1.250 2 2 0 2.500 2-3	32 16 16 .20 .30 .50 3 3 0 1.250 3 3 0 2.500 2-3	32 16 16 .20 .40 .40 3 3 0 1.000 3 3 0 2.000 2-3	32 16 16 .20 50 .30 2 2 0 1.250 2 2 0 2.500 2-3	36 16 20 .10 .30 .60 3 3 0 1.500 3 3 0	36 16 20 .10 .40 .50 3 3 0 1.250 3 3 0 2.500	36 16 20 .10 .45 .45 3 3 0 1.125 3 2.250	36 16 20 .10 .50 .40 2 2 0 1.250 2 2 0 2.500 2	36 16 20 .20 .30 .50 3 0 1.250 3 0 2.500
What Ax Spare Lo. On	a. Base le acing ad les 10	E L X X X' a1 a2 a3 G N B M G N B M G N B M G O O O O O O O O O O O O O O O O O O	32 16 16 10 .45 .45 .45 .3 3 0 1.125 3 3 0 2.250 2.3 3 4.000R 3.630 1-3	32 16 16 10 .50 .40 2 2 0 1.250 2 2 0 2.500 2.500 2.500 3.500 1.250 2 1.250 2 1.250 1	32 16 16 .20 .30 .50 3 0 1.250 3 0 2.500 2.500 2.3 3 3.0000R 3.840 2.3	32 16 16 .20 .40 .40 .40 3 3 0 1.000 3 3 0 2.000 2-3 3 4.000R	32 16 16 .20 .50 .30 2 2 0 1.250 2 2 0 2.50 2.50 2.50 3.80 2.50 3.80 2.50 3.80 2.50 3.80 2.50 3.80 3.80 2.80 3.00 3.	36 16 20 .10 .30 .60 3 3 0 1.500 3 3 0 3.000 3 0 4.500	36 16 20 .10 .40 .50 3 3 0 1.250 3 3 0 2.500 3 3 0 2.500	36 16 20 .10 .45 .45 .45 3 3 0 1.125 3 3 0 2.250 3 3 3 0 3 0 2.250	36 16 20 .10 .50 .40 2 2 0 1.250 2 2 0 2.500 2.500 2 0 3.750 1-3	36 16 20 .20 .30 .50 3 3 0 1.250 3 3 0 2.500 3 3 0 2.500 3 3 0 1.250 3 0 3 0 1.250 3 0 1.250 3 0 0 1.250 1.2
WI Axx Spp Lo. On Axx	le le acing ad les 10 20	E L X X X A1 A2 A3 G N B M B M G N B M B M G N B M B M G N B M B M B M B M B M B M B M B M B M B	32 16 16 .10 .45 .45 .3 0 1.125 3 3 0 2.250 2-3 4.000R 3.630 1-3 2	32 16 16 .10 .50 .40 2 2 0 1.250 2 2 0 2.500 2-3 2 3.555L 3.929 1-3 2	32 16 16 .20 .30 .50 3 3 0 1.250 3 3 0 2.500 2-3 3.840 2-3 3	32 16 16 .20 .40 .40 .3 3 0 1.000 3 3 0 2.000 2-3 3.000 2-3 4.000R 3.226 1-3 2	32 16 16 20 50 30 2 2 0 1.250 2 2 0 2.500 2.30 2.30 3.30 2.500	36 16 20 .10 .30 .60 3 3 0 1.500 3 3 0 3.000 3 3 0 3.000 3 3 0 3 0 3 0 3 0 3 0 3 0 3 0 3 0 3 0 3 0 3 0 3 0 3 0 0 0 0 0 0 0 0 0 0 0 0 0	36 16 20 .10 .40 .50 3 3 0 1.250 3 3 0 2.500 3 3 0 2.500	36 16 20 .10 .45 .45 .3 3 0 1.125 3 3 0 2.250 3 3 0 3.375 2-3	36 16 20 .10 .50 .40 2 2 0 1.250 2 2 0 2.500 2 2 0 2.500 2 1.250 2 1.250 2 1.250 2 1.250 2 1.250 1.250 2 2 2 0 1.250 2 1.250 2 1.250 2 2 2 0 2.500 2	36 16 20 .30 .50 .50 3 3 0 1.250 3 3 0 2.500 3 3 0 2.500 3
WI Axx Spp Lo. On Axx	a. Base le acing ad les 10	E L X X X' a1 a2 a3 G N B M G N B M G N B M G O O O O O O O O O O O O O O O O O O	32 16 16 10 .45 .45 .45 .3 3 0 1.125 3 3 0 2.250 2.3 3 4.000R 3.630 1-3	32 16 16 10 .50 .40 2 2 0 1.250 2 2 0 2.500 2.500 2.500 3.500 1.250 2 1.250 2 1.250 1	32 16 16 .20 .30 .50 3 0 1.250 3 0 2.500 2.500 2.3 3 3.0000R 3.840 2.3	32 16 16 .20 .40 .40 .40 3 3 0 1.000 3 3 0 2.000 2-3 3 4.000R	32 16 16 .20 .50 .30 2 2 0 1.250 2 2 0 2.500	36 16 20 .10 .30 .60 3 3 0 1.500 3 3 0 3.000 3 0 4.500	36 16 20 .10 .40 .50 3 3 0 1.250 3 0 2.500 3 3 0 2.500	36 16 20 .10 .45 .45 .45 3 3 0 1.125 3 3 0 2.250 3 3 3 0 3 0 2.250	36 16 20 .10 .50 .40 2 2 0 1.250 2 2 0 2.500 2 50 3.750	36 16 20 .20 .30 .50 3 3 0 1.250 3 3 0 2.500 3 3 0 2.500 3 3 0 1.250 3 0 3 0 1.250 3 0 1.250 3 0 0 1.250 1.2
n-Feet	le le acing ad les 10 20 40	e L	32 16 16 10 .45 .45 .3 .0 .1.125 .3 .3 .0 .2.250 2.250 2.3 4.000R 3.630 1.3 2.250 2.250 1.3 2.250 1.3 1.3 1.3 1.3 1.3 1.3 1.3 1.3	32 16 16 .10 .50 .40 2 2 0 1.250 2 2 0 2.500 2-3 2 3.555L 3.929 1 -3 2 2.404L 6.144L 6.1	32 16 16 .20 .30 .50 3 3 0 1.250 2.500 2-3 3.000R 3.840 2-3 3.0008 5.780 2-3	32 16 16 .20 .40 .40 .3 3 0 2.000 2.000 2.3 3 4.000R 3.226 1-3 2 1.600 1.5264	32 16 16 20 50 30 2 2 2 0 1.250 2 2 3.3000L 3.840 1-3 2 8.6016 6.016	36 16 20 .30 .60 3 3 0 1.500 3 3 0 3.000 3 0 4.500 2-3 3 3.335 R 6.249 2-3	36 16 20 .10 .40 .50 3 3 0 1.250 3 3 0 2.500 3 3 4.445R 5.444 2-3	36 16 20 10 .45 .45 3 3 0 1.125 3 3 0 2.250 3 3 0 3.375 2-3 3 5.000R 5.063	36 16 20 10 .50 .40 2 2 0 1.250 2 2 0 2.500 2 3.750 1-3 2 3.200L 5.456 1-3	36 16 20 .30 .50 .50 3 0 1.250 3 0 2.500 3 3 0 3.750 2-3 3 3.750R 5.282 2-3
WI Axx Spp Lo. On Axx	a. Base le acing ad les 10	e L	32 16 16 10 .45 .45 .45 .3 0 1.125 3 3 0 2.250 2-3 3 4.000R 3.630 1-3 2.800L 5.796 1-3 2	32 16 16 10 .50 .40 2 2 0 1.250 2 2 0 2.500 2-3 2 3.555 3.929 1-3 2.400L 6.144 1-3 2	32 16 16 .20 .30 .50 3 3 0 1.250 2.500 2-3 3.000R 3.840 2-3 3.000R 5.780 2-3 3.000R	32 16 16 16 20 .40 .40 .3 3 0 1.000 2.000 2-3 3.226 1-3 2.000 5.264 1-3 2	32 16 16 16 50 30 2 2 2 0 2.500 2-3 2 3.000L 3.840 1-3 2 800L 6.016 1-3 2	36 16 20 .10 .30 .60 3 3 0 1.500 3 3 0 3 0 4.500 2–3 3 3 0 4.500 2–3 3 3 0 0 0 0 0 0 0 0 0 0 0 0 0	36 16 20 .10 .40 .50 3 3 0 1.250 3 3 0 2.500 3 3 4.445R 5.444 2-3 3	36 16 20 .10 .45 .45 .3 3 0 1.125 3 3 0 2.250 3 3 0 3.375 2-3 5.063 1.3 2	36 -16 -20 -10 -50 -40 -2 -2 -0 -1.250 -2 -0 -2.500 -2 -3 -3.750 -3 -3 -3 -3 -3 -3 -3 -3 -3 -3 -3 -3 -3	36 16 20 .20 .30 .50 .50 3 3 0 1.250 3 3 0 2.500 3 3 0 2.500 3 3 3 0 2.500 3 3 3 0 2.500 3 3 3 0 0 2.500 3 3 0 0 0 0 0 0 0 0 0 0 0 0 0
n-Feet	le le acing ad les 10 20 40	e L	32 16 16 10 .45 .45 .3 .3 .0 .1.125 .3 .3 .0 .2.250 .2.250 .3 .4.000R .3.630 .3.630 .5.796 .5.796 .5.796 .5.796 .5.796	32 16 16 .10 .50 .40 2 2 0 1.250 2 2 0 2.500 2-3 3.555L 3.929 1 -3 2 2.404L 6.144L 6.144L	32 16 16 .20 .30 .50 3 3 0 1.250 2.500 2-3 3.000R 3.840 2-3 3.0008 2-3 3.0008 2-3 3.0008 3	32 16 16 .20 .40 .40 .3 3 0 2.000 2.000 2.3 3 4.000R 3.226 1-3 2 1.600 1.5264	32 16 16 20 50 30 2 2 2 2 2 2 3.8001 3.840 1-3 2 8.001L 8.513	36 16 20 .30 .60 3 3 0 1.500 3 3 0 3.000 3 0 4.500 2-3 3 3.335 R 6.249 2-3	36 16 20 .10 .40 .50 3 3 0 1.250 3 3 0 2.500 3 3 4.445R 5.444 2-3	36 16 20 10 .45 .45 3 3 0 1.125 3 3 0 2.250 3 3 0 3.375 2-3 3 5.000R 5.063	36 16 20 10 .50 .40 2 2 0 1.250 2 2 0 2.500 2 3.750 1-3 2 3.200L 5.456 1-3	36 16 20 .30 .50 .50 3 0 1.250 3 0 2.500 3 3 0 3.750 2-3 3 3.750R 5.282 2-3
n-Feet	a. Base le eacing and les 10 20 40	e L	32 16 16 10 .45 .45 .45 .3 0 0 1.125 .3 3 0 2.250 2-3 4.000R 3.630 1-3 2.800L 5.796 1-3 2.800L 8.257 1-3	32 16 16 .10 .50 .40 2 2 0 1.250 2 2 0 2.500 2-3 2 3.555 3.929 1-3 2 2.400L 8.6144 1-8 2.400L 8.615 1-8	32 16 16 .20 .30 .50 3 3 0 1.250 3 3 0 2.500 2-3 3.000R 3.840 2-3 3.000R 5.780 2-780 1.250	32 16 16 16 20 .40 .40 3 3 0 1.000 2.000 2-3 3.20 1-3 2.000 5.264 1-3 2.1.600L 5.264 1-3 2.1.7751 1-3	32 16 16 16 16 16 16 10 10 10 10 10 10 10 10 10 10	36 20 1.10 .30 .60 3 3 0 1.500 3 3 0 3.000 2-3 3 3.335R 6.249 2-3 3 3.335R	36 16 20 .10 .40 .50 3 3 0 1.250 3 3 0 2.500 3 3 4.445R 5.444 2-3 3 4.445R 7.605 2-3	36 16 20 .10 .45 .45 .3 3 0 1.125 3 3 0 2.250 3 3 3 3 0 2.250 3 3 3 3 3 3 3 3 5 1.125 3 3 3 3 3 3 3 5 6 7 8 8 9 9 9 9 9 9 9 9 9 9 9 9 9	36 16 20 10 50 40 2 2 0 1.250 2 2 2 0 2.500 2 3.750 1-3 2 3.200L 7.905 1-3	36 16 20 .30 .50 .50 .3 3 0 1.250 3 3 0 2.500 3 3 0 2.500 3 3 3 0 2.500 3 3 3 0 2.500 3 3 3 0 2.500 3 3 3 0 2.500 3 3 3 0 3 0 0 3 0 0 0 0 0 0 0 0 0 0 0 0 0
n-Feet	le le acing ad les 10 20 40	e L XXX' a1 a2 a3 G N B M G N B M G N B M G N B M G N B M G N B M B M B M B M B M B M B M B M B M B	32 16 16 16 17 10 18 18 18 18 18 18 18 18 18 18 18 18 18	32 16 16 16 .10 .50 .40 2 2 0 1.250 2 2 0 2.500 2-3 2 3.5551 3.929 1-3 2.400L 8.615 1-3 2	32 16 16 .20 .30 .50 3 3 0 1.250 2.500 2-3 3.000R 3.840 2-3 3.000R 7.744 1-3 3	32 16 16 16 .20 .40 .40 .40 3 3 0 1.000 3 4 0.000 2.000 2-3 3 4.000R 3.226 1-3 2 1.600L 5.264 1-3 2 1.600L 7.751 1-3 2	32 16 16 16 20 50 30 2 2 2 0 1.250 2 2 3.000L 3.840 1-3 2 8.00L 6.016 1-3 2 8.513 1-3 2	36 16 20 .10 .30 .60 3 3 0 1.500 3 3 0 3.000 2-3 3 3.335R 6.249 2-3 3.335R 8.448 2-3 3	36 16 20 .10 .40 .50 3 3 0 1.250 3 3 0 2.500 3 3 4.445R 7.605 2-3 3 4.445R	36 16 20 .10 .45 .45 .3 3 0 1.125 3 3 0 2.250 3 3 0 3.375 2–3 5.063 1–3 2 3.700L 7.474 1–3 2	36 -16 -20 -10 -59 -40 -2 -2 -0 -1.250 -2 -2 -0 -2.500 -2 -3 -3.200L -3 -3 -3 -3 -3 -3 -3 -3 -3 -3 -3 -3 -3	36 16 20 .20 .30 .50 .50 0 1.250 3 3 0 2.500 3 3 3 0 2.500 2.500 3 3 3 7 7 8 7 8 9 9 9 9 9 9 9 9 9 9 9 9 9
n-Feet	a. Base le eacing and les 10 20 40	e L	32 16 16 10 .45 .45 .45 .3 .0 .1.125 .3 .0 2.250 2-3 4.000R 3.630 1-3 .2 2.800L 5.796 1-3 .2 2.800L 8.257 1-3 .2 2.800L 8.257 1-3 .2 .800L 8.257 1-3 2.800L 8.257 1-3 .800L 8.257 1-3 .800L 8.257 1-3 .800L 8.257 1-3 .800L 8.257 1-3 .800L 8.257 1-3 .800L 8.257 1-3 .800L 8.257 1-3 .800L 8.257 1-3 .800L 8.257 1-3 8.257	32 16 16 .10 .50 .40 2 2 0 1.250 2 2 0 2.500 2-3 2 3.5551 3.929 1-3 2 2.400L 8.615 1-3 2 2.400L	32 16 16 16 20 30 .50 3 3 0 1.250 3 2.500 2.500 2-3 3.000R 5.780 2-3 3.000R 7.744 1-3 3 5.600R 9.923	32 16 16 16 20 .40 .40 .3 3 0 1.000 2.000 2-3 3.20 1-3 2.000 5.264 1-3 2.1.600L 7.751 1-3 2.1.600L	32 16 16 16 16 16 16 10 10 10 10 10 10 10 10 10 10	36 20 1.10 .30 .60 3 3 0 1.500 3 3 0 3.000 2-3 3 3.335R 6.249 2-3 3 3.335R	36 16 20 .10 .40 .50 3 3 0 1.250 3 3 0 2.500 3 3 4.445R 5.444 2-3 3 4.445R 7.605 2-3	36 16 20 .10 .45 .45 .3 3 0 1.125 3 3 0 2.250 3 3 3 3 0 2.250 3 3 3 3 3 3 3 3 5 1.125 3 3 3 3 3 3 3 5 6 7 8 8 9 9 9 9 9 9 9 9 9 9 9 9 9	36 16 20 10 50 40 2 2 0 1.250 2 2 2 0 2.500 2 3.750 1-3 2 3.200L 7.905 1-3	36 16 20 .30 .50 .50 3 3 0 1.250 3 3 0 2.500 3 3 0 2.500 3 3 0 2.500 3 3 0 2.500 3 3 3 0 2.500 3 3 0 0 2.500 3 3 0 0 2.500 3 3 0 0 2.500 2.500 3 3 3 0 0 2.500 2.500 3 3 3 3 3 0 0 2.500 3 3 3 3 3 3 3 3 3 3 3 3 3
n-Feet	11. Base le acing ad les 10 20 30 40 50 60	E L X X' A1 A2 A3 G N B M G N B M G N B M G N B M G N B M G N B M G N B M G G N B M G G N B M G G N B M G G G G G G G G G G G G	32 16 16 16 16 17 45 45 45 3 3 0 1.125 3 3 4.000R 3.630 1-3 2.800L 5.796 1-3 2.800L 8.257 1-3 2.800L 10.731 1-3	32 16 16 16 .10 .50 .40 2 2 0 1.250 2 2 0 2.500 2-3 2 3.555L 3.929 1-3 2 2.400L 8.615 1-3 2 2.400L 11.096 1-3	32 16 16 16 .20 .30 .50 3 3 0 1.250 2.500 2-3 3.000R 3.840 2-3 3.000R 7.744 1-3 5.600R 9.923 1-3	32 16 16 16 .20 .40 .40 .40 3 3 0 1.000 3 4 0.000 2.000 2-3 3 4.000R 3.226 1-3 2 1.600L 7.751 1-3 2 1.600L 1.000 1	32 16 16 16 20 50 30 2 2 2 0 1.250 2-3 2 3.000L 3.840 1-3 2 8.00L 8.513 1-3 2 8.00L 11.01	36 16 20 .10 .30 .60 3 3 0 1.500 3 3 0 3.000 2-3 3 3.335R 6.249 2-3 3.335R 8.448 2-3 2.335R 10.666	36 16 20 .10 .40 .50 3 3 0 1.250 3 3 0 2.500 3 3 0 2.500 2.4445R 7.605 2-3 4.445R 7.605 2-3 4.445R 9.7605 1.250	36 16 20 .10 .45 .45 .3 3 0 1.125 3 3 0 2.250 3 3 0 3.375 2–3 5.063 1–3 2 3.700L 7.474 1–3 2 3.700L 9.928 1–3	36 16 20 .10 .50 .40 2 2 2 0 1.250 2 2 0 2.500 2 3.200L 7.905 1-3 2 3.200L 10.371 1-3 1-3	36 16 20 .20 .30 .50 .50 .50 .50 .50 .50 .50 .5
n-Feet	a. Base le eacing and les 10 20 40	e L XX X' a1 a2 a3 G N B M B M G N B M B M G N B M B M B M B M B M B M B M B M B M B	32 16 16 10 .10 .45 .45 .3 3 0 1.125 3 3 4.000R 3.630 1-3 2 2.800L 5.796 1-3 2.800L 10.731 1-3 2	32 16 16 17 19 19 19 19 19 19 19 19 19 19 19 19 19	32 16 16 20 30 50 3 3 0 1.250 2.500 2-3 3.000R 3.400 2-3 3.000R 7.744 1-3 5.600R 9.923 1-3 3	32 16 16 16 20 40 40 3 3 0 1.000 3 3 4.000R 3.226 1-3 2 1.600L 7.751 1-3 2 1.600L 10.243 1-3 2	32 16 16 16 20 50 30 2 2 2 0 1.250 2.500 2-3 3.000L 3.840 1-3 2 8.00L 6.016 1-3 2 8.513 1-3 2 1.250 1.	36 16 20 .30 .60 .30 .60 3 3 0 1.500 3 3 0 4.500 2-3 3.335R 6.249 2-3 3.335R 8.448 2-3 3 2.335R 10.665	36 16 20 10 .40 .50 3 3 0 1.250 3 3 0 2.500 3 3 4.445R 7.605 2-3 3 4.445R 9.796 1-3 3	36 16 20 10 .45 .45 .45 .3 0 1.125 3 0 2.250 3 3 0 3.375 2 3 5.000R 5.063 1 -3 2 3.700L 9.928 1 -3 2	36 16 20 10 59 10 59 40 2 2 0 1.250 2 2 0 2.500 2 3.750 1-3 2 3.200L 7.905 1-3 2 3.200L 10.371 1-3 2	36 16 20 .30 .50 .50 3 3 0 1.250 3 3 0 2.500 3 3 0 3.750 2-3 3 3.750R 7.225 2-3 3.750R 9.187 1-3 3
n-Feet	11. Base le acing ad les 10 20 30 40 50 60	E L X X' A1 A2 A3 G N B M G N B M G N B M G N B M G N B M G N B M G N B M G G N B M G G N B M G G N B M G G G G G G G G G G G G	32 16 16 16 16 17 45 45 45 3 3 0 1.125 3 3 4.000R 3.630 1-3 2.800L 5.796 1-3 2.800L 8.257 1-3 2.800L 10.731 1-3	32 16 16 16 .10 .50 .40 2 2 0 1.250 2 2 0 2.500 2-3 2 3.555L 3.929 1 -3 2.400L 8.615 1 -3 2.400L 1.100 1.0000 1.0	32 16 16 16 .20 .30 .50 3 3 0 1.250 2.500 2-3 3.000R 3.840 2-3 3.000R 7.744 1-3 5.600R 9.923 1-3	32 16 16 16 .20 .40 .40 .40 3 3 0 1.000 3 4 0.000 2.000 2-3 3 4.000R 3.226 1-3 2 1.600L 7.751 1-3 2 1.600L 1.000 1	32 16 16 16 20 50 30 2 2 2 0 1.250 2-3 2 3.000L 3.840 1-3 2 8.00L 8.513 1-3 2 8.00L 11.01	36 16 20 .10 .30 .60 3 3 0 1.500 3 3 0 3.000 2-3 3 3.335R 6.249 2-3 3.335R 8.448 2-3 2.335R 10.666	36 16 20 .10 .40 .50 3 3 0 1.250 3 3 0 2.500 3 3 0 2.500 2.4445R 7.605 2-3 4.445R 7.605 2-3 4.445R 9.7605 1.250	36 16 20 .10 .45 .45 .3 3 0 1.125 3 3 0 2.250 3 3 0 3.375 2–3 5.063 1–3 2 3.700L 7.474 1–3 2 3.700L 9.928 1–3	36 16 20 .10 .50 .40 2 2 2 0 1.250 2 2 0 2.500 2 3.200L 7.905 1-3 2 3.200L 10.371 1-3 1-3	36 16 20 .20 .30 .50 .50 .50 .50 .50 .50 .50 .5
n-Feet	1. Base 1 le acing ad les 10 20 30 40 60 80	E L X X X X X X X X X X X X X X X X X X	32 16 16 10 .45 .45 .45 .3 3 0 1.125 .3 3 4.000R 3.630 1-3 2.800L 8.257 1-3 2.800L 10.731 1-3 2 2.800L 10.731 1-3 1 2.800L 15.698 1-3	32 16 16 17 19 19 19 19 19 19 19 19 19 19 19 19 19	32 16 16 20 30 30 50 3 3 0 1.250 3 3 0 2.500 2-3 3.000R 3.840 2-3 3.000R 7.744 1-3 3.600R 9.923 1-3 5.600R 9.923 1-3 5.600R 14.792	32 16 16 .20 .40 .40 .40 .3 3 0 1.000 3 3 4.0006 3.2 1.600L 1.3 2 1.600L 1.3 2 1.600L 1.5.232 1.600L 15.232 1.623	32 16 16 16 20 50 30 2 2 2 0 1.250 2.500 2.3.000L 3.840 1-3 2 8.00L 8.513 1-3 2 8.00L 1.31 1.32 2 8.00L 8.513 1.32 1.011 1.33 2 8.00L 8.513 1.34 1.35 1	36 16 20 10 .30 .60 3 3 0 1.500 3 3 0 4.500 2 3 3 3.335R 6.249 2 -3 3.335R 8.448 2 -3 3 4.800R 15.488 1-3	36 16 20 10 .40 .50 3 3 0 1.250 3 3 0 2.500 3 3 4.445R 7.605 2-3 4.445R 9.796 1-3 5.800R 14.621 1-3	36 16 20 10 45 45 45 3 0 1.125 3 0 2.250 3 3 0 3.375 2-3 3 5.000R 7.474 1-3 2 3.700L 9.928 1-3 2 3.700L 9.928 1-4 14.871 1-3	36 16 20 10 59 10 59 40 1.250 2 2 0 1.250 2 2 0 3.750 1-3 2 3.200L 7.905 1-3 2 3.200L 10.371 1-3 2 3.200L 10.371 1-3 1.201L 15.328 1-3	36 16 20 .30 .50 .50 .50 .50 .50 .50 .50 .5
n-Feet	11. Base le acing ad les 10 20 30 40 50 60	E L XX X A A A A A A A A A A A A A A A A	32 16 16 16 16 17 45 45 45 45 45 45 46 45 46 47 47 47 47 47 47 47 47 47 47 47 47 47	32 16 16 .10 .50 .40 2 2 0 1.250 2 2 0 2.500 2-3 3.552 1-3 2.400L 8.615 1-3 2.400L 8.615 1-3 2.400L 11.096 1-3 2 2.400L 1-3 2 2.400L 1-3 2 2.400L 1-3 2 2.400L	32 16 16 16 20 30 .50 3 3 0 1.250 3 3 0 2.500 2-3 3.000R 5.780 2-3 3.000R 7.744 1-3 5.600R 9.923 1-3 5.600R 14.792	32 16 16 16 20 .40 .40 .40 3 3 0 1.000 2.000 2-3 3 4.000R 3.226 1-3 2 1.600L 7.751 1-3 2 1.600L 1-3 2 1.600L 1-3 2 1.600L 1-3 2 1.600L 1-3 2 1.600L 1-3 2 1.600L 1-3 2 1.600L 1-3 2 1.600L 1-3 2 1.600L	32 16 16 16 20 50 30 2 2 0 1.250 2 2 0 2.500 2-3 3.000L 3.840 1-3 2 800L 8.513 1-3 2 .800L 1.011 1-3 2 .800L 1-3 2 .800L 1-3 2 .800L 1-3 2 .800L 1-3 2 .800L	36 16 20 10 30 .60 3 3 3 0 1.500 3 3 0 4.500 2-3 3.335R 6.249 2-3 3.335R 8.448 2-3 3 4.800R 15.488 1-3 3	36 16 20 10 .40 .50 3 3 0 1.250 3 3 0 2.500 2.500 3 3.750 2-3 4.445R 7.605 2-3 4.445R 7.605 2-3 5.800R 14.621 1-3 3	36 16 20 10 .45 .45 .45 .3 3 0 1.125 3 3 0 2.250 3 3.375 2-3 3.700L 7.474 1-3 2 3.700L 9.928 1-3 2 3.700L 14.871 1-3 2	36 16 20 .10 .50 .40 2 2 2 0 1.250 2 2 0 2.500 2 2 3.750 1-3 2 3.200L 7.905 1-3 2 3.200L 7.905 1-3 2 3.200L 15.328 1-3 2 3.200L 15.328	36 16 20 .20 .30 .50 .50 .50 .50 .50 .50 .50 .5
n-Feet	1. Base 1 le acing ad les 10 20 30 40 60 80	E L X X X X X X X X X X X X X X X X X X	32 16 16 10 .45 .45 .45 .3 3 0 1.125 .3 3 4.000R 3.630 1-3 2.800L 8.257 1-3 2.800L 10.731 1-3 2 2.800L 10.731 1-3 1 2.800L 15.698 1-3	32 16 16 17 19 19 19 19 19 19 19 19 19 19 19 19 19	32 16 16 20 30 30 50 3 3 0 1.250 3 3 0 2.500 2-3 3.000R 3.840 2-3 3.000R 7.744 1-3 3.600R 9.923 1-3 5.600R 9.923 1-3 5.600R 14.792	32 16 16 .20 .40 .40 .40 .3 3 0 1.000 3 3 4.0006 3.2 1.600L 1.3 2 1.600L 1.3 2 1.600L 1.5.232 1.600L 15.232 1.623	32 16 16 16 20 50 30 2 2 2 0 1.250 2.500 2.3.000L 3.840 1-3 2 8.00L 8.513 1-3 2 8.00L 1.31 1.32 2 8.00L 8.513 1.32 1.011 1.33 2 8.00L 8.513 1.34 1.35 1	36 16 20 10 .30 .60 3 3 0 1.500 3 3 0 4.500 2 3 3 3.335R 6.249 2 -3 3.335R 8.448 2 -3 3 4.800R 15.488 1-3	36 16 20 10 .40 .50 3 3 0 1.250 3 3 0 2.500 3 3 4.445R 7.605 2-3 4.445R 9.796 1-3 5.800R 14.621 1-3	36 16 20 10 45 45 45 3 0 1.125 3 0 2.250 3 3 0 3.375 2-3 3 5.000R 7.474 1-3 2 3.700L 9.928 1-3 2 3.700L 9.928 1-4 14.871 1-3	36 16 20 10 59 10 59 40 1.250 2 2 0 1.250 2 2 0 3.750 1-3 2 3.200L 7.905 1-3 2 3.200L 10.371 1-3 2 3.200L 10.371 1-3 1.201L 15.328 1-3	36 16 20 .30 .50 .50 .50 .50 .50 .50 .50 .5

64 METHOD OF CONVERTING HEAVY MOTOR VEHICLE LOADS

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B 7.800R 5.500L 4.800L 8.600R 4.000L 2.600L		80	G N B M	1-3 3 7.800R 12.961	1-3 2 5,500L 13,278	2 4.800L 13.888	3 8.600R 12.325	2 4.000L 13.000	2 2.600L 14.285	 ····		
M 17.808 18.205 18.830 17.140 17.960 19.268			G N B M	1-3 3 7.800R 12.961	1-3 2 5.500L 13.278 1-3 2	2 4.800L 13.888 1-3 2	8.600R 12.325 1-3 3	$\begin{array}{c} 2\\4.000L\\13.000\\-1-3\end{array}$	2 2.600L 14.285	 		***************************************
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Table 7.4

CONTROLLING CONDITIONS AND MAXIMUM MOMENTS IN SIMPLE SPANS PRODUCED BY THE TYPE 2-S2 TRUCKS WEIGHING ONE KIP EACH



One hundred eight variations in the Type 2-S2 truck are given in this Table. Each truck number, from 1 to 108, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

Tr	uck N	D.	1	2	3	4	5	6	7	8	9	10
W	a. Base	e L	20	20	20	20	20	20	24	24	24	24
Ax Spa	le acing	X X'	8 8	8 8	8	8	8 8	8	8 12	8 12	8 12	8 12
Lo: On Ax		a ₁ a ₂ a ₃	.10 .30 .60	.10 .40 .50	.10 .50 .40	.20 .30 .50	.20 .40 .40	.20 .50 .30	.10 .30 .60	.10 .40 .50	.10 .50 .40	.20 .30 .50
	10	G N B M	3-4 4 1.000R .960	$\begin{array}{c} 2 \\ 2 \\ 0 \\ 1.000 \end{array}$	$\begin{array}{c} 2 \\ 2 \\ 0 \\ 1.250 \end{array}$	3-4 4 1.000R .800	2 2 0 1.000	$\begin{array}{c} 2 \\ 2 \\ 0 \\ 1.250 \end{array}$	3-4 4 1.000R 9.60	2 2 0 1.000	2 2 0 1.250	3-4 4 1.000R .800
	20	G N B M	$^{2-4}_{3}$.667R 2.721	2-4 3 1.220R 2.469	$^{1-3}_{2}$ $.500L$ 2.810	2-4 3 .875R 2.331	1-3 2 0 2.400	$^{1-3}_{2}$ $.236R$ 2.853	$^{3-4}_{4}$ $^{1.000R}_{2.430}$	1-2 2 .800R 2.116	1-2 2 .667R 2.614	$^{3-4}_{4}_{1.000\mathrm{R}}_{2.025}$
	30	G N B M	1-4 3 1.400R 4.965	1-4 2 2.100L 4.747	1-4 2 1.600L 5.186	$^{1-4}_{3}$ $^{2.300R}_{4.376}$	1-4 2 1.200L 4.748	$^{1-4}_{2}$.700L 5.216	2-4 3 1.333R 4.402	2-4 3 2.111R 3.985	$^{1-4}_{2}_{2.400L}_{4.492}$	2-4 3 1.625R 3.770
Feet	40	G N B M	1-4 3 1.400R 7.449	1-4 2 2.100L 7.210	1-4 2 $1.600L$ 7.664	1-4 3 2.300R 6.832	$^{1-4}_{2}_{1.200L}_{7.236}$	$^{1-4}_{2} \hfill .700 L \hfill 7.712$	1-4 3 2.200R 6.721	1-4 2 3.100L 6.340	1-4 2 2.400L 6.944	1-4 3 3.300R 5.972
Span-Feet	50	G N B M	1-4 3 1.400R 9.939	1-4 2 2.100L 9.688	1-4 2 1.600L 10.151	1-4 3 2.300R 9.306	$1-4 \\ 2 \\ 1.200 L \\ 9.729$	1-4 2 .700L 10.210	1-4 3 2.200R 9.197	$^{1-4}_{2} \ 3.100 \mathrm{L} \ 8.792$	1-4 2 2.400L 9.415	1-4 3 3.300R 8.418
	60	G N B M	1-4 3 1.400R 12.433	1-4 2 2.100L 12.174	1-4 2 1.600L 12.643	1-4 3 2.300R 11.788	1-4 2 1.200L 12.224	1-4 2 .700L 12,708	1-4 3 2.200R 11.681	1-4 2 3.100L 11.260	1-4 2 2.400L 11.896	14 3 3.300R 10.882
	80	G N B M	1–4 3 1.400R 17.425	1-4 2 2.100L 17.155	1-4 2 1.600L 17.632	$^{1-4}_{3}$ $^{2.300R}_{16.766}$	1-4 2 1.200L 17.218	1–4 2 .700L 17,706	$^{1-4}_{3}$ $^{2.200}$ R $^{16.661}$	$^{1-4}_{2} \ _{3.100L} \ _{16,220}$	1-4 2 2.400L 16.872	1-4 3 3.300R 15.836
	100	G N B M	1-4 3 1.400R 22.420	1-4 2 2.100L 22.144	1-4 2 1.600L 22.626	1-4 3 2.300R 21.753	1-4 2 1.200L 22.214	1–4 2 .700L 22,705	1-4 3 2.200R 21.648	1-4 2 3.100L 21.196	1-4 2 2.400L 21.858	1-4 3 3.300R 20.809

a1, a2, and a3-Represent the ratio of gross vehicle weight on axles.

G-Axle group causing maximum moment, thus, 1-3 means axles 1, 2, and 3.

N-Number of critical axle under which maximum moment occurs.

B-Distance to right or left of mid-span to point of maximum moment.

M-Maximum moment.

66	METHOD	OF	CONVERTING	HEAVY	MOTOR	VEHICLE	LOADS
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Γrι	ick N	0.	11	12	13	14	15	16	17	18	19	20
Νŀ	ı. Bas	e L	24	24	28	28	28	28	28	28	32	32
×		X,	. 8	8	8	.8	8	8	8	$\frac{8}{16}$	$\frac{8}{20}$	20
op.	acing	X'	.20	$-\frac{12}{.20}$.10	.10	.10		.20	.20	.10	.10
)n		a ₂	.40	.50	.30	.40	.50	.30	.40	.50	.30	.40
X	les	a ₃	40	.30	.60	.50	.40	.50	.40	.30		.50
1	10	G N	$\frac{2}{2}$	2 2	3 4 4	2 2	$\frac{2}{2}$	$_{4}^{3-4}$	$\frac{2}{2}$	$\frac{2}{2}$	34 4	2
		В	0	0	1.000R	0	0	1.000R	0	0	1.000R .960	0
į		_ <u>M</u>	$\frac{1.000}{1-2}$	$\frac{1.250}{1-2}$		$\frac{1.000}{1-2}$	1.250 1-2	.800 3-4	$\frac{1.000}{1-2}$	1.250 1-2	3-4	$\frac{1.0}{1-2}$
	20	N	2	2	4	2	2	4	2	2	4	2
i		B M	$^{1.333 m R}_{2.252}$	1.143R 2.745	$1.000 \mathbf{R} \\ 2.430$.800R 2.116	$^{.667 m R}_{2.614}$	$^{1.000 m R}_{2.025}$	$1.333\mathbf{R} \ 2.252$	1.143R 2.745	1.000R 2.430	$\frac{.80}{2.1}$
			1-4	1-3	3-4	1-2	1-2	3-4	12	1-2	3-4	1-2
Ì	30	N	2	2	4	2	2	4	2	2	4	2
į		B M	2.000L 4.033	4.673	1.000R 3.920	3.361	667R 4.110	1.000R 3.267	1.333R 3.734	1.143R 4.480	1.000R 3.920	$\frac{.80}{3.8}$
-		G	1-4	14	2-4	1-4	14	2-4	14	1-4	2-4	2- 4
:	40	N	2 20001	2 1.300 L	$^{3}_{2.000 m R}$	$^{2}_{4.100L}$	$\frac{2}{3.200 L}$	3	$^{2}_{2.800 L}$	$^2_{1.900\mathrm{L}}$	$^3_{2.667 m R}$	3
1		B M	6.500L	7.142	6.090	5.520	6.256	2.375R 5.212	5.796	6.590	5.561	3.88 4.8
		G	1-4	1-4	1-4	1-4	1-4	1–4	1-4	1-4	14	1-4
	50	N B	$^{2}_{2.000 m L}$	$^{2}_{1.300 \rm L}$	3.000R	$^{2}_{4,100L}$	$\frac{2}{3.200}\mathbf{L}$	$^3_{4.300 m R}$	$^{2}_{2.800 \rm L}$	$^{2}_{1.900L}$	$3.800 \mathrm{R}$	$\frac{2}{5.10}$
ĺ		M	8.980	9.634	8.480	7.936	8.705	7.570	8.257	9.072	7.789	7.1
Ì		G	1-4	1-4	1-4	1-4	1-4	14	1-4	1-4	1-4	1-4
	60	N B	$\frac{2}{2.000}$ L	$^{2}_{1.300L}$	3.000R	$\frac{2}{4.100 L}$	$^{2}_{3.200 \rm L}$	$^{3}_{4.300 m R}$	$^{2}_{2.800 \rm L}$	$^{2}_{1.900L}$	$3 \\ 3.800 m R$	$\frac{2}{5.10}$
1		M	11.467	12.128	10.950	10.380	11,171	10.008	10.731	11.560	10.241	9.
	80	G N	$^{1-4}_2$	$^{1-4}_{2}$	$^{1-4}_{3}$	$^{1-4}_{2}$	$\frac{1-4}{2}$	14 3	$^{1-4}_2$	$^{1-4}_2$	$\frac{1-4}{3}$	1-4 2
		В	2.000 L	$1.300I_{-}$	3.000R	4.100L	3.200 L	4.300R	2.800L	1.900L	$3.800\mathbf{R}$	5.10
		M	16.450	17.121	15.913	15.310	16.128	$\frac{14.931}{4}$	15.698	16.545	15.181	14.4
	100	G N	$^{1-4}_{2}$	$^{1-4}_2$	14 3	$\frac{1-4}{2}$	$\frac{1-4}{2}$	$^{1-4}_3$	$\frac{1-4}{2}$	1-4 2	$^{1-4}_3$	$^{1-4}_{2}$
		В	2.000L	1.300L	3.000R	4.100L	3.200L	4.300R	2.800L	1.900L	3.800R	5.10
	1.37	M	21.440	22.117	20.890	20.268	21.102	19.885	20.678	21.536	20.144	19.5
	ick N i. Base		$\frac{21}{32}$	$\frac{22}{32}$	$\frac{23}{32}$	$\frac{24}{32}$	$\frac{25}{36}$	26 36	$\frac{27}{36}$	$\frac{28}{36}$	29 36	$-\frac{3}{3}$
	le	X	8	8	8	8	8	8	8	8	8	
	acing	X′	20	20	20	20	24	24	24	24	24	2
n	ad	\mathbf{a}_1 \mathbf{a}_2	.10 .50	.20 .30	.20	.20	.10 .30	.10 .40	.10 .50	.20 .30	.20 .40	.2
	les	a 3	.40	.50	.40	.30	.60	.50	.40	.50	.40	.3
1	10	G N	2 2	3 -4 4	2 2	2 2	$_{4}^{3-4}$	2 2	2 2	34 4	2 2	$\frac{2}{2}$
	10	\mathbf{B}	0	1.000R	0	0	1.000R	0	0	1.000R	0	0
ĺ		M	1.250	.800	1.000	1.250	.960	1.000	1.250	.800	1.000	
1	20	G N	$\frac{1}{2}$	3-4 4	$^{1-2}_{2}$	$\frac{1-2}{2}$	3-4 4	$\frac{1-2}{2}$	$\frac{1-2}{2}$	$\frac{3-4}{4}$	$^{1-2}_2$	1-2 2
		\mathbf{B}	.667R	1.000R	1.333R	1.143R	1.000R	.800R	.667R	1.000R	1.333R	1.14
		M G	$\frac{2.614}{1-2}$	$\frac{2.025}{3-4}$	$\frac{2.252}{1-2}$	$\frac{2.745}{1-2}$	2.430 3-4	$\frac{2.116}{1-2}$	$\frac{2.614}{1-2}$	3-4	$\frac{2.252}{1-2}$	$-\frac{2.7}{1-2}$
	30	N	2	4	2	2	4	2	2	3-4 4	2	2
		B M	0.667R 0.667R	$^{1.000 m R}_{3.267}$	1.333R 3.734	1.143R	1.000R	.800R	.667R	1.000R 3.267	1.333R	1.14
		G	1-3	2-4	1-3	$\frac{4.480}{1-2}$	3.920	$\frac{3.361}{1-2}$	$\frac{4.110}{1-2}$	3-4	$\frac{3.734}{1-2}$	1-2
,	40	N	2	3	2	2	4	2	2	4	2	2
		B M	$2.000L \\ 5.680$	3.125R 4.695	1.500L 5.245	$^{1,143 m R}_{6.222}$	1.000R 5.415	$0.800 \mathrm{R} \\ 4.608$	$\begin{array}{c} .667\mathrm{R} \\ 5.608 \end{array}$	1.000R 4.513	1.333R 5.226	1.14 6.2
		G	1-4	14	1-4	1-4	2-4	2 4	1-4	2-4	1-4	1-8
	50	N	2	3	2	2	3	3	2	3	2	2
-		B M	$4.000L \\ 8.020$	$5.300 \mathbf{R} \\ 6.762$	$\frac{3.600 L}{7.559}$	$2.500L \\ 8.525$	$^{3.333R}_{7.249}$	$^{4.778 m R}_{6.359}$	$4.800L \\ 7.361$	$3.875\mathbf{R} \\ 6.140$	6.887	1.17 8.0
		-G	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4
-	60	N B	2 4.000L	3 5.300R	$\frac{2}{3.600}$ L	$^{2}_{2.500 m L}$	$^{3}_{4,600R}$	2 6 1001	$^{2}_{4.800L}$	8 6 300P	2	2
		M	10.467	9.168	10.016	$\frac{2.50015}{11.004}$	9.553	$6.100 { m L} \\ 8.720$	9.784	$\substack{6.300\mathrm{R}\\8.361}$	4.400L 9.323	$\frac{3.10}{10.4}$
		G	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4
	80	N B	$^{2}_{4.000 m L}$	$_{5.300\mathrm{R}}^{3}$	$\frac{2}{3.600 L}$	$\begin{array}{c} 2 \\ 2.500 \mathbf{L} \end{array}$	$^3_{4.600 m R}$	$\frac{2}{6.100L}$	2 4.800L	$_{6.300\mathrm{R}}^{3}$	2 4 400T	2 10
		M	15.400	14,051	14.962	15.978	14.465	13,565	14.688	13.196	$^{4.400}$ L $^{14.242}$	$\frac{3.10}{15.4}$
:		G	1-4	1–4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4
Ì			2	3	2	2	3	2	2	3	2	2
Ì	100	N B	4.000L	5.300R	3.600L	2.5001	4.600R	6.100L	4.800L	6.300R	4.400L	3.10

METHOD FOR RATING HEAVY VEHICLE LOADS TABLE 7.4 (Continued) Truck No. Wh. Base L 8 .20 $\frac{8}{28}$ 28 8 Axle Spacing X X' 28 28 28 28 Load .10 .10 .10 .20 .20 .20 .10 .10 a₁

Loa On		a ₁ a ₂	.10 .30	.10 .40 .50	.10 .50 .40	.20 .30	.20 .40 .40	.20 .50 .30	.10 .30 .60	.10 .40 .50	.10 .50 .40	.20 .30
Ax	es	G G	3-4	2	2	50 34	2	2	3-4	2	2	3-4
	10	N B M	4 1,000R .960	$\frac{1}{0}$	$\frac{1}{2}$	1.000R .800	$\frac{1}{0}$	$\frac{1}{2}$	4 1.000R .960	$\begin{array}{c} -2\\0\\1.000\end{array}$	$\frac{1}{2}$ 0 1.250	4 1.000R .800
	20	G N B	3-4 4 1.000R	1-2 2 .800R	1-2 2 .667R	3-4 4 1.000R	1-2 2 1.333R	1–2 2 1.143R	2–4 3 .667R	2-4 3 1.222R	2-3 2 1.143L	2-4 3 .875R
	30	G N B	2.430 3-4 4 1.000R	2.116 12 2 .800R	2.614 1 2 2 .667R	2.025 3-4 4 1.000R	2.252 1 2 2 1.333R	2.745 1-2 2 1.143R	2.721 2 4 3 .667R	2.469 2-4 3 1.222R	2.745 1-4 2 1.400L	$\frac{2.331}{2-4}$ $\frac{3}{875R}$
	40	M G N	3.920 3-4 4	$\frac{3.361}{1-2}$	$\frac{4.110}{1-2}$	3.267 3–4 4	$\frac{3.734}{1-2}$	4.480 1-2 2	4.965 1-4 3	4.697 1-4 3	4.965 1-4 2	4.320 1-4 3
Span-Feet		B M G	1.000R 5.415 3-4	.800R 4.608 1-2	.667R 5.608 1-2	1.000R 4.513 3-4	1.333R 5.226 1–2	1.143R 6,222 1-2	1.600R 7.264 1-4	2.100R 7.010	1.400L 7.449 1-4	2.700R 6.482 1-4
Spa	50	N B M	$^{4}_{1.000\mathrm{R}}_{6.912}$	2 .800R 5.857	2 .667R 7.106	$^{4}_{1.000R}_{5.760}$	2 1.333R 6.721	$^2_{1.143R}_{7.967}$	3 1.600R 9.751	3 2.100R 9.488	2 1.400L 9.939	3 2.700L 8.946
	60	G N B M	2-4 3 4.000R 8.940	1-4 2 7.100L 7.940	1-4 2 5.600L 9.123	1-4 3 7.300R 7.588	1-4 2 5.200L 8.651	1-4 2 3.700L 9.928	$^{1-4}_{3}$ $^{1.600}$ R $^{12.243}$	1–4 3 2.100R 11.974	1-4 2 1,400L 12,433	$^{1-4}_{3}$ $^{2.700R}_{11.422}$
		- 11	1-4	1-4	1-4	1-4	14	1-4	14	1-4	1-4	1-4
	80	N B M	3 5.400R 13.765	$\begin{array}{c} 2\\ 7.100L\\ 12.730 \end{array}$	$^{2}_{5.600L}_{13.992}$	$^3_{7.300 m R}_{12.366}$	$\begin{array}{c} 2 \\ 5.200 \mathrm{L} \\ 13.538 \end{array}$	$\begin{array}{c} 2 \\ 3.700 L \\ 14.871 \end{array}$	$\begin{array}{c} 3 \\ 1.600 \mathrm{R} \\ 17.232 \end{array}$	3 2.100R 16.955	2 1.400L 17.425	3 2.700R 16.391
	100	G N B M	$^{1-4}_{3}$ $^{5.400}$ R $^{18.692}$	1-4 2 7.100L 17.604	1-4 2 5.600L 18.914	1-4 3 $7.300R$ 17.233	1-4 2 5.200L 18.470	1-4 2 3.700L 19.837	14 3 1.600R 22.226	1-4 3 2.100R 21.944	14 2 1.400L 22.420	1-4 3 2.700R 21.373
Tr	uck N		41	42	43	44	45	46	47	48	49	50
100	h. Bas		24	24	28	28	28	28	28	28	32	32
	le acing	X X'	12	12 8	12 12	12 12	12 12	12 12	12 12	12 12	12 16	12 16
Lo	ad	a ₁	.20 .40	.20 .50	.10	.10 .40	.10 .50	.20	.20 .40	.20 .50	.10 .30	.10 .40
	les	\mathbf{a}_{β}	.40	.30	.60	.50	.40	.50	.40	.30	.60	.50
	10	G N B M	$\begin{array}{c} 2 \\ 2 \\ 0 \\ 1.000 \end{array}$	$\begin{array}{c} 2 \\ 2 \\ 0 \\ 1.250 \end{array}$	3-4 4 1.000R .960	$\begin{array}{c} 2 \\ 2 \\ 0 \\ 1.000 \end{array}$	$\begin{array}{c} 2 \\ 2 \\ 0 \\ 1.250 \end{array}$	3–4 4 1.000R .800	$\begin{array}{c} 2 \\ 2 \\ 0 \\ 1.000 \end{array}$	$\begin{array}{c} 2 \\ 2 \\ 0 \\ 1.250 \end{array}$	3-4 4 1.000R .960	2 2 0 1.000
	20	G N B	2-3 2 1.333L 2.252	2-3 2 .923L 2.677	3-4 4 1.000R 2.430	3-4 4 1.000R 2.025	$\begin{array}{c} 2 \\ 2 \\ 0 \\ 2.500 \end{array}$	3-4 4 1.000R 2.025	2 2	2 2 0 2.500	3–4 4 1.000R 2.430	3-4 4 1.000R 2.025
		G	1-4	1-4	2-4	2-4	1-4	2-4	1-3	1-3	3-4	2-4
	30	N B M	.800L 4.321	$^2_{.300L} \ _{4.803}$	3 1.333R 4.402	$\begin{array}{c} 3 \\ 2.111R \\ 3.985 \end{array}$	$^2_{2.200L}_{4.261}$	$^{3}_{1.625\mathrm{R}}$ $^{3.770}$	$\frac{2}{0}$ 3.600	2 .353 R 4.277	$^{4}_{1.000R}$ $^{3.920}$	3 3.000R 3.320
Feet	40	G N B M	1-4 2 .800L 6.816	1-4 2 .300L 7.302	2–4 3 1.333R 6.639	2-4 3 2.111R 6.201	$^{1-4}_{2}$ $^{2.200L}_{6.721}$	2–4 3 1,625R 5,753	1-4 2 1.600L 6.064	1-4 2 .900L 6.720	$^{2-4}_{3}$ $^{2.000}$ R $^{6.090}$	2-4 3 3.000R 5.503
Span-Feet	50	G N B	1 4 2 .800L 9.313	1-4 2 .300L 9,802	1-4 3 2.400R 9.015	1-4 3 3.100R 8.592	1-4 2 2.200L 9.197	1-4 3 3.700R 8.074		1-4 2 .900L 9.216	2-4 3 2.000R 8.322	1-4 3 4.100R 7.736
	60		1-4 2 .800L 11.811	1-4 2 .300L 12,302	1-4 3 2.400R 11.496	1-4	1-4	1-4 3 3.700R 10.528	1-4 2 1.600L	1-4 2 .900L 11.714	1-4 3 3.200R 10.771	1–4 3 4.100R
	80	G	1-4 2 .800L 16,808	1-4 2	1-4 3	1-4 3	1-4	1-4 3	1-4 2 1.600L	1-4 2	14 3	1–4 3 4.100R
	100	G	1-4 2 .800L 21.806	1-4 2	1-4 3	1-4 3	1-4	14 3	1-4 2 1.600L	1–4 2	1-4 3 3.200R 20.702	1–4 3 4.100R

68 METHOD OF CONVERTING HEAVY MOTOR VEHICLE LOADS TABLE 7.4 (Continued)

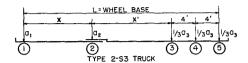
	uck N		(Continue 51	52	53	54	55	56	57	58	59	60
	n. Bas		32	32	32	32	36	36	36	36	36	36
	acing	X X'	12 16	12 16	12 16	12 16	12 20	12 20_	12 20	12 20	12 20	12 20
Lo: On Ax		a ₁ a ₂ a ₃	.10 .50 .40	.20 .30 .50	.20 .40 .40	.20 .50 .30	.10 .30 .60	.10 .40 .50	.10 $.50$ $.40$.20 .30 .50	.20 .40 .40	.20 .50 .30
	10	G N B M	$\begin{array}{c} 2 \\ 2 \\ 0 \\ 1.250 \end{array}$	3-4 4 1.000R .800	2 2 0 1.000	2 2 0 1.250	3 4 4 1.000R .960	2 2 0 1.000	$\begin{array}{c} 2 \\ 2 \\ 0 \\ 1.250 \end{array}$	3-4 4 1.000R .800	2 2 0 1.000	2 2 0 1.250
	20	G N B M	$\begin{array}{c} 2 \\ 2 \\ 0 \\ 2.500 \end{array}$	$^{3-4}_{4}$ $^{1.000}$ $^{2.025}$	$\begin{array}{c} 2 \\ 2 \\ 0 \\ 2.000 \end{array}$	$\begin{array}{c} 2 \\ 2 \\ 0 \\ 2,500 \end{array}$	3-4 4 1.000R 2.430	$^{3-4}_{4}$ $^{1.000R}_{2.025}$	$\begin{array}{c} 2 \\ 2 \\ 0 \\ 2.500 \end{array}$	$^{3-4}_{4}$ $^{1.000R}_{2.025}$	$\begin{array}{c} 2 \\ 2 \\ 0 \\ 2.000 \end{array}$	2 2 0 2.500
	30	G N B M	1-2 2 1.000R 3.920	3-4 4 1.000R 3.267	$^{1-2}_{2}_{2.000R}_{3.380}$	1-2 2 $1.715R$ 4.118	3-4 4 1.000R 3.920	3-4 4 1.000R 3.267	$1-2 \\ 2 \\ 1.000 R \\ 3.920$	3–4 4 1.000R 3.267	1-2 2 2.000R 3.380	1-2 2 1.715F 4.118
-Feet	40	G N B M	1-4 2 3.000L 6.025	2-4 3 2.375R 5.212	1-4 2 2.400L 5.344	$^{1-4}_{2}_{1.500L}$ 6,156	$^{2-4}_{3}_{2.667R}_{5.561}$	2–4 3 3.889R 4.839	$^{1-3}_{2} \ _{1.750L} \ _{5.462}$	2-4 3 3.125R 4.695	$^{1-2}_{2}_{2.000\mathrm{R}}_{4.860}$	1-2 2 1.715F 5.851
Span-Feet	50	G N B M	1-4 2 3.000L 8.480	1-4 3 4.700R 7.242	1-4 2 2.400L 7.815	1-4 2 1.500L 8.645	2–4 3 2.667R 7.779	2–4 3 3.889R 7.021	$^{1-4}_{2}_{3.800L}_{7.789}$	2-4 3 3.125R 6.656	1-4 2 3.200L 7.105	1-4 2 2.100L 8.088
	60	G N B	1-4 2 3.000L 10.950	1-4 3 4.700R 9.668	1-4 2 2.400L 10.296	1-4 2 1.500L 11.138	1-4 3 4.000R 10.067	1–4 3 5.100R 9.334	1-4 2 3.800L 10.241	1-4 3 5.700R 8.842	1-4 2 3.200L 9.571	1-4 2 2.100L 10.574
	80	G N B	1-4 2 3.000L 15.913	1–4 3 4.700R 14.576	1–4 2 2,400L 15.272	1-4 2 1.500L 16,128	1–4 3 4.000R 15.000	1–4 3 5.100R 14.225	1-4 2 3.800L 15.181	1-4 3 5.700R 13.706	1-4 2 3.200L 14.528	1-4 2 2.100L 15.555
	100	G N B M	1-4 2 3.000L 20.890	1-4 3 4.700R 19.521	1-4 2 2.400L 20.258	1-4 2 1.500L 21.123	1-4 3 4.000R 19.960	1-4 3 5.100R 19.160	1-4 2 3.800L 20.144	1–4 3 5.700R 18.625	1-4 2 3.200L 19.502	1-4 2 2.100L 20.544
Tru	ick No	o.	61	62	63	64	65	66	67	68	69	70
$\frac{\mathbf{W}\mathbf{h}}{\mathbf{A}\mathbf{x}}$. Base		40 12	$\frac{40}{12}$	$\frac{40}{12}$	$\frac{40}{12}$	$-\frac{40}{12}$	40 12	44	<u>44</u> 12	44	44
	icing	X X'	24	24	24	24	24	24	12 28	28	12 28	12 28
Loa On Ax		\mathbf{a}_1 \mathbf{a}_2 \mathbf{a}_3	.10 .30 .60	.10 .40 .50	.10 .50 .40	.20 .30 .50	.20 .40 .40	.20 .50 .30	.10 .30 .60	.10 .40 .50	.10 .50 .40	.20 .30 .50
	10	G N B M	3-4 4 1.000R .960	2 2 0 1.000	2 2 0 1.250	3-4 4 1.000R .800	2 2 0 1.000	$\begin{array}{c} 2 \\ 2 \\ 0 \\ 1,250 \end{array}$	3-4 4 1.000R .960	2 2 0 1.000	2 2 0 1.250	3-4 4 1.000R .800
	20	G N B M	3-4 4 1.000R 2.430	3-4 4 1.000R 2.025	2 2 0 2.500	3-4 4 1.000R 2.025	2 2 0 2.000	2 2 0 2.500	3-4 4 1.000R 2.430	34 4 1.000R 2.025	2 2 0 2.500	3-4 4 1.000R 2.025
	30	G N B M	3-4 4 1.000R 3.920	3-4 4 1.000R 3.267	1.2 2 1.000R 3.920	3-4 4 1.000R 3.267	1-2 2 2.000R 3.380	1-2 2 1.715R 4.118	3-4 4 1.000R 3.920	3-4 4 1.000R 3.267	1-2 2 1.000R 3.920	3-4 4 1.000R 3.267
n-Feet	40	G N B M	3-4 4 1.000R 5.415	3-4 4 1.000R 4.513	1-2 2 1.000R 5.415	3-4 4 1.000R 4.513	1-2 2 2.000R 4.860	1-2 2 1.715R 5,851	3-4 4 1.000R 5.415	3-4 4 1.000R 4.513	1-2 2 1.000R 5.415	3-4 4 1.000R 4.513
Span	50	G N B	2–4 3 3.333R 7.249	2-4 3 4.778R 6.359	13 2 2.250L 7.081	2–4 3 3.875R 6,140	1-3 2 1.500L 6.436	1-3 2 .706L 7.634	3–4 4 1.000R 6.912	3-4 4 1.000R 5.760	1-2 2 1.000R 6.912	3-4 4 1.000R 5.760
	60	G N B	2-4 2 3.333R 9.465	2-4 3 4.778R 8.541	1-4 2 4.600L 9.553	2-4 3 3.875R 8.100	1-4 2 4.000L 8.867	1-4 2 2.700L 10.022	2-4 3 4.000R 8.940	2-4 3 5.667R 7.883	1-4 2 5.400L 8.886	2-4 3 4.625R 7.586
	80	G N B M	1-4 3 4.800R 14.288	1-4 3 6.100R 13.365	1-4 2 4.600L 14.465	1-4 3 6.700R 12.861	1-4 2 4.000L 13.800	1-4 2 2.700L 14.991	1-4 3 5.600R 13.592	1-4 3 7.100R 12.530	1-4 2 5.400L 13.765	1-4 3 7.700R 12.041
	100	G N B	1-4 3 4.800R 19.230	1-4 3 6.100R 18.272	1-4 2 4.600L 19.412	1-4 3 6.700R 17.749	1-4 2 4.000L 18.760	1-4 2 2.700L 19.973	1-4 3 5.600R 18.514	1-4 3 7.100R 17.404	1-4 2 5.400L 18.692	1-4 3 7.700R 16.893

			Continue	d)			HEAVY				70	•
	. Base		71 44	$-\frac{72}{44}$	$\frac{73}{28}$	74 28	$\frac{75}{28}$	$-\frac{76}{28}$	$-\frac{77}{28}$	$\frac{78}{28}$	79 32	80
Axl	le	X	12	12	16	16	16	16	16	16	16	16
Spa Loa	icing id	X'		.20	.10	.10	.10	$-\frac{8}{.20}$.20	.20	.10	.10
On Axl	les	a ₂ a ₃	.40 .40	.50 .30	.30 $.60$.40 .50	.50 .40	.30 .50	.40 .40	.50 .30	.30 $.60$.40 .50
	10	G N B	2 2 0	2 2 0	3-4 4 1.000R	2 2 0	2 2 0	3-4 4 1.000R	2 2 0	2 2 0	3-4 4 1.000R	2 2 0
ŀ	20	G N B	1.000 2 2 0	$\frac{1.250}{2}$	$\frac{960}{2-4}$ $\frac{3}{667R}$	1.000 2-4 3 1.222R	1.250 2-3 2 1.143L	.800 2-4 3 .875R	1.000 2-3 2 1.333L	1.250 2-3 2 .923L	3-4 4 1.000R	1.0 3-4 4 1.000
-		<u>M</u>	$-\frac{2.000}{1-2}$	$\frac{2.500}{1-2}$	$\frac{2.721}{2-4}$	$\frac{2.469}{2-4}$	$\frac{2.745}{2-4}$	$\frac{2.331}{2-4}$	$\frac{2.252}{2-4}$	$\frac{2.677}{2-4}$	2.430	2.0
	30	N B M	22.000R 3.380	2 1.715R 4.118	$^{3}_{.667\mathrm{R}}$ $^{4.965}$	3 1.222R 4.697	$^{2}_{\substack{2.222\mathrm{L}\\4.900}}$	$^{3}_{.875\mathrm{R}}$ $^{4.320}$	2 2.500L 4.167	$^2_{1.875L}_{4.594}$	3 1.333R 4.402	3 2.111 3.9
Feet	40	G N B M	1-2 2 2.000R 4.860	1-2 2 1.715R 5.851	$\begin{array}{c} 24 \\ 3 \\ .667 \mathrm{R} \\ 7.211 \end{array}$	2-4 3 1.222R 6.935	1-4 2 1.200L 7.236	2-4 3 .875R 6.315	1-4 2 .400L 6.404	1-4 2 .100R 6.700	2-4 3 1.333R 6.639	2-4 3 2.111 6.2
Span-Feet	50	G N B M	1-2 2 2.000R 6.348	1-2 2 1.715R 7.591	1-4 3 1.800R 9.565	1-4 3 2.300R 9.306	1-4 2 1.200L 9.729	1-4 3 3.100R 8.592	1-4 2 .400L 8.903	1-4 2 .100R 9.200	2-4 3 1.333R 8.881	2-4 3 2.111 8.4
	60	G N B	1-4 2 4.800L 8.184	1-4 2 3.300L 9.482	1-4 3 1.800R 12.054	1-4 3 2.300R 11.788	1-4 2 1.200L 12.224	1-4 3 3.100R 11.060	1-4 2 .400L 11.403	1-4 2 .100R 11.700	1-4 3 2.600R 11.313	1-4 3 3.300 10.8
į	80	G N B	1-4 2 4.800 L	1-4 2 3.300L	1-4 3 1.800R	1-4 3 2.300R	1-4 2 1.200L	1–4 3 3.100R	1-4 2 .400L	1-4 2 .100R	1-4 3 2.600R	1-4 3 3.30
	100	G N B	13.088 1-4 2 4.800L	14.436 1-4 2 3.300L	17.041 1-4 3 1.800R	16.766 1-4 3 2.300R	17.218 1-4 2 1.200L	16.020 14 3 3.100R	16.402 1-4 2 .400L	16.700 1-4 2 .100R	16.285 1-4 3 2.600R	15.8 1-4 3 3.30
Tress	ick No	M	18.030 81	19.409 82	83	21.753 84	22.214 85	20.996 86	21.402 87	21.700	21.268 89	20.8
	. Bas		32	32	32	32	36	36	36	36	36	36
Axl Spa	le acing	X X'	16 12	16 12	16 12	16 12	16 16	16 16	16 16	16 16	16 16	16
Los On		81 82	.10 .50	.20 .30	.20 .40	.20	.10	.10	.10	.20 .30	.20 .40	.20
Axl	les	a ₃	.40	.50	.40	$\frac{.30}{2}$.60	.50	.40	.50	2	.30
	10	G N B M	$\begin{array}{c} 2 \\ 2 \\ 0 \\ 1.250 \end{array}$	3-4 4 1.000R .800	2 2 0 1.000	$\begin{array}{c} 2 \\ 2 \\ 0 \\ 1.250 \end{array}$	3-4 4 1.000R .960	$\begin{array}{c} 2 \\ 2 \\ 0 \\ 1.000 \end{array}$	$\begin{array}{c} 2 \\ 2 \\ 0 \\ 1.250 \end{array}$	3-4 4 1.000R .800	2 0 1.000	2 2 0 1.2
1	20	G N B M	2 2 0 2,500	3-4 4 1.000R 2.025	2 2 0 2.000	2 2 0 2,500	3-4 4 1.000R 2.430	3-4 4 1.000R 2.025	2 2 0 2.500	3-4 4 1.000R 2.025	2 2 0 2.000	2 2 9 2.5
-	30	G N B	2-4 2 3.111L 4.241	2 · 4 3 1.625R 3.770	2-4 2 3.500L 3.527	2-4 2 2.625L 4.084	3-4 4 1.000R 3.920	2 4 3 3.000R 3.320	2-3 2 2.286L 3.772	3-4 4 1.000R 3.267	2-3 2 2.667L 3.043	1-2 2 2.28 3.7
eet	40	G N B	1-4 2 2.000L	2-4 3 1.625R	1-4 2 1.200L	1-4 2 .500L	2-4 3 2.000R	$\frac{2-4}{3}$ 3.000R	1-4 2 2.800L	2-4 3 2.375R	1-4 2 2.000L	1-4 2 1.10
Span-Feet	50	G N B	6.500 1-4 2 2,000L	5,753 2-4 3 1.625R	5.636 1-4 2 1.200L	6.306 1-4 2 .500L	6.090 2-4 3 2.000R	5.503 2-4 3 3.000R	5.796 1-4 2 2.800L	5.212 2-4 3 2.375R	4.900 1-4 2 2.000L	5.7 1-4 2 1.10
	60	G N B	8.980 1-4 2 2.000L	7.742 1-4 3 4.100R	8.129 1-4 2 1.200L	8.805 1-4 2 .500L	8.322 1-4 3 3.400R	7.712 1-4 3 4.300R	8.257 1-4 2 2.800L	7.190 1-4 3 5.100R	7.380 1-4 2 2.000L	8.2 1-4 2 1.10
	80	G N B	11.467 1-4 2 2.000L	10.180 1-4 3 4.100R	10.624 1-4 2 1.200L	11.304 1-4 2 .500L	10,593 1-4 3 3,400R	10.008 1-4 3 4.300R	10.731 1-4 2 2.800L	9.334 1-4 3 5.100R	9.867 1-4 2 2.000L	10.7 1-4 2 1.10
- 1		M G	16.450 1-4	15.110 1-4	15.618	16.303 1-4	15.545 1-4	14.931	15.698 1-4	14.225	14.850 1-4	15.7 1-4

ruck	k No		91	92	93	94	95	96	97	98	99	100
Vh. J	Base	L	40	40	40	40	40	40	44	44	44	44
xle	na	X X'	$\frac{16}{20}$	16 20	$\frac{16}{20}$	$\frac{16}{20}$	$\frac{16}{20}$	$\frac{16}{20}$	16	16	16 24	$\frac{16}{24}$
paci oad	mg_	a ₁	.10		.10	.20	.20	.20	$-\frac{24}{.10}$.10	.10	.20
)n		a ₂	.30	.40	.50	.30	.40	.50	.30	.40	.50	.30
xles		a ₃	.60	.50	.40	.50	.40	.30	.60	.50	.40	.50
	10	G N	$_{4}^{3-4}$	2 2	2 2	34 4	2 2	2 . 2	$_{4}^{3-4}$	2 2	$\frac{2}{2}$	3-4 4
1	••	\mathbf{B}	1.000R	0	0	1.000R	0	õ	1.000R	0	0	1.000
		M	.960	1.000	1.250	.800	1.000	1.250	960	1.000	1.250	.8
	20	G N	34 4	3-4 4	$\frac{2}{2}$	34 4	2 2	2 2	3-4 4	34 4	$\frac{2}{2}$	3-4 4
Ì	20	В	1.000R	1.000R	õ	1.000R	0	0	1.000R	1.000R	0	1.000
		M	2.430	2.025	2.500	2.025	2.000	2.500	2.430	2.025	2.500	2.0
	30	G N	3-4 4	$^{3-4}_{4}$	$\frac{2}{2}$	34 4	12 2	$\frac{1-2}{2}$	3-4 4	3-4 4	2 2	3-4 4
1	00	В	1.000R	1.000R	ő	1.000R	$2.6\overline{6}7R$	2.286R	1.000R	1.000R	0	1.00
		M	3,920	3.267	3.750	3.267	3.043	3.772	3.920	3.267	3.750	3.2
İ	40	G N	$^{2-4}_{3}$	$\frac{2-4}{3}$	$\overset{1-3}{2}$	$^{2-4}_{3}$	$\overset{1-2}{2}$	$^{1-2}_2$	$^{3-4}_4$	$_{4}^{3-4}$	$^{1-2}_{2}$	3-4 4
3	10	B	2.667R	3.889R	1.500L	3.125R	2.667R	2.286R	1.000R	1.000R	1.333R	1.000
- Landa		M	5,561	4.839	5.245	4.695	4.508	5,492	5.415	4,513	5,226	4.5
	50	G N	$^{2-4}_{3}$	24 3	1- ·4 2	$\frac{2-4}{3}$	$^{1-4}_{2}$	$\frac{1-4}{2}$	$\frac{2-4}{3}$	$\frac{2-4}{3}$	$^{1-4}_{2}$	2-4 3
1	90	B	2.667R	3.889R	3.600L	3.125R	2.800L	1.700L	3.333R	4.778R	4.400L	3.87
	~	M	.779	7.021	7.559	6.656	6.657	7.658	7.249	6.359	6.887	6.1
1	60	G	2-4 3	2-4	1–4 2	2–4	1-4 2	14 2	2–4 3	2-4 3	1-4 2	2-4 3
	00	N B	2.667R	3.889R	3.600L	3.125R	2.800L	1.700L	3.333R	4.778R	4.400L	3.87
		M.	10.008	9.226	10.016	8.630	9.131	10.148	9.465	8.541	9.323	8.1
	80	G N	1-4 3	$^{1-4}_{3}$	$^{1-4}_{2}$	$^{1-4}_{3}$	$^{1-4}_{2}$	$^{1-4}_2$	1-4 3	1-4 3	$^{1-4}_{2}$	1-4 3
	60	B	4.200R	5.300R	3.600L	6.100R	2.8001	1.700L	$5.000 \mathrm{R}$	$6.300\mathbf{R}$	4.400L	7.10
		M	14.821	14.051	14.962	13.365	14.098	15.136	14.113	13.196	14.242	12.
١,	00	G N	1-4 3	1–4 3	1-4 2	1-4 3	1-4 2	1-4 2	$\frac{1-4}{3}$	$^{1-4}_{3}$	$^{1-4}_{2}$	1-4 3
1	.00	В	4.200R	5.300R	3.600L	6.100R	2.800L	1.700L	5.000R	6.300R	4.400L	7.10
		M	19.776	18.981	19.930	18.272	19.078	20,129	19.050	18.097	19.194	17.4
rucl		1.60	101	102	103	104	105	106	107	108		
Vh. I	Base		44	44	48	48	48	48	48	48		
xle paci	inø	X X'	$\frac{16}{24}$	$\frac{16}{24}$	$\frac{16}{28}$	$\frac{16}{28}$	$\frac{16}{28}$	$\frac{16}{28}$	$\frac{16}{28}$	$\frac{16}{28}$		
oad		a ₁	.20	.20	.10	.10	10	20	.20	.20		
n		\mathbf{a}_2	.40	.50	.30	.40	.50	.30	.40	.50		
xles	3	G.		$\frac{.30}{2}$	3-4		$-\frac{.40}{2}$	3-4	$\frac{.40}{2}$	30		
	10	N	2	$\overset{\sim}{2}$	4	$\frac{2}{2}$	$\frac{2}{2}$	4	$\frac{2}{2}$	2		
1		В	0	0	1.000R	0	0	1.000R	0	0		
		M	1.000	$\frac{1.250}{2}$	3-4	1.000 3-4	$\frac{1.250}{2}$	<u></u>	1.000	$\frac{1.250}{2}$		
-	20	G N	2	2	4	4	2	4	2	2		
1		В	0	0	1.000R	1,000R	0	1.000R	0	0 504		
-		M G	2.000	$\frac{2.500}{1-2}$	2.430 3-4	2.025 3-4	$\frac{2.500}{2}$	$\frac{2.025}{3-4}$	$\frac{2.000}{1-2}$	$-\frac{2.500}{1-2}$		
	30	N	2	2	3-4 4	3-4 4	2	3-4 4	2	$\frac{1-2}{2}$		
1		В	2.667R	2.286R	1.000R	1.000R	0	1.000R	2.667R	2.286R		
		M	3.043	3.772	3.920	3.267	3.750	3.267	$\frac{3.043}{1.9}$	3.772		
.	40	G N	12 2	$^{1-2}_2$	3-4 4	3-4 4	$^{1-2}_{2}$	3-4 4	$^{1-2}_2$	$^{1-2}_2$		
3		В	2.667R	2.286R	1.000R	$1.000\mathbf{R}$	1.333R	1.000R	2.667R	2.286R		
		M	4.508	5.492	$\frac{5.415}{1}$	4.513	5.226	4.513	$-\frac{4.508}{1.0}$	5.492		
	50	G N	$\frac{1-3}{2}$	$^{1-3}_{2}$	$\frac{3-4}{4}$	$_{4}^{3-4}$	$\frac{1-2}{2}$	3-4 4	$egin{smallmatrix} 1-2 \ 2 \end{smallmatrix}$	1-2 2		
	- 1	В	1.000L	.236L	1.000R	1.000R	1.333R	1.000R	2.667R	2.286R		
		M	6,016	7.226	6.912	5.760	6.721	5.760	5.986	7.223		
1	60	G N	${\overset{1-}{\overset{4}{2}}}$	$\frac{1-4}{2}$	$_{3}^{2-4}$	$^{2-4}_{3}$	$\frac{1-4}{2}$	$^{2-4}_{3}$	$\frac{1-4}{2}$	$^{1-3}_{2}$		
į		В	3.600L	2.300 L	4.000R	5.667R	5.200 L	4.625R	4.400L	.588L		
_		М	8.416	9.588	8.940	7.883	8.651	7.586	7.723	9.045		
İ	80	G N	$\frac{1-4}{2}$	1-4 2	1-4 3	$^{1-4}_{3}$	$^{1-4}_{2}$	$^{1-4}_{3}$	$\frac{1-4}{2}$	1-4 2		
	v	В	3.600L	2.300L	5.800R	7.300R	5.200L	8.100R	4.400L	2.900L		
		M	13,362	14.566	13.421	12.366	13.538	11.720	12.642	14.005		
		G	1-4	1-4	1-4	1-4	1-4	14	1-4	1-4		
١.	00	TAT .	n	n	- 0							
1	.00	N B	$\frac{2}{3.600 L}$	$^{2}_{2.300 \rm L}$	$_{5.800R}^{3}$	3 7.300R	2 5.200L	$^3_{8,100 m R}$	$^{2}_{4.400L}$	$\frac{2}{2.900}$ L		

Table 7.5

CONTROLLING CONDITIONS AND MAXIMUM MOMENTS IN SIMPLE SPANS PRODUCED BY THE TYPE 2-S3 TRUCKS WEIGHING ONE KIP EACH



Ninety variations in the Type 2-S3 truck are given in this Table. Each truck number, from 1 to 90, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

	uck N	-	1	2	3	4	5	6	7	8	9	10
W	h. Bas	e L	24	24	24	24	24	24	28	28	28	28
Ax	le	X	8	8	8	8	8	8	8	8	8	8
Sp	acing	X'	8	8	8	8	8	8	12	12	12	12
Lo	ad	81	.100	.10	.10	.20	.20	.20	.100	.10	.10	.20
On		\mathbf{a}_2	.225	.30	.40	.20	.30	.40	.225	.30	.40	.20
Ax	cles	8.3	.675	.60	.50	.60	.50	.40	.675	.60	.50	.60
	į.	G	3-5	2	2	35	2	2	3-5	2	2	3-5
	10	N	4	2	2	4	2	2	4	2	2	4
	ì	В	0	0	0	0	0	0	0	0	0	0
		M	.788	.750_	1.000	.700	.750	1.000	.788	.750	1.000	.700
	ì	G	35	3-5	1 3	3-5	1-3	1-3	3-5	3-5	1-2	3-5
	20	N	4	4	2	4	2	2	4	4	2	4
	ì	B M	$0 \\ 2.475$	$\begin{array}{c} 0 \\ 2.200 \end{array}$	2.272	$^{0}_{2,200}$.198R 1.868	.366R 2.338	$\frac{0}{2.475}$	$^{0}_{2,200}$	0.800R 0.116	$^{0}_{2,200}$
	i											
		G	$^{2-5}$	2-5	$^{1-5}$	2-5	1-5	1-5	2-5	$^{2-5}$	1-4	$^{2-5}$
	30	N B	$^{4}_{1.500R}$	3 0	2 2.604L	4 1.500R	$^{2}_{2.204L}$	2 1.596L	4 2.000R	$^{3}_{.667\mathrm{R}}$	2 2.324 L	$^{4}_{2.000R}$
		M	4.568	4.350	4.322	4.060	3.858	4.389	4.170	3,763	3,662	3.706
		G	1.55	1-5	1-5	1-5	1-5	1-5	2-5	1-5	1-5	1-5
	40	N	3	1–5 3	$\overset{1-5}{2}$	1–5 3	2	1-5 2	2-5 4	1–ə 3	2	1–5 3
et	40	B	.350R	.800R	2.6041	1.200R	2.204L	1.596L	2.000R	1.600R	3.605L	2.000R
E,		M	6.953	6.816	6.766	6.436	6,317	6,868	6.390	6.064	5.920	5.700
Span-Feet		G	1-5	1-5	1-5	1-5	1-5	1–5	1–5	1-5	1-5	1-5
Da :	50	Ñ	3	3	2	3	2	2	3	3	2	3
0 2		В	.350R	.800R	2.604L	1.200R	2.204L	1.596L	1.000R	1.600R	3.605L	2.000R
		M	9.452	9.313	9.232	8.929	8.793	9.355	8.820	8.551	8.355	8.180
		G	1–5	1-5	1-5	1-5	1–5	1–5	1–5	1–5	15	1-5
i	60	N	3	3	2	3	2	2	3	3	2	3
		В	.350R	$.800\mathbf{R}$	2.604L	1.200R	2.204L	1.596L	1.000R	1.600R	3.605L	2.000R
		M	11.952	11.811	11.709	11.424	11.277	11.847	11.317	11.043	10.812	10.667
		G	15	1-5	1-5	1-5	1–5	1-5	1–5	1-5	1-5	1-5
	80	N	3	3	2	3	2	2	3	3	2	3
		В	.350R	.800R	2.604L	1.200R	2.204L	1.596L	1.000R	1.600R	3.605L	2.000R
		M	16.952	16.808	16.681	16.418	16.257	16.836	16.313	16.032	15.758	15.650
	4	G	1-5	1-5	15	1-5	15	1-5	1–5	1-5	1-5	1-5
İ	100	N	3	3	2	3	2	2	3	3	2	3
		В	.350R	.800R	2.604L	1.200R	2.204L	1.596L	1.000R	1.600R	3.605L	2.000R
		M	21.951	21.806	21.664	21.414	21.245	21.830	21.310	21.026	20.725	20.640

All dimensions are in feet and moments are in kip-feet.

a1, a2, and a3-Represent the ratio of gross vehicle weight on axles.

G-Axle group causing maximum moment, thus, 1-3 means axles 1, 2, and 3.

N-Number of critical axle under which maximum moment occurs.

B-Distance to right or left of mid-span to point of maximum moment.

M-Maximum moment.

72 METHOD OF CONVERTING HEAVY MOTOR VEHICLE LOADS TABLE 7.5 (Continued)

	ick No).	11	12	13	14	15	16	17	18	19	20
	. Base		28	28	32	32	32	32	32	32	36	36
Axl Spa	le leing	\mathbf{X}'	8 12	$\frac{8}{12}$	$\frac{8}{16}$	8 16	8 16	$\frac{8}{16}$	8 16	8 16	8 20	8 20
Loa On	ıd	a 1	.20	.20 .40	.100 .225	.10	.10	.20	.20 .30	.20	.100 .225	.10 .30
Axl	les	a: a:	.50	.40	.675	.60	.50	.60	.50	.40	.675	.60
	10	G N	2 2	$\frac{2}{2}$	$\frac{3-5}{4}$	$\frac{2}{2}$	$\frac{2}{2}$	3-5 4	$\frac{2}{2}$	$\frac{2}{2}$	3–5 4	2 2
1	10	В	0	0	0	0	0	0	0	0	0	0
-		M G	$\frac{.750}{3-5}$	1.000	3-5	.750 3 -5	$\frac{1.000}{1-2}$.700 3-5	3-5	$\frac{1.000}{1-2}$.788 3–5	.750 3-5
Ì	20	N B	4	2 1,333R	4	4	.800R	4	4	2 1.333R	4	4
		M	1.832	2,253	2,475	2.200	2.116	2.200	1.832	2.253	2.475	2.20
-	30	G N	$\frac{2-5}{3}$	$\frac{1-3}{2}$	$_{4}^{3-5}$	3–5 4	$^{1-2}_2$	$_{4}^{3-5}$	$^{3-5}_4$	1-2 2	3–5 4	3–5 4
		B M	0.997R 0.226	0.003R 3.900	0	0	$0.800 \mathrm{R} \\ 3.361$	0	$\frac{0}{3.082}$	1.333R 3.736	0	0 3.70
1		G	1-5	1-5	$\frac{4.163}{2-5}$	$\frac{3.700}{2-5}$	1-4	$-\frac{3.700}{2-5}$	1-4	1-4	$\frac{4.163}{3-5}$	3-5
او	40	N B	$\frac{2}{3.205}$ L	$^{2}_{2.395L}$	$^4_{2.500 m R}$	3 1.333R	$\frac{2}{3.125}$ L	$^{4}_{2.500\mathrm{R}}$	$^2_{2.645\mathrm{L}}$	$^2_{1.841L}$	4	4 0
Span-Feet		M	5.452	6.149	5.990	5.440	5.131	5.325	4.672	5.539	5.850	5.20
pan	50	G N	$^{1-5}_2$	$^{1-5}_2$	$^{2-5}_{4}$	$_{3}^{1-5}$	$^{1-5}_2$	$^{1-5}_3$	$\frac{1-5}{2}$	1–5 2	$^{2-5}_{4}$	$^{2-5}_{3}$
n		B M	3.205L 7.900	$2.395 L \\ 8.620$	2.500R 8.213	2.400R 7.815	4.606L 7.519	2.800R 7.457	4,206L 7,048	$3.193L \\ 7.911$	$3.000R \\ 7.812$	2.000H 7.12
1		G	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5
į	60	N B	$\frac{2}{3.205 L}$	$^{2}_{2.395 \rm L}$	$^3_{1.650 m R}$	$^3_{2.400 m R}$	$^{2}_{4.606L}$	$^{3}_{2.800\mathrm{R}}$	$^{2}_{4.206L}$	$^{2}_{3.193\mathrm{L}}$	$^{3}_{2,300\mathrm{R}}$	3 3.200I
		M	10.366	11.101	10.695	10.296	9.948	9.931	9.489	10.377	10.088	9.57
	80	G N	$^{1-5}_2$	$^{1-5}_2$	$^{1-5}_{3}$	1–5 3	$^{1-5}_2$	1–5 3	$^{1-5}_2$	$^{1-5}_{2}$	$^{1-5}_3$	$^{1-5}_3$
		B M	3.205L 15.323	2.395L 16.077	1.650R 15.684	$\frac{2.400 \mathrm{R}}{15.272}$	$rac{4.606 L}{14.860}$	2.800R 14.898	$\frac{4.206L}{14.415}$	3.193L 15.334	2.300R 15.066	3.200I 14.52
		G	1-5	1-5	1-5	1-5	1-5	1–5	1-5	1-5	1-5	1-5
	100	N B	$^2_{3.205 m L}$	$\frac{2}{2.395 L}$	$^3_{1.650 m R}$	$^3_{2.400 m R}$	$\frac{2}{4.606 { m L}}$	$^3_{2.800 m R}$	$^2_{4.206 \mathbf{L}}$	$^2_{3.193\mathrm{L}}$	$^3_{2.300 m R}$	3 3.200F
_		M	20.298	21.063	20.677	20.258	19.807	19.878	19.371	20.309	20.053	19.50
	ick No		21 36	36	$\frac{23}{36}$	$\frac{24}{36}$	25	26 40	$\frac{27}{40}$	<u>28</u> 40	29 40	30 40
Ax		X	8	8	8	8	40 8	8	8		8	8
	acing	X'_	20	20	20	20	24	24	24	24	24	24
Loa On		a 1 a 2	.10	.20	.20	.20	.100	.10	.10	.20	.20	.20
Ax			.40	.20	.30	.40	.225	.30	.40	.20	.30	.40
- 1	ies	a ₃	.50	.60	.50	.40	.675	.60	.50	.60	.50	.40
	10	G N	$\frac{.50}{2}$	$\frac{.60}{3.5}$	$\frac{.50}{2}$	$\frac{.40}{2}$	$\frac{.675}{3-5}$ +	$\frac{.60}{2}$.50 2 2	3-5 4	.50 2 2	.40 2 2
	-	G	$\frac{.50}{2}$	<u>.60</u> 3-5	50 	$-\frac{.40}{2}$		$-\frac{.60}{2}$.50	.60 3-5	.50	.40 2 2 0
	10	G N B M	.50 2 2 0 1.000 1-2	$ \begin{array}{r} .60 \\ 3-5 \\ 4 \\ 0 \\ .700 \\ 3-5 \end{array} $.50 2 2 0 .750 3-5	$ \begin{array}{r} $.675 3-5 4 0 .788 3-5	$ \begin{array}{r} $	$ \begin{array}{r} $.60 3-5 4 0 .700 3 5	.50 2 2 0 .750 3–5	.40 2 2 0 1.00 1-2
	-	G N B M G N	.50 2 0 1.000 1-2 2 .800R	3-5 4 0 .700 3-5 4 0	.50 2 2 0 .750 3-5 4 0	.40 2 2 0 1.000 1-2 2 1.333R	.675 3-5 4 0 .788 3-5 4 0	$ \begin{array}{r} $.50 2 2 0 1.000 1-2 2 .800R	3-5 4 0 .700 3 5 4 0	.50 2 2 0 .750 3–5 4 0	.40 2 2 0 1.00 1-2 2 1.3331
	10	G N B M G N B	.50 2 2 0 1.000 1-2 2 .800R 2.116	3-5 4 0 .700 3-5 4 0 2.200	.50 2 2 0 .750 3-5 4 0 1.832	.40 2 2 0 1.000 1-2 2 1.333R 2.253	.675 4 0 .788 3-5 4 0 2.475	.60 2 2 0 .750 3-5 4 0 2.200	.50 2 2 0 1.000 1-2 2 .800R 2.116	$ \begin{array}{r} .60 \\ 3-5 \\ 4 \\ 0 \\ .700 \\ 3 \\ 5 \\ 4 \\ 0 \\ 2.200 \end{array} $.50 2 2 0 .750 3-5 4 0 1.832	.40 2 2 0 1.00 1-2 1.3331 2.25
	10	G N B M G N B M	.50 2 2 0 1.000 1-2 2 .800R 2.116 1-2 2	.60 3-5 4 0 .700 3-5 4 0 2,200 3-5 4	.50 2 2 0 .750 3-5 4 0 1.832 3 5 4	.40 2 2 0 1.000 1-2 2 1.333R 2.253 1 2	.675 4 0 .788 3-5 4 0 2.475 3-5 4	.60 2 2 0 .750 3-5 4 0 2.200	.50 2 2 0 1.000 1-2 2 .800R 2.116 1-2 2	$ \begin{array}{c} .60 \\ 3-5 \\ 4 \\ 0 \\ .700 \\ 3 \\ 5 \\ 4 \\ 0 \\ 2.200 \\ \hline 3 \\ 5 \\ 4 \end{array} $.50 2 2 0 .750 3-5 4 0 1.832 3-5 4	$\begin{array}{c} .40 \\ 2 \\ 0 \\ 1.00 \\ 1-2 \\ 2 \\ 1.3831 \\ 2.25 \\ \hline 1-2 \\ 2 \end{array}$
	10	G N B M G N B M	.50 2 2 0 1.000 1-2 2 .800R 2.116 1-2	3-5 4 0 .700 3-5 4 0 2.200	.50 2 2 0 .750 3-5 4 0 1.832	.40 2 2 0 1.000 1-2 2 1.333R 2.253 1 2	.675 3-5 4 0 .788 3-5 4 0 2.475 3-5	.60 2 2 0 .750 3-5 4 0 2.200	.50 2 2 0 1.000 1-2 2 .800R 2.116 1-2 2 .800R 3.361	$\begin{array}{c} .60 \\ 3-5 \\ 4 \\ 0 \\ .700 \\ 3 \\ 5 \\ 4 \\ 0 \\ 2.200 \\ \hline 3 \\ 5 \\ 4 \\ 0 \\ 3.700 \\ \end{array}$.50 2 0 .750 3-5 4 0 1.832	.40 2 2 0 1.00 1-2 2 1.3831 2.25 1-2 2 1.3331
	20	G N B M G N B M G N B M	.50 2 2 0 1.000 1-2 2 .800R 2.116 1-2 2 .800R 3.361 1-3	.60 3-5 4 0 .700 3-5 4 0 2.200 3-5 4 0 3.700 3-5	.50 2 2 0 .750 3-5 4 0 1.832 3-5 4 0 3.082 3-5	.40 2 2 0 1.000 1-2 2 1.333R 2.253 1 2 1.333R 3.736 1-2	.675 4 0 .788 3-5 4 0 2.475 3-5 4 0 4.163 3-5	.60 2 2 0 .750 3-5 4 0 2.200 3-5 4 0 3.700 3-5	.50 2 2 0 1.000 1-2 2 .800R 2.116 1-2 2 .800R 3.361 1-2	$\begin{array}{c} .60 \\ 3-5 \\ 4 \\ 0 \\ .700 \\ 3 \\ 5 \\ 4 \\ 0 \\ 2.200 \\ \hline 3 \\ 5 \\ 4 \\ 0 \\ 3.700 \\ \hline 3 \\ -5 \end{array}$.50 2 2 0 .750 3–5 4 0 1.832 3–5 4 0 3.082	.40 2 2 0 1.00 1-2 2 1.3331 2.25 1-2 2 1.3331 3.73
eet	10	G B M G N B M G N B M G N B M B M B M B M B M B M B M B B M B	.50 2 2 0 1.000 1-2 2 .800R 2.116 1-2 .800R 3.361 1-3 1.904L	.60 3-5 4 0 .700 3-5 4 0 2.200 3-5 4 0 3.700 3-5 4 0 3.700	.50 2 0 .750 3-5 4 0 1.832 3-5 4 0 3.082 3-5 4	.40 2 2 0 1.000 1-2 2 1.333R 2.253 1 2 2 1.333R 3.736 1-2 1.333R	.675 3-5 4 0 .788 3-5 4 0 2.475 3-5 4 0 4.163 3-5 4	.60 2 2 0 .750 3-5 4 0 2.200 3-5 4 0 3.700 3-5 4	.50 2 2 0 1.000 1-2 2 .800R 2.116 1-2 2 .800R 3.361 1-2 2 .800R	.60 3-5 4 0 .700 3 5 4 0 2.200 3 5 4 0 3.700 3 -5 4 0	.50 2 0 .750 3-5 4 0 1.832 3-5 4 0 3.082 3-5 4	.40 2 0 1.00 1-2 2 1.3831 2.25 1-2 2 1.3333 1-2 2 1.3831
ın-Feet	20	G B M G N B M G N B M G N B M	.50 2 2 0 1.000 1-2 2 .800R 2.116 1-2 2 .800R 3.361 1-3 2 1.904L 4.661	.60 3-5 4 0 .700 3-5 4 0 2.200 3-5 4 0 3.790 3-5 4 0 3.790 3-5	.50 2 2 0 .750 3-5 4 0 1.832 3-5 4 0 3.082 3-5 4 0 3.082	.40 2 2 0 1.000 1-2 2 1.3338 R 2.253 1 2 2 2 1.3338 R 3.736 1-2 2 1.3338 R 3.736 5.227	$\begin{array}{c} .675 \\ \hline 3.5 \\ 4 \\ 0 \\ .788 \\ 3-5 \\ 4 \\ 0 \\ 2.475 \\ \hline 3-5 \\ 4 \\ 0 \\ 4.163 \\ \hline 3-5 \\ 4 \\ 0 \\ 5.850 \\ \end{array}$.60 2 2 0 .750 3-5 4 0 2.200 3-5 4 0 3.700 3.5 4 0 3.700	.50 2 2 0 1.000 1-2 2 800R 2.116 1-2 2 800R 3.361 1-2 2 800R 4.608	.60 3-5 4 0 .700 3 5 4 0 2.200 3 5 4 0 3.700 3 -5 4 0 3.700	.50 2 2 0 .750 3–5 4 0 1.832 3–5 4 0 3.082 3–5 4 0 4.332	.40 2 2 0 1.00 1-2 2 1.3331 2.25 1-2 2 1.3331 3.73 1-2 2 1.3331 5.22
2 :	20	G N B M G N B	.50 2 0 1.000 1-2 2 2.800R 2.116 1-2 2 800R 3.361 1-3 2 1.904L 4.661 1-5 2	.60 3-5 4 0 .700 3-5 4 0 2.200 3-5 4 0 3.700 3-5 4 0 5.200 2-5 4	.50 2 2 0 .750 3-5 4 0 1.882 3-5 4 0 3.082 3-5 4 0 3.082 3-5 4 0 3.082 3-5 4 0 3.082 3-5 4 0 3.082 3-5 4 0 3.082 3.0	.40 2 2 0 1.000 1-2 2.333R 2.253 1 2 2.333R 1-2 2 1.333R 5.227 1-5 2	$\begin{array}{c} .675 \\ 3 - 5 \\ 4 \\ 0 \\ .788 \\ 3 - 5 \\ 4 \\ 0 \\ 2.475 \\ 3 - 5 \\ 4 \\ 0 \\ 3.5 \\ 4 \\ 0 \\ 5.850 \\ 3 - 5 \\ 4 \end{array}$	$\begin{array}{c} .60 \\ \hline 2 \\ 2 \\ 0 \\ .750 \\ \hline 3 .5 \\ 4 \\ 0 \\ 2.200 \\ \hline 3 .5 \\ 4 \\ 0 \\ 3.700 \\ \hline 3 .5 \\ 4 \\ 0 \\ 5.200 \\ \hline 3 -5 \\ 4 \\ \end{array}$.50 2 2 0 1.000 1-2 2 .800R 2.116 1-2 2 .800R 3.361 1-2 2 .800R 4.608 1-4	.60 3-5 4 0 .700 3 5 4 0 2.200 3 5 4 0 3.700 3-5 4 0 5.200 3 5	.50 2 2 0 .750 3–5 4 0 1.832 3–5 4 0 3.082 3–5 4 0 4.332 3–5 4	.40 2 2 0 1.00 1-2 2 1.3331 2.25 1-2 2 1.3331 1-2 2 1.3331 5.22
2 :	10 20 30 40	G B M G N B M G N B M G N B M	.50 2 2 2 0 1.000 1-2 2 .800R 2.116 1-2 .800R 3.361 1-3 2 1.904L 4.661	.60 3-5 4 0 .700 3-5 4 0 2.200 3-5 4 0 3.700 3-5 4 0 3.700 3-5 4 0 3.5 4 0 0 3.5 4 0 0 0 0 0 0 0 0 0 0 0 0 0	.50 2 2 0 .750 3-5 4 0 1.832 3 5 4 0 3.082 3.55 4 0 4.332 1-5	.40 2 0 1.000 1-2 2 1.333R 2.253 1 2 2 1.3333R 3.736 1-2 2 1.3333R 5.227 1-5	$\begin{array}{c} .675 \\ \hline 35 \\ 4 \\ 0 \\788 \\ \hline 35 \\ 4 \\ 0 \\ 2.475 \\ \hline 35 \\ 4 \\ 0 \\ 4.163 \\ \hline 35 \\ 4 \\ 0 \\ 5.850 \\ \hline 35 \\ \end{array}$.60 2 2 0 .750 3-5 4 0 2.200 3-5 4 0 3.700 3.700 3.700 3.700 3.700 3.700 3.700 3.700 3.700 3.700 4.7000 4.7	.50 2 2 0 1.000 1-2 2 .800R 2.116 1-2 2 .800R 3.361 1-2 2 .800R	.60 3-5 4 0 .700 3 5 4 0 2.200 3 5 4 0 3.700 3 -5 4 0 3.700 3 -5 4 0 3.700 3 5 4 0 3.700 3 5 4 0 0 3.7000 3.700 3.700 3.700 3.700 3.700 3.700 3.700 3.700 3.70000 3.7000 3.70000 3.7000 3.7000 3.7000 3.7000 3.7000 3	.50 2 2 0 .750 3–5 4 0 1.832 3–5 4 0 3.082 3–5 4 0 4.332	.40 2 2 0 1.00 1-2 2 1.3831 2.25 1-2 2 1.3331 3.73 1-2 2 1.3931 5.22 1-3 2 1.086
2 :	10 20 30 40	G N B M M G M M M M M M M M M M M M M M M M	.50 2 0 1.000 1-2 2 2.800R 2.116 1-2 2 800R 3.361 1-3 2 1.904L 4.661 1-5	.60 3-5 4 0 .700 3-5 4 0 2.200 3-5 4 0 3.700 3-5 4 0 5.200 2-5 4 3.000 2-5 4 3.000 4 3.700 4.700 3.700 4.7000 4.7000 4.7000 4.7000 4.7000 4.7000 4.7000 4.7000 4.7000 4.7000 4.7000 4.7000 4.7000 4.7000 4.7000 4.7000 4.7	.50 2 0 .750 3-5 4 0 1.882 3-5 4 0 3.082 3-5 4 0 3.082 1-5 2 5.207L 6.235 1-5 2 1-5 2 1-5 1-5 1-5 1-5 1-5 1-5 1-5 1-5	.40 2 0 1.000 1-2 2 1.333R 2.253 1 2 2 2.333R 3.736 1-2 2 1.333R 5.227 1-5 2.9.922 1.5	$\begin{array}{c} .675 \\ 3 - 5 \\ 4 \\ 0 \\ .788 \\ 3 - 5 \\ 4 \\ 0 \\ 2.475 \\ 3 - 5 \\ 4 \\ 0 \\ 4.163 \\ 3 - 5 \\ 4 \\ 0 \\ 5.850 \\ 3 - 5 \\ 4 \\ 0 \\ 0 \\ 7.538 \\ 2 \\ 5 \end{array}$.60 2 0 .750 3 .5 4 0 2.200 3-5 4 0 3.700 3 .5 4 0 5.200 3 .5 4 0 0 1.750	.50 2 0 1.000 1-2 2 .800R 3.361 1-2 2 .800R 4.608 1-4 2 4.7271. 6.047	.60 3-5 4 0.700 3 5 4 0.2.200 3 5 4 0.3.700 3-5 4 0.5.200 3-5 4 0.6.700 2-5	.50 2 2 0 .750 3–5 4 0 1.832 3–5 4 0 3.082 3–5 4 0 4.332 3–5 4 0 5.582	.40 2 2 0 1.00 1-2 2 1.3331 2.25 1-2 2 1.3333 3.73 1-2 2 1.3351 5.22 1-3 2 1.086 6.78
2 :	10 20 30 40	G N B M G N B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M B M G N B B M B M G N B B M B M G N B B M B M B M B M B M B M B M B M B M	.50 2 2 0 1.000 1-1-2 2 800R 2.116 1-2 2 800R 3.361 1-3 2 1.904L 4.661 1-5 2 5.607L 6.722 1-5 2 5.607L	.60 3-5 4 0 .700 3-5 4 0 2.200 3-5 4 0 3.700 3-5 4 0 5.200 2-5 4 3.000R 6.944 1-5 3.600R	.50 2 2 0 .750 3-5 4 0 1.832 3-5 4 0 3.082 3-5 4 0 4.332 1-5 2 5.207L 6.235 1-5 2 5.207L	.40 2 0 1.000 1-2 2 1.333R 2.253 1 2 2 1.333R 3.736 1-2 2 1.333R 1-2 2 3.992L 7.227 1.5 2 3.992L 3.992L	.675 3-5 4 0 .788 3-5 4 0 2.475 3-5 4 0 4.163 3-5 4 0 5.850 3-5 4 0 7.538 2.5 4 0 3-5 4 0 3-5 4 0 3-5 4 0 3-5 4 0 3-5 4 0 3-5 4 0 3-5 4 0 3-5 4 0 3-5 4 0 3-5 4 0 1 1 1 1 1 1 1 1 1 1 1 1 1	.60 2 0 .750 3.5 4 0 2.200 3-5 4 0 3.700 3.5 4 0 5.200 3-5 4 0 6.700 1-5 3.4 0 6.700 1-5 3.5 4.000 4.0000 4.000 4.0	.50 2 0 1.000 1-2 2 .800R 2.116 1-2 2 800R 4.608 4.608 1-4 2 4.7271L 6.047 1.5 2 6.608L	.60 3-5 4 0 .700 3 5 4 0 2.200 3 5 4 0 3.700 3-5 4 0 6.700 2-5 4 3.500R	.50 2 0 .750 3–5 4 0 1.832 3–5 4 0 3.082 3–5 4 0 4.332 3–5 4 0 5.582 1–5 2 6.208L	.40 2 2 0 1.00 1-2 2 1.3331 2.25 1-2 2 1.3331 5.22 1-3 2 1.086 6.78 1-5 4.7911
Q :	10 20 30 40	G N B M G N B M G N B B M G N B B M G N B B M G N B B M G N B M G N B M G N B M G N B M G N B M B M G N B M B M G N B M B M B M B M B M B M B M B M B M B	.50 2 0 1.000 1-2 2 2.800R 2.116 1-2 2 800R 3.361 1-3 2 1.904L 4.661 1-5 2 5.607L 6.722 15 2 9.117	.60 3-5 4 0 .700 3-5 4 0 2.200 3-5 4 0 3.700 3-5 4 0 5.200 2-5 4 3.000R 6.944 1-5 3.600R 9.216	.50 2 0 .750 3 -5 4 0 1.882 3 5 4 0 3.082 3 -5 4 0 4.332 1-5 2 5.207L 8.645	.40 2 0 1.000 1-2 2.253 1 2 2.253 1 2 2.333R 3.736 1-2 2 1.383R 5.227 1-5 2 3.992L 9.674	.675 3-5 4 0 .788 3-5 4 0 2.475 3-5 4 0 4.163 3-5 4 0 5.850 3-5 4 0 5.850 3-5 4 0 6.75 4 0 6.75 4 0 6.75 4 0 6.75 4 0 6.75 6.75 6.75 6.75 7.75 8.75 7.75 8.	.60 2 0 .750 3 -5 4 0 2.200 3-5 4 0 3.700 3 -5 4 0 5.200 3-5 4 0 5.200 3-5 4 0 5.200 3-5 4 0 5.200 3-5 4 0 5.200 3-5 4 0 5.200 3-5 4 0 5.200 3-5 4 0 5.200 3-5 4 0 5.200 3-5 4 0 5.200 3-5 4 0 5.200 3-5 4 0 5.200 3-5 4 0 5.200 3-5 4 0 6.700 3-5 4 0 6.700 3-5 4 0 6.700 3-5 4 0 6.700 3-5 4 0 6.700 3-5 4 0 6.700 3-5 4 0 6.700 3-5 4 0 6.700 3-5 4 0 6.700 3-5 4 0 6.700 3-5 4 0 6.700 3-5 4 6.700 3-5 4 6.700 3-5 4 6.700 3-5 4 6.700 3-5 4 6.700 3-5 4 6.700 3-5 4 6.700 3-5 4 6.700 3-5 8 8 8 8 8 8 8 8 8 8 8 8 8	.50 2 0 1.000 1-2 2 .800R 3.361 1-2 2 .800R 4.608 1-4 2 4.7271 6.047 1-5 2 6.608L 8.320	.60 3-5 4 0 .700 3 5 4 0 2.200 3 5 4 0 3.700 3-5 4 0 5.200 3-5 4 0 6.700 2-5 4 3.500R 8.563	.50 2 0 .750 3-5 4 0 1.832 3-5 4 0 3.082 3-5 4 0 4.332 3-5 4 0 5.582 1-5 2 6.208L 7.834	.40 2 0 1.00 1-2 2 1.3831 2.25 1-2 2 1.3831 5.22 1.3831 5.22 1.3831 5.22 4.7911 8.99
Q :	10 20 30 40	G N B M G N B	.50 2 2 0 1.000 1-2 2 800R 2.116 1-2 2 800R 3.361 1-3 2 1.904L 4.661 1-5 2 5.607L 6.722 1-5 2 5.607L 9.117 1-5 2	.60 3-5 4 0 .700 3-5 4 0 2.200 3-5 4 0 3.700 3-5 4 0 5.200 2-5 4 3.000R 6.944 1 5 3.600R 9.216	.50 2 0 .750 3.5 4 0 1.832 3.5 4 0 3.082 3.5 4 0 4.332 1.5 2 5.207L 8.645 1.5 2	.40 2 0 1.000 1-2 2 1.333R 2.253 1 2 2 1.333R 3.736 1-2 2 1.333R 5.227 1-5 2 3.992L 7.227 1.5 2 3.992L 9.674 1-5 2	.675 3-5 4 0 .788 3-5 4 0 2.475 3-5 4 0 4.163 3-5 4 0 5.850 3-5 4 0 7.538 2.5 4 0 7.538 2.5 4 0 7.5 4 0 7.5 4 0 7.5 4 0 7.5 4 0 7.5 4 0 7.5 4 0 7.5 4 0 7.5 4 0 7.5 4 0 7.5 4 0 7.5 7.5 7.5 7.5 7.5 7.5 7.5 7.5	.60 2 2 0 .750 3-5 4 0 2.200 3-5 4 0 3.700 3-5 4 0 6.700 1-5 3 4.000R 8.867 1-5 3	.50 2 0 1.000 1-2 2 .800R 2.116 1-2 2 800R 4.608 4.6047 1-5 2 6.608L 8.320 1-5 2	.60 3-5 4 0 .700 3 5 4 0 2.200 3 5 4 0 3.700 3-5 4 0 5.200 3-5 4 0 6.700 2-5 4 3.563 1-5 3	.50 2 0 .750 3–5 4 0 1.832 3–5 4 0 3.082 3–5 4 0 4.332 3–5 4 0 5.582 1–5 2 6.208L 7.834 1–5 2	.40 2 0 1.00 1-2 2 1.3831 3.73 1-2 2 1.3831 5.22 1.3831 5.22 1.3831 5.22 1.3831 2 2 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
2 :	10 20 30 40 50	G N B M M G N B M M M M M M M M M M M M M M M M M M	.50 2 0 1.000 1-2 2.800R 2.116 1-2 2.800R 3.361 1-3 2.1.904L 4.661 1-5 5.607L 6.722 1.507L 9.6117 1.672	.60 3-5 4 0 .700 3 5 4 0 2.200 3 5 4 0 3.700 3-5 4 0 5.200 2-5 4 3.000R 6.944 1 5 3 3.600R 9.216 1 5	.50 2 2 0 .750 3 .5 4 0 1.882 3 .5 4 0 3.082 3 .5 4 4.332 1-5 2 5.207L 6.235 1-5 2 5.207L 6.235 1-5 1-5 2 5.207L 6	.40 2 0 1.000 1-2 2 1.3333R 2.253 1 2 2 1.333R 3.736 1-2 2 1.333R 5.227 1-5 2 3.992L 7.227 1.5 2 3.992L 9.674 1-5	.675 3-5 4 0 .788 3-5 4 0 2.475 3-5 4 0 5.850 3-5 4 0 7.538 2 .5 4 0 5.850 3-5 4 0 5.850 3-5 4 0 5.850 4 1 1 1 1 1 1 1 1 1 1 1 1 1	.60 2 2 0 .750 3 .5 4 0 2.200 3-5 4 0 3.700 3.5 4 0 5.200 3-5 4 0 5.200 1-5 3 4 0 6.700 1-5 4 0 8.700 1-5 4 1-5 1-5 1-5 1-5 1-5 1-5 1-5 1-5	.50 2 0 1.000 1-2 2 .800R 2.116 1-2 2 .800R 4.608 1-4 2 4.7271 6.047 1.5 2 6.608L 8.320 1-5	.60 3-5 4 0 .700 3 5 4 0 2.200 3 5 4 0 3.700 3-5 4 0 5.200 3-5 4 0 5.200 3-5 4 0 5.200 3-5 4 0 5.200 3-5 4 0 5.200 3-5 4 0 5.200 3-5 4 0 5.200 3-5 4 0 5.200 3-5 4 0 6.200 3-5 4 0 6.200 3-5 4 0 6.200	.50 2 0 .750 3–5 4 0 1.832 3–5 4 0 3.082 3–5 4 0 4.332 3–5 4 0 5.582 1–5 2 6.208L 7.834 1–5	.40 2 0 1.00 1-2 2 1.3831 2.25 1-2 2 1.3831 5.22 1.3831 5.22 1.0868 6.78 1-5 2 4.7911
2 :	10 20 30 40 50 60	G N B M G N B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N	.50 2 2 0 1.000 1-2 2 800R 2.116 1-2 2 800R 3.361 1-3 2 1.904L 4.661 1-5 2 5.607L 9.117 1-5 2 5.607L 1.3 986	.60 3-5 4 0 .7000 3-5 4 0 2.200 3-5 4 0 3.700 3-5 4 0 5.200 2-5 4 3.000R 6.944 1-5 3 3.600R 9.216 1-5 3 3.600R 14.162	.50 2 0 .750 3.5 4 0 1.832 3.5 4 0 3.082 3.5 4 0 4.332 1-5 2 5.207L 8.645 1-5 2 5.207L 8.645 1-5 2 5.207L 8.645 1-5	.40 2 0 1.000 1-2 2 1.333R 2.253 1 2 2 1.333R 1-2 2 1.333R 1-5 2 3.992L 7.227 1.5 2 3.992L 9.674 1-5 2 3.992L 1.4607 1.4607 1.55	.675 3-5 4 0 .788 3-5 4 0 2.475 3-5 4 0 4.163 3-5 4 0 5.850 3-5 4 0 7.538 2.5 4 0 2.475 4 0 1.63 3-5 4 0 1.63 3-5 4 0 1.63 3-5 4 0 1.63 3-5 4 0 1.63 3-5 4 0 1.63 3-5 4 0 1.63 3-5 4 0 1.63 1.	.60 2 2 0 .750 3.5 4 0 2.200 3-5 4 0 3.700 3-5 4 0 6.700 1-5 3 4.000R 8.867 1-5 3.800 1-5	.50 2 0 1.000 1-2 2 .800R 2.116 1-2 2 800R 3.361 1-2 2 800R 4.6047 1-5 2 6.608L 8.320 1-5 2.6608L 1.3138	.60 3-5 4 0 .700 3 5 4 0 2.200 3 5 4 0 3.700 3-5 4 0 5.200 2-5 4 3.500R 8.563 1-5 3 4.400R 13.4442 1-5	.50 2 0 .750 3–5 4 0 1.832 3–5 4 0 3.082 3–5 4 0 4.332 3–5 4 0 5.582 1–5 2 6.208L 7.834 1–5 2 6.208L 1.2674 1–5	.40 2 0 1.000 1-2 2 1.3831 3.73 1-2 1.3831 5.22
Span-Feet	10 20 30 40 50	G N B B M G N B M G N	.50 2 2 0 1.000 1-2 2 800R 2.116 1-2 2 800R 3.361 1-3 2 1.904L 4.661 1-5 2 5.607L 6.722 1-5 2 5.607L 13.986	.60 3-5 4 0 .700 3 5 4 0 2.200 3 5 4 0 3.700 3-5 4 0 5.200 2-5 4 3.000R 6.944 1 5 3 3.600R 9.216 1-5 3.600R 14.162	.50 2 2 0 .750 3-5 4 0 1.8822 3 5 4 0 3.082 3 5 4 0 4.332 1-5 2 5.207L 6.235 1-5 2 5.207L 13.532	.40 2 0 1.000 1-2 2 1.3333R 2.253 1 2 2 1.3333R 5.227 1-5 2 3.992L 7.227 1 5 2 3.992L 7.24 1-5 2 3.992L 1.5 2 1.5 2 1.6 1.6 1.6 1.6 1.6 1.6 1.6 1.6	.675 3-5 4 0 .788 3-5 4 0 2.475 3-5 4 0 5.850 3-5 4 0 7.538 2 5 4 0 7.538 2 5 4 0 1.63 3-5 4 0 1.63 3-5 4 0 1.63 3-5 4 0 1.63 3-5 4 0 1.63	.60 2 2 0 .750 3 .5 4 0 2.200 3-5 4 0 3.700 3.5 4 0 5.200 3-5 4 0 6.700 1-5 3 4.000R 8.867 1-5 3	.50 2 2 0 1.000 1-2 2.800R 2.116 1-2 2.800R 4.608 1-4 2.4.7271 6.068L 8.320 1-5 2.608R 1.3138	.60 3-5 4 0 .700 3 5 4 0 2.200 3 5 4 0 3.700 3-5 4 0 5.200 3-5 4 0 6.700 2-5 4 3.500R 8.563 1-5 3 4.400R	.50 2 0 .750 3–5 4 0 1.832 3–5 4 0 3.082 3–5 4 0 4.332 3–5 4 0 5.582 1–5 2 6.208L 1–5 2 6.208L 12.674	$\begin{array}{c} .40 \\ 2 \\ 2 \\ 0 \\ 1.00 \\ 1-2 \\ 2 \\ 1.3831 \\ 2.25 \\ 1-2 \\ 2 \\ 1.3831 \\ 5.22 \\ 1.3831 \\ 5.22 \\ 1.3831 \\ 5.22 \\ 1.4381 \\ 1.5 \\ 2 \\ 4.7911 \\ 8.99 \\ 1.5 \\ 2 \\ 4.7911 \\ 13.89 \end{array}$

TA.	BLE	7.5 (Continue	d)				·				
	uck No		31	32	33	34	35	36	37	38	39	40
	ı. Bas		28	28	28	28	28	28	32	32	32	32
Ax	le acing	X X'	$^{12}_{8}$	12 8	$^{12}_{8}$	12 8	$\frac{12}{8}$	$^{12}_{8}$	$\frac{12}{12}$	$\frac{12}{12}$	$\frac{12}{12}$	$\frac{12}{12}$
Lo	ad	a ₁	.100	.10	.10	.20	.20	.20	.100	.10	.10	.20
On Ax		\mathbf{a}_2 \mathbf{a}_3	.225 $.675$.30 .60	.40 .50	.20 .60	.30 $.50$.40 $.40$.225 $.675$.30 .60	.40 .50	.20 .60
		G	35	2	2	3-5	2	2	3–5	2	2	3-5
-	10	N	4	2	2	4	2	2	4	2	2	4
		B M	0 .788	$\frac{0}{.750}$	$\frac{0}{1.000}$	$\frac{0}{.700}$	0 .750	$0 \\ 1.000$	$\frac{0}{.788}$	$^{0}_{.750}$	0 1.000	0 .700
		G	3-5	3-5	2 3	3-5	3–5	2–3	35	3-5	2	3–5
	20	N B	4	4 0	$^2_{1.178 m L}$	4 0	4 0	$_{,998L}^{2}$	4 0	4 0	2 0	4 0
		M	2.475	2.200	2.206	2.200	1.832	2.160	2.475	2.200	2.000	2.200
		G	2-5	2- 5	2-5	2-5	2–5	1-4	2-5	2-5	1-4	2-5
	30	N B	$^4_{1.500 m R}$. 0	$^3_{.664 m R}$	4 $1.500R$	3 .247 ${f R}$	$^2_{.150 m L}$	$^{4}_{2.000 m R}$	3 .667 ${f R}$	$^{2}_{2.084\mathrm{L}}$	$^{4}_{2.000\mathrm{R}}$
		M	4.568	4.350	4.162	4.060	3.800	3.966	4.170	3.763	3.432	3.706
	40	G	2-5	1-5	$^{1-5}_{2}$	1-5	1.5	1-5 2	2-5	25	1-5	2-5
ķ	40	N B	$^{4}_{1.500\mathrm{R}}$	$^3_{1.000 m R}$	2.404L	$^3_{1.600 m R}$	$^3_{2.196 m R}$	1.195L	$^{4}_{2.000R}$	$^3_{.667 m R}$	$^2_{3.405 m L}$	$^{4}_{2.000\mathrm{R}}$
4		M	6.800	6.625	6.541	6.064	5.921	6.441	6.390	6.011	5.685	5.680
Span-Feet	50	G N	1-5 3	$^{1\!-\!5}_3$	$^{1-\tilde{5}}_{2}$	$^{1-5}_3$	1–5 3	$^{1\!-\!5}_2$	$^{1-5}$	$^{1-5}_{3}$	1–5 2	15 3
20	,,,	В	$.550\mathbf{R}$	1.000R	2.404L	1.600R	2.196R	1.195L	1.200R	1.800R	3.405L	2.400R
		M	9.256	9.120	9.012	8.551	8.396	8.934	8.629	8.365	8.127	7.815
	60	G N	$^{1-5}$	1–5 3	$^{1-5}_{2}$	$^{1-5}$	$^{1-5}_{3}$	$^{1-5}_{2}$	$^{1-5}_3$	$^{1-5}_{3}$	1-5 2	$^{1-5}_{3}$
		В	.550R	1.000R	2.404L	1.600R	2.196R	1.195L	1.200R	1.800R	3.405L	2.400R
		M G	11.755 1-5	$\frac{11.617}{1-5}$	11.493 1-5	11.043	10.880 1-5	11.429	11.124 1-5	10.854 1-5	10.589 1-5	10.296 1-5
	80	N	3	3	2	3	3	2	3	3	2	3
		B M	.550 m R 16.754	1.000R 16.613	$\frac{2.404L}{16.469}$	1.600R 16.032	2.196R 15.860	1.195L 16.423	1.200R 16.118	1.800R 15.841	3.405L 15.540	$2.400 \mathbf{R} \\ 15.272$
		G	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5
	100	N	3	$^3_{1.000 m R}$	2	3	3	2	3	3	2	3
		В М	$.550 \mathbf{R} \ 21.753$	21.610	2.404L 21.454	1.600R 21.026	2.196R 20.848	1.195L 21.419	1.200R 21.114	1.800R 20.832	3.405L 20.511	2.400R 20.258
Tr	uck N	0.	41	42		44						
	uck No		41 32		43 36		45 36	46	47	48	49	50
WI	ı. Bası le	e L X	32 12	42 32 12	43 36 12	44 36 12	45 36 12	46 36 12	47 36 12	48 36 12	49 40 12	50 40 12
Ax Spa	ı. Bası le acing	e L X X'	32 12 12	42 32 12 12	43 36 12 16	44 36 12 16	45 36 12 16	46 36 12 16	47 36 12 16	48 36 12 16	49 40 12 20	50 40 12 20
WI Ax Spa Loa On	n. Base le acing ad	E L X X' a ₁ a ₂	32 12 12 .20 .30	42 32 12 12 .20 .40	43 36 12 16 .100 .225	44 36 12 16 .10 .30	45 36 12 16 .10 .40	46 36 12 16 .20 .20	47 36 12 16 .20 .30	48 36 12 16 .20 .40	49 40 12 20 .100 .225	50 40 12 20 .10 .30
WI Ax Spa Los	n. Base le acing ad	e L X X' a ₁ a ₂ a ₃	32 12 12 12 .20 .30 .50	42 32 12 12 .20 .40 .40	43 36 12 16 .100 .225 .675	44 36 12 16 .10 .30 .60	45 36 12 16 .10 .40 .50	46 36 12 16 .20 .20 .60	47 36 12 16 .20 .30 .50	48 36 12 16 .20 .40 .40	49 40 12 20 .100 .225 .675	50 40 12 20 -10 -30 -60
WI Ax Spa Loa On	n. Base le acing ad	E L X X' a ₁ a ₂ a ₃ G	32 12 12 .20 .30 .50	42 32 12 12 .20 .40 .40	43 36 12 16 .100 .225 .675 3–5 4	44 36 12 16 .10 .30 .60 2	45 36 12 16 .10 .40 .50 2	46 36 12 16 .20 .20 .60 3–5 4	47 36 12 16 .20 .30 .50	48 36 12 16 .20 .40	49 40 12 20 .100 .225	50 40 12 20 .10 .30 .60
WI Ax Spa Loa On	le acing ad	e L X X' a ₁ a ₂ a ₃ G N B	32 12 12 .20 .30 .50 2 2	42 32 12 12 .20 .40 .40	43 36 12 16 .100 .225 .675 3-5 4 0	44 36 12 16 .10 .30 .60 2 2	45 36 12 16 .10 .40 .50	46 36 12 16 .20 .20 .60 3–5 4 0	47 36 12 16 .20 .30 .50	48 36 12 16 .20 .40 .40 2 2	49 40 12 20 .100 .225 .675 3-5 4 0	50 40 12 20 .10 .30 .60
WI Ax Spa Loa On	le acing ad	E L X X' a ₁ a ₂ a ₃ G	32 12 12 .20 .30 .50	42 32 12 12 .20 .40 .40	43 36 12 16 .100 .225 .675 3–5 4	44 36 12 16 .10 .30 .60	45 36 12 16 .10 .40 .50 2	46 36 12 16 .20 .20 .60 3–5 4	47 36 12 16 .20 .30 .50	48 36 12 16 .20 .40 .40 .20	49 40 12 20 .100 .225 .675 3-5 4	50 40 12 20 .10 .30 .60
WI Ax Spa Loa On	le acing ad	e L X X' a1 a2 a3 G N B M	32 12 12 .20 .30 .50 2 2 0 .750 3–5 4	42 32 12 12 .20 .40 .40 2 2 0 1.000 2	43 36 12 16 .100 .225 .675 3–5 4 0 .788 3–5 4	44 36 12 16 .10 .30 .60 2 2 0 .750 3-5 4	45 36 12 16 .10 .40 .50 2 2 0 1.000	46 36 12 16 .20 .60 3–5 4 0 .700 3–5 4	47 36 12 16 .20 .30 .50 2 2 0 .750 3–5 4	48 36 12 16 .20 .40 .40 .2 2 0 1.000	49 40 12 20 .100 .225 .675 3-5 4 0 .788 3-5 4	50 40 12 20 .10 .30 .60 2 2 0 .750 3-5 4
WI Ax Spa Loa On	n. Base le acing ad les	e L X X' a ₁ a ₂ a ₃ G N B M	32 12 12 .20 .30 .50 2 2 0 .750 3-5	42 32 12 12 .20 .40 .40 2 2 0 1.000	43 36 12 16 .100 .225 .675 3-5 4 0 .788 3-5	44 36 12 16 .10 .30 .60 2 2 0 .750	45 36 12 16 .10 .40 .50 2 2 0 1.000	46 36 12 16 .20 .20 .60 3-5 4 0 .700	47 36 12 16 .20 .30 .50 2 2 0 .750 3-5	48 36 12 16 .20 .40 .40 .20 .40 .40 .20 .40 .40 .20 .20 .20 .20 .20 .20 .20 .2	49 40 12 20 .100 .225 .675 3-5 4 0 .788 3-5	50 40 12 20 .10 .30 .60 2 2 0 .750
WI Ax Spa Loa On	le acing ad les 10	e L X X' a ₁ a ₂ a ₃ G N B M G N B	32 12 12 20 .30 .50 2 2 0 .750 3-5 4 0 1.832 2-5	42 32 12 12 .20 .40 .40 2 2 0 1.000 2 2 0 2.000 1-3	43 36 12 16 .100 .225 .675 3-5 4 0 .788 3-5 4 0 2.475 3-5	44 36 12 16 .10 .30 .60 2 2 0 .750 3-5 4 0 2.200 3-5	45 36 12 16 .10 .50 2 2 0 1.000 2 2 0 2.000	46 36 12 16 20 .60 3–5 4 0 .700 3–5 4 0 0 3–5 4 0 3–5	47 36 12 16 .20 .50 2 2 0 .750 3–5 4 0 1.832 3–5	48 36 12 16 .20 .40 2 2 0 1.000 2 2 2 0 1.000 1-2	49 40 12 20 1.100 .225 .675 3-5 4 0 .788 3-5 4 0 2.475 3-5	50 40 12 20 .10 .80 .60 2 2 0 .750 3–5 4 0 2.200 3–5
WI Ax Spa Loa On	n. Base le acing ad les	e L X X X a ₁ a ₂ a ₃ G N B M G N B M G N B N B N	32 12 12 .20 .30 .50 2 2 0 .750 3-5 4 0 1.832 2-5 3	42 32 12 12 .20 .40 .40 2 2 0 1.000 2 2 0 2.000	43 36 12 16 .100 .225 .675 3-5 4 0 7.88 3-5 4 0 2.475 3-5 4	44 36 12 16 .10 .30 .60 2 2 0 .750 3-5 4 0 2.200	45 36 12 16 .10 .40 .50 2 2 0 1.000 2 2 0 2.000	46 36 12 16 .20 .60 3-5 4 0 .700 3-5 4 0 2.200 .3-5 4 0 2.200 .3-5 4 0 3-5 4 0 2.200 .3-5 4 0 3-5 4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	47 36 12 16 .20 .30 .50 2 2 0 .750 3–5 4 0 1.832 3–5 4	48 36 12 16 20 40 40 2 2 0 1.000 2 2 0 2.000 1-2 2	49 40 12 20 .100 .225 .675 3-5 4 0 .788 3-5 4 0 2.475 3-5 4	50 40 12 20 .30 .60 2 2 0 .750 3–5 4 0 2.200 3–5 4
WI Ax Spa Loa On	le acing ad les 10	e L X X X' a1 a2 a3 G N B M G N B M G N B M M G N B M M G N B M M M G N B M M M M M M M M M M M M M M M M M M	32 12 12 20 .30 .50 2 2 0 .750 3–5 4 0 1.832 2–5 3 .997R 3.226	42 32 12 12 .20 .40 .40 2 2 0 1.000 2 2 0 2.000 1-3 2.549R 3.507	43 36 12 16 .100 .225 .675 4 0 .788 3-5 4 0 2.475 3-5 4 0 4.163	44 36 12 16 .10 .30 .60 2 2 0 .750 3-5 4 0 2.200 3-5 4 0 3.700	45 36 12 16 .10 .40 .50 2 2 0 1.000 2 2 0 2.000 1-2 2 1.200R	46 36 12 16 20 .20 .60 3-5 4 0 .700 3-5 4 0 3-5 4 0 3-5 4 0 3-5 4 0 3-5 4 0 3-5 4 0 3-5 4 0 3-5 4 0 3-5 4 0 0 3-5 4 0 0 0 0 0 0 0 0 0 0 0 0 0	47 36 12 16 .20 .30 .50 2 2 0 .750 3-5 4 0 1.832 3-5 4 0 3.082	48 36 12 16 20 40 40 40 2 2 0 1.000 2 2 2 2 0 0 2-2000 1-2 2 2-000 8 3.380	49 40 12 20 100 .225 .675 3-5 4 0 .788 3-5 4 0 2.475 3-5 4 0 4.163	50 40 12 20 .10 .30 .60 2 2 0 .750 3–5 4 0 2.200 3–5 4 0
WI Ax Spa Loa On	a. Bassale acing ad les 10 20 30	e L X X X' a1 a2 a3 G N B M G N B M G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G R B M G G R B M G G R B M G G R B M G G R B M G G R B M G G R B M G G R B M G G R B M G G R B M G G R B M G G R B M G G R B M G G R B M G G R B M G G R B M G G R B M G G R B M R B M R B R B	32 12 12 20 .30 .50 2 2 0 .750 3-5 4 0 1.832 2-5 3 .997R 3.226	42 32 12 12 20 .40 .40 .40 2 2 0 1.000 2 2 0 2.000 1—3 2 549R 3.507 1—5	43 36 12 16 .100 .225 .675 3-5 4 0 2.475 3-5 4 0 4.163 2-5	44 36 12 16 .10 .30 .60 2 2 0 .750 3–5 4 0 2.200 3-5 4 0 3.700 2–5	45 36 12 16 40 .50 1.000 2 2 0 1.000 2-2 0 2.000 1-2 2 1.200R 3.174 3.274	46 36 12 16 20 .20 .60 3-5 4 0 2.200 3-5 4 0 2.200 3-5 4 0 2.200 3-5 4 0 2.30 3-5 4 0 2.30 3-5 4 0 2.30 3-5 4 0 2.30 3-5 4 0 0 2.30 3-5 4 0 0 2.30 3-5 4 0 0 2.30 0 0 0 0 0 0 0 0 0 0 0 0 0	47 36 12 16 20 30 .50 2 2 0 .750 3–5 4 0 1.832 3–5 4 0 3.082 2–5	48 36 12 16 20 40 40 40 2 2 0 1.000 2 2 2 2 0 2.000 1-2 2 2.000R 3.380	49 40 12 20 .100 .225 .675 3-5 4 0 .788 3-5 4 0 2.475 3-5 4 0 4.163 3-5	50 40 12 20 .30 .60 .60 2 2 0 .750 3–5 4 0 2.200 3–5 4 0 3.700 3–5
WI Axx Spo Loo On Axx	le acing ad les 10	e L X X X' a1 a2 a3 G N B M G N B M G N B M M G N B M M G N B M M M G N B M M M M M M M M M M M M M M M M M M	32 12 12 20 30 .50 2 2 0 .750 3-5 4 0 1.832 2-5 3 .997R 2-5 3 .997R	42 32 12 12 .20 .40 .40 2 2 0 1.000 2 2 0 2.00 1-3 2.549R 3.507 1-5 2.1994L	43 36 12 16 .100 .225 .675 4 0 .788 3-5 4 0 2.475 3-5 4 0 2.475 3-5 4 0 2.475 3-5 4 0 2.475	44 36 12 16 .10 .30 .60 2 2 0 .750 3-5 4 0 2.200 3-5 4 0 2.200 3-7 1.333R	45 36 12 16 .40 .50 2 2 0 1.000 2 2 0 2.000 1-2 2 1.200R 3.174 2-5 3.2440R	46 36 12 16 20 20 60 3-5 4 0 700 3-5 4 0 2.200 3-5 4 0 2.300 2.300 3.000 3	47 36 12 16 20 .30 .50 2 2 0 .750 3-5 4 0 1.832 3-5 4 0 3.082 2-5 3 1.746R	48 36 12 16 20 40 40 2 2 0 1.000 2 2 2 2 0 0 1-2 2.000 1-2 2.000 1-4 2 1.379L	49 40 12 20 .100 .225 .675 3-5 4 0 2.475 3-5 4 0 4.163 3-5 4	50 40 12 20 .10 .30 .60 2 2 0 .750 3–5 4 0 2.200 3-5 4 0 3.700
WI Axx Spo Loo On Axx	a. Bassale acing ad les 10 20 30	e L	32 12 12 20 .30 .50 2 2 0 .750 3-5 4 0 1.832 2-5 3 .997R 5.218	42 32 12 12 20 .40 .40 .2 2 0 1.000 2 2 0 2.000 1-3 2 .549R 3.507 1-5 2 1.994L 5.705	43 36 12 16 100 .225 .675 3-5 4 0 2.475 3-5 4 0 4.163 2-5 4 2.500R 5.990	44 36 12 16 .10 .30 .60 2 2 0 .750 3–5 4 0 2.200 3–5 4 0 2.750 3–75	45 36 12 16 .40 .50 2 2 0 1.000 2 2 0 2.000 1-2 2 1.200R 3.174 2-5 3 2.440R 4.934	46 36 12 16 20 .20 .60 3-5 4 0 2.200 3-5 4 0 2.200 3-5 4 0 2.200 3-5 4 0 2.200 3-5 4 0 2.200 3-5 4 0 2.200 3-5 4 0 2.200 3-5 4 0 2.200 3-5 4 0 2.200 3-5 4 0 2.200 3-5 4 0 2.200 3-5 4 0 2.200 3-5 4 0 2.200 3-5 4 0 2.200 3-5 4 0 2.200 3-5 4 0 2.200 3-5 4 0 2.200 3-5 4 0 2.200 3-5 4 0 2.200 3-5 4 0 3.7000 3.700 3.700 3.700 3.700 3.700 3.700 3.700 3.700 3.7000 3.700 3.700 3.700 3.700 3.700 3.700 3.700 3.700 3.70000 3.7000 3.7000 3.7000 3.7000 3.7000 3.7000 3.7000 3.	47 36 12 16 20 .30 .50 2 2 0 .750 3-5 4 0 1.832 3-5 4 0 3.082 2-5 3 1.746R 4.661	48 36 12 16 .20 .40 .40 .2 2 0 1.000 2 2 2 2 0 2.000 1-2 2 2.000R 3.380 1-4 2 1.379L 5.107	49 40 12 20 .100 .225 .675 3-5 4 0 .788 3-5 4 0 2.475 3-5 4 0 4.163 3-5 4 0 5.675 4 0 5.675 4 0 5.675 4 0 5.675 4 0 5.675 4 0 5.675 4 0 5.675 4 0 5.675 4 0 5.675 4 0 5.675 4 0 5.675 4 0 5.675 4 0 5.675 4 0 5.675 4 0 5.675 4 0 5.675 4 0 5.675 4 0 5.675 4 0 5.675 5.675 6.755	50 40 12 20 .30 .60 .750 3–5 4 0 2,200 3–5 4 0 3,700 3–5 4 0 5,200
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WI Axx Spo Loo On Axx	n. Bassle le acing ad les 10 20 30 40	e L X X X a1 a2 a3 G N B M G N B M G N B M G N B M G N B M G N B M B M G N B M B M B M G N B M B M B M B M B M B M B M B M B M B	32 12 12 20 .30 .50 2 2 0 .750 3-5 4 0 1.832 2-5 3 .997R 3.226 2-5 3 .997R 3.226 1.5218	42 32 12 12 20 .40 .40 .40 2 2 0 1.000 2 2 0 2.000 1-3 2 5.49R 3.507 1-5 1.994L 5.705 1-5 1.994L	43 36 12 16 100 .225 .675 3-5 4 0 2.475 3-5 4 0 2.475 3-5 4 0 2.475 3-5 4 0 2.475 3-5 4 0 2.475 3-5 4 0 2.475 3-5 4 0 2.475 4 0 2.475 4 0 2.475 4 0 2.475 4 0 2.475 4 0 2.475 4 0 2.475 4 0 2.500 4 2.500 4 4 2.500 4 4 4 4 4 4 4 4 4 4 4 4 4	44 36 12 16 .10 .30 .60 2 2 0 .750 3–5 4 0 2.200 3–5 4 0 2.200 3–5 4 0 3.700 2–5 3.33R 5.440 2–5 3.33R 3.35 3.30 3.00 3	45 36 12 16 .40 .50 2 2 0 1.000 2 2 0 2.000 1-2 2 1.2007 3.174 2-5 3 2.440R 4.934 1-5 2 4.061	46 36 12 16 20 20 .60 3-5 4 0 2.200 3-5 4 0 2.200 3-5 4 0 2.500 3-5 4 0 2.500 3-5 4 0 3.700 2-5 4 2.500 8	47 36 12 16 20 30 .50 2 2 0 .750 3-5 4 0 1.832 3-5 4 0 3.082 2-5 3 1.746R 4.661 1-5 3 4.194R	48 36 12 16 20 40 40 40 2 2 0 0 1.000 2 2 2 2.000 1-2 2.000 1-4 2 1.379L 5.107 1-5 2 2.793L	49 40 12 20 .100 .225 .675 3-5 4 0 .788 3-5 4 0 2.475 3-5 4 0 4.163 3-5 4 0 5.850 2-5 .875 4 0 2.475 3-5 4 0 4 0 4 0 2.475 4 0 4 0 4 0 4 0 4 0 4 0 4 0 4 0 4 0 4 0 4 0 4 0 4 0 4 0 0 4 0 0 0 0 0 0 0 0 0 0 0 0 0	50 40 12 20 .10 .30 .60 2 2 0 .750 3–5 4 0 2.200 3–5 4 0 5.200 2.200 3–5 2.200 3–5 4 0 2.200 3–5 4 0 2.200 3–6 4 0 2.200 3–6 4 0 3.700 3.700 4.700 4.700 5.7000 5.70000 5.7000 5.7000 5.7000 5.7000 5.7000 5.7000 5.70000 5.7000 5.7000 5.7000 5.7000 5.7000 5.70000 5.7000 5.7000
n-Feet	n. Bassle le acing ad les 10 20 30 40	e L	32 12 12 12 20 30 .50 2 2 0 .750 3–5 4 0 1.832 2–5 3 .997R 3.226 2–5 3 .997R 5.218 1–5 3 3.957R 5.97R	42 32 12 12 20 .40 .40 .40 2 2 0 1.000 2 2 0 2.000 1-3 2 .549R 3.507 1-5 2 1.994L 8.186	43 36 12 16 100 .225 .675 3-5 4 0 2.475 3-5 4 0 4.163 2-5 4 2.500R 8.213	44 36 12 16 .30 .60 2 0 .750 3-5 4 0 2.200 3-5 4 0 3.700 2-5 3 1.333R 5.440 2-5 3 1.333R 7.682	45 36 12 16 .40 .50 2 2 0 1.000 2 2 0 2.000 1-2 2 1.200R 3.174 2-5 3 2.440R 4.934 1-5 2 4.06IJ 7.283	46 36 12 16 .20 .20 .60 3-5 4 0 2.200 3-5 4 0 2.200 3-5 4 0 2.200 2-5 4 2.500 2-5 4 2.500 2-7 4 0 3-7 4 2-7 2-7 2-7 2-7 2-7 2-7 2-7 2-7	47 36 12 16 20 .30 .50 2 0 .750 3-5 4 0 1.832 3-5 4 0 3.082 2-5 3 1.746R 4.661 1-5 3 4.194R 6.654	48 36 12 16 20 .40 .40 .40 2 2 0 1.000 2 2 2 2 0 2.000 1-2 2 2.0000 1-4 2 1.379L 5.107 1-5 2 7.463	49 40 12 20 100 .225 .675 4 0 .788 3–5 4 0 2.475 3–5 4 0 4.163 8–5 4 0 4.163 8–5 4 0 4.163	50 40 12 20 .30 .60 2 2 0 .750 3–5 4 0 2.200 3–5 4 0 3.700 3–5 4 0 2.200 3–5 4 0 2.200 3–5 4 0 3.700 3–5 4 0 3–7 4 4 0 3–7 4 0 3–7 4 4 0 3–7 4 0 3–7 4 0 3–7 4 4 0 3–7 4 4 4 4 5 4 4 5 4 5 4 5 4 5 4 5 4 5 5 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5
n-Feet	n. Bassle le acing ad les 10 20 30 40	e L X X X a1 a2 a3 G N B M G N B M G N B M G N B M G N B M G N B M B M G N B M B M B M G N B M B M B M B M B M B M B M B M B M B	32 12 12 20 .30 .50 2 2 0 .750 3-5 4 0 1.832 2-5 3 .997R 3.226 2-5 3 .997R 3.226 7.5218 1-5 3 3.195R 7.505	42 32 12 12 20 .40 .40 .40 .2 2 0 1.000 2 2 0 2.000 1-3 2 5.49R 3.507 1-5 2 1.994L 8.186 1-5 2	43 36 12 16 100 .225 .675 3-5 4 0 2.475 3-5 4 0 2.475 3-5 4 0 2.475 3-5 4 0 2.475 3-5 4 0 2.475 3-5 4 0 2.475 3-5 4 0 2.475 4 0 2.475 4 0 2.475 4 0 2.475 4 0 2.475 4 0 2.475 4 0 2.475 4 0 2.475 4 0 2.500 4 2.500 4 4 2.500 4 4 4 4 4 4 4 4 4 4 4 4 4	44 36 12 16 .10 .30 .60 2 2 0 .750 3–5 4 0 2.200 3–5 4 0 2.200 3–5 4 0 3.700 2–5 3.33R 5.440 2–5 3.33R 3.35 3.30 3.00 3	45 36 12 16 .40 .50 2 2 0 1.000 2 2 0 2.000 1-2 2 1.2007 3.174 2-5 3 2.440R 4.934 1-5 2 4.966I	46 36 12 16 20 20 .60 3-5 4 0 2.200 3-5 4 0 2.200 3-5 4 0 2.500 3-5 4 0 2.500 3-5 4 0 3.700 2-5 4 2.500 8	47 36 12 16 20 30 .50 2 2 0 .750 3-5 4 0 1.832 3-5 4 0 3.082 2-5 3 1.746R 4.661 1-5 3 4.194R	48 36 12 16 20 40 40 40 2 2 0 1.000 2 2 2 2.0000 1-2 2.0000 3.380 1-4 2 1.379L 5.107 1-5 2 2.793L 7.463 1-5 2	49 40 12 20 .100 .225 .675 3-5 4 0 .788 3-5 4 0 2.475 3-5 4 0 4.163 3-5 4 0 5.850 2-5 .875 4 0 2.475 3-5 4 0 4 0 4 0 2.475 4 0 4 0 4 0 4 0 4 0 4 0 4 0 4 0 4 0 4 0 4 0 4 0 4 0 4 0 0 4 0 0 0 0 0 0 0 0 0 0 0 0 0	50 40 12 20 .10 .30 .60 2 2 0 .750 3–5 4 0 2.200 3–5 4 0 5.200 2.200 3–5 2.200 3–5 4 0 2.200 3–5 4 0 2.200 3–6 4 0 2.200 3–6 4 0 3.700 3.700 4.700 4.700 5.7000 5.70000 5.7000 5.7000 5.7000 5.7000 5.7000 5.7000 5.70000 5.7000 5.7000 5.7000 5.7000 5.7000 5.70000 5.7000 5.7000
n-Feet	10 as solve and a	e L	32 12 12 12 20 30 .50 2 2 0 .750 3–5 4 0 1.832 2–5 3 .997R 3.226 2–5 3 .997R 3.25 1–5 3.195R 7.505	42 32 12 12 20 .40 .40 .40 2 2 0 1.000 2 2 0 2.000 1-3 2 .549R 3.507 1-5 2 1.994L 8.186 1-5 2 1.994L	43 36 12 16 100 .225 .675 3-5 4 0 2.475 3-5 4 0 4.163 2-5 4 2.500R 5.990 2-5 4 2.500R 8.213 1-5 3 1.850R	44 36 12 16 .30 .60 2 0 .750 3-5 4 0 2.200 3-5 4 0 3.700 2-5 3 1.333R 5.440 2-5 3 1.333R 2-60 2-60 3-60 3-60 3-750	45 36 12 16 .10 .40 .50 2 0 1.000 2 2 0 2.000 1-2 2 1.200R 3.174 2-5 3 2.44084 4.934 1-5 2 4.406I 7.283	46 36 12 16 20 .20 .60 3-5 4 0 .700 3-5 4 0 2.200 3-5 4 2.500R 5.325 2-5 4 2.500R 7.300 1-5 3.200R	47 36 12 16 .20 .30 .50 2 0 .750 3-5 4 0 1.832 3-5 4 0 3.082 2-5 3 1.746R 4.661 1-5 3 4.194R 6.654 1-5 3 4.194R	48 36 12 16 20 .40 .40 .40 2 2 0 1.000 2 2 2 0 2.000 1-2 2 2.000R 3.380 1-4 2 1.379L 5.107 1-5 2 2.793L 7.463 1-5 2 2.793L	49 40 12 20 100 .225 .675 4 0 .788 3–5 4 0 2.475 3–5 4 0 4.163 3–5 4 0 4.163 3–5 4 0 4.163 3–5 4 0 4.163 3–5 4 0 4.163 3–6 4.163	50 40 12 20 .10 .30 .60 2 2 0 .750 3–5 4 0 2.200 3–5 4 0 3.700 3-5 4 0 2.200 3-1 4 0 3.700 3-1 4 3.7000 3.700 3.7000
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n-Feet	10 as solve and a	e L XX Xi a1 a2 a3 G N B M G N	32 12 12 12 20 30 .50 2 2 0 .750 3–5 4 0 1.832 2–5 3 .997R 3.225 2–5 3 .997R 5.218 1–5 3 3.195R 9.971 1–5 3 3.195R 9.971 1–5 3	42 32 12 12 20 .40 .40 .40 2 2 0 1.000 2 2 0 2.000 1-3 2 .549R 3.507 1-5 2 1.994L 8.186 1-5 2 1.994L 10.672 1-5 2	43 36 12 10 100 .225 .675 4 0 .788 3-5 4 0 2.475 3-5 4 0 4.163 2-5 4 2.500R 5.990 2-5 4 2.500R 5.990 1-5 4 1.500R	44 36 12 16 .30 .60 2 0 .750 3-5 4 0 2.200 3-5 4 0 3.700 2-5 3 1.333R 5.440 2-5 3 1.333R 7.682 1-5 3 2.600R 10.113 1-5 3	45 36 12 16 .10 .40 .50 2 0 1.000 2 2 0 2.000 1-2 2 1.200R 3.174 2-5 3 2.440R 4.934 1-5 2 4.406I 9.718 1-5 2	46 36 12 16 20 .20 .60 3-5 4 0 .700 3-5 4 0 2.200 3-5 4 2.500R 5.325 2-5 4 2.500R 7.300 1-5 3 3.200R 9.571 1-5 3	47 36 12 16 20 .30 .50 2 0 .750 3-5 4 0 1.832 3-5 4 0 3.082 2-5 3 4.194R 6.654 1-5 3 4.194R 9.095 1-5 3	48 36 12 16 20 .40 .40 .40 2 2 0 1.000 2 2 2 0 2.000 1-2 2 2.000R 3.380 1-4 2 1.379L 5.107 1-5 2 2.793L 9.937 1-5 2	49 40 12 20 100 .225 .675 4 0 .788 3–5 4 0 2.475 3–5 4 0 4.163 8–5 4 0 5.850 2–5 4 3.000R 7.812 2–5 4 3.000R 10.00 10.0	50 40 12 20 .30 .60 .60 2 2 0 .750 3–5 4 0 2.200 3–5 4 0 3.700 3–5 4 0 3.700 3–5 4 0 3.700 3–5 4 0 3.700 3–5 4 0 3.700 3–5 4 0 3.700 3–5 4 0 3.7000 3.700 3.700 3.700 3.700 3.700 3.700 3.700 3.700 3.7000 3.7
n-Feet	n. Basile acing ad less 10 20 30 40 50 60	e L XX XX A1 A2 A3 G N B M G N	32 12 12 12 20 .30 .50 2 2 0 .750 3–5 4 0 1.832 2–5 3 .997R 3.296 2–5 3.997R 3.295 1.532 1.532 3.997R 3.195R 7.505 1.53 3.195R 9.995R 1.53	42 32 12 12 12 12 12 14 10 40 40 2 2 0 1.000 2 2 0 2.000 1-3 2 2.549R 3.507 1-5 2 1.994L 8.186 1-5 2 1.994L 8.196 1.954 1.95	43 36 12 16 100 .225 .675 3-5 4 0 2.475 3-5 4 0 2.475 3-5 4 0 2.475 3-5 4 0 2.475 3-5 4 0 2.475 3-5 4 0 2.475 3-5 4 0 1.675 3-5 4 0 2.475 3-5 4 0 1.675 4 0 1.675 1.67	44 36 12 16 .10 .30 .60 2 2 0 .750 3-5 4 0 2.200 3-5 4 0 2.25 3.700 2-5 3.333R 5.440 2-5 3 1.333R 7.682 1-5 3 2.600R	45 36 12 16 .40 .50 2 2 0 1.000 2 2 0 2.000 1-2 2 1.200R 3.174 2-5 3 2.440R 4.934 1-5 2 4.406I 7.283 1-5 9.718 1-5 2 4.406L 9.718	46 36 12 16 .20 .20 .60 3-5 4 0 .700 3-5 4 0 2.200 3-5 4 2.500 3-7 3-7 1-5 3 3.200 8	47 36 12 16 20 30 .50 2 2 0 .750 3-5 4 0 1.832 3-5 4 0 3.082 2-5 3.1.746R 4.661 1-5 3 4.194R 9.095 1-5 3 4.194R	48 36 12 16 .20 .40 .40 .2 2 2 0 1.000 2 2 2 0.000 1-2 2 2.000 1-4 2 2.793L 7.463 1-5 2 2.793L 9.937 1-5 2 2.793L	49 40 12 20 100 225 .675 3-5 4 0 2.475 3-5 4 0 2.475 3-5 4 0 5.850 2-5 4 3.000R 7.812 2-5 4 3.000R 1	50 40 12 20 .10 .30 .60 2 2 0 .750 3-5 4 0 2.200 3-5 4 0 5.200 2-5 3 2.000R 7.122 1-5 3 3.400R 9.393 1-5 3 3.400R
n-Feet	1. Basic le acing ad les 10 20 30 40 50 60 80	e L XX a1 a2 a3 G N B M G R B M G R B R B M G R B R B M G R B R B R B R B R B R B R B R B R B R	32 12 12 12 20 30 .50 2 2 0 .750 3–5 4 0 1.832 2–5 3 .997R 3.295 2–5 3.997R 5.218 1–5 3.195R 7.505 1–5 3.195R 9.971 1–5 3.195R	42 32 12 12 20 .40 .40 .40 .2 2 0 1.000 2 2 0 2.000 1-3 2 .549R 3.507 1-5 2 1.994L 1.994L 10.672 1.994L 10.672 1.994L 10.672 1.994L 10.672 1.994L 10.672 1.994L 10.672 1.994L 10.672 1.994L 10.672 1.994L 10.672 1.994L 10.672 1.994L 10.672 1.994L 10.672 1.994L 10.672 1.994L 10.672 1.994L 10.672 1.994L 10.672 1.994L	43 36 12 10 100 .225 .675 3-5 4 0 2.475 3-5 4 0 4.163 2-5 4 2.500R 8.213 1-5 3.850R 10.507	44 36 12 16 .30 .60 2 2 0 .750 3-5 4 0 2.200 3-5 4 0 3.700 2-5 3 1.333R 5.440 2-5 3 1.333R 1.682 1-5 3 2.600R 10.113	45 36 12 16 .40 .50 2 0 1.000 2 2 0 2.000 1-2 2 1.200R 3.174 2-5 3 2.4440R 4.934 1-5 2 4.406I 9.718 1-5 2 4.406I 9.718 1-5 2 4.406I 1.46637 1-5	46 36 12 16 20 .20 .60 3-5 4 0 .700 3-5 4 0 2.200 3-5 4 0 2.200 3-5 4 0 2.200 3-5 4 0 3.700 1-5 3 3.200R 9.571 1-5 3 3.200R 14.528	47 36 12 16 20 .30 .50 2 0 .750 3-5 4 0 1.832 3-5 4 0 3.082 2-5 3 1.746R 4.661 1-5 3 4.194R 9.095 1-5 3 4.194R 14.022 1-5	48 36 12 16 20 .40 .40 .40 2 2 0 1.000 2 2 2 2 0 2.000 1-2 2 2.0000 1-4 2 1.379L 5.107 1-5 2 2.793L 7.463 1-5 2 2.793L 9.937 1-5 2 2.793L 14.905 1-5	49 40 12 20 100 .225 .675 3-5 4 0 .788 3-5 4 0 2.475 3-5 4 0 4.163 3-5 4 0 5.850 2-5 4 3.000R 7.812 2-5 4 3.000R 10.035 1-5 3 2.500R 14.878	50 40 12 20 .30 .60 .60 2 2 0 .750 3–5 4 0 2.200 3–5 4 0 3.700 3–5 4 0 2.200 3–5 4 0 3.700 3–5 3.700 2.100 3.7000 3.700 3.700 3.700 3.700 3.700 3.700 3.700 3.7000 3.700 3.700 3.700 3.700 3.700 3.700 3.7000 3.7000 3.7000
n-Feet	n. Basile acing ad less 10 20 30 40 50 60	e L XX a1 a2 a3 GNBM GNBM GNBM GNBM GNBBM GNBBM GNBBM GNBBM GNBBM GNBBM GNBBM GNBBM	32 12 12 12 12 12 20 30 .50 2 2 0 .750 3-5 4 0 1.832 2-5 3 .997R 5.218 1-5 3 3.195R 7.505 1-5 3 3.195R 7.997R 5.218 1-5 3 3.195R 7.997R 5.218 1-5 3 3.195R 7.997R 5.218 1-5 3 3.195R 7.997R 5.218 1-5 3 3.195R 7.997R 5.218 1-5 3 3.195R 7.997R 5.218 1-5 3 3.195R 7.997R 5.218 1-5 3 3.195R 7.997R 5.218 1-5 3 3.195R 7.997R 5.218 1-5 3 3.195R 7.997R 5.218 1-5 3 3.195R 7.997R 5.218 1-5 3 3.195R 7.997R 5.218 1-5 3 3.195R 7.997R 5.218 1-5 3 3.195R 7.997R	42 32 12 12 12 12 20 .40 .40 .40 2 2 0 1.000 2 2 0 2.000 1-3 2 549R 3.507 1-5 2 1.994L 5.705 1-5 2 1.994L 15.656 1-5 2 1.994L 15.656 1-5 2 1.994L	43 36 12 16 100 .225 .675 3-5 4 0 .788 3-5 4 0 2.475 3-5 4 0 4.163 2-5 4 2.500R 8.213 1-5 3 1.850R 1.850R 15.493 1-5 3 1.850R 15.493 1.850R 15.493	44 36 12 16 .10 .30 .60 2 2 0 .750 3-5 4 0 2.200 3-5 4 0 2.200 2-5 3.700 2-5 3.33R 5.440 2-5 3 1.333R 7.682 1-5 3 2.600R 10.113 1-5 3 2.600R 10.113 1-5 3 2.600R 1.750	45 36 12 16 .40 .50 2 2 0 1.000 2 2 0 2.000 1-2 2 1.200R 3.174 2-5 3 2.440R 4.934 1-5 2 4.406L 7.283 1-5 2 4.406L 1-5 2 4.406L 1-5 2 4.406L 1-5 2 4.406L 1-5 2 4.406L	46 36 12 16 .20 .20 .60 3-5 4 0 .700 3-5 4 0 2.200 3-5 4 2.500 3-7 3-7 1-5 3 3.200 1-5 3 3.200 1-5 3 3.200 1-5 3 3.200 1-5 3 3.200 1-5 3	47 36 12 16 20 30 50 2 2 0 750 3-5 4 0 1.832 3-5 4 0 3.082 2-5 3 4.194R 6.654 1-5 3 4.194R 9.095 1-5 3 4.194R 14.022 1-5 3	48 36 12 16 .20 .40 .40 .40 .2 2 0 1.000 2 2 2 0 2.000 1-2 2 2.000 1-4 2 2.793L 7.463 1-5 2 2.793L 9.937 1-5 2 2.793L 1.905 1-4 9.937 1-5 2 2.793L 1.905	49 40 12 20 .100 .225 .675 3-5 4 0 .788 3-5 4 0 2.475 3-5 4 0 4.163 3-5 4 0 5.850 2-5 4 3.000R 7.812 2-5 4 3.000R 7.812 3-5 4 3.000R 7.812 3-5 4 3.04 3.05 3-5 4 3.05 3-5 4 3.05 3.05 3.05 3.05 3.05 3.05 3.05 3.05	50 40 12 20 .10 .30 .60 2 2 0 .750 3-5 4 0 2.200 3-5 4 0 5.200 2-5 3 2.000R 7.122 1-5 3 3.400R 9.393 1-5 3 3.400R 14,345 1-5 3
n-Feet	1. Basic le acing ad les 10 20 30 40 50 60 80	e L XX a1 a2 a3 G N B M G R B M G R B R B M G R B R B M G R B R B R B R B R B R B R B R B R B R	32 12 12 12 20 30 .50 2 2 0 .750 3–5 4 0 1.832 2–5 3 .997R 3.295 2–5 3.997R 5.218 1–5 3.195R 7.505 1–5 3.195R 9.971 1–5 3.195R	42 32 12 12 20 .40 .40 .40 .2 2 0 1.000 2 2 0 2.000 1-3 2 .549R 3.507 1-5 2 1.994L 1.994L 10.672 1.994L 10.672 1.994L 10.672 1.994L 10.672 1.994L 10.672 1.994L 10.672 1.994L 10.672 1.994L 10.672 1.994L 10.672 1.994L 10.672 1.994L 10.672 1.994L 10.672 1.994L 10.672 1.994L 10.672 1.994L 10.672 1.994L 10.672 1.994L	43 36 12 10 100 .225 .675 3-5 4 0 2.475 3-5 4 0 4.163 2-5 4 2.500R 8.213 1-5 3.850R 10.507	44 36 12 16 .30 .60 2 2 0 .750 3-5 4 0 2.200 3-5 4 0 3.700 2-5 3 1.333R 5.440 2-5 3 1.333R 1.682 1-5 3 2.600R 10.113	45 36 12 16 .40 .50 2 0 1.000 2 2 0 2.000 1-2 2 1.200R 3.174 2-5 3 2.4440R 4.934 1-5 2 4.406L 9.718 1-5 2 4.406L 14.6637 1-5	46 36 12 16 20 .20 .60 3-5 4 0 .700 3-5 4 0 2.200 3-5 4 0 2.200 3-5 4 0 2.200 3-5 4 0 3.700 1-5 3 3.200R 9.571 1-5 3 3.200R 14.528	47 36 12 16 20 .30 .50 2 0 .750 3-5 4 0 1.832 3-5 4 0 3.082 2-5 3 1.746R 4.661 1-5 3 4.194R 9.095 1-5 3 4.194R 14.022 1-5	48 36 12 16 20 .40 .40 .40 2 2 0 1.000 2 2 2 2 0 2.000 1-2 2 2.0000 1-4 2 1.379L 5.107 1-5 2 2.793L 7.463 1-5 2 2.793L 9.937 1-5 2 2.793L 14.905 1-5	49 40 12 20 100 .225 .675 3-5 4 0 .788 3-5 4 0 2.475 3-5 4 0 4.163 3-5 4 0 5.850 2-5 4 3.000R 7.812 2-5 4 3.000R 10.035 1-5 3 2.500R 14.878	50 40 12 20 .30 .60 .60 2 2 0 .750 3–5 4 0 2.200 3–5 4 0 3.700 3–5 4 0 2.200 3–5 4 0 3.700 3–5 3.700 2.100 3.7000 3.700 3.700 3.700 3.700 3.700 3.700 3.700 3.7000 3.700 3.700 3.700 3.700 3.700 3.700 3.7000 3.7000 3.7000

74 METHOD OF CONVERTING HEAVY MOTOR VEHICLE LOADS

74 TA	BLE	1.0 L	Continue	u,								
Tru	ick No) .	51	52	53	54	55	56	57	58	59	60
	ı. Base		40	40	40	40	44	44	44	44	44	44
Ax	le acing	X X'	$\frac{12}{20}$	$\begin{array}{c} 12 \\ 20 \end{array}$	$\frac{12}{20}$	$\frac{12}{20}$	$\frac{12}{24}$	$\frac{12}{24}$	$\frac{12}{24}$	$\frac{12}{24}$	$\begin{array}{c} 12 \\ 24 \end{array}$	$\begin{array}{c} 12 \\ 24 \end{array}$
Lo	ad	aı	.10	.20	.20	.20	.100	.10	.10	.20	.20	.20
On Ax		\mathbf{a}_2	.40 .50	.20 .60	.30 .50	$.40 \\ .40$.225 $.675$.30 $.60$.40 .50	.20 .60	.30 $.50$	$.40 \\ .40$
		G	2	35	2	2	3-5	2	2	3–5	2	2
1	10	N B	2 0	4 0	$\frac{2}{0}$	2	4 0	2 0	2 0	4 0	2 0	2 0
		M	1.000	.700	.750	1.000	.788	.750	1.000	.700	.750	1.000
	20	G N	$\frac{2}{2}$	$^{3-5}_{4}$	3–5 4	2 2	$^{3-5}$	$^{3-5}$	$\frac{2}{2}$	$_4^{3-5}$	3–5 4	2 2
	20	В	0	0	0	0	0	' 0	0	0	0	0
		M G	2.000	$\frac{2.200}{35}$	$\frac{1.832}{3-5}$	$\frac{2.000}{1-2}$	$\frac{2.475}{3-5}$	2.200 3-5	$\frac{2.000}{1-2}$	$\frac{2.200}{3-5}$	3-5	$\frac{2.000}{1-2}$
	30	N	2	4	4	2	4	4	2	4	4	2
		B M	1.200R 3.174	$\begin{smallmatrix} 0\\3.700\end{smallmatrix}$	$\frac{0}{3.082}$	2.000R 3.380	$^{0}_{4.163}$	$\begin{array}{c} 0 \\ 3.700 \end{array}$	1.200R 3.174	$\frac{0}{3.700}$	$\frac{0}{3.082}$	2.000R 3.380
		G	1-3	3-5	3-5	1-2	3–5	3-5	1-2	3-5	3–5	1–2
te te	40	N B	$^{2}_{1.604L}$	4 0	4 0	$^2_{2.000 m R}$	4 0	4 0	$^2_{1.200 m R}$	4 0	4 0	2 2.000R
F		M	4.443	5.200	4.332	4.860	5.850	5.200	4.418	5.200	4.332	4.860
Span-Feet	50	G N	$^{1-5}_2$	$^{2-5}$	$^{2-5}_{3}$	$\frac{1-4}{2}$	3-5 4	$_{4}^{3-5}$	$^{1-4}_2$	3-5 4	3–5 4	$_{2}^{1-3}$
Ω.	00	В	5.407L	$3.000\mathbf{R}$	2.495R	1.993L	0	0	4.487L	0	0	.540L
i		M G	6.478 1-5	$\frac{6.944}{2-5}$	$\frac{6.100}{1-5}$	$\frac{6.767}{1-5}$	$\frac{7.538}{2-5}$	6.700 2-5	5.811 1–5	$\frac{6.700}{2-5}$	5.582 2-5	$\frac{6.371}{1-5}$
ļ	60	N	2	4	3	2	4	3	2	4	3	2
		13 M	5.407L 8.881	3.000R 8.920	5.193R 8.252	$\begin{array}{c} 3.592 \mathrm{L} \\ 9.223 \end{array}$	3.500R 9.634	$\frac{2.667 \mathrm{R}}{8.807}$	$6.408 L \\ 8.077$	$3.500\mathbf{R} \\ 8.563$	3.244R 7.542	4.391L 8.531
ļ		G	1-5	1–5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5
	80	N B	$^{2}_{5.407 \rm L}$	$^3_{4.000 m R}$	$_{5.193R}^{3}$	$\begin{array}{c} 2 \\ 3.592 \mathbf{L} \end{array}$	$3 \\ 3.150 $ R	$\frac{3}{4.200\mathbf{R}}$	2 6.408L	$^3_{4.800 m R}$	3 6.192R	2 4.391L
		M	13,759	13.800	13.140	14.170	14.274	13.621	12.906	13.088	12.283	13.450
	100	G N	$^{1-5}_2$	$^{1-5}_3$	$^{1-5}_3$	$^{15}_2$	$^{1-5}_{3}$	$^{1-5}_3$	$^{1-5}_2$	1-5 3	$^{1-5}$	$^{1-5}_2$
	100	В	5.407L	4.000R	$5.193\mathbf{R}$	3.592L	3.150R	$4.200\mathbf{R}$	6.408L	4.800R	6.192R	4.391L
		M	18.686	18.760	18.073	19.137	19.249	18.576	17.803	18.030	17.187	18.402
111	and MI		<i>e</i> 1	69	6.9	0.1	C.E.	CC	67	co	co	70
	uck No 1. Base		61 32	62 32	63 32	64 32	65 32	66 32	67 36	68 36	69 36	70 36
Wł	ı. Base le	L X	32 16	32 16	$\frac{32}{16}$	32 16	32 16	32 16	36 16	36 16	36_ 16	36
Ax Spa	n. Base le acing	X X'	32 16 8	32 16 8	32 16 8	32 16 8	32 16 8	32 16 8	36 16 12	36 16 12	36 16 12	36 16 12
What Ax Spa	n. Base le acing ad	2 L X X' a ₁ a ₃	32 16 8 .100 .225	32 16 8 .10 .30	32 16 8 .10 .40	32 16 8 .20 .20	32 16 8 .20 .30	32 16 8 .20 .40	36 16 12 .100 .225	36 16 12 .10 .30	36 16 12 .10 .40	36 16 12 .20 .20
Wh Ax Spa Loa	n. Base le acing ad	X X' a ₁ a ₂ a ₃	32 16 8 .100 .225 .675	32 16 8 .10 .30 .60	32 16 8 .10 .40 .50	32 16 8 .20 .20 .60	32 16 8 .20 .30 .50	32 16 8 .20 .40 .40	36 16 12 .100 .225 .675	36 16 12 .10 .30 .60	36 16 12 .10 .40 .50	36 16 12 .20 .20 .60
Ax Spa Loa On	n. Base le acing ad	X X' A1 A3 A3 G N	32 16 8 .100 .225 .675 3-5 4	32 16 8 .10 .30 .60	32 16 8 .10 .40 .50	32 16 8 .20 .20 .60 3-5 4	32 16 8 .20 .30 .50	32 16 8 .20 .40 .40	36 16 12 .100 .225 .675 3-5 4	36 16 12 .10 .30 .60	36 16 12 .10 .40 .50	36 16 12 .20 .20 .60 3-5 4
Ax Spa Loa On	n. Base le acing ad les	2 L X X' a ₁ a ₂ a ₃ G	32 16 8 .100 .225 .675 3-5	32 16 8 .10 .30 .60	32 16 8 .10 .40 .50	32 16 8 .20 .20 .60 3-5	32 16 8 .20 .30 .50	32 16 8 .20 .40 .40	36 16 12 .100 .225 .675 3-5	36 16 12 .10 .30 .60	36 16 12 .10 .40 .50	36 16 12 .20 .20 .60 3-5
Ax Spa Loa On	n. Base le acing ad les	2 L X X' a ₁ a ₂ a ₃ G N B M	32 16 8 .100 .225 .675 3-5 4 0 .788 3-5	32 16 8 .10 .30 .60 2 2 0 .750 3-5	32 16 8 .10 .40 .50 2 2 0 1.000	32 16 8 .20 .20 .60 3-5 4 0 .700 3-5	32 16 8 .20 .30 .50 2 2 0 .750 3-5	32 16 8 .20 .40 .40 2 2 0 1.000 2 3	36 16 12 .100 .225 .675 3-5 4 0 .788	36 16 12 .10 .30 .60 2 2 0 .750	36 16 12 .10 .40 .50 2 2 0 1.000	36 16 12 .20 .20 .60 3-5 4 0 .700
Ax Spa Loa On	n. Base le acing ad les	X X X' a ₁ a ₂ a ₃ G N B M	32 16 8 .100 .225 .675 3-5 4 0 .788	32 16 8 .10 .30 .60 2 2 0 .750	32 16 8 .10 .40 .50 2 2 0 1.000	32 16 8 .20 .20 .60 3-5 4 0 .700	32 16 8 .20 .30 .50 2 2 0 .750	32 16 8 .20 .40 .40 2 2 0 1.000	36 16 12 .100 .225 .675 3-5 4 0 .788	36 16 12 .10 .30 .60 2 2 0 .750	36 16 12 .10 .40 .50 2 2 0 1.000	36 16 12 .20 .20 .60 3-5 4 0
Ax Spa Loa On	n. Base le acing ad les	XXX' a1 a2 a3 G N B M G N B M	32 16 8 .100 .225 .675 3-5 4 0 .788 3-5 4 0 .2475	32 16 8 .10 .30 .60 2 2 0 .750 3–5 4 0 2.200	32 16 8 .10 .40 .50 2 2 0 1.000 2-3 2 1.178L 2.206	32 16 8 .20 .20 .60 3-5 4 0 .700 3-5 4 0 .200 .000 .000 .000 .000 .000 .000 .000 .000 .000 .000 .000	32 16 8 .20 .30 .50 2 2 0 .750 3–5 4 0 1.832	32 16 8 .20 .40 .40 .2 2 0 1.000 2.3 2 .998L 2.160	36 16 12 .100 .225 .675 3-5 4 0 .788 3-5 4 0 2.475	36 16 12 .10 .30 .60 2 2 0 .750 3-5 4 0 2.200	36 16 12 .10 .40 .50 2 2 0 1.000 2 2 0 2.000	36 16 12 .20 .20 .60 3-5 4 0 .700 3-5 4 0 .200
Ax Spa Loa On	n. Base le acing ad les	X X' a1 a2 a3 G N B M G N B	32 16 8 .100 .225 .675 3-5 4 0 .788 3-5 4	32 16 8 .10 .30 .60 2 2 0 .750 3-5 4 0 2.200 2-5	32 16 8 .10 .40 .50 2 2 0 1.000 2-3 2 1.178L 2.206 2-5	32 16 8 .20 .20 .60 3-5 4 0 .700 3-5 4	32 16 8 .20 .30 .50 2 2 0 .750 3-5 4 0 1.832 2-5	32 16 8 .20 .40 .40 2 2 0 1.000 2.3 2 .998L 2.160 2-5	36 16 12 .100 .225 .675 3-5 4 0 .788 3-5 4 0 2.475 2-475	36 16 12 .10 .30 .60 2 2 0 .750 3-5 4 0 2.200 2-5	36 16 12 .10 .40 .50 2 2 0 1.000 2 2 0 2.000	36 16 12 .20 .60 .60 3-5 4 0 .700 3-5 4 0 2.200 2-5
Ax Spa Loa On	n. Base le acing ad les 10	X X X' a1 a2 a3 G N B M G N B M	32 16 8 .100 .225 .675 3–5 4 0 .788 3–5 4 0 2.475 2–475 4 1.500R	32 16 8 .10 .30 .60 2 2 0 .750 3-5 4 0 2.200 2-5 3	32 16 8 .10 .40 .50 2 2 0 1.000 2–3 2 1.178L 2.206 2–5 3.664R	32 16 8 .20 .60 3-5 4 0 .700 3-5 4 0 2.200 2.200 2.5 4 0 1.5 4 0 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7	32 16 8 .20 .50 .50 2 2 0 .750 3-5 4 0 1.832 2-5 3 .247R	32 16 8 20 .40 .40 .40 2 2 0 1.000 2 3 2 .998L 2.160 2-5 2 2.996L	36 16 12 .100 .225 .675 3-5 4 0 .788 3-5 4 0 2.475 2-5 4 2.000R	36 16 12 .10 .30 .60 2 2 0 .750 3–5 4 0 2.200 2–5 3 .667R	36 16 12 .10 .40 .50 2 2 0 1.000 2 2 0 2.000 2-5 3	36 16 12 .20 .60 3-5 4 0 .700 3-5 4 0 2.200 2-5 4 2.000R
What Ax Spa	n. Base le acing ad les 10	X X X' X' A1 A2 A3 G N B M G N B M	32 16 109 .225 .675 4 0 .788 3 -5 4 0 2.475 2-5 4.500R	32 16 8 .10 .30 .60 2 2 0 .750 3-5 4 0 2.200 2-5 3 0 4.350	32 16 8 .10 .40 .50 2 2 0 1.000 2–3 2 1.178L 2.206 2–5 3 .664R 4.162	32 16 8 .20 .20 .60 3-5 4 0 .700 3-5 4 0 2.200 2-5 4 1.500R	32 16 8 .20 .30 .50 2 2 0 .750 3-5 4 0 1.832 2-5 3.247R 3.800	32 16 8 20 .40 .40 .40 2 2 0 1.000 2 3 2 .998L 2.160 2-5 2.996L 3.842	36 16 12 1100 .225 .675 3-5 4 0 .788 3-5 4 0 2.475 2-5 4 2.000R	36 16 12 10 .30 .60 2 2 0 .750 3–5 4 0 2.200 2–5 3.667R 3.763	36 16 12 10 .40 .50 2 2 0 1.000 2 2 0 2.000 2–5 3 1.552R	36 16 12 .20 .60 3-5 4 0 .700 3-5 4 0 2.200 2-5 4 2.000R 3.706
WITAXX Sport Loss On Ax	n. Base le acing ad les 10	2 L X X X' a1 a2 a3 G N B M G N B M G G N B M G	32 16 8 .100 .225 .675 3-5 4 0 .788 3-5 4 0 2.475 2-5 4 1.500R 4.568 2-5 4	32 16 8 .10 .30 .60 2 2 0 .750 3-5 4 0 2.200 2-5 3 0 4.350	32 16 8 .10 .40 .50 2 2 0 1.000 2-3 2.178L 2.206 2-5 3 .664R 4.162 2-5 3	32 16 8 .20 .20 .60 3-5 4 0 .700 3-5 4 0 2.200 2.200 2.50 4 0 2.10 4 0 1.10	32 16 8 .20 .30 .50 2 2 0 .750 3–5 4 0 1.832 2–5 3.800 2–5 3.800	32 16 8 20 .40 .40 .40 .40 .2 2 0 1.000 2 3 2988L 2.160 2-5 2 2.996L 3.842 1-5 2	36 16 12 1100 .225 .675 3-5 4 0 .788 3-5 4 0 2.475 2-5 4 2.000R 4.170 2-5 4	36 16 12 10 30 .60 2 2 0 .750 3–5 4 0 2.200 2–5 3.763 2–5 3.763	36 16 12 10 .40 .50 2 2 0 1.000 2 2 0 2.000 2-5 3 1.552R 3.422 2-5 3	36 16 12 .20 .60 3-5 4 0 .700 3-5 4 0 2.200 2-5 4 2.000R 3.706
Ax Spa Loa On	n. Base le acing ad les 10 20	X X' a1 a2 a3 GNBM GNBM GNBM GNBM GNBM GNBM GNBM GNBM	32 16 8 .100 .225 .675 3-5 4 0 .788 3-5 4 0 2.475 2-5 4 1.500R 4.568	32 16 8 .10 .30 .60 2 0 .750 3–5 4 0 2.200 2.200 2.200 2.300 4.350 2.300 4.350 2.300 3.300 4.300 3.300 3.300 4.	32 16 8 .10 .40 .50 2 0 1.000 2-3 2 1.178L 2.206 2-5 3 .664R 4.162 2-5	32 16 8 .20 .20 .60 3-5 4 0 .700 3-5 4 0 2.200 2-5 4 1.500R 4.060 2-5	32 16 8 .20 .30 .50 2 2 0 .750 3–5 4 0 1.832 2–5 3 .247R 3.800 2–5	32 16 8 20 .40 .40 .40 2 2 0 1.000 2 3 2 .998L 2.160 2-5 2 2.996L 3.842 15	36 16 12 100 .225 .675 4 0 .788 3-5 4 0 2.475 2-5 4 2.000R 4.170 2-5	36 16 12 .10 .30 .60 2 2 0 .750 3-5 4 0 2.200 2-5 3 .667R 3.763 2-5	36 16 12 .10 .40 .50 2 2 0 1.000 2 2 0 2.000 2-5 3 1.552R 3.422 2-5	36 16 12 .20 .60 3-5 4 0 .700 3-5 4 0 2.200 2-5 4 2.000R 3.706
Ax Spo Loo On Ax	a. Base le acing ad les 10 20 30	2 L X X' a1 a2 a3 G N B M G N B M G N B M G N B M G N B M G N B M G G G G G G G G G G G G G	32 16 8 100 225 .675 3-5 4 0 788 3-5 4 0 2.475 2-5 4.568 2-5 4.500R 4.568 0 1.500R 6.800	32 16 8 .10 .30 .60 .2 2 0 .750 3–5 4 0 2.200 2-5 3 0 4.350 2-5 3 6.660 1-5	32 16 8 .10 .40 .50 2 2 0 1.000 2-3 2.178L 2.206 2-5 3.664R 4.162 2-5 3.664R 6.409 1-5	32 16 8 .20 .20 .60 3-5 4 0 .700 3-5 4 0 2.200 2-5 4 1.500R 4.060 2-5 4 1.500R 6.045 1-5	32 16 8 .20 .30 .50 .50 2 2 2 0 .750 3–5 4 0 1.832 2–5 3.247R 3.800 2–5 3.247R 5.800 1–5	32 16 8 20 .40 .40 .40 .40 .2 2 0 1.000 2 3 2988L 2.160 2-5 2 2.996L 3.842 1-5 2.795L 6.021 1-5	36 16 12 1100 .225 .675 3-5 4 0 .788 3-5 4 0 2.475 2-5 4 2.000R 4.170 2-5 4 2.000R 6.390 6.390 2-5	36 16 12 10 .30 .60 2 2 0 .750 3–5 4 0 2.200 2–5 3.667R 3.763 2–5 3.667R 6.011 2–5	36 16 12 10 .40 .50 2 2 0 1.000 2-5 3 1.552R 3.422 2-5 3 1.552R 5.654 5.654	36 16 12 .20 .60 3-5 4 0 .700 3-5 4 0 2.200 2-5 4 2.000R 3.706 2-5 4 2.000R 5.680
WITAXX Sport Loss On Ax	n. Base le acing ad les 10 20	XXX' a1 a2 a3 G N B M G N B M G N B M G N B M G N B M G N B M M G N B M M G N B M M G N B M M M M M M M M M M M M M M M M M M	32 16 8 100 .225 .675 4 0 .788 3 -5 4 0 2.475 2-5 4 1.500R 4.568 2-5 4 1.500R	32 16 8 .10 .30 .60 2 2 0 .750 3-5 4 0 2.200 2-5 3 0 4.350 2-5 3 0 6.60	32 16 8 .10 .40 .50 2 2 0 1.000 2-3 2 1.178L 2.206 2-5 3.664R 4.162 2-5 3.664R 6.409	32 16 8 .20 .20 .60 3-5 4 0 .700 3-5 4 1.500R 4.060 2-5 4.060 2-5 4.060 6.045	32 16 8 .20 .30 .50 .2 2 2 0 .750 3-5 4 0 1.832 2-5 3.800 2-5 3.247R 5.800	32 16 8 .20 .40 .40 .40 .2 .2 .0 1.000 2.3 .2 .998L 2.160 2-5 .2 2.998L 3.842 1-5 .795L 6.021	36 16 12 100 225 .675 4 0 .788 3-5 4 0 2.475 2-5 4 2.000R 4.170 2-5 4 2.000R	36 16 12 10 .30 .60 2 2 0 .750 3-5 4 0 2.200 2-5 3.763 2-5 3.667R 6.011 2-5 3	36 16 12 10 .40 .50 2 2 0 1.000 2 2 0 2.000 2–5 3 1.552R 3.422 2–5 3 1.552R 5.654	36 16 12 .20 .20 .60 .60 .700 3-5 4 0 2.200 2-5 4 2.000 2-5 4 2.000R 5.680
Ax Spo Loo On Ax	a. Base le acing ad les 10 20 30	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	32 16 8 100 225 .675 3-5 4 0 788 3-5 4 0 2.475 2-5 4 1.500R 4.668 2-5 4 1.500R 6.800 1-5 3 750R 9.061	32 16 8 .10 .30 .60 2 2 0 .750 3–5 4 0 2.200 2.200 2.5 3 0 4.350 2-5 3 0 6.600 1–5 3 1.200R 8.929	32 16 8 8 .10 .40 .50 2 2 0 1.000 2-3 2.178L 2.206 2-5 3.664R 4.162 2-5 3.664R 6.409 1-5 2.204L 8.793	32 16 8 .20 .20 .60 3-5 4 0 .700 3-5 4 0 2.200 2-5 4 1.500R 4.060 2-5 4 1.500R 6.045 1-5 3 8.180	32 16 8 .20 .30 .50 .50 2 2 0 .750 3–5 4 0 1.832 2–5 3.24TR 3.800 2–5 3.24TR 5.800 1–5 8.803 1–5 8.803 8.903 8.003 8.003 8.003 8.003 8.003 8.003 8.003 8.003	32 16 8 20 .40 .40 .40 .40 .2 2 0 1.000 2 3 2988L 2.160 2-5 2 2.996L 3.842 1-5 2 .795L 6.021 1-5 2 8.518	36 16 12 1100 .225 .675 3-5 4 0 .788 3-5 4 0 2.475 2-5 4 2.000R 4.170 2-5 4 2.000R 6.390 2-5 4 2.000R 8.6390 8.6390 8.6900	36 16 12 10 .30 .60 2 2 0 .750 3-5 4 0 2.200 2-5 3 .667R 3.763 2-5 3 .667R 6.011 2-5 8 667R 8.258	36 16 12 10 40 .50 2 2 0 1.000 2-5 3 1.552R 3.422 2-5 3 1.552R 3.422 2-5 3 1.552R 3.422 2-7 3 3.422 2-7 3.4222 3.4222 3.4	36 16 12 .20 .60 3-5 4 0 .700 3-5 4 0 2.200 2-5 4 2.000R 3.706 2-5 4 2.000R 5.680 2-5 4 2.000R 7.664
Ax Spo Loo On Ax	a. Base le acing ad les 10 20 30	2 L X X X X X X X X X X X X X X X X X X	32 16 100 .225 .675 3-5 4 0 .788 3-5 4 0 2.475 2-5 4 1.500R 4.508 4.500 1-5 3.750R	32 16 8 .10 .30 .60 2 2 0 .750 3–5 4 0 2.200 2.25 3 0 4.350 2-5 3 0 6.600 1–5 3 1.200 8.929 1.200 8.929 1.200 1.2	32 16 8 .10 .40 .50 2 2 0 1.000 2-3 2.206 2-5 3 .664R 4.162 2-5 3 .664R 6.409 1-5 2	32 16 8 .20 .20 .60 3-5 4 0 2.200 2-5 4 1.500R 4.060 2-5 4 1.500R 1.500R 2-5 4 2.200 2-5 3-5 4 3-5 4 3-5 4 3-5 4 0 2.200 3-5 4 0 2.200 2-5 4 1.500R 4.00 2-5 4 1.500R 4.00 2-5 4 1.500R 4.00 2-5 4 1.500R 2	32 16 8 .20 .30 .50 2 2 0 .750 3–5 4 0 1.832 2–5 3.800 2–5 3.800 1.580 1.580 2.5966	32 16 8 .20 .40 .40 .40 .2 .2 .0 1.000 2.3 .2 .998L 2.160 2-5 .2 2.996L 3.842 1-5 .2 .795L 6.021 1-5 .2 .795L	36 16 12 1100 225 .675 3-5 4 0 .788 3-5 4 0 2.475 2-5 4 2.000R 4.170 2-5 4 2.000R 4.390 2-5 4	36 16 12 .10 .30 .60 .750 3-5 4 0 2.200 2-5 3 .667R 3.763 3.667R 6.011 2-5 3.667R	36 16 12 10 .40 .50 2 2 0 1.000 2-5 3 1.552R 3.422 2-5 3 1.552R 5.654 1-5 2 3.205L	36 16 12 .20 .20 .60 3-5 4 0 .700 3-5 4 0 2.200 2-5 4 2.000R 3.706 2-5 4 2.000R 7.664 1-5 3
Ax Spo Loo On Ax	10 Base 10 Bas	XXX' a1 a2 a3 G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M B M G N B M B M G N B M B M G N B B M B M B M G N B B M B M B M B M B M B M B M B M B M	32 16 8 100 225 .675 3-5 4 0 .788 3-5 4 0 2.475 2-5 4 1.500R 6.800 1-5 3 .750R 9.061 1-5 3 .750R	32 16 8 .10 .30 .60 2 2 0 .750 3–5 4 0 2.200 2-5 3 0 4.350 2-5 3 0 6.600 1-5 3 1.200R 8.929 1-5 3 1.200R	32 16 8 .10 .40 .50 2 2 0 1.000 2-3 2.178L 2.206 2-5 3.664R 4.162 2-5 3.664R 6.409 1-5 2.204L 8.793 1-5 2.204L 2.204L	32 16 8 .20 .20 .60 3-5 4 0 .700 3-5 4 0 2.200 2-5 4 1.500R 4.060 2-5 4 1.500R 6.045 1-5 3 2.000R 8.180 1-5 3 2.000R 8.180 1-5 3 3.000R	32 16 8 .20 .30 .50 2 2 0 .750 3-5 4 0 1.832 2-5 3 .247R 3.800 2-5 3 .247R 5.800 15 3 2.596R 8.035 1.5 3 2.596R 8.035 1.5 3 2.596R 8.035 1.596R 8.035 8.03	32 16 8 20 .40 .40 .40 .40 .2 2 0 1.000 2 3 2988L 2.160 2-5 2 2.996L 3.842 1-5 2 795L 6.021 1-5 2 795L 8.518 1-5 2 795L 795L	36 16 12 1100 .225 .675 3-5 4 0 .788 3-5 4 0 2.475 2-5 4 2.000R 4.170 2-5 4 2.000R 6.390 6.390 2-5 4 2.000R 8.622 1-5 3 1.0000 1.0000 1.0	36 16 12 10 30 .60 2 2 0 .750 3-5 4 0 2.200 2-5 3.763 2-5 3.667R 3.763 2-5 3 .667R 8.258 1-5 3 2.000R	36 16 12 10 .40 .50 2 2 0 1.000 2-5 3 1.552R 3.422 2-5 3 1.552R 5.654 1-5 2 3.205L 7.900 1-5 2 3.205L	36 16 12 .20 .60 3-5 4 0 .700 3-5 4 0 2.200 2-5 4 2.000R 3.706 2-5 4 2.000R 5.680 7.664 1-5 3 2.800R
Ax Spo Loo On Ax	10 Base 10 Bas	XXX' a1 a2 a3 G N B M B M G N B M B M G N B M B M G N B M B M G N B M B M B M B M B M B M B M B M B M B	32 16 100 .225 .675 3-5 4 0 .788 3-5 4 0 2.475 2-5 4 1.500R 4.568 2-5 4 1.500R 9.661 1-5 3	32 16 8 .10 .30 .60 2 0 .750 3-5 4 0 2.200 2-5 3 0 4.350 2-5 3 0 6.600 1-5 3 1.2008 8.929 1-5 3 1.2008	32 16 8 .10 .40 .50 2 2 0 1.000 2-3 2.178L 2.206 2-5 3 .664R 6.409 1-5 2 2.204L 8.793 1-5 2 2.204L 11.277	32 16 8 .20 .20 .60 3-5 4 0 .700 3-5 4 0 2.200 2-5 4 1.500R 6.045 1-5 3 2.000R 1.15 1.500R 1.50	32 16 8 .20 .30 .50 .750 3–5 4 0 1.832 2–5 3 .24TR 3.800 2–5 3 .24TR 3.800 1–5 8.035 1–5 1–5 1–5 1–5 1–5 1–5 1–5 1–	32 16 8 20 .40 .40 .40 .40 2 2 0 1.000 2 3 2 .998L 2.160 2-5 2 2.996L 3.842 1-5 2 .795L 6.021 1-5 2 .795L 1-5 1-5 2 .795L 1-5 1-5 1-5 1-5 1-5 1-5 1-5 1-5	36 16 12 100 .225 .675 3-5 4 0 .788 3-5 4 0 2.475 2-5 4 2.000R 6.390 2-5 4 2.000R 8.622 1-5 3 1.400R 10.933	36 16 12 10 30 .60 2 2 0 .7560 3-5 4 0 2.200 2-5 3 .667R 3.763 2-5 3 .667R 8.258 1-5 3 2.000R	36 16 12 10 .40 .50 2 0 1.000 2 2 0 2.000 2-5 3 1.552R 3.422 2-5 3.205L 7.900 1-5 2 3.205L 10.366	36 16 12 20 .60 3-5 4 0 .700 3-5 4 0 2.200 2-5 4 2.000R 3.706 2-5 4 2.000R 5.680 2-5 4 2.000R 7.664 1-5 3 2.800R 9.931
Ax Spo Loo On Ax	10 Base 10 Bas	XXX' a1 a2 a3 GN BM GN B	32 16 8 100 225 .675 3-5 4 0 .788 3-5 4 0 2.475 2-5 4.568 2-5 4.500R 4.568 2-5 3.750R 9.061 1-5 3.750R 1.559 1-5 3.750R 1.559	32 16 8 .10 .30 .60 .2 2 0 .750 3–5 4 0 2.200 2-5 3 0 4.350 2-5 3 1.200R 8.929 1-5 3 1.200R 1	32 16 8 8 .10 .40 .50 2 2 0 1.000 2-3 2.1178L 2.206 2-5 3.664R 4.162 2-5 3.664R 6.409 1-5 2.204L 8.793 1-5 2.204L 11.277 1-5 2.204L	32 16 8 .20 .20 .60 3-5 4 0 .700 3-5 4 0 2.200 2-5 4 1.500R 4.060 2-5 4 1.500R 8.180 1-5 3 2.000R 8.180 1-5 3 2.000R 8.180 1-5 3 3.000R 8.180 1-5 3 3.000R 8.180 1.760	32 16 8 8 .20 .30 .50 .50 .750 3-5 4 0 1.832 2-5 3.800 2-5 3.800 1.55 3.247R 3.800 1.55 3.247R 3.800 1.55 3.247R 3.800 1.55 3.247R 3.800 1.55 3.247R 3.800 1.55 3.247R 3.800 1.55 3.247R 3.800 1.55 3.247R 3.800 1.55 3.247R 3.800 1.55 3.247R 3.800 1.55 3.247R 3.800 1.55 3.247R 3.800 1.55 3.247R 3.800 1.55 3.247R 3.800 1.55 3.247R 3.800 1.55 3.800	32 16 8 20 .40 .40 .40 .40 .2 2 0 1.000 2 3 2988L 2.160 2-5 2 2.996L 3.842 1-5 2 795L 6.021 1-5 2 795L 1-5 2 1-5 1-5 2 2 2 2 1-5 2 1-5 2 2 2 1-5 2 1 2 2 2 2 2 2 1 2 2 2 2 2 2 2 2 2 2 2 2 2	36 16 12 1100 .225 .675 3-5 4 0 .788 3-5 4 0 2.475 2-5 4 2.000R 4.170 2-5 4 2.000R 6.390 2-5 4 2.000R 8.622 1-5 3 1.400R 1.000R	36 16 12 10 .30 .60 2 2 0 .750 3-5 4 0 2.200 2-5 3.667R 3.763 2-5 3 .667R 6.011 2-5 3 667R 8.258 1-5 3 2.000R 10.667 1-5 3	36 16 12 10 .40 .50 2 2 0 1.000 2-5 3 1.552R 3.422 2-5 3.452R 5.654 1-5 2 3.205L 7.900 1-5 2 3.205L 10.366 1-5 2	36 16 12 .20 .60 3-5 4 0 .700 3-5 4 0 2.200 2-5 4 2.000R 3.706 2-5 4 2.000R 5.684 1-5 3 2.800R 9.931 1-5 3
Ax Spo Loo On Ax	1. Base le acing ad les 10 20 30 40 60	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	32 16 100 225 .675 3-5 4 0 .788 3-5 4 0 2.475 2-5 4 1.500R 4.568 2-5 4 1.500R 9.661 1-5 3 .750R 1.550R 1.550R 1.550R	32 16 8 .10 .30 .60 2 2 0 .750 3–5 4 0 2.200 2.25 3 0 4.350 2-5 3 0 6.600 1-5 3 1.200R 8.929 1-5 3 1.200R 11.424 1-5	32 16 8 8 .10 .40 .50 2 2 0 1.000 2-3 2.206 2-5 3.664R 4.162 2-5 3.664R 2-5 3.73 2-204L 8.793 1-5 2.204L 1.277 1-5	32 16 8 .20 .20 .60 3-5 4 0 2.200 2-5 4 1.500R 4.060 2-5 4 1.500R 8.180 1-5 3 2.000R 1.060R 1.060R	32 16 8 .20 .30 .50 2 2 0 .750 3–5 4 0 1.832 2–5 3 .247R 3.800 1–5 8.035 1–5 3 2.596R 8.035 1–5 3 1.596R 1.	32 16 8 .20 .40 .40 .40 .2 2 0 1.000 2.3 .298L 2.160 2-5 2.996L 3.842 1-5 2.795L 6.021 1-5 2.795L 8.518 1-5 2.795L 1.000 1.	36 16 12 100 225 .675 3-5 4 0 .788 3-5 4 0 2.475 2-5 4 2.000R 6.390 2-5 4 2.000R 8.622 1-5 3 1.400R 10.00R	36 16 12 10 30 .60 .60 2 2 0 .750 3-5 4 0 2.200 2-5 3 .667R 3.763 3 .667R 6.011 2-5 3 2.000R 10.667 1-5	36 16 12 10 .40 .50 2 2 0 1.000 2 2 0 2.000 2-5 3 1.552R 5.654 1-5 2 3.205L 7.900 1-5 2 3.205L 10.366 1-5	36 16 12 20 .20 .20 .3-5 4 0 .700 3-5 4 0 2.200 2-5 4 2.000R 3.706 2-5 4 2.000R 7.664 1-5 3 2.800R 9.931 1-5
Ax Spo Loo On Ax	10. Base le acing ad les 10 20 30 40 60 80	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	32 16 8 100 225 .675 3–5 4 0 .788 3–5 4 0 2.475 2–5 4 1.500R 4.560R 4.6.800 1–5 3.750R 9.061 1–5 3.750R 1.559 1.559 1.559 1.557 1.508	32 16 8 .10 .30 .60 .2 2 0 .750 3–5 4 0 2.200 2-5 3 0 4.350 2-5 3 0 6.600 1-5 3 1.200R 1.424 1-5 3 1.200R 16.418	32 16 8 8 .10 .40 .50 2 2 0 1.000 2-3 2 1.178L 2.206 2-5 3 .664R 4.162 2-5 3 .664R 6.409 1-5 2 2.204L 11.277 1-5 2 2.204L 11.277 1-5 2 2.204L 11.277 1-5 2 2.206L 1.277 1.277 1.577	32 16 8 .20 .20 .60 3-5 4 0 .700 3-5 4 0 2.200 2-5 4 1.500R 4.060 2-5 4 1.500R 8.180 1-5 3 2.000R 8.180 1-5 3 2.000R 1.567 1-5 3 2.000R 1.567 1-5 3 2.000R 1.567	32 16 8 .20 .30 .50 .50 2 2 0 .750 3–5 4 0 1.832 2–5 3 .247R 3.800 2–5 3 .247R 5.800 1–5 8.035 1–5 3 2.596R 10–513 10–513 10–513 10–513 10–513 10–513 10–514 10–514 10–515	32 16 8 20 .40 .40 .40 .40 .2 2 0 1.000 2 3 2988L 2.160 2-5 2 2.996L 3.842 1-5 2 795L 8.518 1-5 2 .795L 11.016 1 5 2 .795L 11.016 1 5 2 .795L 1.016 1.021 1	36 16 12 1100 .225 .675 3-5 4 0 .788 3-5 4 0 2.475 2-5 4 2.000R 4.170 2-5 4 2.000R 6.390 2-5 4 2.000R 8.622 1-5 3 1.400R 10.933 1.400R 10.933 1.400R 15.925 1-5	36 16 12 10 .30 .60 2 2 0 .750 3-5 4 0 2.200 2-5 3.667R 3.763 2-5 3.667R 8.258 1-5 3 2.000R 10.667 1-5 3 2.000R 15.650R	36 16 12 10 40 .50 2 2 0 1.000 2-5 3 1.552R 3.422 2-5 3 1.552R 3.422 2-5 3 2.552R 1.054 1-5 2 3.205L 10.366 1-5 2 3.205L 1.0366 1-5 2 3.205L 1.5328	36 16 12 .20 .60 .20 .50 .700 3-5 4 0 .700 2-5 4 2.000R 2-5 4 2.000R 5.680 2-5 4 2.000R 7.664 1-5 3 2.800R 9.931 1-5 3 2.800R 1.4898 1-5
WI Axx Sport Loss On Ax	1. Base le acing ad les 10 20 30 40 60	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	32 16 8 100 .225 .675 3-5 4 0 .788 3-5 4 0 2.475 2-5 4 1.500R 4.5680 1-5 3 .750R 1.557 1-5 3 .750R 1.550R 1.550R	32 16 8 .10 .30 .60 2 2 0 .750 3-5 4 0 2.200 2-5 3 0 6.600 1-5 3 1.200R 8.929 1-5 3 1.200R 8.911 1.424 1-5 3 1.200R 1.455	32 16 8 .10 .40 .50 2 2 0 1.000 2-3 2 1.178L 2.206 2-5 364R 6.409 1-5 2.204L 8.793 1-5 2.204L 11.277 1-5 2.204L 16.257 1-5 2.204L 16.257	32 16 8 .20 .20 .60 3-5 4 0 2.200 2-5 4 1.500R 4.060 2-5 4 1.500R 3-5 4.060 2-5 4.060 1-5 3.000R 1-5 3.000R 1-5 3.000R 1-5 3.000R 1-5 3.000R 1-5 3.000R 1-5 3.000R 1.500R	32 16 8 .20 .30 .50 .750 3-5 4 0 1.832 2-5 3.840 2-5 3.247R 5.800 1-5 3.247R 5.906R 8.035 1-5 3 2.596R 10.51 10	32 16 8 .20 .40 .40 .40 .40 .2 .2 .0 1.000 2.3 2 .998L 2.160 2-5 2 2.998L 3.842 1-5 2 .795L 8.518 1-5 2 .795L 8.518 1-5 2 .795L 8.11016 1.0106	36 16 12 100 225 675 4 0 .788 3-5 4 0 2.475 2-5 4 2.000R 6.390 2-5 4 2.000R 8.622 1-5 3 1.400R 10.933 1.5 3 1.400R 15.925 1-5 3	36 16 12 10 30 .60 .60 2 2 0 .750 3-5 4 0 2.200 2-5 3.667R 8.763 2-5 3.667R 8.258 1-5 3.000R 10.650	36 16 12 10 .40 .50 2 2 0 1.000 2 2 0 2.000 2-5 3 1.552R 3.422 2-5 3.205L 7.900 1-5 2 3.205L 10.366 1-5 2 3.205L 15.323 1-5 2 3.205L 10.366	36 16 12 20 20 20 60 3-5 4 0 700 3-5 4 0 2.200 2-5 4 2.000R 2-5 4 2.000R 7.664 1-5 3 2.800R 9.931 1-5 3 2.800R 14.898 1-5 3
Ax Spo Loo On Ax	10. Base le acing ad les 10 20 30 40 60 80	XX' a1 a2 a3 GNBM GNBM GNBM GNBM GNBM GNBM GNBM GNBM	32 16 8 100 .225 .675 4 0 .788 3 -5 4 0 2.475 2-5 4 1.500R 6.800 1-5 3 .750R 9.061 1-5 3 .750R 1.559 1-5 3 .750R 1.559 1-5 3 .750R	32 16 8 .10 .30 .60 .2 2 0 .750 3–5 4 0 2.200 2-5 3 0 4.350 2-5 3 0 6.600 1-5 3 1.200R 1.424 1-5 3 1.200R 16.418	32 16 8 8 .10 .40 .50 2 2 0 1.000 2-3 2 1.178L 2.206 2-5 3 .664R 4.162 2-5 3 .664R 6.409 1-5 2 2.204L 11.277 1-5 2 2.204L 11.277 1-5 2 2.204L 11.277 1-5 2 2.206L 1.277 1.277 1.577	32 16 8 .20 .20 .60 .700 3-5 4 0 2.200 2-5 4 1.500R 6.045 1-5 3 2.000R 8.180 1-5 3 2.000R 1-5 3 2.000R 8.180 1-5 3 2.000R 8.180 1-5 3 3 3.000R 8.180 1-5 3 3.000R 8.180 1-5 3 3.000R 8.180 1-5 3 3.000R 8.180 1.500R 1	32 16 8 .20 .30 .50 .50 2 2 0 .750 3–5 4 0 1.832 2–5 3 .247R 3.800 2–5 3 .247R 5.800 1–5 8.035 1–5 3 2.596R 10–513 10–513 10–513 10–513 10–513 10–513 10–514 10–514 10–515	32 16 8 20 .40 .40 .40 .40 .2 2 0 1.000 2 3 2988L 2.160 2-5 2 2.996L 3.842 1-5 2 795L 8.518 1-5 2 .795L 11.016 1 5 2 .795L 11.016 1 5 2 .795L 1.016 1.021 1	36 16 12 1100 .225 .675 3-5 4 0 .788 3-5 4 0 2.475 2-5 4 2.000R 4.170 2-5 4 2.000R 6.390 2-5 4 2.000R 8.622 1-5 3 1.400R 10.933 1.400R 10.933 1.400R 15.925 1-5	36 16 12 10 30 .60 .60 2 2 0 .750 3-5 4 0 2.200 2-5 3 .667R 6.011 2-5 3 .667R 8.258 1-5 3 2.000R 10.667 1-5 3 2.000R 15.650	36 16 12 10 40 .50 2 2 0 1.000 2-5 3 1.552R 3.422 2-5 3 1.552R 3.422 2-5 3 2.552R 1.054 1-5 2 3.205L 10.366 1-5 2 3.205L 1.0366 1-5 2 3.205L 1.5328	36 16 12 .20 .60 .20 .50 .700 3-5 4 0 .700 2-5 4 2.000R 2-5 4 2.000R 5.680 2-5 4 2.000R 7.664 1-5 3 2.800R 9.931 1-5 3 2.800R 1.4898 1-5

1-5

2 3.990L

 $_2^{1-5}$

3.990L

1-5

2

3.990L

17.969

13.009

8.075

5.986

5.582

2-5

3 3.244R

7.542

 $^{1-5}_{3}$

6.592R

11.948

1-5

3

6.592R

16.839

TABLE 7.5 (Continued)

Truck N		71	72	73	74	75	76	77	78	79	80
Wh. Bas	e L	36	36	40	40	40	40	40	40	44	44
Axle	X	16	16	16	16	16	16	16	16	16	16
Spacing		12	12	16	16	16	16	16	16	20	20
Load	a ₁	.20	.20	.100	.10	.10	.20	.20	.20	.100	.10
On	\mathbf{a}_2	.30	.40	.225	.30	.40	.20	.30	.40	.225	.30
Axles	\mathbf{a}_3	.50	.40	.675	.60	.50	.60	.50	.40	.675	.60
1	G	2	2	3 5	2	2	3-5	2	2	3-5	2
10	76.7	a	e e			0		o	0	4	0

W	h. Base	2 L	36	36	40	40	40	40	40	40	44	44
Ax	le acing	X X'	16 12	16 12	16 16	16 16	16 16	16 16	16 16	16 16	16 20	16 20
On	ad les	a ₁ a ₂ a ₃	.20 .30 .50	.20 .40 .40	.100 .225 .675	.10 .30 .60	.10 .40 .50	.20 .20 .60	.20 .30 .50	.20 .40 .40	.100 .225 .675	.10 .30 .60
	10	G N B M	2 2 0 .750	2 2 0 1.000	3 5 4 0 .788	2 2 0 .750	2 2 0 1.000	3-5 4 0 .700	2 2 0 .750	2 2 0 1.000	3-5 4 0 .788	2 2 0 .750
	20	G N B M	3-5 4 0 1.832	2 2 0 2.000	$\begin{array}{c} 3-5 \\ 4 \\ 0 \\ 2.475 \end{array}$	$\frac{3.5}{4}$ 0 2.200	$\begin{array}{c} 2 \\ 2 \\ 0 \\ 2.000 \end{array}$	$\begin{array}{c} 3 - 5 \\ 4 \\ 0 \\ 2.200 \end{array}$	$ \begin{array}{r} 3 \ 5 \\ 4 \\ 0 \\ 1.832 \end{array} $	$\begin{array}{c} 2 \\ 2 \\ 0 \\ 2.000 \end{array}$	3-5 4 0 2.475	3-5 4 0 2.200
	30	G N B M	2-5 3 .997R 3.226	2-4 2 2.796 L 3.312	3-5 4 0 4.163	35 4 0 3.700	3-5 4 0 3.082	3-5 4 0 3.700	$\begin{array}{c} 3-5 \\ 4 \\ 0 \\ 3.082 \end{array}$	1-2 2 2.667R 3.043	3-5 4 0 4.163	3-5 4 0 3.700
Fret	40	G N B M	2-5 3 .997R 5.218	1-5 2 1.594 I , 5.270	2-5 4 2.500R 5.990	2-5 3 1.333R 5.440	2-5 3 2.440R 4.934	2-5 4 2.500R 5.325	2-5 3 1.746R 4.661	1-4 2 .917L 4.684	3-5 4 0 5.850	3-5 4 0 5.200
Span-Fret	50	G N B M	2-5 3 .997R 7.214	1-5 2 1.594L 7.757	2-5 4 2.500R 8.213	$\begin{array}{c} 2-5 \\ 3 \\ 1.333 \mathrm{R} \\ 7.682 \end{array}$	2-5 3 2.440R 7.158	2-5 4 2.500R 7.300	2–5 3 1.746R 6.648	$^{1-5}_{2}_{2.393L}_{7.022}$	2-5 4 3.000R 7.812	2-5 3 2.000R 7.122
	60	G N B M	15 3 3.595R 9.617	1-5 2 1.594L 10.249	2-5 4 2.500R 10.444	1-5 3 2.800R 9.931	1-5 2 4.206L 9,489	2-5 4 2.500R 9.283	1-5 3 4.595R 8.754	1-5 2 2.393L 9.503	$\begin{array}{c} 2-5 \\ 4 \\ 3.000 \mathrm{R} \\ 10.035 \end{array}$	2-5 3 2.000R 9.360
	80	G N B	1-5 3 3.595R 14.563	1–5 2 1.594L 15,238	1-5 3 2.050R 15.303	1-5 3 2.800R 14.898	1-5 2 4.206L 14.415	1-5 3 3.600R 14.162	1-5 3 4.595R 13.666	1-5 2 2.393L 14.479	1-5 3 2.700R 14.691	1-5 3 3.600R 14.162
	100	G N B M	1–5 3 3.595R 19.531	1-5 2 1.594L 20.232	1-5 3 2.050R 20.293	1-5 3 2.800R 19.878	1-5 2 4.206L 19.371	1-5 3 3.600R 19.130	1–5 3 4.595R 18.614	$^{1-5}_{2}_{2.393L}_{19.465}$	1-5 3 2.700R 19.673	1-5 3 3.600R 19.130
	1. 37		0.1	00	(10)		0.5					

100	G N B M	1–5 3 3.595R 19.531	1-5 2 1.594L 20.232	1-5 3 2.050R 20.293	1-5 3 2.800R 19.878	1-5 2 4.206L 19.371	$^{1-5}$ 3 $^{3.600R}$ $^{19.130}$	1-5 3 4.595R 18.614	1-5 2 2.393L 19.465	1-5 3 2.700R 19.673	1-5 3 3.600R 19.130
Truck N	ο,	81	82	83	84	85	86	87	88	89	90
Wh. Bas	еL	44	44	44	44	48	48	48	48	48	48
Axle Spacing	X X'	16 20	16 20	16 20	16 20	16 24	16 24	16 24	16 24	16 24	16 24
Load On Axles	a1 a2 a3	.10 .40 .50	.20 .20 .60	.20 .30 .50	.20 .40 .40	.100 .225 .675	.10 .30 .60	.10 .40 .50	.20 .20 .60	.20 .30 .50	.20 .40 .40
10	G	2	35	2	2	3 5	2	2	3 - 5	2	2

	G	2	35	2	2	3 - 5	2	2	3 -5	2	2
10	N	2	4	2	2	4	2	2	4	2	2
	\mathbf{B}	0	0	0	0	0	0	0	0	0	0
	M	1.000	.700	.750	1.000	.788	.750	1.000	.700	.750	1.000
	G	2	35	3-5	2	3-5	3-5	2	35	3-5	2
20	N	2	4	4	2	4	4	2	4	4	2
	В	0	0	0	0	0	0	0	0	0	0
	M	2.000	2.200	1.832	2.000	2.475	2.200	2.000	2.200	1.832	2.000
	G	3-5	3 5	3-5	1-2	35	35	3-5	3-5	3-5	1-2
30	N	4	4	4	2	4	4	4	4	4	2
	В	0	0	0	2.667R	0	0	0	0	0	2.667R
	M	3.082	3.700	3.082	3.043	4.163	3.700	3.082	3.700	3.082	3.043
	G	3-5	35	3-5	1-2	3-5	3–5	3-5	3-5	3-5	1-2
40	N	4	4	4	2	4	4	4	4	4	2
	В	0	0	0	2.667R	0	0	0	0	0	2.667R
	M	4.332	5.200	4.332	4.507	5.850	5.200	4.332	5.200	4.332	4.507
	G	2-5	2-5	2-5	1-4	3-5	3-5	2–5	3-5	3-5	1-2
50	N	3	4	3	2	4	4	3	4	4	2
	\mathbf{B}	3.328R	$3.000\mathbf{R}$	2.495R	1.531L	0	0	4.216R	0	0	2.667R

7.538

2-5

3.500R

9.634

1-5 3 3.350R

14.090

1--5

3.350R

19.062

4

6.700

2-5

3 2.667R

8.807

1-5 3 4.400R

13.442

1-5

3

4.400R

18.394

5.772

3 4.216R

7.969

1–5 2 6.208L

12.674

1-5

2

6.208L

17.577

2-5

6.700

2-5

4

3.500R

1-5

5.200R

12.738

1-5

3 5.200R

17.670

8.563

12.794

17.716

6.340

1-5

2 3.191L

8.779

 $\frac{1-5}{2}$

3.191L

13.736

1-5

2

3.191L

18.711

unde	50	G N B M	2-5 3 3.328R 6.451	2-5 4 3.000R 6.944	2-5 3 2.495R 6.100
	60	G N B M	2-5 3 3.328R 8.667	2-5 4 3.000R 8.920	2-5 3 2.495R 8.083
	80	G N B	1-5 2 5,207L	1-5 3 4.400R	1-5 3 5.593R

13.532

1-5

2

5.207L

18.464

13.442

18.394

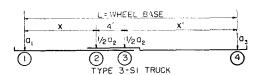
1-5 3 3 4.400R 5.593R

M

100 N B

Table 7.6

CONTROLLING CONDITIONS AND MAXIMUM MOMENTS IN SIMPLE SPANS PRODUCED BY THE TYPE 3-S1 TRUCKS WEIGHING ONE KIP EACH



Ninety variations in the Type 3-S1 truck are given in this Table. Each truck number, from 1 to 90, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

Tru	ick No	· ·	1	2	3	4	5	6	7	8	9	10
Wh	. Base	e L	24	24	24	24	24	24	28	28	28	28
Ax		X	8	8	8	8	8	8	8	8	8	8
	cing	X'	12	12	12	12	12	12	16	16	16	16
Loa		\mathbf{a}_1	.10	.10	.10	.20	.20	.200	.10	.10	.10	.20
On Ax		a ₂	.40 .50	.50 .40	.60 .30	.40 .40	.50 .30	.534 .266	.40 .50	.50 .40	.60 .30	.40 .40
44.0	10.5	G	4	4	2-3	4	2-3	2-3	4	4	2-3	4
ı	10	N	4	4	3	4	3	3	4	4	3	4
1	10	B	Ô	õ	1.000R	Õ	1.000R	1.000R	ō	Õ	1.000R	ō
		M	1.250	1.000	.960	1.000	.800	.854	1.250	1.000	.960	1.000
		G	4	13	1-3	4	1-3	1-3	4	1-3	1-3	4
- 1	20	N	4	2	2	4	2	2	4	2	2	4
- 1		B M	$\frac{0}{2.500}$	0.167L 0.101	2.503	$\frac{0}{2.000}$	$.429\mathbf{R} \\ 2.207$	363R 2.341	$\substack{0\\2,500}$.167L 2.101	.286L 2.503	$\frac{0}{2.000}$
			2.300	1-4	1-4	2-4	1-4	$\frac{2.541}{1-3}$	3-4	1-3	1-3	1-3
Ì	30	G N	2-4 4	3	3	2-4 4	$\frac{1-4}{3}$	$\frac{1-3}{2}$	3-4 4	2	2	$\frac{1-3}{2}$
1	30	B	3.111R	1.300L	.600L	3.500R	.100L	.363R	2.286R	.167L	.286L	.667R
1		M	4.241	4.056	4.512	3.526	4.000	4.174	3.772	3.600	4.252	3.309
		G	2-4	1 -4	1-4	1-4	1-4	1-4	2-4	1-4	1-4	1-4
-	40	N	4	3	3	3	3	3	4	3	3	3
ee		В	3.111R	1.300L	.600L	.800L	.100L	.132R	4.000R	2.100L	1.200L	1.600L
Span-Feet		M	6.418	6.542	7.009	6.016	6.500	6.664	5.760	5.810	6.436	5.264
ar	50	G N	$^{1-4}$	1-4 3	$^{1-4}$	$^{1-4}_{3}$	$^{1-4}_{3}$	1-4	1–4 4	1-4 3	1–4 3	1-4
Š	90	В	4.000R	1.300L	$^3_{.600}$ L	.800L	.100L	$^3_{.132 m R}$	5.000R	2.100L	1.200L	3 1.600L
		M	8.820	9.034	9.507	8.513	9.000	9.164	8.000	8.288	8.929	7.751
		G	1-4	1-4	1-4	1–4	1-4	1-4	1-4	1-4	1-4	1-4
	60	N	4	3	3	3	3	3	4	3	3	3
		\mathbf{B}	4.000R	$1.300 \mathbf{L}$.600L	.800L	.100L	.132R	5.000R	2.100L	1.200L	1.600L
j		M	11.267	11.528	12.006	11.011	11.500	11.664	10.417	10.774	11.424	10.243
		G	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4
	80	N B	4	3	3	3	3	3	4	3	3	3
		M	4.000R 16.200	1.300L 16.521	.600L 17.005	.800L 16.008	.100L 16.500	.132R 16.664	5.000R 15.313	2.100L 15.755	1.200L 16.418	1.600L 15.232
		-G	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4
	100	N	4	3	3	3	3	3	4	3	3	3
		В	4.000R	1.300L	.600L	.8001	.100L	.132R	5.000R	2.100L	1.200L	1.600L
47 10000		M	21.160	21.517	22.004	21.006	21.500	21.664	20.250	20.744	21.414	20,226

All dimensions are in feet and moments are in kip-feet.

a1, a2, and a3-Represent the ratio of gross vehicle weight on axles.

G-Axle group causing maximum moment, thus, 1-3 means axles 1, 2, and 3.

N-Number of critical axle under which maximum moment occurs.

B-Distance to right or left of mid-span to point of maximum moment.

M-Maximum moment.

ruck			Continued 11	12	13	14	15	16	17	18	19	20
Vh. B		L	28	28	32	32	32	32	32	32	36	36
xle pacin	ıg	X X'	8 16	8 16	$\frac{8}{20}$	$\frac{8}{20}$	$\frac{8}{20}$	$\frac{8}{20}$	$\frac{8}{20}$	$\frac{8}{20}$	$\frac{8}{24}$	8 24
oad		a ₁	.20	.200	.10	.10	.10	.20	.20 .50	.200 .534	.10	.10
n xles		a ₂ a ₃	.50 .30	.534 .266	.50	.40	.60 .30	.40	.30	.266	.40 .50	.50 .40
1	0	G N	$^{2 ext{}3}_3$	$\frac{2-3}{3}$	4	4 4	$^{2-3}_{3}$	$\frac{4}{4}$	$\frac{2-3}{3}$	$^{2-3}_3$	4 4	4 4
		B M	1.000R $.800$	1.000R .854	$\substack{0\\1.250}$	$\begin{smallmatrix} 0\\1.000\end{smallmatrix}$	1.000R .960	$\frac{0}{1.000}$	1.000R .800	1.000R .854	$0 \\ 1.250$	0 1.00
		G	1-3	1 -3	4	13	13	4	13	1-3	4	1-3
2	80	N B	$^{2}_{.429 m R}$	2 .363R	$\frac{4}{0}$	$^2_{.167}{ m L}$.286L	4 0	2 .429 R	$^2_{.363 m R}$	$\frac{4}{0}$	$\frac{2}{.167}$
		M G	13	2.341 1-3	$\frac{2.500}{4}$	2.101 1-3	2.503 13	2.000	$\frac{2.207}{1-3}$	$\frac{2.341}{1-3}$	2.500	2.1 1-3
3	30	N B	2	2	4	2	2	2	2	2	4	2
		M	.429 R 3.955	.363R 4.174	$\substack{0\\3.750}$.167L 3.600	$\frac{.286L}{4.252}$	3.309	.429R 3.955	.363R 4.174	$\substack{0\\3.750}$.167 3.6
4	10	G N	$^{1-4}_3$	$\frac{1-4}{3}$	$_{4}^{3-4}$	$^{1-4}_3$	$_{2}^{1-3}$	$\frac{1}{2}$	$^{1-3}_2$	$^{1-3}_{2}$	4	1-3 2
5		B M	.700L 5.912	.402L 6.135	2.857R 5.143	2.900L 5.110	0.286L 0.002	.667R 4.807	0.429R 0.5703	.363R 6.008	0 5.000	0.167 0.167
		G	1-4	1-4	2-4	1-4	1 -4	1 4	1-4	1-4	2-4	1-4
. 5	50	N B	$^{3}_{.700L}$	3 $^{.402}$ L	$^{4}_{4.889\mathrm{R}}$	$^3_{2.900 ext{L}}$	$^{3}_{1.800 m L}$	$^{3}_{2.400\mathrm{L}}$	$^3_{1.300 m L}$	3 .935L	4 5.778R	$\frac{3}{3.700}$
		M	8.410	8.634	7.280	7.568	8.365	7.015	7.834	8.115	6.651	6.8
e	60	G N	1-4 3	1-4 3	1-4 4	1-4 3	1-4 3	1-4 3	3	1-4 3	1–4 4	1-4 3
i		B M	.700L 10.908	.402 L 11.133	$_{9.600}^{6.000R}$	2.900L 10.040	1.800L 10.854	$\frac{2.400 L}{9.496}$	1.300L 10.328	.935L 10.612	$7.000\mathbf{R} \\ 8.817$	$\frac{3.706}{9.3}$
5	30	G N	1–4 3	1-4	$^{1-4}_{4}$	1-4	1-4 3	1-4 3	1-4	1-4	1-4 4	1-4 3
		B M	.700L	.402L	6.000R	2.900L	1.800L 15.841	2.400 L	1.300L	.935L	7.000R	3.70
		G	15.906 1-4	16.133	14.450 1-4	15.005 1-4	1-4	14.472	15.321 1-4	15.608 1–4	13.613 1-4	14.2 1-4
10	00	N B	$^{3}_{.700L}$	$^{3}_{.402L}$	$^{4}_{6.000\mathrm{R}}$	$^{3}_{2.900 L}$	$^{3}_{1.800 m L}$	$\frac{3}{2.400 L}$	3 1.300 L	$^{3}_{.935L}$	$^4_{7.000\mathrm{R}}$	$\frac{3}{3.70}$
		M	20.905	21.132	19.360	19.984	20.832	19.458	20.317	20.606	18,490	19.2
ruck Vh. E	100		21 36	22 36	$\frac{23}{36}$	36	25 40	$\frac{26}{40}$	27 40		29 40	30
xle		\mathbf{x}^{-}	8	8	8	8	8	8	8	8	8	
pacii oad	ng	X'	.10	.20	.20	.200	.10	.10	.10	.20	.20	.20
n xles		a ₂	.60 .30	.40 .40	.50 .30	.534 .266	.40 .50	.50 .40	.60	.40	.50	.53
T	• • • •	\mathbf{G}^{-}	2-3	4	2-3	2–3	4	4	2-3	4	2-3	2-3
	10	N B	1.000R	4 0	3 1.000R	1.000R	4 0	4 0	1.000R	4 0	3 1.000R	1.00
		M G	$\frac{.960}{1-3}$	1.000	.800 1-3	.854 1-3	$\frac{1.250}{4}$	1.000 1-3	$\frac{.960}{1-3}$	1.000	.800 1-3	 1–8
1 :	20	Ñ B	.286L	4	.429R	$^2_{363\mathrm{R}}$	4	2 .167L	.286L	4	2 .429R	.36
İ		M	2.503	2.000	2.207	2.341	2.500	2.101	2.503	2.000	2.207	2.5
:	30	G N	${\overset{1-3}{2}}$	$^{1-3}_2$	$\frac{1-3}{2}$	1-3 2	4	$\frac{1-3}{2}$	$^{1-3}_2$	1-3 2	$\frac{1-3}{2}$	1-3 2
		B M	$\begin{array}{c} .286 \mathrm{L} \\ 4.252 \end{array}$	3.309	3.958	363R 4.174	$\frac{0}{3.750}$	3.600	$\begin{array}{c} .286 \mathrm{L} \\ 4.252 \end{array}$	3.309	3.955	.36 4.1
	40	G N	1–3 2	1-3 2	1-3 2	1-3 2	4	1-3 2	1-3	1–3	1-3	1-3
Span-rec	40	В	.286L	.667R	.429R	.363R	4 0	.167L	.286L	.667R	2 .429R	.36
[<u>M</u>	6.002	$\frac{4.807}{1-4}$	5.703 1-3	$\frac{6.008}{1-3}$	5.000 4	5.100 1-3	6.002 1-3	4.807 1-3	5.703 1–3	6.0
Ď,	50	N B	3 2.400L	3 3.200L	2 .429R	.363R	4	.167L	2 .286L	2 .667R	2 .429R	.36
		M	7.815	6.305	7.453	7.843	6.250	6.600	7.751	6.305	7.453	7.8
	60	G N	$egin{smallmatrix} 1-4 \ 3 \end{smallmatrix}$	$\frac{1-4}{3}$	$^{1-4}_{3}$	14 3	$\frac{2-4}{4}$	$^{1-4}_{3}$	$\frac{1-4}{3}$	$^{1-4}_{3}$	$^{1-4}_{3}$	1-3 2
		B M	2.400I. 10.296	3.200L 8.771	1.900L 9.760	1.469L 10.099	6.667R 8.167	4.500L 8.638	3.000L 9.750	4.000L 8.067	2.500L 9.204	.36 9.6
		$^{-}G^{}$	1–4	1–4	1-4	1-4	1-4	1-4	1-4	1–4	1-4	1
	80	N B	$^3_{2.400 m L}$		3 1.900L	3 1.469L	$^{4}_{8.000R}$	$^{3}_{4.500\mathrm{L}}$	3.000L		$^3_{2.500 extbf{L}}$	$\frac{3}{2.00}$
		M	15.272	13.728	14.745	15.090	12.800	13.553	14.713 1-4	13.000 1-4	14.178	14.5
1	00	G N B	14 3 2.400L	1-4 3 3.200L	1-4 3 1.900L	1-4 3 1.469L	1-4 4	1-4 3 4.500L	3	3	1-4 3 2.500L	1-4 3 2.00
1 "							8.000R					

78 METHOD OF CONVERTING HEAVY MOTOR VEHICLE LOADS TABLE 7.6 (Continued)

TA	DLL	1.0 (Continue	u <i>)</i>								
	uck N		31	32	33	34	35	36	37	38	39	40
-	n. Bas		28	28	28	28	28	28	32	32	32	32
Ax	le acing	X X'	$\frac{12}{12}$	12 12	$\frac{12}{12}$	$\frac{12}{12}$	$\frac{12}{12}$	$\frac{12}{12}$	12 16	$\frac{12}{16}$	$\frac{12}{16}$	$^{12}_{16}$
Los		a ₁	.10	.10	.10	.20	.20	.200	.10	.10	.10	.20
On		\mathbf{a}_2	.40	.50	.60	.40 .40	.50	.534 $.266$	$.40 \\ .50$.50 $.40$.60	.40
Ax	ies	a ₃ G	,50 4	.40 4	$\frac{.30}{2-3}$	4	2-3	2-3	4	4	.30 2-3	
	10	N	4	4	3	4	3	3	4	4	3	4
		B M	$\frac{0}{1.250}$	$0 \\ 1.000$	1.000R .960	$\frac{0}{1,000}$	1.000R $.800$	1.000R $.854$	$\frac{0}{1.250}$	$\frac{0}{1,000}$	1.000R .960	$\frac{0}{1.000}$
		G	4	2-3	2-3	4	2-3	2-3	4	2-3	2-3	4
	20	N	4	3	3	4	3	3	4	3	3:	4
		B M	$\frac{0}{2.500}$	$1.000 \mathbf{R} \\ 2.025$	$1.000 \mathrm{R} \ 2.430$	$\frac{0}{2,000}$	1.000R 2.025	1.000R 2.163	$\frac{0}{2.500}$	$1.900R \\ 2.025$	1.000R 2.430	$\frac{0}{2.000}$
		G	2-4	2-4	2 4	2-4	2-4	24	3-4	13	1–3	3-4
	30	N B	$^{4}_{3.111R}$	$^{3}_{2.111L}$	$^{3}_{1.333 m L}$	$^4_{3.500 m R}$	$^{3}_{1.625 m L}$	3 $^{1.333}$ L	$^{4}_{2.286 m R}$	$^2_{.167 m R}$	2. 0	2.667R
		M	4.241	3,984	4.403	3.526	3.770	3.913	3.772	3.400	4.050	3.043
i		G	2–4	1-4	1-4	1-4	1-4	1-4	2-4	1-4	1-4	1-4
t e	40	$_{ m B}^{ m N}$	$^4_{3.111R}$	$^3_{1.100 \mathbf{L}}$	$^3_{.400 \mathbf{L}}$	$^3_{.400 \mathbf{L}}$	$^3_{.300 m R}$	$^{3}_{.532 m R}$	$^4_{4.000 m R}$	3 1.900L	$^{3}_{1.000L}$	3 1.200L
Fe		M	6.418	6.330	6.804	5.604	6.102	6.272	5.760	5,590	6.225	4.836
Span-Feet		G	1-4	1-4	14 3	1-4 3	1-4	$^{1-4}_{3}$	2-4	1-4	1-4	1-4
S	50	N B	$^4_{4.200 m R}$	$^{3}_{1.100 m L}$.400L	.400 L	$^3_{.300\mathrm{R}}$	$.532\mathrm{R}$	$^4_{4.000 m R}$	$^{3}_{1.900L}$	$1.000 \mathbf{L}$	$^3_{1.200 m L}$
		M	8.653	8.824	9.303	8,103	8.602	8.770	7.938	8.072	8.720	7.329
	60	G N	14 4	$^{1-4}_{3}$	$^{1-4}_{3}$	$^{1-4}_{3}$	$^{1-4}_{3}$	$\frac{1-4}{3}$	$^{\mathbf{1-4}}_{4}$	$^{1-4}_3$	$^{1-4}_{3}$	$\frac{1-4}{3}$
		В	4.200R	1.100L	.4001	.400L	300R	.532R	5.200R	1.900L	1.000L	1.200L
-		M	11.094	11.320	$\frac{11.803}{1}$	10.603	11.102	11.269	10.251	10.560	11.217	9.824
	80	G N	$^{1-4}_{4}$	$^{1-4}_3$	$\frac{1-4}{3}$	$^{1-4}_{3}$	$^{1-4}_{3}$	$^{1-4}_3$	1-4 4	$\frac{1-4}{3}$	1-4 3	$^{1-4}_3$
		\mathbf{B}	4.200R	1.100L	.400 L	.400 L	.300R	.532R	5.200R	1.900L	1.000L	1.200L
		 	16.021 1–4	16.315	$\frac{16.802}{1-4}$	$\frac{15.602}{1-4}$	16.101	$\frac{16.268}{1-4}$	15.138 1–4	$-\frac{15.545}{1-4}$	16.213 1–4	$\frac{14.818}{1-4}$
	100	N	4	3	3	3	3	3	4	3	3	3
		B M	4.200R 20.976	1.100L 21.312	.400L 21.802	20.602	$0.300 \mathrm{R}$ 21.101	0.532R 21.267	5.200R 20.070	1.900L 20.536	1.000L 21.210	1.200L 19.814
	ick No		41	42	43	44	45	46	47	48	49	50
	ı. Base		32	32	36	36	36	36	36	36	40	40
Ax		X			12	12	12	12	12	12	12	12
	ie	25.	12	12								
-	acing	X'	16	16	20	20	20	20	20	20	24	24
Los On	acing ad	X' a ₁ a ₂										
Los	acing ad	X' a ₁ a ₂ a ₃	.20 .50 .30	.200 .534 .266	.10 .40 .50	.10 .50 .40	.10 .60 .30	.20 .20 .40 .40	.20 .50 .30	.200 .534 .266	.10 .40 .50	.10 .50 .40
Los On	acing ad les	X' a ₁ a ₂ a ₃ G	.20 .50 .30 .2-3	.200 .534 .266 2-3	.10 .40 .50	.10 .50 .40	20 .10 .60 .30 2 -3	.20 .20 .40 .40	20 .20 .50 .30 2–3	20 .200 .534 .266 2-3	.10 .40 .50	.10 .50 .40
Los On	acing ad	X' a ₁ a ₂ a ₃ G N B	16 .20 .50 .30 2-3 3 1.000R	16 .200 .534 .266 2-3 3 1.000R	.10 .40 .50 4 4 0	20 .10 .50 .40 4 4 0	20 .10 .60 .30 2 -3 3 1.000R	.20 .20 .40 .40 .40	20 .20 .50 .30 2-3 3 1.000R	20 .200 .534 .266 2-3 3 1.000R	.10 .40 .50 4 4	.10 .50 .40
Los On	acing ad les	X' a ₁ a ₂ a ₃ G N B M	16 .20 .50 .30 2-3 3 1.000R .800	16 .200 .534 .266 2-3 3 1.000R .854	20 .10 .40 .50 4 4 0 1.250	20 .10 .50 .40 4 4 0 1,000	20 .10 .60 .30 2 -3 3 1.000R .960	20 .20 .40 .40 4 4 0 1.000	20 .20 .50 .30 2-3 3 1.000R .800	20 .200 .534 .266 2-3 3 1.000R .854	24 .10 .40 .50 4 4 0 1.250	24 .10 .50 .40 -4 4 0 1.000
Los On	acing ad les	X' a ₁ a ₂ a ₃ G N B	16 .20 .50 .30 2-3 3 1.000R	16 .200 .534 .266 2-3 3 1.000R	.10 .40 .50 4 4 0	20 .10 .50 .40 4 4 0	20 .10 .60 .30 2 -3 3 1.000R	.20 .20 .40 .40 .40	20 .20 .50 .30 2-3 3 1.000R	20 .200 .534 .266 2-3 3 1.000R	.10 .40 .50 4 4	.10 .50 .40
Los On	acing ad les	X' a1 a2 a3 G N B M G N B N B	16 .20 .50 .30 2-3 3 1.000R .800 2-3 3 1.000R	16 .200 .534 .266 2-3 3 1.000R .854 2-3 3 1.000R	20 .10 .40 .50 4 4 0 1.250 4 0	20 .10 .50 .40 4 4 0 1.000 2-3 3 1.000R	20 .10 .60 .30 2 -3 3 1.000R .960 2-3 3 1.000R	20 .20 .40 .40 4 4 0 1.000 4 0	20 .20 .50 .30 2-3 3 1.000R .800 2-3 3 1.000R	20 .200 .534 .266 2-3 3 1.000R .854 2-3 3 1.000R	24 .10 .40 .50 4 4 0 1.250 4 4	24 .10 .50 .40 4 4 0 1.000 2–3 3 1.000R
Los On	acing ad les	X' a1 a2 a3 G N B M G N B M	16 .20 .50 .30 2-3 3 1.000R .800 2-3 3 1.000R 2.025	16 .200 .534 .266 2-3 3 1.000R .854 2-3 3 1.000R 2.163	20 .10 .40 .50 4 4 0 1.250 4 0 2.500	20 .10 .50 .40 4 4 0 1.000 2-3 3 1.000R 2.025	20 .10 .60 .30 2 -3 3 1.000R .960 2-3 3 1.000R 2.430	20 .20 .40 .40 4 4 0 1.000 4 4 0 2.000	20 .20 .50 .30 2-3 3 1.000R .800 2-3 3 1.000R 2.025	20 .200 .534 .266 2-3 3 1.000R .854 2-3 3 1.000R 2.163	24 .10 .40 .50 4 4 0 1.250 4 0 2.500	24 .10 .50 .40 4 4 0 1.000 2–3 3 1.000R 2.025
Los On	acing ad les	X' a1 a2 a3 G N B M G N B M G N	16 .20 .50 .30 2-3 3 1.000R .800 2-3 3 1.000R 2.025	16 .200 .534 .266 2-3 3 1.000R .854 2-3 3 1.000R 2.163 1-3 2	20 .10 .40 .50 4 4 0 1.250 4 4 0 2.500	20 .10 .50 .40 4 4 0 1.000 2-3 3 1.000R 2.025 1-3 2	20 .10 .60 .30 2-3 3 1.000R .960 2-3 3 1.000R 2.430 1-3 2	20 .20 .40 .40 .40 .4 0 1.000 4 4 0 2.000 4	20 .20 .50 .30 2-3 3 1.000R .800 2-3 3 1.000R 2.025 1-3	20 .200 .534 .266 2-3 3 1.000R .854 2-3 3 1.000R 2.163	24 .10 .40 .50 4 4 0 1.250 4 0 2.500	24 .10 .50 .40 -4 4 0 1.000 2-3 3 1.0000R 2.025 1-3 2
Los On	acing ad les 10 20	X' a1 a2 a3 G N B M G N B M G N B M G N B M	16 .20 .50 .30 2-3 3 1.000R .800 2-3 3 1.000R 2.025 1-3 2	16 .200 .534 .266 2-3 3 1.000R .854 2-3 3 1.000R 2.163 1-3 2	20 .10 .40 .50 4 4 0 1.250 4 0 2.500	20 .10 .50 .40 4 4 0 1.000 2-3 3 1.000R 2.025 1-3 2 .167R	20 .10 .60 .30 2-3 3 1.000R .960 2-3 3 1.000R 2.430 1-3 2	20 .20 .40 .40 4 0 1.000 4 0 2.000	20 .20 .50 .30 2-3 3 1.000R .800 2-3 3 1.000R 2.025 1-3 2	20 .200 .534 .266 2-3 3 1.000R .854 2-3 3 1.000R 2.163 1-3 2	24 .10 .40 .50 4 4 0 1.250 4 0 2.500	24 .10 .50 .40 4 0 1.000 2–3 3 1.000R 2.025 1–3 2 .167R
Los On	acing ad les 10 20	A' a1 a2 a3 G N B M G N B M B M G N B M	16 .20 .50 .30 2-3 3 1.000R .800 2-3 3 1.000R 2.025	16 .200 .534 .266 2-3 3 1.000R .854 2-3 3 1.000R 2.163 1-3 2	20 .10 .40 .50 4 4 0 1.250 4 4 0 2.500	20 .10 .50 .40 4 4 0 1.000 2-3 3 1.000R 2.025 1-3 2	20 .10 .60 .30 2-3 3 1.000R .960 2-3 3 1.000R 2.430 1-3 2	20 .20 .40 .40 .40 .4 0 1.000 4 4 0 2.000 4	20 .20 .50 .30 2-3 3 1.000R .800 2-3 3 1.000R 2.025 1-3	20 .200 .534 .266 2-3 3 1.000R .854 2-3 3 1.000R 2.163	24 .10 .40 .50 4 4 0 1.250 4 0 2.500	24 .10 .50 .40 -4 4 0 1.000 2-3 3 1.0000R 2.025 1-3 2
Los On Ax	acing ad les 10 20	A' a1 a2 a3 G N B M G N B M G N B M G N B N B N B N B N B N B N B N B N B N	16 .20 .50 .30 .30 .30 .30 .3 1.000R .800 .800 .800 .800 .800 .800 .800	16 .200 .534 .266 2-3 3 1.000R 2-8 3 1.000R 2.163 1-3 2 .908R 3.791 1-4	20 .10 .40 .50 4 4 0 1.250 4 0 2.500 4 4 0 3.750	20 .10 .50 .40 4 4 0 1.000 2-3 3 1.000R 2.025 1-3 2 1.67 R 3.400	20 10 .60 .30 2-3 3 1.000R .960 2-8 3 1.000R 2.430 1-3 2 0 4.050 1-3 2	20 .20 .40 .40 .40 .4 .0 1.000 4 .0 2.000 4 .0 .0 3.000 1-3 2	20 20 20 50 30 2-3 1.000R .800 2-3 3 1.000R 2.025 1-3 2 1.000R 3.573 1-3 2	20 .200 .584 .266 2-3 3 1.000R .854 2-3 3 1.000R 2.163 1-3 2 .908R 3.791	24 10 .40 .50 4 4 0 1.250 4 4 0 2.500 4 4 0 3.750 4 4 4	24 .10 .50 .40 -4 4 0 1.000 2-3 3 1.000R 2.025 1-3 2 .167R 3.400
Los On Ax	acing ad les 10 20 30	A' a1 a2 a3 G N B M G N B M G N B M G O O O O O O O O O O O O O O O O O O	16 .20 .50 .30 .30 2-3 1.000R .800 2-3 1.000R 2.025 1-3 2 1.000R 3.573 1-4	16 .200 .534 .266 2-3 3 1.000R .854 2-3 3 1.000R 2.163 1-3 2 .908R 3.791	20 .10 .40 .50 4 4 0 1.250 4 4 0 2.500 4 4 0 3.750	20 .10 .50 .40 4 4 0 1,000 2-3 3 1.900R 2,025 1-3 2 1.67 R 3,400 1-3	20 .10 .60 .30 2-3 3 1.000R .960 2-3 3 1.000R 2-4 2.480 1-3 2 0 4.050 1-3 2 0	20 .20 .40 .40 4 4 0 1.000 4 4 0 2.000 4 4 0 3.000	20 .20 .50 .30 2-3 3 1.000R .800 2-3 3 1.000R 2.025 1-3 2 1.000R 3.573 1-3 2 1.000R	20 .200 .534 .266 2-3 3 1.000R .854 2-3 3 1.000R 2.163 2.908R 3.791 1-3 2.908R	24 .10 .40 .50 4 4 0 1.250 4 4 0 2.500 4 4 0 3.750	24 .10 .50 .40 -4 4 0 1.000 2-3 3 1.0000R 2.025 1-3 2 1.67R 3.400
Los On Ax	acing ad les 10 20 30	X' a1 a2 a3 G N B M G N B M G N B M G G N G G N G G N G G N G G N G G G G	16 .20 .30 .50 .30 .30 .33 1.000R .800 2-8 3.000R .2.025 1-3 2.1.000R 3.573 1-4 3.300L 5.502 1-4	16 .200 .206 2-3 3 1.000R .854 2-3 3 1.000R .2.163 1-3 2.163 1-3 2.908R 3.791 1-4 3 .002L 5.730 1-4	20 .10 .40 .50 4 4 0 1.250 4 4 0 2.500 4 4 0 3.750 3.4 4 2.857R	20 .10 .50 .40 4 4 0 0 1.000 2-3 3 3 2.025 1-3 2.167 R 3.400 1-3 2.167 R 4.900 1-4	20 .10 .60 .30 2 -3 3 1.000R .960 2-3 3 1.000R 2.430 1-3 2 0 4.050 1-3 2 0 5.800 1-4	20 .20 .40 .40 .40 4 4 0 1.000 4 4 0 2.000 4 4 0 3.000 1-3 2 1.333R 4.427 1-4	20 20 20 30 31 1.000R 800 2-3 3 1.000R 2.025 1-3 2 1.000R 3.573 1-3 2 1.000R 3.573 1-3 1.000R	20 .200 .534 .266 2-3 3 1.000R .854 2-3 3 1.000R 2.163 1-3 2 .908R 3.791 1-3 2 .908R 5.621 1-4	24 110 .40 .50 4 4 0 1.250 4 4 0 2.500 4 1 0 3.750 4 4 0 3.750	24 .10 .50 .40 4 4 0 1.000 2-3 3 1.000R 2.025 1-3 2 1.67R 3.400 1-3 2 .167R 4.900
Los On Ax	acing ad les 10 20 30	X' a1 a2 a3 G N B M B M G N B M G N B M B M G N B M B M G N B M B M G N B M B M G N B M B M B M G N B M B M B M G N B M B M B M B M B M B M B M B M B M B	16 .20 .30 .30 2-3 3 1.000R .800 2-8 3 1.000R 2.02S 1-3 2 1.000R 3.573 1-4 3.300L 5.502 1-4 3	16 .200 .206 2-3 3 1.000R .854 2-3 3 1.000R .2.163 1-3 2 .908R 3.791 1-4 3 .002L 5.730	20 .10 .40 .50 4 4 0 1.250 4 4 0 2.500 4 4 0 3.750 3.4 4 2.857R 5.143 2-4	20 .10 .50 .40 4 4 0 1.000 2-3 3 1.000R 2.025 1-3 2 167 R 4.900 1-4 3	20 .10 .60 .30 2-3 3 1.000R .960 2-3 3 1.000R 2.430 1-3 2 0 4.050 1-3 2 0 5.800 1-4 3	20 .20 .40 .40 .40 .40 .40 .40 .40 .4	20 20 20 30 2-3 3 1.000R .800 2-3 1.000R 2.025 1-3 2 1.000R 3.573 1-3 2 1.000R 3.573 1-3 2 1.000R	20 .200 .534 .266 2-3 3 1.000R 2-3 3 1.000R 2.163 1-3 2 908R 3.791 1-3 2 1.000R 2.163 1.000R 2.163 1.000R 2.163 1.000R 2.164 1.000R 3.791 1.000R 3.791 1.000R	24 .10 .40 .50 4 4 0 1.250 4 4 0 3.750 4 4 0 3.750 4 4 0 2.5000 2-4	24 .10 .50 .40 .4 .4 .0 .1.000 2-3 3 1.0000R 2.025 1-3 2.167R 3.400 1-3 2.167R 4.900 1-4 3
Los On Ax	acing ad les 10 20 30 40	X' a1 a2 a3 G N B M G N B M G N B M G G N G G N G G N G G N G G N G G G G	16 .20 .30 .50 .30 .30 .33 1.000R .800 2-8 3.000R .2.025 1-3 2.1.000R 3.573 1-4 3.300L 5.502 1-4	16 .200 .534 .266 2-3 3 1.000R .854 2-3 3 1.000R 2.163 1-3 2.908R 3.791 1-4 3 .002L 5.730 1-4	20 .10 .40 .50 4 4 0 1.250 4 4 0 2.500 4 4 0 3.750 3-4 4 2.857R 5.143	20 .10 .50 .40 4 4 0 0 1.000 2-3 3 3 2.025 1-3 2.167 R 3.400 1-3 2.167 R 4.900 1-4	20 .10 .60 .30 2 -3 3 1.000R .960 2-3 3 1.000R 2.430 1-3 2 0 4.050 1-3 2 0 5.800 1-4	20 .20 .40 .40 .40 4 4 0 1.000 4 4 0 2.000 4 4 0 3.000 1-3 2 1.333R 4.427 1-4	20 20 20 30 31 1.000R 800 2-3 3 1.000R 2.025 1-3 2 1.000R 3.573 1-3 2 1.000R 3.573 1-3 1.000R	20 .200 .534 .266 2-3 3 1.000R .854 2-3 3 1.000R 2.163 1-3 2 .908R 3.791 1-3 2 .908R 5.621 1-4	24 .10 .40 .50 4 4 0 1.250 4 4 0 2.500 4 4 0 3.750 4 4 0 0 2.5000	24 .10 .50 .40 4 4 0 1.000 2-3 3 1.000R 2.025 1-3 2 1.67R 3.400 1-3 2 .167R 4.900
Los On Ax	ad les 10 20 30 40 50	X' a1 a2 a3 G N B M G N B M G N B M G N B M G G N B M G G N B M G G N B G N B G G N B G G N B G G G G G	16 .20 .30 .30 .30 .30 .30 .30 .30 .30 .30 .3	16 .200 .206 2-3 3 1.000R .854 2-3 3 1.000R .2.163 1-3 2.908R 3.791 1-4 3 .002L 5.730 1-4 3 .002L 8.230	20 .10 .40 .50 4 4 0 1.250 4 4 0 2.500 4 4 0 3.750 3.4 4 2.857R 5.143 2-4 4.889R 7.280 2-4	20 .10 .50 .40 4 0 1.000 2-3 3 1.000R 2.025 1-3 2 .167R 4.900 1-4 3 2.704L 7.346 1-4	20 .10 .60 .30 2-3 3 1.000R .960 2-3 3 1.000R 2.430 1-3 2 0 4.050 1-3 2 0 5.800 1-4 3 1.600L 8.151 1-4	20 .20 .40 .40 .40 .40 .40 .40 .40 .4	20 20 20 30 2-3 3 1.000R .800 2-3 3 1.000R 2.025 1-3 2 1.000R 3.573 1-3 2 1.000R 3.573 1-3 2 1.000R 1.43 2.025 1.43 2.025 1.43 2.025 1.43 2.025 1.43 2.025 1.43 2.025 1.000R 1.000	20 .200 .534 .266 2-3 3 1.000R .854 2-3 3 1.000R 2.163 1-3 2 908R 3.791 1-3 2 .908R 5.621 1-4 3 .536L 7.702	24 .10 .40 .50 4 4 0 1.250 4 4 0 3.750 4 4 0 5.000 2-4 4 5.778R 668T 668T 668T 2-4	24 .10 .50 .40 .4 .4 .0 .1.000 2-3 3 1.0000R 2.025 1-3 2 1.67R 3.400 1-3 2 .167R 4.900 1-4 3 3.500£ 1-4
Los On Ax	acing ad les 10 20 30 40	X' a1 a2 a3 G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B N B M G N B N B N B M G N B N B M G N B N B N B M G N B N B M G N B N B M G N B N B M G N B N B M G N B N B M G R M B M G R M B M B M B M B M B M B M B M B M B M	16 .20 .30 .30 .30 .33 1.000R .800 .31 .000R .800 .31 .000R .3.573 .300L .5.502 .300L .8.002 .300L .8.002	16 .200 .534 .266 2-3 3 1.000R .854 2-3 1.000R 2.163 1-3 2 .908R 3.791 1-4 3 .002L 5.730 1-4 3	20 .10 .40 .50 4 4 0 1.250 4 4 0 2.500 4 4 0 3.750 3-4 4 2.857R 5.143 2-4 4 4.889R 7.280	20 .10 .50 .40 4 4 0 1.000 2-3 3 1.0000R 2.025 1-3 2 1.67 R 3.400 1-3 2 2.700L 7.346 1-4 3	20 .10 .60 .30 2-3 3 1.000R .960 2-3 1.000R 2.430 1-3 2 0 5.800 1-4 3 1.600L 8.151 1-4 3	20 .20 .40 .40 .40 .4 .0 1.000 .4 .0 .2.000 .4 .0 .2.000 .4 .0 .3.000 .3.000 .3.33 R .4.427 .1-4 .3 .2.000 .5.580 .5.580 .5.580 .5.6	20 20 20 30 2-3 3 1.000R .800 2-3 1.000R 2.025 1-3 2 1.000R 2.025 1-3 2 1.000R 3.573 1-3 2 1.000R 1.000R 3.573 1-3 2 1.000R	20 .200 .534 .266 2-3 3 1.000R .854 2-3 1.000R 2.163 1-3 2 .908R 3.791 1-3 2 .908R 5.621 1-4 3 .536L 7.702	24 .10 .40 .50 4 4 0 1.250 4 4 0 3.750 4 4 0 5.000 2-4 4 5.000 2-4 4 4 4 0 5.000 4 4 4 4 4 5 6 6 6 7 7 8 8 8 8 8 8 8 8 8 8 8 8 8	24 .10 .50 .40 4 4 0 1.000 2-3 3 1.0000R 2.025 1-3 2 .167R 3.400 1-3 2 167R 4.900 1-4 3 3.500L 6.645 1-4 3
Los On Ax	ad les 10 20 30 40 50	X' a1 a2 a3 G N B M G N B M G N G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M M G N B M M G N B M M G N B M M G N B M M G M M M M M M M M M M M M M M M M	16 20 30 30 2-3 3 1.000R 800 2-8 3 1.000R 2-8 3 1.000R 3.573 1-4 3 3.00L 5.502 1-4 3 3.00L 1.4 3 3.00L 1.4 3 3.00L 1.000R	16 .200 .206 2-3 3 1.000R .854 2-3 3 1.000R .2.163 1-3 2.008R 3.791 1-4 3 .002L 8.230 1-4 3 .002L 8.230 1-4 3 .002L 8.230	20 .10 .40 .50 4 4 0 1.250 4 4 0 2.500 4 4 0 3.750 3-4 4 2.857R 5.143 2-4 4.889R 7.280 2-4 4.889R 9.458	20 .10 .50 .40 4 4 0 1.000 2-3 3 1.000R 2.025 1-3 2 167R 4.900 1.43 2.700L 7.346 1-4 3 2.700L 9.822	20 10 10 10 10 10 10 10 10 10 10 10 10 10	20 .20 .40 .40 .40 .40 .40 .40 .40 .4	20 .20 .30 .50 .30 2-3 3 1.000R .800 2-3 3 1.000R 2.025 1-3 2 1.000R 3.573 1-3 2 1.000R 3.573 1-3 2 1.04 3 .900L 5.318 1-4 3 .900L 9.40 1-4 3 .900L 9.40	20 .200 .534 .266 2-3 3 1.000R .854 2-3 3 1.000R 2.163 1-3 2.908R 3.791 1-3 2.908R 5.621 1-4 3 .536L 1-4 3 .536L 1-4 3 .536L 1-4 3	24 .10 .40 .50 4 4 0 1.250 4 4 0 3.750 4 4 0 5.778R 5.778R 8.800	24 .10 .50 .40 .4 .4 .0 .1.000 2-3 3 1.0000 2-3 2.167R 3.400 1-3 2.167R 4.900 1-4 3 3.500L 9.104
Los On Ax	ad les 10 20 30 40 60 60	X' a1 a2 G N B M G N B M G N B M G N B M G N B B M G N B B M G N B B M G N B B M G N B B B G N B B B G N B B B G N B B B G N B B B G N B B B G N B B B G R G R B B B G R G R B B B G R G R	16 .20 .30 .30 .30 .30 .30 .30 .30 .000R .800 .30 .000R .3000R .3.573 .000R .3.300L .5.502 .4 .3 .300L .8.002 .4 .3 .300L .5.502 .502 .502 .502 .502 .502 .502 .5	16 .200 .534 .266 2-3 3 1.000R .854 2-3 3 1.000R 2.163 2 .908R 3.791 1-4 3 .002L 5.730 1-4 3 .002L 8.230 1-4 3 .002L 8.230 1-4 3 .002L 8.230 1-4	20 .10 .40 .50 4 4 0 1.250 4 4 0 2.500 4 4 0 3.750 3-4 4 2.857R 5.143 2-4 4.889R 7.280 2-4 4.889R 9.458 1-4	20 .10 .50 .40 4 4 0 1.000 2-3 3 1.000R 2.025 1-3 2 .167R 4.900 1-4 3 2.700L 7.346 1-4 3 2.700L 9.822 1-4	20 .10 .60 .80 2-3 3 1.000R .960 2-43 1.000R 2.430 1-3 2 0 4.050 1-3 2 0 5.800 1-4 3 1.600L 8.151 1-4 3 1.600L 8.151	20 .20 .40 .40 .40 .40 .40 .40 .40 .4	20 20 20 30 2-3 3 1.000R .800 2-3 1.000R 2.025 1-3 2 1.000R 3.573 1-3 2 1.000R 5.318 1-4 3 .900L 7.416 1-4 3 .909L 1-4 3 .909L 1-4	20 .200 .534 .266 2-3 3 1.000R .854 2-3 1.000R 2.163 1-3 2 .908R 3.791 1-3 2 .908R 5.621 1-4 3 .536L 7.702 1-4 3 .536L 10.201 1-4	24 .10 .40 .50 4 4 0 1.250 4 4 0 3.750 4 4 0 5.000 2-4 4 5.778R 6.651 2-4 5.778R 8.880 1-4	24 .10 .50 .40 4 4 0 1.000 2-3 3 1.000R 2.025 1-3 2 .167R 3.400 1-3 2 167R 4.900 1-4 3 3.500L 6.645 1-4 3 3.500L 9.104 1-4
Los On Ax	ad les 10 20 30 40 50	X' a1 a2 a3 G N B M G N B M G N G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M M G N B M M G N B M M G N B M M G N B M M G M M M M M M M M M M M M M M M M	16 20 30 30 2-3 3 1.000R 800 2-8 3 1.000R 2-8 3 1.000R 3.573 1-4 3 3.001L 5.502 1-4 3 3.001L 10.502 1-4 3 3.000L 10.502	16 .200 .206 2-3 3 1.000R .854 2-3 3 1.000R .2.163 1-3 2.008R 3.791 1-4 3 .002L 8.230 1-4 3 .002L 8.230 1-4 3 .002L 8.230	20 .10 .40 .50 4 4 0 1.250 4 4 0 2.500 4 4 0 3.750 3-4 4 2.857R 5.143 2-4 4.889R 7.280 2-4 4.889R 9.458	20 .10 .50 .40 4 4 0 1.000 2-3 3 1.000R 2.025 1-3 2 167R 4.900 1.43 2.700L 7.346 1-4 3 2.700L 9.822	20 10 10 10 10 10 10 10 10 10 10 10 10 10	20 .20 .40 .40 .40 .40 .40 .40 .40 .4	20 .20 .30 .50 .30 2-3 3 1.000R .800 2-3 3 1.000R 2.025 1-3 2 1.000R 3.573 1-3 2 1.000R 3.573 1-3 2 1.04 3 .900L 5.318 1-4 3 .900L 9.40 1-4 3 .900L 9.40	20 .200 .534 .266 2-3 3 1.000R .854 2-3 3 1.000R 2.163 1-3 2.908R 3.791 1-3 2.908R 5.621 1-4 3 .536L 1-4 3 .536L 1-4 3 .536L 1-4 3	24 .10 .40 .50 4 4 0 1.250 4 4 0 3.750 4 4 0 5.778R 5.778R 8.800	24 .10 .50 .40 .4 .4 .0 .1.000 2-3 3 1.0000 2-3 2.167R 3.400 1-3 2.167R 4.900 1-4 3 3.500L 9.104
Los On Ax	ad les 10 20 30 40 60 60	X' a1 a2 a3 G N B M B M G N B M B M G N B M B M G N B M B M G N B M B M G N B M B M G N B M B M B M B M G N B M B M B M B M B M B M B M B M B M B	16 .20 .30 .30 .30 .30 .30 .30 .30 .30 .30 .3	16 .200 .206 2-3 3 1.000R .854 2-3 1.000R 2.163 2 .908R 3.791 1-4 3 .002L 5.730 1-4 3 .002L 1.730 1-4 3 .002L 1.730	20 .10 .40 .50 4 4 0 1.250 4 4 0 2.500 4 4 0 3.750 3-4 4 2.857R 5.143 2-4 4.889R 7.280 2-4 4.889R 7.280 1-4 6.200R 1-4	20 .10 .50 .40 4 4 0 1.000 2-3 3 1.000R 2.025 1-3 2 .167R 4.900 1-4 3 2.700L 7.346 1-4 3 2.700L 9.822 1-4 3 2.700L 1.44 3.400 1.400 1.4	20 10 .60 .80 2-3 3 1.000R .960 2-3 3 1.000R 2.430 1-3 2 0 4.050 1-3 2 0 5.800 1-4 3 1.600L 8.151 1-4 3 1.600L 10.643 1-4 3 1.600L 15.632	20 .20 .40 .40 .40 .40 .40 .40 .40 .4	20 20 20 30 2-3 3 1.000R .800 2-3 1.000R 2.025 1-3 2 1.000R 3.573 1-3 2 1.000R 3.573 1-3 2 1.000R 3.573 1-3 2 1.000R 3.573 1-3 2 1.000R 3.573 1-3 2 1.000R 3	20 .200 .200 .534 .266 2-3 3 1.000R .854 2-3 3 1.000R 2.008 2.103 1-3 2.908R 3.791 1-3 2.908R 5.621 1-4 3.536L 1.7.702 1-4 3 .536L 10.201 1-4 3 .536L 15.200	24 .10 .40 .50 4 4 0 1.250 4 4 0 3.750 4 4 0 5.000 2-4 4 5.778R 6.651 2-4 4 5.778R 8.800 1-4 7.200R 13.448	24 .10 .50 .40 4 4 0 1.000 2-3 3 1.000R 2.025 1-3 2 .167R 3.400 1-3 2.167R 4.900 1-4 3 3.500L 6.645 1-4 3 3.500L 1-4 3 3.500L 1-4 3 3.500L 1-4 3 3.500L 1-4 3 3.500L 1-4 3 3.500L 1-4 3 3.500L 1-4 3 3.500L 1-4 3 3.500L 1-4 3 3.500L
Los On Ax	20 20 40 60 80	X' a1 a2 a3 G N B M G N B M G N B M G N B M G N B M G G R G G R G G R G R G G R G G R G	16 .20 .30 .30 .30 .30 .33 1.000R .800 2-8 3 1.000R .2.025 1-3 2 1.000R 3.573 1-4 3 .300L 5.502 1-4 3 3.00L 10.502 1-4 3 3.00L 10.502 1-4 3 3.00L 10.502 1-4 3 10.502 1-4 3 10.502 1-4 3 10.502 1-4 3 10.502 1-4 3 10.502 1-4 3 3 300L 10.502	16 .200 .206 2-3 3 1.000R .854 2-8 3 1.000R .854 2-3 3 1.000R 3.791 1-4 3 .002L 5.730 1-4 3 .002L 10.730 1-4 3 .002L 10.730 1-4	20 .10 .40 .50 4 4 0 1.250 4 4 0 2.500 4 4 0 3.750 3-4 4 2.857R 5.143 2-4 4 4.889R 7.280 2.4 4 4.889R 9.458 1-4 6.200R 14.281 1-4 1.250	20 .10 .50 .40 4 4 0 1.000 2-3 3 1.000R 2.025 1-3 2 1.67R 3.400 1-3 2.167R 4.900 1-4 3 2.700L 9.822 1-4 3 2.700L 14.791 1-4 1-4 3	20 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.	20 .20 .40 .40 .40 .40 .40 .40 .40 .4	20 .20 .30 .30 2-3 3 1.000R .800 2-3 3 1.000R 2.025 1-3 2 1.000R 3.573 1-3 2 1.000R 5.318 1-4 3 .900L 9.914 1-4 3 .900L 1.4910 1.4910	20 .200 .534 .266 2-3 3 1.000R .854 2-3 3 1.000R 2.163 1-3 .908R 3.791 1-4 3 .536L 7.702 1-4 3 .536L 10.201 1-4 3 .536L 10.201 1-4 3 .536L 10.201 1-4	24 .10 .40 .50 4 4 0 1.250 4 4 0 2.500 4 4 0 3.750 4 5.778R 6.651 2-4 4 5.778R 8.800 1-4 7.200R 1.44 1.44 1.48	24 .10 .50 .40 .4 .4 .0 .1.000 2-3 3 1.0000R 2.025 1-3 2.167R 3.400 1-3 2.167R 4.900 1-4 3 3.500L 9.104 1-4 3 3.500L 9.104 1-4 3 3.500L 1.4 1.4 1.4 1.4 1.4 1.4 1.4 1.4 1.4 1.4
Los On Ax	ad les 10 20 30 40 60 60	X' a1 a2 a3 G N B M R M R M R M R M R	16 .20 .30 .30 .30 .30 .30 .30 .30 .30 .30 .000R .800 .30 .000R .800 .30 .000R .300L .5.502 .300L .8.002 .300L .5.502 .300L .5.501 .300L .5.501 .300L .5.501 .300L .5.501	16 .200 .266 2-3 3 1.000R .854 2-3 1.000R 2.163 2 .908R 2.163 3 .908L 5.730 1-4 3 .002L 8.230 1-4 3 .002L 15.730 1-4 3 .002L 15.730 1-4 3 .002L 15.730	20 .10 .40 .50 4 4 0 1.250 4 4 0 2.500 4 4 0 3.750 3-4 4 2.857R 5.143 2-4 4.889R 7.280 2-4 4.889R 9.458 1-4 6.200R 14.281 1-4 6.200R	20 .10 .50 .40 4 4 0 1.000 2-3 3 3 8 2.025 1-3 2 .167R 3.400 1-4 3 2.700L 9.822 1-4 3 2.700L 1-4 3 2.700L 1-4 3 2.700L 1-4 3 2.700L 1-4 3 2.700L 3 2.700L 3 2.700L 3 2.700L 3 2.700L 3 2.700L 3 2.700L 3 2.700L 3 2.700L 3 2.700L 3 2.700L 3 2.700L	20 10 .60 .80 2-3 3 1.000R .960 2-3 3 1.000R 2.430 1-3 2 0 4.050 1-3 2 0 5.800 1-4 3 1.600L 8.151 1-4 3 1.600L 15.632 1-4 3 1.600L	20 .20 .40 .40 .40 .40 .40 .40 .00 .1.000 .40 .40 .000 .40 .000 .1-3 .2.0001 .6.580 .1-4 .3 .2.0001 .1-4 .3 .2.0001 .1-4 .3 .2.0001 .1-4 .3 .000 .1-4 .000	20 20 20 30 31 1.000R 800 2-3 3 1.000R 2.025 1-3 2 1.000R 3.573 1-3 2 1.000R 3.573 1-4 3 900L 9.914 1-4 3 9.900L 14.910 1-4 3 9.900L 14.910	20 .200 .200 .206 2-3 3 1.000R .854 2-3 3 1.000R 2.163 1-3 2 .908R 3.791 1-4 3 .536L 10.201 1-4 3 .536L 10.201 1-4 3 .536L 15.200 1-4 3 .536L 15.200 1-4 3 .536L	24 .10 .40 .50 4 4 0 1.250 4 4 0 2.500 4 4 0 3.750 4 4 0 5.000 2-4 4 5.778R 8.800 1-4 7.200R 13.448 1-4 4 7.200R	24 .10 .50 .40 4 4 0 1.000 2-3 3 1.000R 2.025 1-3 2 .167R 3.400 1-3 2.167R 4.900 1-4 3 3.500L 6.645 1-4 3 3.500L 1-4 3 3.500L 1-4 3 3.500L 1-4 3 3.500L 1-4 3 3.500L 1-4 3 3.500L 3.500L 1-4 3 3.500L 3.500L 3.500L 3.500L 3.500L 3.500L
Los On Ax	20 20 40 60 80	X' a1 a2 a3 GNBM GNBM GNBM GNBM GNBM GNBM GNBM GNBM	16 .20 .30 .30 .33 1.000R .800 2-8 3 1.000R .800 2-8 3 1.000R 3.573 1-4 3 .300L 5.502 1-4 3 .300L 10.502 1-4 3 .300L 10.502 1-4 3 .300L 10.502 1-4 3 .300L 10.502 1-4 3 .300L 10.502	16 .200 .206 2-3 3 1.000R .854 2-3 3 1.000R .2.163 1-3 2.008R 3.791 1-4 3 .002L 8.230 1-4 8 .002L 8.230 1-4 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	20 .10 .40 .50 4 4 0 1.250 4 4 0 2.500 4 4 0 3.750 3.4 4 4.889R 7.280 2-4 4.889R 7.280 1-4 4.89R 1-4 4.89R 1-4 4.281 1-4 4.281	20 .10 .50 .40 4 4 0 1.000 2-3 3 1.000R 2.025 1-3 2.167R 3.400 1-3 2.700L 7.346 1-4 3 2.700L 9.822 1-4 3 2.700L 14.791 1-4 3	20 10 10 10 10 10 10 10 10 10 10 10 10 10	20 .20 .40 .40 .40 .40 .40 .40 .40 .4	20 20 20 30 2-3 3 1.000R .800 2-3 3 1.000R 2-025 1-3 2 1.000R 3.573 1-3 2 1.000R 5.318 1-4 3 .900L 7.416 1-4 3 .900L 1-4 1-4 3 .900L 1-4 3 .900L 1-4 3 .900L 1-4 3 .900L 1-4	20 .200 .200 .534 .266 2-3 3 1.000R .854 2-3 3 1.000R 2.163 1-3 2.908R 3.791 1-3 2.908R 5.621 1-4 3 .536L 10.201 1-4 3 .536L 15.200 1-4 3	24 .10 .40 .50 4 4 0 1.250 4 4 4 0 2.500 4 4 0 3.750 4 4 0 5.778R 8.800 1-4 4 7.200R 13.448 1-4 4	24 .10 .50 .40 4 0 1.000 2-3 3 1.0000 2-3 2 1-3 2 167R 3.400 1-4 3 3.500L 1-4 3 3.500L 14.053 1-4 3

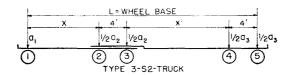
					FOR R	ATING	HEAVY	VEHICE	E LOAI	os		79
	BLE		Continued 51	1) 52		54	55	56	57	58	59	60
	. Base		40	40	53 40	40	44	44	44	44	44	44
$\frac{\mathbf{A}\mathbf{x}}{\mathbf{A}\mathbf{x}}$		X	12	$-\frac{10}{12}$	12	12	12	12	12	12	12	12
	cing	X'	24	24	24	24	28	28	28	28	28	28
Loa	ad	a_1 a_2	.10 .60	.20 .40	.20 .50	.200 $.534$.10 .40	.10 .50	.10 .60	.20 .40	.20 .50	.200 .534
Ax	les	a 3	.30	.40	.30	.266	.50	.40	.30	.40	.30	.266
1		G	2-3	4	2-3	23	4	4	2-3	4	23	2-3
į	10	N B	$^3_{1.000 m R}$	$\frac{4}{0}$	$^3_{1.000\mathrm{R}}$	$^3_{1.000 m R}$	$\frac{4}{0}$	4 0	$^3_{1.000\mathrm{R}}$	$\frac{4}{0}$	$^3_{1.000 m R}$	$^3_{1.000 m R}$
		M_	960	1.000	.800	.854	1.250	1.000	.960	1.000	.800	.854
1	20	G N	$\frac{2-3}{3}$	4 4	$\frac{2-3}{3}$	$\frac{2-3}{3}$	4 4	$\frac{2-3}{3}$	23 3	4 4	2-3 3	23 3
	20	В	1.000R	0	1.000R	1.000R	0	1.000R	1.000R	0	1.000R	1.000R
		M	2.430	2.000	2.025	2.163	2.500	2.025	2.430	2.000	$\frac{2.025}{1.0}$	2.163
	30	G N	$rac{1-3}{2}$	4	$\frac{1}{2}$	13 2	4	$^{1-3}_{2}$	1-3 2	4 4	$^{1-3}_{2}$	13 2
		В	0	0	1.000R	$.908\mathbf{R}$	0	.167R	0	0	$1.000\mathrm{R}$.908R
		M. G	4.050	$\frac{3.000}{1-3}$	3.573 1–3	$\frac{3.791}{1-3}$	$\frac{3.750}{4}$	3,400	4.050	$\frac{3.000}{1-3}$	$-\frac{3.573}{1-3}$	$\frac{3.791}{1-3}$
4	40	N	2	2	2	2	4	2	2	2	2	2
aa.		B M	$\begin{smallmatrix} 0\\5.800\end{smallmatrix}$	$^{1.333 m R}_{4.427}$	$1.000 \mathrm{R} \\ 5.318$	5.621	$\frac{0}{5.000}$	$^{.167}_{4.900}$	$\frac{0}{5.800}$	1.333R 4.427	1.000R 5.318	5.621
3		G	1-4	1-3	1-3	1-3	4	1-3	13	1-3	1-3	1-3
Span-Feet	50	N	3	2	2	2	4	2	2	2	2	2
		В М	$\frac{2.200 \text{L}}{7.597}$	1.333R 5.921	$\frac{1.000 \mathrm{R}}{7.064}$	0.908R 7.453	$^{0}_{6,250}$	6.400	$\frac{0}{7.550}$	1.333R 5.921	1.000R 7.064	0.908 m R
		G	1-4	14	1-4	1-4	2-4	14	1-4	1-4	1–3	1-3
	60	N B	$^{3}_{2.200 m L}$	3 2.800L	$^3_{1.500 m L}$	$3 \\ 1.069 \mathbf{L}$	$^4_{6.667 m R}$	$^{3}_{4.300 L}$	$^{3}_{2.800 { m L}}$	$\begin{array}{c} 3\\3.600 \mathrm{L} \end{array}$	$^2_{1.000\mathrm{R}}$	$^{2}_{.908 m R}$
ĺ		M	10.081	8.331	9.338	9.682	8.167	8.408	9.531	7.616	8.812	9.286
	60	G	1-4	1-4	1-4	14	1-4	1-4	1-4	1-4	1-4	1-4
	80	N B	$^{3}_{2.200L}$	$^3_{2.800 \mathbf{L}}$	3 1.500 L	$1.069 \mathbf{L}$	$^4_{8.200 m R}$	$^{3}_{4.300L}$	$^3_{2.800}$ L	$3 \\ 3.600 $ L	3 2.100L	$^3_{1.603 m L}$
		M	15.061	13.298	14.328	14.677	12.641	13.331	14.498	12.562	13.755	14.162
ļ	100	G N	14 3	$\frac{1-4}{3}$	$\frac{1}{3}$	1–4 3	$^{1-4}_{4}$	$\frac{1-4}{3}$	$^{1-4}_3$	$\frac{1-4}{3}$	$\frac{1-4}{3}$	1-4 3
	200	В	2.200 L	2.800L	1.500 L	1.069L	8.200R	4.300L	2.800 L	$3.600 \mathbf{L}$	2.100L	1.603L
	 ==1====	M	20.048	18.278	19.323	19.674	17.472	18.285	19.478	17.530	18.744	19.155
	uck No		61 32	$-\frac{62}{32}$	63 32	64 32	65 32	$\frac{-66}{32}$	$\frac{67}{36}$	$\frac{-68}{36}$	69 36	$\frac{70}{36}$
Ax		X	16	16	16	16	16	16	16	16	16	16
Sp	acing	X'	12	12	12	12	12	12	16	16	16	16
Lo		\mathbf{a}_1	.10 .40	.10 .50	.10 .60	.20 .40	.20 $.50$.200 .534	.10 .40	.10 .50	.10 .60	.20 .40
	les	as	.50	.40	.30	.40	.30	.266	.50	.40	.30	.40
	10	G N	4	4	23	4	23	2–3	4	4	2-3	4
	10	В	4	4 0	$^3_{1.000 m R}$	$\frac{4}{0}$	$^{3}_{1.000\mathrm{R}}$	$^3_{1.000\mathrm{R}}$	$\frac{4}{0}$	$\frac{4}{0}$	$^3_{1.000 m R}$	$\frac{4}{0}$
		_M	1.250	1.000	.960	1.000	.800	.854	1.250	1.000	.960	1.000
	20	G N	4 4	$^{2-3}_{3}$	$\frac{2-3}{3}$	4 4	$\frac{2-3}{3}$	$\frac{2}{3}$	4 4	$_{3}^{2-3}$	2·-3 3	4 4
		В	0	1.000R	1.000R	0	1.000R	1.000R	0	1.000R	1.000R	0
		M G	$\frac{2.500}{2-4}$	2.025	$\frac{2.430}{2-4}$	2.000	$\frac{2.025}{2-4}$	$\frac{2.163}{2-4}$	2.500 3-4	$\frac{2.025}{2-4}$	$\frac{2.430}{2-3}$	$rac{2.000}{3-4}$
	30	N	4	3	3	4	3	3	4	3	3	4
		B M	3.111R 4.241	2.111L 3.984	1.333L 4,403	3.500R 3.526	$\frac{1.625 L}{3.770}$	1.333L 3.913	2.286R 3.772	3.000L 3.320	$1.000\mathbf{R} \\ 3.920$	2.667R 3.043
		G	2-4	2-4	2-4	2-4	2-4	24	2-4	2-4	2-4	2-4
et	40	$_{ m B}^{ m N}$	$^{4}_{3,111R}$	3	$^{3}_{1.333L}$	$^{4}_{3.500\mathrm{R}}$	3	3	$^{4}_{4.000\mathrm{R}}$	3.000L	$^{3}_{2.000L}$	$^{4}_{4.500 m R}$
Feet	İ	M	6.418	2.111L 6.200	6.640	5.445	1.625L 5.753	1.3331. 5.901	5.760	5.503	6.090	4.805
Span-		G	2-4	1-4	14	1-4	1-4	1-4	2-4	1-4	1-4	1-4
$\dot{\mathbf{s}}$	50	N B	$\frac{4}{3.111R}$	$^3_{.900\mathbf{L}}$	$^{3}_{.200 L}$	3 0	3 .700R	3 $.931$ R	$rac{4}{4.000\mathbf{R}}$	3 1.700L	$^3_{.800 m L}$	$^{3}_{.800 extbf{L}}$
		M	8.625	8.616	9.101	7.700	8.210	8,382	7.938	7.858	8.513	6.913
	60	G N	1-4	1-4	1-4	1-4	1-4	1-4	24	1-4	1-4	14
	60	В	$^{4}_{4.400R}$	$^3_{.900L}$	$^{3}_{.200L}$	3 0	3 .700R	3 .931R	$\frac{4}{4.000R}$	3 1.700L	.800L	3 .800L
		M	10.923	11.114	11.601	10.200	10.708	10.879	10.140	10.348	11.011	9.411
	80	G N	$^{1-4}_{4}$	1–4 3	$\frac{1-4}{3}$	$^{1-4}_{3}$	$^{1-4}$	14 3	1-4 4	14 3	$^{1-4}_{3}$	$^{1-4}_{3}$
		В	4.400R	.900L	.200L	0	.700R	.931R	5.400R	1.700L	.800L	.800L
		M	15.842	16.110	16.601	15.200	15.706	15.876	14.965	15.336	16.008	14.408
	100	G N	14 4	$^{1-4}_{3}$	$\frac{1-4}{3}$	$^{1-4}_3$	$^{1-4}_{3}$	$^{1-4}_{3}$	1–4 4	1–4 3	$\frac{1-4}{3}$	$\frac{1-4}{3}$
	1 700											
	100	B	4.400R 20.794	.900L 21.108	.200L 21.600	0 20.200	.700R 20.705	.931R 20.874	5.400R 19.892	1.700L 20.329	.800L 21.006	.800L 19.406

80 METHOD OF CONVERTING HEAVY MOTOR VEHICLE LOADS TABLE 7.6 (Continued)

	ick N	0.	71	72	73	74	75	76	77	78	79	80
Wł	ı. Bas		36	36	40	40	40	40	40	40	44	44
Ax Spa	le acing	X X'	16 16	16 16	16 20	16 20	16 20	16 20	16 20	16 20	16 24	16 24
Lo		a ₁	.20	.200	.10	.10	.10	.20	.20	.200	.10	.10
On Av	les	\mathbf{a}_2	.50 $.30$.534 $.266$.40 .50	.50 $.40$.60 .30	.40 .40	.50 .30	.534 .266	.40 .50	.50 .40
~	105	G	2-3	2-3	4	4	2-3	4	2-3	2-3	4	4
ļ	10	N	3	3	4	4	3	4	3	3	4	4
		B M	1.000R	1.000R $.854$	$0 \\ 1,250$	$\frac{0}{1.000}$	1.000R .960	$\frac{0}{1.000}$	1.000R .800	1.000R .854	0 1.250	0 1.00
- }		G	2-3	2-3	4	2-3	2-3	4	23	2-3	4	2-3
	20	N	3	3	4	3	3	4	3	3	4	3
		B M	$1.000R \\ 2.025$	$1.000R \\ 2.163$	$\substack{0\\2.500}$	1.000R 2.025	1.000R 2.430	$\frac{0}{2.000}$	1.000R 2.025	1.000R 2.163	$\frac{0}{2.500}$	1.000 2.02
		G	2-3	2-3	4	23	2-3	4	2-3	2-3	4	2-3
İ	30	N	3	3	4	3	3	4	3	3	4	3
		B M	1.000R 3.267	$1.000R \\ 3.489$	$\substack{0\\3.750}$	1.000R 3.267	$1.000 \mathrm{R} \\ 3.920$	$\frac{0}{3.000}$	1.000R 3.267	1.000R 3.489	$\substack{0\\3.750}$	1.000 3.2
Ì		G	2-4	2-4	3-4	2-4	1-3	2-4	1-3	1-3	4	1-3
اد	40	N	3	3	4	3	2	4	2	2	4	2
9		B M	$2.375L \\ 5.213$	2.000L	2.857R 5.143	3.889L 4.840	5.602	5.500R 4.205	1.572R 4.943	1.453R 5.244	$\frac{0}{5.000}$.500
-		G	1-4	5.412 1-4	$\frac{5.143}{2-4}$	1-4	1-4	1-4	1-4	1-4	2-4	1-4
Span-Feet	50	Ň	3	3	4	3	3	3	3	3	4	3
2		В	.100R 7.600	.398R	4.889R	2.500L	1.400L	1.600L	7.00L	.136L	5.778R	3.300
]		M	1-4	7.834 1-4	$\frac{7.280}{2-4}$	7.125 1–4	7.939	6.151	1-4	$\frac{7.297}{1-4}$	6.651 2-4	1-4
	60	G N	3	3	2-4 4	3	3	3	3	3	4	3
1		В	.100R	.398R	4.889R	2.500L	1.400L	1.600L	.500 L	.136L	$5.778\mathbf{R}$	3.300
		M	10.100	10.333	9.458	9.604	10.433	8.643	9.504	9.796	8.800	8.88
	80	G N	$^{1-4}_{3}$	$\frac{1-4}{3}$	14 4	14 3	$\frac{1-4}{3}$	14 3	$^{1-4}_{3}$	14 3	14 4	1-4 3
	., •	В	.100R	.398R	6.400R	2.500L	1.400L	1.600L	.500L	.136L	7.400R	3.300
-		M	15.100	15.332	14.112	14.578	15.425	13.632	14.503	14.796	13.285	13.88
ļ	100	G N	$^{1-4}$	1–4 3	1-4 4	1-4 3	1–4 3	14 3	1–4 3	1–4 3	14 4	1-4 3
- 1	100		.100R	.398R	6.400R	2.500L	1.400L				7.400R	3.300
ı		В						1.600L	.500L	.136L		
		M	20.100	20.332	19.010	19.563	20.420	18.626	19.503	19.796	18.148	18.80
	ick N	М о.	20.100 81	20.332 82	19.010 83	19.563 84	20.420 85	18.626 86	19.503	19.796 88	18.148 89	18.80
Wh	. Bas	M o. e L	20.100 81 44	20.332 82 44	19.010 83 44	19.563 84 44	85 48	18.626 86 48	19.503 87 48	19.796 88 48	18.148 89 48	18.80 90 48
Wh	. Bas	M o. e L X	20.100 81	20.332 82	19.010 83	19.563 84	20.420 85	18.626 86	19.503 87 48 16	19.796 88 48 16	18.148 89 48 16	18.80 90 48 16
Wh Ax Spa	i. Base le icing	M o. e L	81 44 16	82 44 16	19.010 83 44 16	19.563 84 44 16	85 48 16	18.626 86 48 16	19.503 87 48	19.796 88 48 16 28 .20	18.148 89 48	18.80 90 48 16 28
Wh Ax Spa Loa On	a. Base le acing ad	M o. e L X X' a ₁ a ₂	81 44 16 24 .10 .60	82 44 16 24 .20 .40	19.010 83 44 16 24 .20 .50	19.563 84 44 16 24 .200 .534	85 48 16 28 .10 .40	18.626 86 48 16 28 .10 .50	19.503 87 48 16 28 .10 .60	19.796 88 48 16 28 .20 .40	18.148 89 48 16 28 .20 .50	18.80 90 48 16 28 .200 .534
Wh	a. Base le acing ad	M o. e L X X' a1 a2 a3	81 44 16 24 .10 .60 .30	82 44 16 24 .20 .40 .40	19.010 83 44 16 24 .20 .50 .30	19.563 84 44 16 24 .200 .534 .266	85 48 16 28 .10 .40 .50	18.626 86 48 16 28 .10 .50 .40	19.503 87 48 16 28 .10 .60 .30	19.796 88 48 16 28 .20 .40 .40	18.148 89 48 16 28 .20 .50 .30	18.80 90 48 16 28 .200 .534 .266
Wh Ax Spa Loa On	a. Base le acing ad	M D. e L X X' a1 a2 a3 G N	20.100 81 44 16 24 .10 .60 .30 2-3 3	82 44 16 24 .20 .40 .40 4	19.010 83 44 16 24 .20 .50 .30 2-3 3	84 44 16 24 .200 .534 .266 2–3 3	85 48 16 28 .10 .40 .50	18.626 86 48 16 28 .10 .50 .40	19.503 87 48 16 28 .10 .60 .30 2-3 3	19.796 88 48 16 28 .20 .40 .40 4	18.148 89 48 16 28 .20 .50 .30 2-3 3	18.80 90 48 16 28 .200 .534 .266 2-3 3
Wh Ax Spa Loa On	a. Base le acing ad les	M D. e L X X' a1 a2 a3 G N B	20.100 81 44 16 24 .10 .60 .30 2-3 3 1.000R	82 44 16 24 .20 .40 .40 4 4	19.010 83 44 16 24 .20 .50 .30 2–3 3 1.000R	19.563 84 44 16 24 .200 .534 .266 2–3 3 1.000R	20.420 85 48 16 28 .10 .40 .50 4 4	18.626 86 48 16 28 .10 .50 .40 4 4	19.503 87 48 16 28 .10 .60 .30 2-3 3 1.000R	19.796 88 48 16 28 .20 .40 .40 4 0	18.148 89 48 16 28 .20 .50 .30 2-3 3 1.000R	18.80 90 48 16 28 .200 .534 .266 2-3 3
Wh Ax Spa Loa On	a. Base le acing ad les	M o. e L X X' a1 a2 a3 G N B M	20.100 81 44 16 24 .10 .60 .30 2-3 3 1.000R .960	82 44 16 24 .20 .40 .40 4 4 0 1.000	19.010 83 44 16 24 .20 .50 .30 2–3 3 1.000R .800	19.563 84 44 16 24 .200 .534 .266 2-3 3 1.000R .854	20.420 85 48 16 28 .10 .40 .50 4 0 1.250	18.626 86 48 16 28 .10 .50 .40 4 4 0 1.000	19.503 87 48 16 28 .10 .60 .30 2-3 3 1.000R .960	19.796 88 48 16 28 .20 .40 .40 4 4 0 1.000	18.148 89 48 16 28 .20 .50 .30 2–3 3 1.000R .800	18.80 90 48 16 28 .200 .534 .266 2-3 3 1.000 .85
Wh Ax Spa Loa On	a. Base le acing ad les	M D. e L X X' a1 a2 a3 G N B	20.100 81 44 16 24 .10 .60 .30 2-3 3 1.000R .960 2-3 3	82 44 16 24 .20 .40 .40 4 4	19.010 83 44 16 24 .20 .50 .30 2–3 3 1.000R	19.563 84 44 16 24 .200 .534 .266 2-3 1.000R .854 2-3 3	20.420 85 48 16 28 .10 .40 .50 4 4	18.626 86 48 16 28 .10 .50 .40 4 4 0 1.000 2-3 3	19.503 87 48 16 28 .10 .60 .30 2-3 1.000R .960 2-3 3	19.796 88 48 16 28 .20 .40 .40 4 0	18.148 89 48 16 28 .20 .50 .30 2-3 3 1.000R	18.80 90 48 16 28 .200 .534 .266 2-3 3
Wh Ax Spa Loa On	a. Basele acing ad les	M D. e L X X' a1 a2 a3 G N B M G N B	20.100 81 44 16 24 .10 .60 .30 2-3 1.000R .960 2-3 1.000R	82 44 16 24 .20 .40 .40 4 0 1.000	19.010 83 44 16 24 .20 .50 .30 2–3 1.000R .800 2–3 1.000R	19.563 84 44 16 24 .200 .534 .266 2-3 1.000R .854 2-3 1.000R	20.420 85 48 16 28 .10 .40 .50 4 0 1.250 4	18.626 86 48 16 28 .10 .50 .40 4 4 0 1.000 2.3 3	19.503 87 48 16 28 .10 .60 .30 2-3 3 1.000R .960 2-3 3	19.796 88 48 16 28 20 40 40 1.000 4 0	18.148 89 48 16 28 .20 .50 .30 2-3 3 1.000R .800 2-3 3 1.000R	18.86 90 48 16 28 .200 .534 .266 2-3 3 1.000 .85
Wh Ax Spa Loa On	a. Basele acing ad les	M D. e L X X' a1 a2 a3 G N B M G N B M	20.100 81 44 16 24 .10 .60 .30 2-3 3 1.000R .960 2-3 3 1.000R	82 44 16 24 .20 .40 .40 4 4 0 1.000 4 4 0 2.000	19.010 83 44 16 24 .20 .50 .30 2-3 1.000R 2.025	19.563 84 44 16 24 .200 .534 .266 2-3 1.000R .854 2-3 1.000R 2.163	20.420 85 48 16 28 .10 .40 .50 4 4 0 1.250 4 4 0 2.50	18.626 86 48 16 28 .10 .50 .40 4 4 0 1.000 2-3 1.000R 2.025	19.503 87 48 16 28 .10 .60 .30 2-3 3 1.000R 2-3 3 1.000R 2.430	19.796 88 48 16 28 .20 .40 .40 4 4 0 1.000 4 4 0 2.000	18.148 89 48 16 28 .20 .50 .30 2–3 1.000R .800 2–3 1.000R 2.025	18.86 90 48 16 28 .200 .534 .266 2-3 3 1.000 2.16
Wh Ax Spa Loa On	a. Basele acing ad les	M O. e L X X' a1 a2 a3 G N B M G N B M G	20.100 81 44 16 24 .10 .60 .30 2-3 1.000R .960 2-3 1.000R	82 44 16 24 .20 .40 .40 4 0 1.000	19.010 83 44 16 24 .20 .50 .30 2–3 1.000R .800 2–3 1.000R	19.563 84 44 16 24 .200 .534 .266 2-3 1.000R .854 2-3 1.000R	20.420 85 48 16 28 .10 .40 .50 4 0 1.250 4	18.626 86 48 16 28 .10 .50 .40 4 4 0 1.000 2.3 3	19.503 87 48 16 28 .10 .60 .30 2-3 3 1.000R .960 2-3 3 1.000R 2-430 2-3	19.796 88 48 16 28 .20 .40 .40 4 4 0 1.000 4 4 0 2.000	18.148 89 48 16 28 .20 .50 .30 2-3 3 1.000R .800 .20 .800 .20 .20 .30 .30 .30 .30 .30 .30 .30 .3	18.86 90 48 166 28 .200 .534 .266 2-3 3 1.000 2.16 2-3
Wh Ax Spa Loa On	a. Base le le le les les 10	M D. E L X X X' A1 A2 A3 G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M	20.100 81 44 16 24 110 .60 .30 2-3 3 1.000R .960 2-3 3 1.000R .2-3 3 1.000R .30	20.332 82 44 16 24 .20 .40 .40 4 4 0 1.000 4 4 0 2.000 4 4 0	19.010 83 44 16 24 .20 .50 .30 2-3 1.000R 2.025 2-3 1.000R	19.563 84 44 16 24 .200 .534 .266 2-3 3 1.000R 2.163 2-3 1.000R	20.420 85 48 16 28 .10 .40 .50 4 4 0 0 2.500 4 4 0	18.626 86 48 16 28 .10 .50 .40 4 4 0 1.000 2-3 1.000R 2.025 2-3 1.000R	19.503 87 48 16 28 .10 .60 .30 2-3 3 1.000R 2.430 2-3 3 1.000R	19.796 88 48 16 28 .20 .40 .40 4 4 0 1.000 4 4 0 2.000 4	18.148 89 48 16 28 .20 .50 .30 .30 2-3 3 1.000R 2.025 2-3 3 1.000R	18.86 90 48 16 28 .200 .534 .266 2-3 3 1.000 2.16 2-3 8 1.000 2.100 2.000 2.
Wh Ax Spa Loa On	a. Base le le le les les 10	M o. e L X X' a1 a2 a3 G N B M G N B M G N B M G N B M	20.100 81 44 16 24 .10 .60 .30 2-3 1.000R .960 2-3 1.000R 2-3 1.000R 3 3 1.000R 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	20.332 82 44 16 24 .20 .40 .40 4 4 0 1.000 4 4 0 2.000 4 4 0 3.000	19.010 83 44 16 24 .20 .50 .30 2-3 1.000R 2.025 2-3 1.000R 2.025 3 1.000R 3.267	19.563 84 44 16 24 200 .534 .266 2-3 1.000R .854 2-3 1.000R 2.163 3 1.000R 3.489	20.420 85 48 16 28 .10 .40 .50 4 4 0 1.250 4 4 0 3.750	18.626 86 48 16 28 .10 .50 .40 4 4 0 1.000 2-3 3 1.000R 2.025 2-3 3 1.000R 3.267	19.503 87 48 16 28 .10 .60 .30 2-3 3 1.000R .960 2-3 3 1.000R 2-3 3 1.000R 3.30 3 3 3 3 3 3 3 3 3 3 3 3 3	19.796 88 48 16 28 20 40 40 1.000 4 0 2.000 4 0 3.000	18.148 89 48 16 28 .20 .50 .30 2–3 3 1.000R .800 2–3 3 1.000R 2.025 2–3 3 1.000R 2.025 30 1.000R 3.00 3	18.86 90 48 16 28 .200 .534 .266 2-3 3 1.000 2.16 2-3 8 1.000 3.48
Wh Ax Spa Loa On Ax	a. Basele acing ad les 10 20	M	20.100 81 44 16 24 .10 .60 .30 2-8 3 1.000R 2.430 2.3 1.000R 2.430 2.3 1.000R 2.430 2.3 1.000R	20.332 82 44 16 24 .20 .40 4 4 0 1.000 4 4 0 3.000 1-3	19.010 83 44 16 24 .20 .50 .30 2-3 3 1.000R 2.025 2-3 3 1.000R 3.267	19.563 84 44 16 24 .200 .534 .266 2-3 3 1.000R 2.163 2-3 3 1.000R 3.104 2-3 1.000R	20.420 85 48 16 28 .10 .40 .50 4 4 0 1.250 4 0 2.500 4 0 3.750 4	18.626 86 48 16 28 .10 .50 .40 4 4 0 1.000 2-3 3 1.000R 2.025 2-3 3 1.000R 1.000R	19.503 87 48 16 28 .10 .60 .30 2-3 3 1.000R 2.430 2-3 3 1.000R 2.430 2-3 3 1.000R	19.796 88 48 16 28 -20 .40 4 4 0 1.000 4 4 0 3.000 1-3	18.148 89 48 16 28 .20 .50 .30 2-3 1.000R 2.025 2-3 1.000R 2.025 1.000R 1.000R	18.86 90 48 16 28 .2000 .534 .266 2-3 3 1.0000 2.16 2-3 8 1.0000 3.46 1-3
Wh Ax: Spa Loa On Ax:	a. Base le le le les les 10	M o. e L X X' a1 a2 a3 G N B M G N B M G N B M G N B M	20.100 81 44 16 24 .10 .60 .30 2-3 1.000R .960 2-3 1.000R 2.430 2-3 3.000R 3.920 1-3 2.286R	20.332 82 44 16 24 .20 .40 4 4 0 1.000 4 4 0 3.000 1-3 2.000R	19.010 83 44 16 24 .20 .50 .30 2-3 1.000R 2.025 2-3 1.000R 2.025 3 1.000R 3.267	19.563 84 44 16 24 200 .534 .266 2-3 1.000R .854 2-3 1.000R 2.163 3 1.000R 2.1433R	20.420 85 48 16 28 .10 .40 .50 4 4 0 1.250 4 4 0 3.750	18.626 86 48 16 28 .10 .50 .40 4 4 0 1.000 2-3 3 1.000R 2.025 2-3 3 1.000R 3.267 1-3 2 5.00R	19.503 87 48 16 28 .10 .60 .30 2-3 3 1.000R .960 2-3 3 1.000R 2-3 3 1.000R 3.30 3 3 3 3 3 3 3 3 3 3 3 3 3	19.796 88 48 16 28 20 40 40 1.000 4 0 2.000 4 0 3.000	18.148 89 48 16 28 .20 .50 .30 2–3 3 1.000R .800 2–3 3 1.000R 2.025 2–3 3 1.000R 2.025 30 1.000R 3.00 3	18.86 90 48 16 28 .200 .534 .266 2-3 3 1.000 2.16 2-3 8 1.000 3.48 1-3 2
Wh Ax: Spa Loa On Ax:	a. Basele acing ad les 10 20	M D. D. D. D. D. D. D. D. D. D. D. D. D.	20.100 81 44 16 24 .10 .60 .30 2-3 1.000R .960 2-3 1.000R 2.430 1.000R 2.430 1.000R 2.436 5.602	20.332 82 44 16 24 .20 .40 4 4 0 1.000 4 4 0 2.000 4 0 3.000 1-3 2 000R 4.060	19.010 83 44 16 24 .20 .50 .30 2-3 3 1.000R 8.00 2-3 3 1.000R 2.025 2-3 3 1.000R 1.000R 4.025 4.943	19.563 84 44 16 24 200 .534 .266 2-3 3 1.000R 2.163 2-3 3 1.000R 2.163 2-3 3 1.000R 2.163	20.420 85 48 16 28 .10 .40 .50 4 4 0 1.250 4 4 0 2.500 4 4 0 3.750 4 4 0 5.000	18.626 86 48 16 28 .10 .50 .40 4 4 0 1.000 2-3 3 1.000R 2.025 2-3 3 1.000R 3.267 1-3 2 5.00R 4.704	19.503 87 48 16 28 .10 .60 .30 2-3 3 1.000R .960 2-3 3 1.000R 2.430 2-3 1.000R 2.430 2-3 5 1.000R 2.430 2.5 3 1.000R 2.5 3 1.000R 2.5 3 3 1.000R 2.5 3 3 1.000R 2.5 3 3 1.000R 2.5 3 3 1.000R 2.5 3 3 1.000R 2.5 3 3 1.000R 2.5 3 3 1.000R 2.5 3 3 1.000R 2.5 3 3 1.000R 2.5 3 3 1.000R 2.5 3 3 1.000R 2.5 3 3 1.000R 2.5 3 3 1.000R 2.5 3 3 1.000R 2.5 3 3 1.000R 3.	19.796 88 48 16 28 20 40 4 0 1.000 4 4 0 3.000 1-3 2 2.000R 4.060	18.148 89 48 16 28 .20 .50 .30 2-3 3 1.000R .800 2-3 1.000R 2.025 2-3 3 1.000R 2.025 2-3 1.05 1.05 4.943	18.86 90 48 166 1.60 1.60 1.60 1.60 1.60 1.60 1.60
Whax Spector Lose On Ax	le Bassle le le le le le le le le le le le le l	M	20.100 81 44 16 24 .10 .60 .30 2-3 3 1.000R 2.430 2-3 1.000R 2.430 2-3 2.480 2-3 1.000R	20.332 82 44 16 24 .20 .40 4 4 0 1.000 4 4 0 3.000 1-3 2 2.000R 4,060 1-3	19.010 83 44 16 24 .20 .50 .30 2-3 1.000R 2.025 2-3 1.000R 3.267 1-3 2 1.572R 4.943 1-3	19.563 84 44 16 24 .200 .534 .266 2-3 3 1.000R 2.163 2-3 3 1.000R 3.489 1-3 2 1.453R 5.244	20.420 85 48 16 28 .10 .40 .50 4 4 0 2.500 4 4 0 3.750 4 4 0 5.000 4	18.626 86 48 16 28 .10 .50 .40 4 4 0 1.000 2-3 3 1.000R 2.025 2-3 3 1.000R 3.267 1-3 2 5.500R 4.704 1-3	19.503 87 48 16 28 .10 .60 .30 2-3 3 1.000R 2.430 2-3 3 1.000R 2.430 2-3 2 2.86R 5.602 1-3	19.796 88 48 16 28 -20 -40 4 4 0 1.000 4 4 0 3.000 1-3 2 2.000R 4.066 1-3	18.148 89 48 16 28 .20 .50 .30 2-3 3 1.000R .800 2-3 3 1.000R 2.025 2-3 1.000R 3.267 1-3 2 1.572R 4.943 1-3	18.80 900 488 166 288 .2000 .5344 .2666 2-3 3 1.00000 .818 2-3 3 1.0000 3.44 1-3 2 1.4535 5.2-5 1-3
Whax Sparent Loan Ax	a. Basele acing ad les 10 20	M D. D. D. D. D. D. D. D. D. D. D. D. D.	20.100 81 44 16 24 .10 .60 .30 2-3 1.000R .960 2-3 1.000R 2.430 1.000R 2.430 1.000R 2.436 5.602	20.332 82 44 16 24 .20 .40 4 4 0 1.000 4 4 0 2.000 4 0 3.000 1-3 2 000R 4.060	19.010 83 44 16 24 .20 .50 .30 2-3 3 1.000R 8.00 2-3 3 1.000R 2.025 2-3 3 1.000R 1.000R 4.025 4.943	19.563 84 44 16 24 200 .534 .266 2-3 3 1.000R 2.163 2-3 3 1.000R 2.163 2-3 3 1.000R 2.163	20.420 85 48 16 28 .10 .40 .50 4 4 0 1.250 4 4 0 2.500 4 4 0 3.750 4 4 0 5.000	18.626 86 48 16 28 .10 .50 .40 4 4 0 1.000 2-3 3 1.000R 2.025 2-3 3 1.000R 3.267 1-3 2 500R 4.704 1-3 2	19.503 87 48 16 28 .10 .60 .30 2-3 3 1.000R .960 2-3 3 1.000R 2-3 3 1.000R 2-3 3 2-3 2-3 3 2-3 3 1.000R 2-3 3 1.000R 2-3 3 1.000R 2-3 3 2-3 3 1.000R 2-3 3 2-3 3 3 1.000R 2-3 3 3 1.000R 2-3 3 3 2-3 3 3 1.000R 2-3 3 3 2-3 3 3 3 3 3 3 3 3 3 3 3 3 3	19.796 88 48 16 28 20 40 40 4 4 0 1.000 4 4 0 2.000 4 4 0 2.000 1-3 2 2.000R 4.060 1-3 2	18.148 89 48 16 28 .20 .50 .30 2-3 3 1.000R .800 2-3 3 1.000R 2.025 2-3 3 1.000R 2.025 2-3 3 1.000R 3.267 1-3 2 1.572R 4.943 1-3 2	18.84 900 488 166 288 .2000 .5344 1.0000 3.44 1-3 2 1.455 5.2-2 1.3 2
Whax Sparent Loan Ax	le Bassle le le le le le le le le le le le le l	M D. D. SERVICE STATE OF STATE	20.100 81 44 16 24 .10 .60 .30 2-3 1.000R .960 2-3 1.000R 2.430 1.000R 2-3 2.430 1.000R 2-3 3 1.000R 2-3 3 1.000R 2-3 3 1.000R 2-3 3 3 1.000R 3.920 1-3 2 2.86R 5.602	20.332 82 44 16 24 .20 .40 .40 4 4 0 1.000 4 4 0 3.000 1-3 2 2.000R 4.060 1-3 2	19.010 83 44 16 24 .20 .50 .30 2-3 1.000R .800 2-3 1.000R 2.025 2-3 3 .207 1-3 2 1.572R 4.943 1-3 2	19.563 84 44 16 24 200 .534 .266 2-3 1.000R .854 2-3 3 1.000R 2.163 2-3 3 1.000R 2.1453R 5.244	20.420 85 48 16 28 .10 .40 .50 4 4 0 1.250 4 4 0 3.750 4 4 0 5.000 4 4 4	18.626 86 48 16 28 .10 .50 .40 4 4 0 1.000 2-3 3 1.000R 2.025 2-3 3 1.000R 3.267 1-3 2 5.500R 4.704 1-3	19.503 87 48 16 28 .10 .60 .30 2-3 3 1.000R 2.430 2-3 3 1.000R 2.430 2-3 2 2.86R 5.602 1-3	19.796 88 48 16 28 -20 -40 4 4 0 1.000 4 4 0 3.000 1-3 2 2.000R 4.066 1-3	18.148 89 48 16 28 .20 .50 .30 2-3 3 1.000R .800 2-3 3 1.000R 2.025 2-3 1.000R 3.267 1-3 2 1.572R 4.943 1-3	18.80 90 48 166 28 .2000 .5344 .2666 2-3 3 1.0000 .81 2-3 3 1.0000 3.44 1-3 2.1453 2 1.453
Whax Spector Lose On Ax	a. Basicle leading add less 10 20 30 40	M	20.100 81 44 16 24 .10 .60 .30 2-3 1.000R .960 2-3 1.000R 2-3 1.000R 2-3 2.430 13 2 2.86R 5.602 1-4 3 2.000L 7.380 1.44	20.332 82 44 16 24 .20 .40 .40 4 4 0 1.000 4 4 0 3.000 1-3 2 2.000R 4.060 1-3 2 2.000R 5.54R	19.010 83 44 16 24 .20 .50 .30 2-3 1.000R .800 2-3 1.000R 2.025 2-3 1.000R 3.267 1-3 2 1.572R 4.943 1-3 2 1.572R 6.685	19.563 84 44 16 24 200 .534 .266 2-3 1.000R .854 2-3 1.000R 2.163 2-3 1.000R 2.1453R 5.244 1-3 2 1.453R 7.072	20.420 85 48 16 28 .10 .40 .50 4 4 0 1.250 4 4 0 3.750 4 4 0 5.000 4 4 0 6.250 2-4	18.626 86 48 16 28 .10 .50 .40 4 4 0 1.000 2-3 3 1.000R 2.025 2-3 3 1.000R 4.704 1-3 2 5.00R 4.704 1-3 1.4	19.503 87 48 16 28 .10 .60 .30 2-3 3 1.000R .960 2-3 3 1.000R 2-430 2-3 3 1.000R 3.920 1-3 2 2.86R 5.602 1-3 2 2.86R 7.351	19.796 88 48 16 28 20 40 40 44 4 0 1.000 4 4 0 2.000 4 4 0 2.000 1-3 2 2.000R 4.060 1-3 2 2.000R 5.548	18.148 89 48 16 28 .20 .50 .30 2-3 3 1.000R .800 2-3 3 1.000R 2.025 2-3 3 1.000R 3.267 1-3 2 1.572R 4.943 1-3 2 1.572R 6.665 1-3	18.80 90 48 166 28 2000 .5344 .3 3 1.000 .81 2-3 3 1.000 2.11 2-3 3 1.000 3.44 1-3 5.22 1.453 5.22 1.453 7.07
Whax Sparent Loan Ax	le Bassle le le le le le le le le le le le le l	M	20.100 81 44 16 24 .10 .60 .30 2-3 1.000R .960 2-3 1.000R 2.430 1.000R 2.430 2.86R 5.602 1-4 3 2.000L 7.380	20.332 82 44 16 24 .20 .40 4 4 0 1.000 4 4 0 2.000 4 4 0 3.000 1-3 2 2.000R 4.060 1-3 2 2.000R 5.548 1-4	19.010 83 44 16 24 .20 .50 .30 2-3 1.000R 800 2-3 1.000R 2.025 2-3 3 1.000R 2.1572R 6.685 1.4	19.563 84 44 16 24 200 .534 .266 2-3 1.000R .854 2-3 3 1.000R 2.163 2-3 3 1.000R 2.163 2-3 3 1.000R 2.163 2-1 3 1.453R 7.072 1.453R 7.072	20.420 85 48 16 28 .10 .40 .50 4 4 0 1.250 4 4 0 3.750 4 4 0 5.000 4 4 0 6.250 2 4 4 0 6.250	18.626 86 48 16 28 .10 .50 .40 4 4 0 1.000 2-3 1.000R 2.025 2-3 3 1.000R 3.267 1-3 2 500R 4.704 1-3 2 500R 6.203 1-4	19.503 87 48 16 28 .10 .60 .30 2-3 3 1.000R .960 2-3 3 1.000R 2-43 3 1.000R 2-35 1.000R 2-31 3 1.000R 2-31 3 1.000R 2-31 3 1.000R 2-31 3 1.000R 2-31 3 1.000R 2-31 3 1.000R 2-31 3 1.000R 1-3 2 286R 7.351 1-4 3	19.796 88 48 16 28 20 .40 4 4 0 1.000 4 4 0 2.000 4 0 3.000 1-3 2 2.000R 5.548 1-4	18.148 89 48 16 28 .20 .50 .30 2-3 3 1.000R 2.025 2-3 1.000R 3.067 1-3 2 1.572R 4.943 1-3 2 1.572R 6.685 1-3 2	18.80 90 48 166 28 200 5344 1.010 2.166 2-3 3 1.000 2.116 2-3 3 1.000 3.44 1-3 2 1.453 7.00 1-3 2 1.453 7.00
Whax Sparent Loan Ax	a. Basicle leading add less 10 20 30 40	M	20.100 81 44 16 24 .10 .60 .30 2-3 1.000R .960 2-3 1.000R 2-3 1.000R 2-3 2.430 13 2 2.86R 5.602 1-4 3 2.000L 7.380 1.44	20.332 82 44 16 24 .20 .40 .40 4 4 0 1.000 4 4 0 3.000 1-3 2 2.000R 4.060 1-3 2 2.000R 5.54R	19.010 83 44 16 24 .20 .50 .30 2-3 1.000R .800 2-3 1.000R 2.025 2-3 1.000R 3.267 1-3 2 1.572R 4.943 1-3 2 1.572R 6.685	19.563 84 44 16 24 200 .534 .266 2-3 1.000R .854 2-3 1.000R 2.163 2-3 1.000R 2.1453R 5.244 1-3 2 1.453R 7.072	20.420 85 48 16 28 .10 .40 .50 4 4 0 1.250 4 4 0 3.750 4 4 0 5.000 4 4 0 6.250 2-4	18.626 86 48 16 28 .10 .50 .40 4 4 0 1.000 2-3 3 1.000R 2.025 2-3 3 1.000R 4.704 1-3 2 5.00R 4.704 1-3 1.4	19.503 87 48 16 28 .10 .60 .30 2-3 3 1.000R .960 2-3 3 1.000R 2-430 2-3 3 1.000R 3.920 1-3 2 2.86R 5.602 1-3 2 2.86R 7.351	19.796 88 48 16 28 20 40 40 44 4 0 1.000 4 4 0 2.000 4 4 0 2.000 1-3 2 2.000R 4.060 1-3 2 2.000R 5.548	18.148 89 48 16 28 .20 .50 .30 2-3 3 1.000R .800 2-3 3 1.000R 2.025 2-3 3 1.000R 3.267 1-3 2 1.572R 4.943 1-3 2 1.572R 6.665 1-3	18.84 90 488 160 288 2.2000 5.534 3 1.0000 888 1.0000 3.41 2-3 3 3 1.0000 3.44 1-3 2 1.453 5.22 1.453 7.07
Whax Sparent Loan Ax	a. Bassale leacing ad less 10 20 30 40 50	M O. e L X X ' a1 a2 a3 G N B M G R B M G R B R B M R B R B M R B R B R B R B R B	20.100 81 44 16 24 .10 .60 .30 2-3 1.000R .960 2-3 1.000R 2.430 2-3 2.430 1-3 .286R 5.602 1-4 3 2.000L 7.380 1.43 3.000R 2.430 1.43 3.000R 1.44 3.000L 7.380	20.332 82 44 16 24 .20 .40 4 4 0 1.000 4 4 4 0 3.000 1-3 2 2.000R 4.060 1-3 2 2.000R 5.548 1-4 3 2.4096 1-4	19.010 83 44 16 24 .20 .50 .30 2-3 3 1.000R .800 2-3 3.000R 2.03 2-3 3 1.000R 2.025 2-3 3 1.000R 3.267 1-3 2 1.572R 4.943 1-3 2 1.572R 6.685 1-4 3 1.100L 1.920 1.4	19.563 84 44 16 24 200 .534 .266 2-3 1.000R .854 2-3 1.000R 2.163 3 1.000R 2.1453R 5.244 1-3 2 1.453R 7.072 1-4 3 .670I 9.270 1-4	20.420 85 48 16 28 .10 .40 .50 4 4 0 1.250 4 4 0 3.750 4 4 0 5.000 4 4 6.667R 8.167 2.4	18.626 86 48 16 28 .10 .50 .40 4 4 0 1.000 2-3 3 1.000R 2.025 2-3 3 2.000R 4.704 1-3 2 .500R 6.203 1-4 3 4.100L 8.180 1-4	19.503 87 48 16 28 .10 .60 .30 2-3 3 1.000R .960 2-3 3 1.000R 2-430 2-3 3 1.000R 2-3 3 1.000R 2-3 1.000R 2-3 3 2-3 2-3 3 2-3 2-3 3 2-3 2-3 3 2-3 2-3 3 2-3 2-3 3 2-3 2-3 3 2-3 2-3 3 2-3 2-3 3 1-3 2-3 2	19.796 88 48 16 28 20 40 4 4 0 1.000 4 4 0 2.0000 4 4 0 2.0000 4 4 0 2.0000 1-3 2 2.0000R 5.548 1-4 3 3.200L 7.171 1-4	18.148 89 48 16 28 .20 .50 .30 2-3 3 1.000R .800 2-3 1.000R 2.025 2-3 1.000R 3.267 1-3 2 1.572R 6.685 1-3 2 1.572R 6.685 1-3 2 1.572R 8.429 1.44	18.80 90 48 166 28 2.200 5.34 1.000 2.11 2-3 3 1.000 3.41 1-3 2 1.453 7.00 1-3 2 1.453 8.90
Whax Sparent Loan Ax	a. Basicle leading add less 10 20 30 40	M D. e L X X X a1 a2 a3 B M G N B M B M G N B M B M B M B M B M B M B M B M B M B	20.100 81 44 16 24 .10 .60 .30 2-3 3 1.000R .960 2-3 3 1.000R 3.920 1-3 2.86R 5.602 1-4 3 2.000L 9.867	20.332 82 44 16 24 20 .40 4 4 0 1.000 4 4 0 2.000 4 4 0 3.000 1-3 2 2.0000 4 4.060 1-3 2 2.000 1-3 2 2.000 1-3 2 2.000 1-3 2 1-4 3	19.010 83 44 16 24 .20 .50 .30 2-3 1.000R .800 2-3 3 1.000R 3.267 1-3 2 1.572R 4.943 1-3 2 1.572R 4.943 1-3 1.00L 8.920 1-4 3	19.563 84 44 16 24 200 534 2-66 2-3 3 1.000R .854 2-3 3 1.000R 2.163 2-3 3 1.000R 3.489 1-3 2 1.453R 5.244 1-3 2 1.453R 5.244 1-3 2 1.453R 5.244 1-3 2 1.453R 5.244 1-3 2 1.453R 5.244 1-3 2 1.453R 5.244 1-3 2 1.453R	20.420 85 48 16 28 10 .40 .50 4 4 0 1.250 4 4 0 3.750 4 4 0 5.000 4 4 0 6.250 2 4 6.667 8.167 2 4 4 4	18.626 86 48 16 28 .10 .50 .40 4 4 0 1.000 2-3 3 1.000R 2.025 2-3 3 1.000R 3.267 1-3 2 5.000R 4.704 1-3 2 5.000R 4.704 1-3 4.100L 8.180 1-4	19.503 87 48 16 28 10 60 .30 2-3 3 1.000R .960 2-3 3 1.000R 2.430 2-3 3 1.000R 2.430 2-3 3 1.000R 3.920 1-3 2 2.86R 5.602 1-4 3 2.600L 9.313 1-4 3	19.796 88 48 16 28 .20 .40 4 4 0 1.000 4 4 0 3.000 1-3 2 2.000R 4.060 1-3 2 2.000R 1-3 2 1-4 3 3.200L 7.171 1-4	18.148 89 48 16 28 .20 .50 .50 .30 2-3 3 1.000R .800 2-3 3 1.000R 2.025 2-3 3 1.000R 3.267 1-3 2 1.572R 4.943 1-3 2 1.572R 6.685 1-3 1.572R 8.429 1-4 3	18.84 90 488 166 28 2000 .534 3 1.0000 .818 2-3 3 1.0000 3.44 1-3 2 1.453 5.22 1.453 7.07 1-3 2 1.453 8.99
Whax Spector Lose On Ax	a. Bassale leacing ad less 10 20 30 40 50	M O. e L X X ' a1 a2 a3 G N B M G R B M G R B R B M R B R B M R B R B R B R B R B	20.100 81 44 16 24 .10 .60 .30 2-3 1.000R .960 2-3 1.000R 2.430 2-3 2.430 1-3 .286R 5.602 1-4 3 2.000L 7.380 1.43 3.000R 2.430 1.43 3.000R 1.44 3.000L 7.380	20.332 82 44 16 24 .20 .40 4 4 0 1.000 4 4 4 0 3.000 1-3 2 2.000R 4.060 1-3 2 2.000R 5.548 1-4 3 2.4096 1-4	19.010 83 44 16 24 .20 .50 .30 2-3 3 1.000R .800 2-3 3.000R 2.03 2-3 3 1.000R 2.025 2-3 3 1.000R 3.267 1-3 2 1.572R 4.943 1-3 2 1.572R 6.685 1-4 3 1.100L 1.920 1.4	19.563 84 44 16 24 200 .534 .266 2-3 1.000R .854 2-3 1.000R 2.163 3 1.000R 2.1453R 5.244 1-3 2 1.453R 7.072 1-4 3 .670I 9.270 1-4	20.420 85 48 16 28 .10 .40 .50 4 4 0 1.250 4 4 0 3.750 4 4 0 5.000 4 4 6.667R 8.167 2.4	18.626 86 48 16 28 .10 .50 .40 4 4 0 1.000 2-3 3 1.000R 2.025 2-3 3 2.000R 4.704 1-3 2 .500R 6.203 1-4 3 4.100L 8.180 1-4	19.503 87 48 16 28 .10 .60 .30 2-3 3 1.000R .960 2-3 3 1.000R 2-430 2-3 3 1.000R 2-3 3 1.000R 2-3 1.000R 2-3 3 2-3 2-3 3 2-3 2-3 3 2-3 2-3 3 2-3 2-3 3 2-3 2-3 3 2-3 2-3 3 2-3 2-3 3 2-3 2-3 3 1-3 2-3 2	19.796 88 48 16 28 20 40 4 4 0 1.000 4 4 0 2.0000 4 4 0 2.0000 4 4 0 2.0000 1-3 2 2.0000R 5.548 1-4 3 3.200L 7.171 1-4	18.148 89 48 16 28 .20 .50 .30 2-3 3 1.000R .800 2-3 1.000R 2.025 2-3 3 1.000R 3.267 1-3 2 1.572R 4.943 1-3 2 1.572R 6.685 1-3 2 1.572R 8.429 1-4 8.429 1-4 3 1.700L	18.86 90 488 16.28 2.200 5.344 2.266 2-3 3 1.000 2.16 2-3 3 1.000 2.1453 5.24 1-3 2 1.453 7.07 1-3 2 1.453 7.07 1-3 2 1.453 7.07 1-3 2 1.453 7.07
Whax Spector Lose On Ax	1. Bassele acing a	M D. e L X X X a1 a2 a3 G N B M G R B M G R B R B M G R B R B R B R B R B R B R B R B R B R	20.100 81 44 16 24 .10 .60 .30 2-3 1.000R .960 2-3 1.000R 2-3 3.920 1-3 2 2.86R 5.602 1-4 3 2.000L 7.380 1.49 867	20.332 82 44 16 24 .20 .40 4 4 0 1.000 4 4 0 3.000 1-3 2 2.000R 4.060 1-3 2 2.000R 5.548 1-4 3 2.400L 7.896 1-4 3 2.400L	19.010 83 44 16 24 .20 .50 .30 2-3 1.000R .800 2-3 1.000R 2.025 2-3 3 1.000R 3.267 1-3 2 1.572R 4.943 1-3 1.572R 4.943 1-4 3 1.100L 8.920 1-4 3 1.100L	19.563 84 44 16 24 200 .534 .266 2-3 1.000R .854 2-3 1.000R 2.163 2-3 1.000R 2.163 2-3 1.000R 1.453R 7.072 1.453R 7.072 1.453R 7.072 1.453R 7.072 1.453R 7.072 1.453R 7.072 1.453R 7.072 1.453R 7.072 1.453R 7.072 1.453R 7.072 1.453R 7.072 1.453R 7.072	20.420 85 48 16 28 .10 .40 .50 4 4 0 1.250 4 4 0 3.750 4 4 0 5.000 4 4 6.667R 8.167 2.4 6.667R	18.626 86 48 16 28 .10 .50 .40 4 4 0 1.000 2-3 3 1.000R 2.025 2-3 3 2.000R 4.704 1-3 2.500R 4.704 1-3 4.100L 8.180	19.503 87 48 16 28 .10 .60 .30 2-3 3 1.000R .960 2-3 3 1.000R 2.430 2-3 3 1.000R 2.430 2-3 3 1.000R 3.920 1-3 2.86R 7.351 1-4 3 2.6000L 9.313 1-4 3 2.600L	19.796 88 48 16 28 20 .40 4 4 0 1.000 4 4 0 2.000 4 4 0 2.000 1-3 2 2.000R 4.060 1-3 2 2.000R 5.548 1-4 3 3.200L	18.148 89 48 16 28 .20 .50 .50 .30 2-3 3 1.000R .800 2-3 3 1.000R 2.025 2-3 3 1.000R 3.267 1-3 2 1.572R 4.943 1-3 2 1.572R 6.685 1-3 1.572R 8.429 1-4 3	18.86 90 488 16.28 2.200 5.344 2.266 2-3 3 1.000 2.16 2-3 3 1.000 2.1453 5.24 1-3 2 1.453 7.07 1-3 2 1.453 7.07 1-3 2 1.453 7.07 1-3 2 1.453 7.07
Wh Ax Spa Loa On	a. Bassale leacing ad less 10 20 30 40 50	M O. e L X X ' a1 a2 a3 G N B M B M G N B M B M B M B M B M B M B M B M B M B	20.100 81 44 16 24 .10 .60 .30 2-3 1.000R .960 2-3 1.000R 2.430 2-3 3 1.000R 2.430 2-3 2.886R 5.602 1-4 3 2.000L 7.380 1-4 3 2.000L 9.867 1-4 3 2.000L	20.332 82 44 16 24 .20 .40 4 4 0 1.000 4 4 4 0 3.000 1-3 2 2.000R 4.060 1-3 2 2.000R 5.548 1-4 3 2.400L 1-8 3 3.400L 1-8 3.400L 1-8 3.400L	19.010 83 44 16 24 .20 .50 .30 2-3 3 1.000R .800 2-3 1.000R 2-3 2 1.572R 4.943 1-3 2 1.572R 6.685 1-4 3 1.100L 3.915	19.563 84 44 16 24 200 .534 .266 2-3 1.000R .854 2-3 1.000R 2.1453R 5.244 1-3 2 1.453R 7.072 1-4 3 .670L 1.4268	20.420 85 48 16 28 .10 .40 .50 4 4 0 1.250 4 4 0 3.750 4 4 0 5.000 4 4 6.6667R 8.167 2.4 6.6667R 12.500	18.626 86 48 16 28 .10 .50 .40 4 4 0 1.000 2-3 3 1.000R 2.025 2-3 3 1.000R 4.704 1-3 2 .500R 6.203 1-4 3 4.100L 8.180 1-4 4 1.00L 13.110	19.503 87 48 16 28 .10 .60 .80 .2-3 1.000R .960 2-3 1.000R 2.430 2-3 3 1.000R 2.430 1-3 2.430 1-3 2.866R 7.351 1-4 3 2.6000L 9.313 1-4 3 2.6000L 1.4.285	19.796 88 48 16 28 20 .40 4 4 0 1.000 4 4 0 3.000 1-3 2 2.0000R 4.060 1-3 2 2.000R 5.548 1-4 3 3.200L 7.171 1-4 3 3.200L 12.128	18.148 89 48 16 28 20 .50 .30 2-3 3 1.000R .800 2-3 1.000R 2.025 2-3 3 1.000R 3.267 1-3 2 1.572R 4.943 1-3 2 1.572R 8.429 1.4 3 1.700L 13.336	18.86 90 488 16.28 2.200 5.534 2.266 2.3 3 1.000 2.116 2.3 8 1.000 2.1453 5.24 1.453 7.07 1.3 8 1.453 2 1.453 7.107

Table 7.7

CONTROLLING CONDITIONS AND MAXIMUM MOMENTS IN SIMPLE SPANS PRODUCED BY THE TYPE 3-S2 TRUCKS WEIGHING ONE KIP EACH



One hundred twelve variations in the Type 3-S2 truck are given in this Table. Each truck number, from 1 to 112, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

Tri	ick N	ο.	1	2	3	4	5	6	7	8	9	10
Wł	ı. Base	e L	28	28	28	28	28	28	28	32	32	32
Ax		X	8	8	8	8	8	8	8	8	8	8
	acing	X'	12	12	12	12	12	12	12	16	16	16
Loa		$\mathbf{a_1}$.10	.10	.10	.10	.20	.20	.20	.10	.10	.10
On Ax		\mathbf{a}_2	.30 .60	.40 .50	.45 .45	.50 .40	.30 .50	.40 .40	.50 .30	.30 .60	.40 .50	.45 .45
AX	162	a ₃	4-5	4-5	4-5	2-3	4-5	4-5	2-3	45	4-5	4-5
	10	G N	4ə 5	4-0 5	4-3 5	∠⊸ა 3	4-5 5	4.∹ə 5	3	4ə 5	4-5 5	4-5 5
ĺ	10	В	1.000R	1.000R	1,000R	1.000R	1.000R	1.000R	1.000R	1.000R	1.000R	1.000R
- 1		M	.960	.800	.720	.800	.800	.640	.800	.960	.800	.720
		G	4-5	4 -5	1-3	1-3	4-5	1-3	1-3	4-5	4-5	1-3
	20	N	5	5	2	2	5	2	2	5	5	2
i		В	1.000R	1.000R	.091L	.167L	1.000R	.667R	.429R	1.000R	1.000R	.091L
		M	2.430	2.025	1.901	2.102	2.025	1.814	2.205	2.430	2.025	1.901
	30	G N	2-5 4	2-5 4	1-5 3	$^{1-4}_{3}$	2-5 4	1-3 2	$^{1-3}_{2}$	4-5 5	4–5 5	$^{1-3}_{2}$
	90	В	1.667R	2.556R	2.100L	.125L	2.000R	.667R	.429R	1.000R	1.000R	.091L
		M	4.134	3.647	3.447	3.701	3.506	3.310	3.953	3.920	3.267	3.276
		G	2-5	2-5	1-5	1-5	25	1 5	15	25	2-5	1-5
أبد	40	N	4	4	3	3	4	3	3	4	4	3
ee		В	1.667R	2.556R	2.100L	1.700L	2.000R	1.200L	.400L	2.333R	3.445R	3.000L
Span-Feet		M	6.364	5.847	5.910	6.172	5.480	5.636	6.204	5.821	5.167	5.125
an	50	G N	1-5 4	$^{1-5}_{4}$	1–5 3	1-5 3	1-5 4	$^{1-5}_{3}$	1-5 3	2-5 4	1-5	1-5
Sp	50	B	2.700R	3.500R	2,100L	1.700L	4.000R	1.200L	.400L	2.333R	$^{4}_{4.500\mathrm{R}}$	3 3.000L
1		M	8.746	8.245	8.388	8.658	7.820	8.129	8.703	8.047	7.405	7.580
		G	15	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5
	60	N	4	4	3	3	4	3	3	4	4	3
		\mathbf{B}	2.700R	3.500R	2.100L	1.700L	4.000R	1.200L	.400L	$3.500\mathbf{R}$	$4.500\mathbf{R}$	3.000L
		M	11.222	10.704	10.874	11.148	10.267	10.624	11.203	10.504	9.838	10.050
		G	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	15
	80	N B	$^{4}_{2.700R}$	$^{4}_{3.500R}$	$^{3}_{2.100L}$	3 1.700L	4 4.000R	$^3_{1.200 m L}$	$^3_{.400 L}$	4	4	3
1		M	2.700R 16.191	15.653	2.100L 15.855	16.136	4.000K 15.200	1.200L 15.618	16.202	3.500R 15.453	4.500R 14.753	3.000L 15.013
		G	1-5	1-5	1-5	1-5	1- 5	1-5	1-5	1-5	1-5	1-5
	100	N	4	4	3	3	4	3	3	4	4	3
		В	2.700R	3.500R	2.100L	1.700L	4.000R	1.200L	.400L	3.500R	4.500R	3.000L
		M	21.173	20.623	20.844	21.129	20.160	20.614	21.202	20.423	19.703	19.990

a₁, a₂, and a₃-Represent the ratio of gross vehicle weight on axles.

G-Axle group causing maximum moment, thus, 1-3 means axles 1, 2, and 3.

N-Number of critical axle under which maximum moment occurs.

B-Distance to right or left of mid-span to point of maximum moment.

M-Maximum moment.

82 METHOD OF CONVERTING HEAVY MOTOR VEHICLE LOADS

TA	BLE	7.7 (Continue	i)								
	ick No		11	12	13	14	15	16	17	18	19	20
$\frac{\mathbf{W}}{\mathbf{A}\mathbf{x}}$	a. Base		32	32 8	32 8	328	36 8	36 8	<u>36</u>	36	36	36
	ie icing	X X'	16	16	16	16	20	20	20	8 20	8 20	20
Loa	ad	a ₁ a ₂	.10 .50	.20	.20	.20 .50	.10 .30	.10 .40	.10 .45	.10 .50	.20 .30	.20 .40
Ax	les	a ₂	.40	.50	.40	.30	.60	.50	.45	.40	.50	.40
	10	G N	2–3 3	4-5 5	4-5 5	2-3 3	4-5 5	$^{4-5}_{5}$	$^{4-5}_{5}$	$^{2-3}_3$	$^{4-5}_{5}$	$^{4-5}_{5}$
	10	В	1.000R	1.000R	1.000R	1.000R	1.000R	1.000R	1.000R	1.000R	1.000R	1.000R
		M G	.800 1-3	.800 4-5		.800 1-3	.960 4-5	.800 4-5	$\frac{.720}{1-3}$	$\frac{.800}{1-3}$.800 4-5	$-\frac{.640}{1-3}$
	20	N	2	5	2 .667R	2	5	5	2	2	5	2
		B M	$^{.167}_{2.102}$	$1.000R \\ 2.025$.667R 1.814	$^{.429 m R}_{2.205}$	1.000R 2.430	$1.000\mathrm{R}$ 2.025	$091L \\ 1.901$	$^{.167}_{2,102}$	$1.000 { m R} \ 2.025$.667R 1.814
	20	G	1-3	4-5	1-3	1-3	4-5	4-5	1-3	1-3	4-5	1-3
	30	N B	$^2_{.167 m L}$	$_{1.000\mathrm{R}}^{5}$	$^2_{.667 m R}$	2 .429R	$_{1.000\mathrm{R}}^{5}$	$_{1.000 m R}^{5}$	$^2_{.091 ext{L}}$	$^2_{.167 m L}$	$_{ m 1.000R}^{ m 5}$	$^2_{.667 m R}$
		M G	3.602 1-5	$\frac{3.267}{2-5}$	3.310	$\frac{3.953}{1-4}$	3.920	$\frac{3.267}{3-5}$	$\frac{3.276}{1-3}$	3.602	$\frac{3.267}{3-5}$	3.310 1-3
4.3	40	N	3	4	3	2	4	4	2	$\overset{1-3}{2}$	4	2
Feet		B M	$2.500L \\ 5.456$	2.750R 4.951	$\frac{2.000L}{4.900}$	1.412L 5.744	$^{1.200 m R}_{5.427}$	2.143R 4.579	091L 4.651	5.102	1.539R 4.537	.667R 4.808
Span-Feet		G	1-5	1-5	1–5	1-5	2-5	2–5	1-5	1-5	2-5	15
\mathbf{Sp}	50	N B	$^{3}_{2.500 m L}$	$_{5.000\mathrm{R}}^{4}$	$^{3}_{2.000 L}$	3 $1.000L$	$^4_{3.000 m R}$	$^4_{4.333 m R}$	3.900L	$3 \\ 3.300 $ L	$^4_{3.500 m R}$	3 2.800L
		M	7.925	7.000	7.380	8.120	7.512	6.687	6.804	7.218	6.396	6.657
	60	G N	$^{1-5}_{3}$	$^{1-5}_{4}$	$^{1-5}_{3}$	1-5 3	1-5 4	$^{1-5}$	1-5 3	$^{1-5}_{3}$	1–5 4	$^{1-5}_{3}$
		B M	2.500L 10.404	$5.000\mathbf{R}$	2.000L	1.000L	4.300R	5.500R 9.004	3.900L	3.300 L	6.000R	2.800L
		G	1-5	9.417	$\frac{9.867}{1-5}$	$\frac{10.617}{1-5}$	$\frac{9.808}{1-5}$	1-5	9.254 1–5	$\frac{9.682}{1-5}$	8.600 1-5	9.131 1-5
	80	N B	3 2.500L	$_{5.000\mathrm{R}}^{4}$	$^3_{2.000\mathbf{L}}$	3 1.000L	$\overset{4}{4.300}\mathrm{R}$	$^{4}_{5.500\mathrm{R}}$	3 3.900L	3 3.300 L	$^{4}_{6.000\mathrm{R}}$	$^{3}_{2.800 L}$
		M	15.378	14.313	14.850	15.613	14.731	13.878	14.190	14.636	13.450	14.098
	100	G N	$^{1-5}_{3}$	1-5 4	1-5 3	1-5 3	1-5 4	1–5 4	$^{1-5}$	1-5	1–5 4	1-5 3
	100	В	2.500L	$5.000\mathbf{R}$	2.000 L	1.000L	4.300R	5.500R	3.900L	$\begin{array}{c} 3\\3.300 L \end{array}$	6.000R	2.800L
_		M	20.363	19.250	19.840	20.610	19.685	18.803	19.152	19.609	18.360	19.078
· Tr	1- 37	_	0.1	00	0.9	0.4	0=	0.0	07	0.0	00	0.0
To desire	uck No		21 36	22 40	23 40	24 40	25 40	26 40	27 40	28 40	29 44	30 44
W Ax	ı. Bası le	e L	36 8	40 8	40 8	40 8	40 8	40 8	40 8	40 8	8	44
Ax Sp	n. Base le acing	X X'	36 8 20	40 8 24	40 8 24	40 8 24	40 8 24	40 8 24	40 8 24	40 8 24	44 8 28	44 8 28
Ax Sp Lo On	n. Base le acing ad	E L X X' a ₁ a ₂	36 8 20 .20 .50	40 8 24 .10 .30	8 24 .10 .40	40 8 24 .10 .45	8 24 .10 .50	40 8 24 .20 .30	40 8 24 .20 .40	40 8 24 .20 .50	8 28 .10 .30	8 28 .10 .40
Ax Sp Lo On	n. Base le acing ad	E L X X' a ₁ a ₂ a ₃	36 8 20 .20 .50 .30	8 24 .10 .30 .60	8 24 .10 .40 .50	40 8 24 .10 .45 .45	8 24 .10 .50 .40	40 8 24 .20	40 8 24 .20 .40 .40	40 8 24 .20 .50 .30	8 28 .10 .30 .60	44 8 28 .10 .40 .50
Ax Sp Lo On	n. Base le acing ad	X X' a ₁ a ₂ a ₃ G	36 8 20 .20 .50 .30 2–3 3	8 24 .10 .30 .60 4-5 5	$ \begin{array}{r} 40 \\ 8 \\ 24 \\ \hline .10 \\ .40 \\ .50 \\ 4-5 \\ 5 \end{array} $	40 8 24 .10 .45 .45 4-5 5	40 8 24 .10 .50 .40 2-3 3	40 8 24 .20 .30 .50 4–5	40 8 24 .20 .40 .40 4-5 5	40 8 24 .20 .50 .30 2–3	8 28 .10 .30 .60 4–5	44 8 28 .10 .40 .50 4-5 5
Ax Sp Lo On	n. Base le acing ad les	a1 a2 a3 G N B M	36 8 20 .20 .50 .30 2–3 3 1.000R .800	40 8 24 .10 .30 .60 4-5 5 1.000R .960	40 8 24 .10 .40 .50 4–5 5 1.000R .800	40 8 24 .10 .45 .45 4–5 5 1.000R .720	40 8 24 .10 .50 .40 2-3 3 1.000R .800	40 8 24 .20 .30 .50 4–5 5 1.000R .800	40 8 24 .20 .40 .40 4-5 5 1.000R .640	40 8 24 .20 .50 .30 2–3 3 1.000R .800	44 8 28 .10 .30 .60 4–5 5 1.000R .960	44 8 28 .10 .40 .50 4-5 5 1.000R .800
Ax Sp Lo On	n. Base le acing ad les	a1 a2 a3 G N B M	36 8 20 .20 .50 .30 2–3 1.000R .800 1–3	40 8 24 .10 .30 .60 4-5 5 1.000R .960 4-5	40 8 24 .10 .40 .50 4-5 5 1.000R .800 4-5	40 8 24 .10 .45 .45 4–5 5 1.000R .720 1–3	40 8 24 .10 .50 .40 2-3 3 1.000R .800 1-3	40 8 24 .20 .30 .50 4–5 5 1.000R .800	40 8 24 .20 .40 .40 4-5 5 1.000R .640 1-3	40 8 24 .20 .50 .30 2-3 3 1.000R .800	44 8 28 .10 .30 .60 4–5 5 1.000R .960	44 8 28 .10 .40 .50 4–5 5 1.000R .800 4–5
Ax Sp Lo On	n. Base le acing ad les	a1 a2 a3 G N B M G N B	36 8 20 .20 .50 .30 2-3 3 1.000R .800 1-3 2 .429R	40 8 24 .10 .30 .60 4-5 5 1.000R .960 4-5 5 1.000R	40 8 24 .10 .40 .50 4-5 5 1.000R .800 4-5 5 1.000R	40 8 24 .10 .45 .45 4–5 5 1.000R .720 1–3 2 .091L	40 8 24 .10 .50 .40 2-3 3 1.000R .800 1-3 2 .167L	40 8 24 .20 .30 .50 4–5 5 1.000R .800 4–5 5 1.000R	40 8 24 .20 .40 .40 4-5 5 1.000R .640 1-3 2 .667R	40 8 24 .20 .50 .30 2-3 3 1.000R .800 1-3 2 .429R	44 8 28 .10 .30 .60 4–5 5 1.000R .960 4–5 5 1.000R	44 8 28 .10 .40 .50 4–5 5 1.000R 800 4–5 5 1.000R
Ax Sp Lo On	n. Base le acing ad les	e L X X' a1 a2 a3 G N B M G N B	36 8 20 .20 .50 .30 2-3 3 1.0000R .800 1-3 2 .429R 2.205	40 8 24 .10 .30 .60 4-5 5 1.000R .960 4-5 5 1.000R 2.430	40 8 24 .10 .40 .50 4-5 5 1.000R .800 4-5 5 1.000R 2.025	40 8 24 .10 .45 .45 4-5 5 1.000R .720 1-3 2 .091L 1.901	40 8 24 .10 .50 .40 2-3 3 1.000R .800 1-3 2 .167L 2.102	40 8 24 .20 .30 .50 4–5 5 1.000R .800 4–5 5 1.000R 2.025	40 8 24 .20 .40 .40 4-5 5 1.000R .640 1-3 2 .667R 1.814	40 8 24 .20 .50 .30 2-3 3 1.000R .800 1-3 2 .429R 2.205	44 8 28 .10 .30 .60 4–5 5 1.000R .960 4–5 5 1.000R 2.430	44 8 28 .10 .40 .50 4–5 5 1.000R .800 4–5 5 1.000R
Ax Sp Lo On	n. Base le acing ad les	E L X X X A1 A2 A3 G N B M G N B M G N B N B N B N B N B N B N B N B N B N	36 8 20 .50 .50 .30 2–3 3 1.000R .800 1–3 2 .429R 2.205 1–3	40 8 24 .10 .60 4-5 5 1.000R 2.430 4-5 5	40 8 24 .10 .40 .50 4-5 5 1.000R 2.025 4-5 5	40 8 24 .10 .45 .45 .45 1.000R .720 1-3 2 .091L 1.901 1-3 2	8 24 .10 .50 .40 2-3 3 1.000R .800 1-3 2 .167L 2.102	40 8 24 .20 .30 .50 4–5 1.000R .800 4–5 1.000R 2.025 4–5 5	40 8 24 .20 .40 4-5 5 1.000R .640 1-3 2 .667R 1.814 1-3 2	40 8 24 .20 .50 .30 2–3 3 1.000R .800 1–3 2 .429R 2.205 1–3 2	44 8 28 .10 .60 4–5 1.000R 2.430 4–5 5	44 8 28 .10 .40 .50 4–5 5 1.000R 2.025 4–5 5
Ax Sp Lo On	le acing ad les 10 20	a1 a2 a3 G N B M G N B M	36 8 20 .20 .50 .30 2-3 3 1.0000R .800 1-3 2 .429R 2.205 1-3	40 8 24 .10 .30 .60 4-5 5 1.000R .960 4-5 5 1.000R 2.430 4-5	40 8 24 .10 .40 .50 4-5 5 1.000R .800 4-5 5 1.000R 2.025	40 8 24 .10 .45 .45 .45 1.000R .720 1-3 2 .091L 1.901 1-3	40 8 24 .10 .50 .40 2-3 3 1.000R .800 1-3 2 .167L 2.102 1-3	40 8 24 .20 .30 .50 4–5 5 1.000R .800 4–5 5 1.000R 2.025 4–5	40 8 24 .20 .40 .40 4-5 5 1.000R .640 1-3 2 .667R 1.814 1-3	40 8 24 .20 .50 .30 2-3 3 1.000R .800 1-3 2 .429R 2.205 1-3	44 8 28 .10 .30 .60 4–5 5 1.000R .960 4–5 5 1.000R 2.430	44 8 28 .10 .40 .50 4–5 5 1.000R 2.025 4–5 5 1.000R
Ax Sp Lo On	n. Bassale le acing ad les 10 20	e L X X X a1 a2 a3 G N B M G N B M G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G G G G G G G G G G G G G G G G G	36 8 20 .20 .50 .30 .30 2-3 3 1.000R .800 1-3 2.205 1-3 2.429R 3.953 1-3	40 8 24 .10 .30 .60 4-5 5 1.000R .960 4-5 5 1.000R 2.430 4-5 5 1.000R 2.430 4-5 5 1.000R	40 8 24 .10 .40 .50 4-5 5 1.000R .800 4-5 5 1.000R 2.025 4-5 5 1.000R 2.025 4-5 4-5 5 1.000R 4-5 5 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 1.000R 4-5 4-5 5 1.000R 4-5 4-5 1.000R 4-5 1.	40 8 24 .10 .45 .45 4-5 5 1.000R .720 1-3 2 .091L 1.901 1-3 2 .091L 3.276 1-3	40 8 24 .10 .50 .40 2-3 3 1.000R .800 1-3 2 .167L 2.102 1-3 2 .167L 2.167L	40 8 24 .20 .30 .50 4–5 5 1.000R .800 4–5 5 1.000R 2.025 4–5 5 1.006R 2.025 4–5 4–5 4–5 4–5 4–5 4–5 4–5 4–	40 8 24 .20 .40 .40 4-5 5 1.000R .640 1-3 2 .667R 1.814 1-3 2 .667R 3.310 1-3	40 8 24 .20 .50 .30 2-3 3 1.000R .800 1-3 2 .429R 2.205 1-3 2 .429R 3.953 1-3	8 28 .10 .30 .60 4-5 5 1.000R .960 4-5 5 1.000R 2.430 4-5 5 1.000R	44 8 28 .10 .40 .50 4–5 5 1.000R 2.025 4–5 5 1.000R 3.267 4–5
Windowski Axx Sp Lo On Axx	le acing ad les 10 20	2 L X X' a1 a2 a3 G N B M G N B M G N B B M B M B M B B M B B M B B M B B M B B M B B M B B M B B M B B M B B M B M B B M B B M B B M B B M B B M B B M B B M B B M B B M B B M B M B B M B B M B B M B B M B B M B B M B B M B B M B B M B B M B M B M B B M B B M B B M B B M B B M B M B B M B B M B B M B B M B B M B B M B B M B B M B B M B B M B B M B M B B M B M B B M B	36 8 20 .50 .50 .30 2-3 3 1.000R .800 1-3 2 .429R 3.953 1-3 2 .429R 3.953	40 8 24 .10 .30 .60 4-5 5 1.000R .960 4-5 5 1.000R 2.430 4-5 5 1.000R	40 8 24 .10 .40 .50 4-5 5 1.000R .800 4-5 5 1.000R 2.025 4-5 5 1.000R 2.025 4-5 5 1.000R	40 8 24 .10 .45 .45 .45 .5 1.000R .720 1-3 .091L 1.901 1-3 .2 .091L 3.276 1-3 .2 .091L	40 8 24 110 .50 .40 2-3 3 1.000R .800 1-3 2 .167L 2.102 1-3 2 3 3 3 3 3 3 3 3 3 3 3 3 3	40 8 24 .20 .30 .50 4-5 5 1.000R .800 4-5 5 1.000R 2.025 4-5 5 1.000R 3.267 4-5 5 1.000R	40 8 24 .20 .40 .40 4-5 5 1.000R .640 1-3 2 .667R 1.814 1-3 2 .667R 3.310 1-3 2 .667R	40 8 24 .20 .50 .30 2-3 1.000R .8000 1-3 2 .429R 2.205 1-3 2 429R 3.953 1-3 2 429R	8 28 .10 .30 .60 4-5 5 1.000R .960 4-5 5 1.000R 2.430 4-5 5 1.000R	44 8 28 .10 .40 .50 4-5 5 1.000R 2.025 4-5 5 1.000R 2.025 3.267
Wind Ax Sp Loo On Ax	n. Bassale le acing ad les 10 20	E L X X X 4 1 a 2 a 3 a 3 G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M M G N B M M M G N B M M M M M M M M M M M M M M M M M M	36 8 20 .20 .50 .30 .30 .30 .30 .800 1–3 .800 1–3 .2 .429R .2.205 1–3 .2 .429R .3.953 1–3 .2 .429R .500 .500 .500 .500 .500 .800	40 8 24 .10 .30 .60 4-5 5 1.000R 2.430 4-5 5 1.000R 2.430 4-5 5 1.000R 2.430 4-5 5 1.000R 2.430 5 5 1.000R 2.430 4-5 5 5 1.000R 2.430 4-5 5 5 1.000R 2.430 4-5 5 5 5 1.000R 2.430 4-5 5 5 1.000R 2.430 4-5 5 5 1.000R 2.430 4-5 5 5 1.000R 4-5 5 5 1.000R 4-5 5 5 1.000R 4-5 5 5 1.000R 4-5 5 1.000R 4-5 5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 4-5 1.000R 4-5 1	40 8 24 .10 .40 .50 4-5 1.000R .800 4-5 1.000R 2.025 4-5 1.000R 2.025 4-5 1.000R 3.267 4-5 1.000R	40 8 24 .10 .45 .45 .45 1.000R .720 1-3 2 .091L 1.901 1-3 2 .091L 3.276 1-3 2 .091L 4.651	40 8 24 .10 .50 .40 2-3 3 1.000R .800 1-3 2 .167L 2.102 1-3 2 .167L 3.602 1-3 2 .167L 5.102	40 8 24 .20 .30 .50 .50 .60 .800 4-5 5 1.000R 2.025 4-5 5 1.000R 2.025 4-5 5 1.000R 2.025 4-5 5 1.000R 2.025 4-5 5 1.000R 2.025 4-5 5 1.000R 2.025 4-5 5 1.000R 4-5 5 1.000R 2.025 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 4-5 1.000R 4-5 1.000R 4-5 1.000R 4-5 1.000R 4-5 1.000R 4-5 1.000R 4-5 1.000R 4-5 1.000R 4-5 1.000R 4-5 1.000R 4-5 1.000R 4-5 1.000R 4-5 1.000R 4-5 1.000R 4-5 1.000	40 8 24 .20 .40 .40 .40 .4-5 5 1.000R .640 1-3 2 .667R 1.814 1-3 2 .667R 3.310 1-3 2	40 8 24 .20 .50 .30 .30 2-3 3 1.000R .800 1-3 2 .429R 2.205 1-3 2 .429R 3.953 1-3 2 .429R 5.703	44 8 28 .10 .30 .60 4-5 5 1.000R 2.430 4-5 5 1.000R 2.430 4-5 5 1.000R 2.430 4-5 5 1.000R 2.430 4-5 5 1.000R 2.430 4-5 5 1.000R 2.430 4-5 5 1.000R 2.430 4-5 5 1.000R 2.430 4-5 5 1.000R 2.430 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 5 5 1.000R 3.920 4-5 5 5 1.000R 3.920 4-5 5 5 5 5 6 6 6 6 6 6 6 7 8 8 8 8 8 8 8 8 8 8 8 8 8	44 8 28 .10 .40 .50 1.000R 2.025 4-5 5 1.000R 2.025 4-5 5 1.000R 2.025 4-5 1.000R 3.267 4-5 5 1.000R
Wind Ax Sp Loo On Ax	n. Bassale le acing ad les 10 20	E L X X X Y A1 A2 A3 A3 A3 A B M A B	36 8 20 .50 .50 .30 2-3 3 1.000R .800 1-3 2.429R 2.205 1-3 2.429R 3.953 1-3 2.429R 5.703	40 8 24 .10 .30 .60 4-5 5 1.000R 2.430 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 5 4-5 5 4-5 5 4-5 5 1.000R 3.960 4-5 5 5 1.000R 3.960 4-5 5 5 1.000R 3.960 4-5 5 5 1.000R 3.960 4-5 5 5 1.000R 3.960 4-5 5 5 1.000R 3.960 4-5 5 5 1.000R 3.960 4-5 5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 5 1.000R 5.410 4-5 5 1.000R 5.410 4-5 5 1.000R 5.410 4-5 5 1.000R 5.415 1.000R 5.415 1.000R 5.415 1.000R 5.415 1.000R 5.415 1.000R 5.415 1.000R 5.415 1.000R 5.415 1.000R 5.415 1.000R 5.415 1.000R 5.415 1.000R 5.415 4.000R 5.415 1.000R 5.415 5.415 1.000R 5.415 1.000R 5.415 1.000R 5.415 1.000R 5.415 1.000R 5.415 1.000R 5.415 1.000R 5.415 1.000R 5.415 5.415 1.000R	40 8 24 .10 .40 .50 4-5 5 1.000R .800 4-5 5 1.000R 2.025 4-5 5 1.000R 3.267 4-5 5 1.000R 3.267 4-5 4-5 4-5 5 4-5 5 1.000R 3.267 4-5 4-5 4-5 4-5 5 4-5 5 4-5 5 4-5 5 1.000R 3.267 4-5 5 1.000R 3.267 4-5 5 4-5 4-5 5 4-5 5 4-5 5 1.000R 3.267 4-5 5 1.000R 3.267 4-5 5 1.000R 3.267 4-5 5 1.000R 3.267 4-5 5 1.000R 3.267 4-5 5 1.000R 3.267 4-5 5 1.000R 3.267 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 4-5 4-5 4-5 4-5 4-5 4-5 4-5	40 8 24 .10 .45 .45 .45 .5 1.000R .720 1-3 2 .091L 1.901 1-3 2 .091L 3.276 1-3 2 .091L 3.276 1-5 1-3 2 .091L 1-5 1-3 2 .091L 1-5 1-3 2 .091L 1-3 2 1-3 2 .091L 1-3 2 .091L 1-3 2 .091L 1-3 2 .091L 1-3 2 .091L 1-3 2 .091L 1-3 2 .091L 1-3 2 .091L 1-3 2 1-3 2 .091L 1-3 2 .091L 1-3 2 .091L 1-3 2 .091L 1-3 2 .091L 1-3 2 .091L 1-3 2 .091L 1-3 2 .091L 1-3 2 1-3 2 1-3 2 2 2 2 2 2 2 2 2 2 2 2 2	40 8 24 1.10 .50 .40 2-3 3 1.000R .800 1-3 2 .167L 2.102 1-3 2 .167L 3.602 1-3 3.602 1-3 1-3 1-3 1-3 1-3 1-3 1-3 1-3	40 8 24 .20 .30 .50 4-5 5 1.000R .800 4-5 1.000R 2.025 4-5 1.000R 4-5 5 1.000R 2.025 4-5 5 1.000R 2.025 4-5 4-5 5 1.000R 2.025 4-5 4-5 4-5 5 1.000R 2.025 4-5 4-5 4-5 5 1.000R 2.025 4-5 4-5 5 1.000R 2.025 4-5 4-5 5 1.000R 2.025 4-5 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 4-5 1.000R 4-5 1.000R 4-5 1.000R 4-5 1.000R 4-5 1.000R	40 8 24 .20 .40 .40 .4-5 .5 1.000R .640 1-3 2 .667R 1.814 1-3 2 .667R 3.310 1-3 2 .667R 3.40 1-3 2 .667R 3.40 1-3 2 .667R 1.814 1.814	40 8 24 .20 .50 .30 2-3 3 1.000R .8000 1-3 2 .429R 2.205 1-3 2 .429R 3.953 1-3 2 .429R 5.703 1-3 2	44 8 28 .10 .30 .60 4-5 5 1.000R 2.430 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 5 1.000R 3.940 4-5 5 5 1.000R 3.940 4-5 5 5 1.000R 3.940 4-5 5 5 1.000R 3.940 4-5 5 5 1.000R 3.940 4-5 5 5 1.000R 3.940 4-5 5 5 1.000R 3.940 4-5 5 5 1.000R 3.940 4-5 5 5 1.000R 3.940 4-5 5 5 1.000R 3.940 4-5 5 1.000R 3.940 4-5 5 1.000R 3.940 4-5 5 1.000R 3.940 4-5 5 1.000R 3.940 4-5 5 1.000R 3.940 4-5 5 1.000R 3.940 4-5 5 1.000R	44 8 28 .10 .40 .50 4-5 5 1.000R 2.025 4-5 1.000R 3.267 4-5 1.000R 3.267 4-5 5 1.000R 3.267 4-5 5 5 5 5 5 5 5 5 5 5 5 5 5
Windowski Axx Sp Lo On Axx	n. Bass le acing ad les 10 20 40	e L X X X Y a1 a2 a3 G N B M G N B M G N B M G N B M G N B M B M B M B M B M B M B M B M B M B	36 8 20 .50 .30 .30 .30 .30 .300 1-3 .2 .429R .2.205 1-3 .2 .429R .3.95 1-3 .2 .429R .3.95 1-3 .2 .429R .3.90 .3.90 .3.90 .3.90 .3.90 .3.90 .3.90 .4.90	40 8 24 .10 .30 .60 4-5 5 1.000R 2.430 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 1.000R 4-5 1.000R 4-5 1.000R 4-5 1.000R 4-5 1.000R 4-5 1.000R 4-5 1.000R 4-5 1.000R 4-5 1.000R 4-6 1.000R 4-7 4-7 1.000R 4-7 4-7 1.000R 4-7 1.000R 4-7 1.000R 4-7 1.000R 4-7 1.000R 4-7 1.000R 4-7 1.000R 4-7 1.000R 4-7 1.000R 4-7 1.000R 4-7 1.000R 4-7 1.000R 4-7 4-7 4-7 4-7 4-7 4-7 4-7 4	40 8 24 .10 .40 .50 4-5 5 1.000R 2.025 4-5 1.000R 3.267 4-5 1.000R 4.513 2-5 4.513	40 8 24 10 .45 .45 .45 1.0002 1-3 2.091L 1.901 1-3 2.091L 3.276 1-3 2.091L 3.276 1-3 2.091L 3.276 1-3 2.091L 3.276 1-3 2.091L 3.276 1-3 2.091L 3.276	40 8 24 .10 .50 .40 2-3 3 1.000R .800 1-3 2 .167L 3.602 1-3 1-3 1-3 1-3 1-3 1-3 1-3 1-3	40 8 24 .20 .30 .50 .50 1.000R .800 4-5 5 1.000R 2.025 4-5 5 1.000R 3.267 4-5 5 1.000R 4.55 5 1.000R 2.025 4-5 4-5 4-5 4-5 4-5 5 1.000R 2.025 4-5 4-5 4-5 4-5 4-5 5 1.000R 2.025 4-5 4-5 4-5 4-5 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 4-5 1.000R 4-5 4-5 1.000R 4-5 4-5 1.000R 4-5 4-5 4-5 1.000R 4-5 4-5 1.000R 4-5 4-5 4-5 1.000R 4-5 4-5 4-5 4-5 4-5 4-5 4-5 4-5	40 8 24 .20 .40 .40 .40 .40 .640 .640 .640 .640 .1-3 .2 .667R .814 .814 .667R .3.310 .1-3 .2 .667R .4.808 .1-3 .2 .667R .1-3 .2 .667R .4.808 .1-3 .2 .667R .4.808 .1-3 .2 .667R .4.808 .1-3 .2 .667R .4.808 .1-3 .2 .667R .4.808 .1-3 .2 .667R .4.808 .1-3 .2 .667R .4.808 .1-3 .2 .667R .4.808 .1-3 .2 .667R .4.808 .1-3 .2 .667R .4.808 .1-3 .2 .667R .4.808 .1-3 .2 .667R .4.808 .1-3 .2 .667R .4.808 .1-3 .2 .667R .4.808 .1-3 .2 .667R .4.808 .1-3 .2 .667R .4.808 .1-3 .2 .667R .4.808 .1-3 .2 .667R .4.808 .1-3 .2 .4 .808 .1-3 .2 .4 .808 .1-3 .2 .4 .808 .1-3 .2 .4 .4 .808 .1-3 .2 .4 .808 .1-3 .2 .4 .4 .808 .1-3 .2 .4 .4 .808 .1-3 .2 .4 .4 .808 .1 .2 .4 .4 .808 .1 .4 .4 .808 .1 .4 .4 .808 .1 .4 .4 .8 .4 .8 .4 .4 .8 .4 .4 .8 .4 .4 .8 .4 .4 .8 .4 .4 .8 .4 .4 .8 .4 .4 .8 .4 .4 .8 .4 .4 .8 .4 .4 .8 .4 .4 .4 .4 .4 .8 .4 .4 .4 .4 .4 .4 .4 .4 .4 .4 .4 .4 .4	40 8 24 .20 .50 .30 1.000R .800 1-3 .429R 2.205 1-3 .2 .429R 3.953 1-3 .2 .429R 3.953 1-3 .2 .429R 3.953 1-3 .429R 3.954 1-3 .429R 3.954 1-3 .429R 3.954 1-3 .429R 3.954 1-3 .429R 3.954 1-3 .429R 3.954 1-3 .429R 3.954 1-3 .429R 3.954 1-3 .429R 3.954 1-3 .429R 3.954 1-3 .429R 3.954	44 8 28 10 30 60 4-5 5 1.000R 2.430 4-5 5 1.000R 3.920 4-5 5 1.000R 4-5 5 1.000R 5	44 8 28 .10 .40 .50 .50 1.000R 2.025 4-5 1.000R 3.267 4-5 5 1.000R 4.513 4-5 5 1.000R
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Wind Ax Sp Loo On Ax	n. Basing le acing ad les 10 20 30 40 50	9 L	36 8 20 .20 .50 .30 .30 .30 .800 1–3 .2 .429R .2.205 1–3 .2 .429R .3.953 1–3 .2 .429R .7.67T .7.67T .7.67T .7.65L .7.65L .7.65L .7.60L .800 .800	40 8 24 .10 .30 .60 4-5 5 1.000R 2.430 4-5 1.000R 3.920 4-5 1.000R 3.920 4-5 1.000R 3.920 4-5 4-5 1.000R 3.920 4-7 4-8 1.000R 7.001B 4-9 4-9 4-9 4-9 4-9 4-9 4-9 4-9	40 8 24 .10 .40 .50 4-5 5 1.000R 8.00 4-5 5 1.000R 3.267 4-5 5 1.000R 4.51 2.025 4-5 6.043 2-5 4.000R 4.5 5 1.000R 4.5 5 1.000R 3.267 4.5 5 1.000R 4.5 5 1.000R 3.267 4.5 5 1.000R 4.5 5 1.000R 4.5 5 1.000R 3.267 4.5 5 1.000R 4.5 5 1.000R 4.5 5 1.000R 4.5 5 1.000R 4.5 5 1.000R 4.5 5 1.000R 4.5 5 1.000R 4.5 5 1.000R 4.5 5 1.000R 4.5 5 1.000R 4.5 5 1.000R 4.5 5 1.000R 4.5 5 1.000R 4.5 5 1.000R 4.5 5 4.5 5 4.5 6.043 2.025 4.5 8.26 6.043 8.26	40 8 24 1.10 .45 .45 .45 .5 1.000 R .720 1-3 2 .091 L 1.901 1-3 2 .091 L 3.276 1-3 2 .091 L 6.061 1-5 3 4.800 L 8.484	40 8 24 1.10 .50 .40 2-3 3 1.000R .800 1-3 2.1671L 3.602 1-3 2 .1671L 5.102 1-3 2 .1671L 6.602 1-5 3 4.100L 8.980	40 8 24 .20 .30 .50 4-5 5 1.000R 8.00 4-5 1.000R 3.267 4-5 1.000R 4.5 1.000R 4.5 2.025 4-5 4.5 1.000R 4.5 5.889 2.5 4.25	40 8 24 20 .40 .40 4-5 5 1.000R .640 1-3 2 .667R 3.310 1-3 2 .667R 4.808 1-3 2 .667R 4.808 1-3 2 .667R 4.808 1-3 8 8 8 8 8 8 8 8 8 8 8 8 8	40 8 24 20 .50 .30 1.000R .800 1-3 2.429R 3.953 1-3 2 429R 5.703 1-3 2 429R 5.703 1-3 2 429R 5.703	44 8 28 28 10 .30 .60 4-5 5 1.000R 2.430 4-5 1.000R 3.920 4-5 1.000R 5.415 4-5 1.000R 5.415 4-5 1.000R 8.960 4-5 1.000R 8.960 4-5 1.000R 8.920 4-5 1.000R 8.940 4-5 1.000R 8.920 4-5 1.000R 8.940 4-5 8.940 8.9	44 8 28 .10 .40 .50 1.000R 2.025 4-5 5 1.000R 3.267 4-5 1.000R 4.513 4-5 1.000R 4.613 4-5 1.000R 4.513
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Wind Ax Sp Loo On Ax	n. Basile acing ad les 10 20 36 60	9 L XX X' a1 a2 a3 BM GNBM GNBBM GNBBM GNBBM GNBBM GNBBM GNBBM GNBBM GNBBM GNBBM	36 8 20 .20 .50 .30 .30 .30 1.000R .800 1-3 2.429R 2.205 1-3 2.429R 3.953 1-3 2.429R 5.703 1-4 2.1.765L 7.577 1-5 3.600L 1-6 3.600L	40 8 24 .10 .30 .60 4-5 5 1.000R 2.430 4-5 5 1.000R 2.430 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 4 1.600R 7.013 4-5 4 1.600R 7.013 4-5 4 1.600R 7.013 4-5 4 1.600R 7.013 4-5 4-5 1.000R 1.	40 8 24 .10 .40 .50 4-5 1.000R .800 4-5 1.000R 2.025 4-5 1.000R 3.267 4-5 1.000R 4.513 2-5 4.5 2.22R 6.043 2-5 4.5 2.22R 6.040 6.02 6.02 6.02 6.03 6.0	49 8 24 110 45 45 4-5 5 1.000R 720 1-3 2 .091L 1.901 1-3 2 .091L 4.651 1-5 3 4.800L 6.061 1-5 3 4.800L 8.484 1-5 3 4.800L	40 8 24 10 50 40 2-3 3 1.000R 800 1-3 2 1.67L 2.102 1-3 2 1.67L 5.102 1-3 2 1.67L 5.102 1-3 4.100L 8.980 1-5 3 4.100L	40 8 24 .20 .30 .50 .50 .60 4-5 5 1.000R 2.025 4-5 5 1.000R 4.513 2-5 4 4.250R 5.88 4.250R 4.250R 4.250R 4.250R 4.250R 4.250R 4.250R 4.250R	40 8 24 .20 .40 .40 .40 .40 .40 .40 .640 1-3 .667R 1.814 1-3 .667R 4.808 1-3 .2 .667R 4.808 1-3 .840 1-5 .840 .840 1-5 .840	40 8 24 20 .50 .30 .30 1.000R .800 1-3 2 .429R 2.205 1-3 2 .429R 5.703 1-3 2 429R 7.452 1-5 3 2.200L 9.481 1-5 3 2.200L	44 8 28 .10 .30 .60 4-5 5 1.000R 2.430 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 5 1.000R 4-5 5 1.000R 3.920 4-5 5 1.000R 4-5 1.000R 4-5 1.000R 4-5 1.000R 4-5 1.000R 6.915 4-4 4.03333 8.680 1-5 4.590R 4.5	44 8 28 .10 .40 .50 1.000R 2.025 4-5 5 1.000R 2.025 4-5 5 1.000R 4.513 4-5 5 1.000R 4.513 4-5 5 1.000R 4.513 4-5 5 1.000R 4.513 4.51 4.51 5 1.000R 5 1.000R 4.51 6.11 1.000R 7.760 6.11 1.000R 7.760 6.11 1.000R 7.760 6.11 1.000R 7.760 6.11 1.000R 7.760 6.11 1.000R 7.760 6.11 1.000R 7.760 6.11 1.000R 7.760 6.11 1.000R 7.760 6.11 1.000R 7.760 6.11 1.000R 7.760 6.11 1.000R 7.760 6.10 1.000R 7.760 6.10 1.000R 7.760 6.10 1.000R 7.760 6.10 1.000R 7.760 6.10 1.000R 7.760 6.10
Wind Ax Sp Loo On Ax	n. Basile acing ad les 10 20 36 60	S L XX XY A1 A2 A3 BM GN BM GN BM GN BM GN BM GN BM GN BM GN BM GN BM GN BM GN BM GN BM GN BM GN BM GN BM MBM BM GN BM MBM BM GN BM BM MBM BM MBM BM MBM BM MBM BM MBM BM	36 8 20 .20 .50 .30 .30 .30 .30 .30 .30 .30 .30 .30 .3	40 8 24 .10 .30 .60 4-5 5 1.000R 2.430 4-5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 5 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 5 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 5 4-5 5 1.000R 3.920 4-5 5 4-5 5 1.000R 3.920 4-5 5 4-5 5 4-5 1.000R 3.920 4-5 5 4-5 4-6 1.000R 3.920 4-5 5 4-6 1.000R 3.920 4-5 5 4-6 1.000R 3.920 4-5 5 4-6 1.000R 3.920 4-7 1.000R 3.920 4-7 1.000R 3.920 4-7 1.000R 3.920 4-7 1.000R 3.920 4-7 1.000R 3.920 4-7 1.000R 3.920 4-7 1.000R 3.920 4-7 1.000R 3.920 4-7 1.000R 3.920 4-7 1.000R 3.920 4-7 1.000R 3.920 4-7 1.000R 3.920 4-7 1.000R 3.920 4-7 4-7 4-7 4-7 4-7 4-7 4-7 4-7	40 8 24 .10 .40 .50 .45 .800 4-5 1.000R 2.025 4-5 1.000R 3.267 1.000R 4.513 2-5 4.513 2-5 4.522R 6.043 2-5 4.5.222R 8.211 1-5 4.5.222R 6.043	40 8 24 .10 .45 .45 .45 .45 1.000R .720 1-3 2 .091L 3.276 1-3 2 .091L 3.276 1-3 2 .091L 3.276 1-3 4.800L 4.800L 3.800L 1.800C 1.800L 1.800L 1.800C 1.800C 1.800C 1.800C 1.800C 1.800	40 8 24 10 50 40 2-3 3 1.000R .800 1-3 2 .167L 2.102 1-3 2 .167L 5.102 1-3 2 .167L 6.602 1-3 3 4.100L 1.91 4.100L 1.91	40 8 24 .20 .30 .50 .50 .60 4-5 5 1.000R 2.025 4-5 1.000R 3.267 4-5 1.000R 3.267 4-5 1.000R 4.513 2-5 4 4.250R 5.889 2-5 4 4.250R 7.841 1.55 4 7.000R 7.841 1.55 4 7.000R 7.841 1.55 4 7.000R 1.55 4 7.000R 1.55 4 7.000R 1.55 4 7.000R 1.55 1	40 8 24 .20 .40 .40 .40 .40 .40 .40 .40 .640 1-3 .667R 3.310 1-3 .2 .667R 4.808 1-3 .2 .667R 4.808 1-3 .840 1-5 .840 1-5 .840 1-5 .840 1-3 .840 1-5 .840	40 8 24 .20 .50 .30 .800 1-3 .2 .429R 3.953 1-3 .2 .429R 5.703 1-3 .2 .429R 7.452 1-5 3 2.200L 9.481 1-5 3 2.200L 1.4461	44 8 28 28 .10 .30 .60 .60 .90 4-5 5 1.000R 2.430 4-5 5 1.000R 3.920 4-5 5 1.000R 5.415 4-5 1.000R 6.912 2-5 4.3338R 8.680 1-5 4.5 5.900R 1.000R	44 8 28 .10 .40 .50 .50 1.000R 2.025 4-5 1.000R 3.267 4-5 1.000R 5.760 2-5 4.513 4-5 1.000R 7.561 1.000R 4.7561 1.000R 7.7561 1.000R
Wind Ax Sp Loo On Ax	n. Basile acing ad les 10 20 36 60	E L XX A1 A2 A3 G NB M G G NB M G G NB M G G NB M G G NB M G NB M G G NB M M G NB M M G NB M M M M M M M M M M M M M M M M M M	36 8 8 20 .20 .50 .30 .30 .30 1.000R .800 1-3 2 .429R 2.205 1-3 2 4.29R 3.953 1-3 2 4.29R 5.703 1-4 2 1.765L 7.577 1-5 3 1.600L 15.032 1-5 3	40 8 24 .10 .30 .60 4-5 5 1.000R 2.430 4-5 5 1.000R 2.430 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 4 1.600R 7.010 4-5 4 1.600R 7.010 1.000R 7.0	40 8 24 .10 .40 .50 4-5 1.000R .800 4-5 1.000R 2.025 4-5 1.000R 3.267 4-5 5.000R 4.513 2-5 4.5 5.222R 6.043 2-5 4.5 1.000R 4.513 2-5 4.5 1.000R 1.000R 1.0	49 8 24 10 45 45 4-5 1.000R 720 1-3 2 .091L 1.901 1-3 2 .091L 4.651 1-5 3 4.800L 6.061 1-5 3 4.800L 8.484 1-5 3 4.800L 13.388 1-5 3	40 8 24 .10 .50 .40 2-3 3 1.000R .800 1-3 2 .167L 2.102 1-3 2 .167L 5.102 1-3 2 .167L 5.102 1-5 3 4.100L 8.980 1-5 3 4.100L 13.910 1-5 3	40 8 24 .20 .30 .50 .50 .60 .800 4-5 5 1.000R 2.025 4-5 5 1.000R 4.513 2-5 4 4.250R 5.80 4.513 2-5 4 4.250R 7.841 1-5 4 7.000R 1.600R 1.	40 8 24 .20 .40 .40 .40 .40 .40 .40 .40 .4	40 8 24 20 .50 .30 .30 1.000R .800 1-3 2 .429R 2.205 1-3 2 .429R 5.703 1-3 2 .429R 7.452 1-5 3 2.200L 1.4.461 1-5 3	44 8 28 .10 .30 .60 4-5 5 1.000R 2.430 4-5 5 1.000R 2.430 4-5 5 1.000R 3.920 4-5 5 1.000R 4-5 5 1.000R 3.920 4-5 5 1.000R 4-5 1.000R 4-5 5 1.000R 4-5 1.000R 4-5 1.000R 4-5 1.000R 4-5 1.000R 4-5 1.000R 4-3 1.000R 4-3 1.000R 4-3 1.000R 4-3 1.000R 4-3 1.000R 1	44 8 28 .10 .40 .50 1.000R 2.025 4-5 5 1.000R 2.025 4-5 5 1.000R 4.513 4-5 5 1.000R 4.513 4-5 5 1.000R 4.513 4-5 5 1.000R 4.513 4-5 5 1.000R 4.513 4-5 5 1.000R 4.513 4-5 5 1.000R 4.513 4-5 5 1.000R 4.513
Wind Ax Sp Loo On Ax	10. Basic le acing ad les 10 20 30 40 50 60 80	S L XX A1 A2 A3 A3 BM GNBM GNBM GNBM GNBM GNBM GNBM GNBM G	36 8 20 .50 .50 .30 .50 .31 .0000R .800 1-3 2.429R 2.205 1-3 2.429R 3.953 1-3 2.429R 5.703 1-4 2.765L 7.577 1-5 3 1.600L 15.032 1-58	40 8 24 .10 .30 .60 4-5 1.000R 2.430 4-5 1.000R 3.920 4-5 1.000R 3.920 4-5 1.000R 3.920 4-5 4-5 1.000R 3.920 4-5 4-5 1.000R 3.920 4-5 4-5 4-5 4-5 4-6 7.013 2-5 4-6 7.013 2-5 4-7 9.203 1-5 4-7 9.203 1-5 4-7 9.203 1-5 4-7 9.203 1-5 4-7 9.203 1-5 1.000R	40 8 24 .10 .40 .50 4-5 5 1.000R 2.025 4-5 1.000R 3.267 4-5 1.000R 3.267 4-5 5 1.000R 3.225 4-5 5 1.000R 3.225 4-5 5 1.000R 4.5 5 1.000R 3.225 4-5 5 1.000R 4.5 5 1.000R 4.5 5 1.000R 4.5 5 1.000R 4.5 5 1.000R 4.5 5 1.000R 4.5 5 1.000R 4.5 5 1.000R 4.5 5 1.000R 4.5 5 1.000R 4.5 5 1.000R 4.5 5 1.000R 4.5 5 1.000R 4.5 5 1.000R 4.5 5 1.000R 4.5 5 1.000R 4.5 5 2.22R 6.043 2.25 4 6.043 1.000R 8.211 8.211 8.21	40 8 24 10 .45 .45 .45 .45 .46 .720 1-3 .091L 1.901 1-3 2 .091L 3.276 1-3 2 .091L 3.6061 1-5 3 4.800L 8.484 1-5 3 4.800L 8.483 1-5 3 4.803L 8.483 1-5	40 8 24 10 .50 .40 .50 .40 2-3 3 1.000R .800 1-3 2 .167L 2.102 1-3 2 .167L 5.102 1-3 2 1-3 2 1-67L 6.602 1-5 3 4.100L 8.980 1-5 3 4.100L 1.91 1-5	40 8 24 .20 .30 .50 .50 .800 4-5 5 1.000R 2.025 4-5 5 1.000R 3.267 4-5 1.000R 3.267 4-5 1.000R 4.513 2-5 4.250R 7.841 1-5 4.200R 7.841 1-5	40 8 24 .20 .40 .40 .40 .40 .40 .40 .640 1-3 .667R 1.814 1-3 .2 .667R 3.310 1-3 .2 .667R 4.808 1-3 .3 .667R 4.808 1-3 .667R 3.800 1-5 .3 .667R 1.814 1.815 1.814 1.	40 8 24 .20 .50 .30 2-3 3 1.000R .800 1-3 .429R 2.205 1-3 .2 .429R 3.953 1-3 .2 .429R 7.452 1-5 3 2.200L 9.481 1-5	44 8 28 28 10 .30 .60 4-5 1.000R 2.430 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 5 4-4 5 5 1.000R 4-5 5 1.000R 3.920 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 4-5 5 4-5 5 1.000R 4-5 5 4-5 5 4-5 5 4-5 5 4-5 5 4-5 5 4-5 5 4-5 5 4-5 5 4-5 5 4-5 5 4-5 5 4-5 5 4-5 5 4-5 4-	44 8 28 .10 .40 .50 .50 1.000R 2.025 4–5 5 1.000R 3.267 4–5 5 1.000R 4.513 4–5 5 1.000R 4.513 4–5 5 1.000R 4.513 4–7.561 1–5 4 7.561 1–5 4 7.562 1–5 4

			(Continue	d)								
T	uck N		31	32	33	34	35	36	37	38	39	40
$\frac{\mathbf{W}\mathbf{h}}{\mathbf{A}\mathbf{x}}$	ı. Bası le	e L X	44 8	<u>44</u> 8	8	8	<u>44</u> 8	28	28 12	12	28 12	12
Spa	acing	X'	28	28	28	28	28	8	8	8	8	8
Loa		8.1 8.2	.10 .45	$.10 \\ .50$.20 .30	.20 .40	.20 .50	$.10 \\ .30$.10 .40	$.10 \\ .45$.10 .50	.20 .30
Ax	les	a 3	.45	.40	.50	.40	.30	.60	.50	.45	.40	.50
	10	G N	4-5 5	$\frac{2-3}{3}$	4-5 5	$^{4-5}_{5}$	$^{2-3}_{3}$	4-5 5	$^{4-5}$	$egin{array}{c} 4-5 \ oldsymbol{5} \end{array}$	2–3 3	4–5 5
		B M	1.000R $.720$	1.000R $.800$	1.000R $.800$	$1.000\mathrm{R}$ $.640$	1.000R .800	1.000R .960	1.000R .800	1.000R $.720$	1.000R $.800$	1.000R .800
		G	1-3	1-3	4-5	1-3	1-3	3-5	3-5	2-4	2-4	3-5
	20	$_{ m B}^{ m N}$	$^2_{.091 \mathbf{L}}$	$^2_{.167 m L}$	$_{1.000 m R}^{5}$	$^2_{.667 m R}$	$^2_{.429 m R}$	4 0	$^4_{.429 m R}$	3 .667L	$^{3}_{.429L}$	4 .154 $^{\mathrm{R}}$
		M	1.901	2.102	2.025	1.814	2.205	2.550	2.205	2.063	2.205	2.150
	30	G N	$^{1-3}_2$	$^{1-3}_{2}$	4–5 5	$^{1-3}_2$	$^{1-3}_2$	$^{2-5}_4$	$^{2-5}_4$	$\substack{2-5\\4}$	$^{2-5}_{3}$	$\begin{array}{c} 2-5 \\ 4 \end{array}$
İ		B M	.091L 3.276	3.602	1.000R 3.267	$^{.667}_{3.310}$	3.953	1.000R 4.680	1.667R 4.334	2.000R 4.170	1.667L 4.334	1.250R 4.042
		G	1-3	1-3	4-5	1-3	1-3	2-5	25	15	1-5	2-5
t t	40	$_{ m B}^{ m N}$	091L	$^{2}_{.167L}$	$_{1.000\mathrm{R}}^{5}$	$^2_{.667 m R}$	$^2_{.429 m R}$	$^{4}_{1.000\mathrm{R}}$	$^4_{1.667 m R}$	$^{3}_{1.000L}$	$^3_{.700 m L}$	$^4_{1.250 m R}$
Fe		M	4.651	5,102	4.513	4.808	5.703	6.923	6.564	6.525	6.712	6.031
Span-Feet	50	G N	$\frac{1-3}{2}$	$^{1-3}_{2}$	4–5 5	$^{1-3}_2$	$^{1-3}_2$	$^{1-5}$	$^{1-5}_{4}$	1–5 3	$^{1-5}_{3}$	1-5 4
တ		B M	.091L 6.026	$\frac{.167L}{6.602}$	1.000R 5.760	667R	429R 7.452	2.100R 9.288	$2.700\mathbf{R} \\ 8.946$	1.000L 9.020	0.700L 9.210	3.400R 8.331
		G	1-5	15	2-5	1-3	1.432	1-5	1-5	1-5	1-5	1-5
	60	N B	3 5.700L	3 4.900L	$_{5.000\mathrm{R}}^{4}$	$^2_{.667 m R}$	$^2_{.429 m R}$	$^4_{2.100 m R}$	$^4_{2.700 m R}$	3 1.000L	.700L	$^4_{3.400R}$
		M _	7.742	8.300	7.334	7.805	9.201	11.774	11.442	11.517	11.708	10.793
	80	G N	$^{1-5}_3$	$\frac{1-5}{3}$	$^{1-5}_{4}$	$^{1-5}_{3}$	$^{1-5}_3$	$^{1-5}$	1–5 4	1-5 3	$_{3}^{1-5}$	$^{1-5}_4$
		B M	5.700L 12.606	4.900L 13.200	8.000R 11.800	4.400I. 12.642	$\frac{2.800L}{13.898}$	2.100R	2.700R 16.391	1.000L 16.513	.700L 16.706	$3.400\mathbf{R} \\ 15.745$
		G	15	1-5	1-5	1-5	1-5	16.75 <u>5</u> 15	1-5	1-5	1-5	1-5
	100	N B	$\begin{array}{c} 3 \\ 5.700 \mathbf{L} \end{array}$	$^{3}_{4.900L}$	$^{4}_{8.000\mathrm{R}}$	$\overset{3}{4.400} \mathbf{L}$	$^{3}_{2.800 \rm L}$	$^{4}_{2.100\mathrm{R}}$	$^4_{2.700\mathrm{R}}$	$^3_{1.000\mathrm{L}}$.700L	$^{4}_{3.400\mathrm{R}}$
		M	17.525	18.140	16.640	17.594	18.878	21.744	21.373	21.510	21.705	20.716
	ick No		41	42	43	44	45	46	47	48	49	50
Wl	. Bas	e L	28	28	32	32	32	32	32	32	32	36
Wh	. Bas											
Wh Ax Spa Loa	i. Base le icing	X X' a ₁	28 12 8 .20	28 12 8 .20	32 12 12 .10	32 12 12 .10	32 12 12 .10	32 12 12 .10	32 12 12 .20	32 12 12 .20	32 12 12 .20	36 12 16 .10
Ax Spa	n. Base le ncing ad	e L X X' a_1 a_2 a_3	28 12 8 .20 .40 .40	28 12 8 .20 .50 .30	32 12 12 .10 .30 .60	32 12 12 .10 .40 .50	32 12 12 .10 .45 .45	32 12 12 .10 .50 .40	32 12 12 .20 .30 .50	32 12 12 .20 .40 .40	32 12 12 12 .20 .50 .30	36 12 16 .10 .30 .60
Wh Ax Spa Loa On	n. Base le ncing ad	E L X X' a ₁ a ₂ a ₃ G	28 12 8 .20 .40 .40 .40	28 12 8 .20 .50 .30 2–3	32 12 12 .10 .30 .60 4–5	32 12 12 .10 .40 .50 4-5	32 12 12 .10 .45 .45 .45	32 12 12 .10 .50 .40 2-3	32 12 12 .20 .30 .50 4-5	32 12 12 .20 .40 .40 .40	32 12 12 .20 .50 .30 2–3	36 12 16 .10 .30 .60 4-5
Wh Ax Spa Loa On	n. Base le ncing nd	E L X X' A1 A2 A3 G N B	28 12 8 .20 .40 .40 4–5 5 1.000R	28 12 8 .20 .50 .30 2-3 3 1.000R	32 12 12 .10 .30 .60 4–5 5 1.000R	32 12 12 .10 .40 .50 4-5 5 1.000R	32 12 12 .10 .45 .45 4-5 5 1.000R	32 12 12 .10 .50 .40 2-3 3 1.000R	32 12 12 .20 .30 .50 4-5 5 1.000R	32 12 12 .20 .40 .40 4-5 5 1.000R	32 12 12 .20 .50 .30 2–3 3 1,000R	36 12 16 .10 .30 .60 4-5 5 1.000R
Wh Ax Spa Loa On	n. Base le ncing nd	E L X X' a ₁ a ₂ a ₃ G N	28 12 8 .20 .40 .40 .40 4-5 5	28 12 8 .20 .50 .30 2-3 3	32 12 12 .10 .30 .60 4–5	32 12 12 .10 .40 .50 4-5 5	32 12 12 .10 .45 .45 .45	32 12 12 .10 .50 .40 2–3 3	32 12 12 .20 .30 .50 4-5 5	32 12 12 .20 .40 .40 4-5 5	32 12 12 .20 .50 .30 2–3 3	36 12 16 .10 .30 .60 4-5 5
Wh Ax Spa Loa On	n. Base le ncing nd	X X' a ₁ a ₂ a ₃ G N B M	28 12 8 .20 .40 .40 4-5 5 1.000 R .640 3-5 4	28 12 8 .20 .50 .30 2-3 3 1.000R .800 2 4	32 12 12 .10 .30 .60 4-5 5 1.000R .960 4-5 5	32 12 12 .10 .40 .50 4-5 5 1.000R .800 4-5 5	32 12 12 .10 .45 .45 4-5 5 1.000R .720 4-5 5	32 12 12 .10 .50 .40 2-3 3 1.000R .800 2-3 3	32 12 12 .20 .30 .50 4–5 5 1.000R .800 4–5 5	32 12 12 .20 .40 .40 4–5 5 1.000R .640 4–5 5	32 12 12 .20 .50 .30 2-3 3 1.000R .800 2-3 3	36 12 16 .10 .30 .60 4-5 5 1.000R .960 4-5 5
Wh Ax Spa Loa On	a. Base le acing ad les	X X' a1 a2 a3 G N B M G	28 12 8 .20 .40 .40 4-5 5 1.000R .640 3-5 4 .667R 1.814	28 12 8 .20 .50 .30 2–3 3 1.000R .800 2 4 3 .154L 2.150	32 12 12 .10 .30 .60 4-5 5 1.000R .960 4-5 5 1.000R .2430	32 12 12 .10 .40 .50 4-5 5 1.000R .800 4-5 1.000R 2.025	32 12 12 .10 .45 .45 4-5 5 1.000R .720 4-5 1.000R 1.823	32 12 12 .10 .50 .40 2-3 3 1.000R .800 2-3 3 1.000R 2.025	32 12 12 .20 .30 .50 4-5 5 1.000R .800 4-5 5 1.000R 2.025	32 12 12 .20 .40 .40 4-5 5 1.000R .640 4-5 1.000R 1.620	32 12 12 .20 .50 .30 2–3 3 1.000R .800 2–3 3 1.000R 2.025	36 12 16 .10 .30 .60 4-5 5 1.000R .960 4-5 5 1.000R 2.430
Wh Ax Spa Loa On	a. Base le acing ad les 10	A L X X' A1 A2 A3 G N B M G N B M G G	28 12 8 .20 .40 .40 4-5 5 1.000R .640 3-5 4 .667R 1.814 2-5	28 12 8 .20 .50 .30 2-8 3 1.000R .800 2 4 3 .154L 2.150 2-5	32 12 12 .10 .30 .60 4-5 5 1.000R .960 4-5 5 1.000R 2.430 2-5	32 12 12 .10 .40 .50 4-5 5 1.000R .800 4-5 5 1.000R 2.025	32 12 12 10 .45 .45 5 1.000R .720 4-5 5 1.000R 1.823 2-5	32 12 12 .10 .50 .40 2-3 3 1.000R .800 2-3 3 1.000R 2.025	32 12 12 .20 .30 .50 4-5 5 1.000R .800 4-5 5 1.000R 2.025	32 12 12 .20 .40 .40 4-5 5 1.000R .640 4-5 5 1.000R 1.620 2-5	32 12 12 .20 .50 .30 2-3 3 1.000R .800 2-3 3 1.000R 2.025	36 12 16 .10 .30 .60 4-5 5 1.000R .960 4-5 5 1.000R 2.430 4-5
Wh Ax Spa Loa On	a. Base le acing ad les	E L X X X a ₁ a ₂ a ₃ G N B M G N B M G N B M	28 12 8 .20 .40 .40 .40 .640 3–5 4 .667R 1.814 2–5 4 2.000R	28 12 8 .20 .50 .30 2-3 1.000R .800 2 4 3 1.54L 2.150 2-5 3 1.250L	32 12 12 .10 .30 .60 4-5 5 1.000R .960 4-5 1.000R 2.430 2-5 4	32 12 12 .10 .40 .50 4-5 1.000R .800 4-5 1.000R 2.025 2-5 4 2.556R	32 12 12 .10 .45 .45 4-5 5 1.000R .720 4-5 5 1.000R 1.823 2-5 4 3.000R	32 12 12 .10 .50 .40 2-3 3 1.000R 2-3 2.025 2-5 3 2.556L	32 12 12 .20 .30 .50 4-5 5 1.000R .800 4-5 5 1.000R 2.025 2-5 4 2.000R	32 12 12 20 .40 .40 .40 4-5 5 1.000R .640 4-5 5 1.000R 1.620 2-5 4 3.000R	32 12 12 20 .50 .30 2-3 3 1.000R .800 2-3 3 1.000R 2.025 1-3 2	36 12 16 .30 .60 4-5 5 1.000R 4-5 5 1.000R 2.430 4-5 5 1.000R
Wh Ax Spa Loa On	a. Base le acing ad les 10	X X' a ₁ a ₂ a ₃ G N B M G N B M	28 12 8 20 .40 .40 4-5 5 1.000R .640 3-5 4 .667R 1.814 2-5 4 .000R .3706	28 12 8 .20 .50 .30 3 1.000R .800 2 4 3 .1541 2.150 2-5 3 1.250L 4.042	32 12 12 .10 .30 .60 4-5 1.000R .960 4-5 1.000R 2.430 2-5 4 1.667R 4.134	32 12 12 .10 .40 .50 4-5 5 1.000R .800 4-5 5 1.000R 2.025 2-5 4 3.647	32 12 12 .10 .45 .45 .45 5 1.000R .720 4-5 5 1.000R 1.823 2-5 4 3.000R 3.420	32 12 12 .10 .50 .40 2-3 3 1.000R .800 2-3 3 2.03 2.05 2.556L 3.647	32 12 12 20 .30 .50 4-5 5 1.000R .800 4-5 5 1.000R 2.025 2-5	32 12 12 .20 .40 .40 .40 5 1.000R .640 4-5 5 1.000R 1.620 2-5 4 3.000R	32 12 12 .20 .50 .30 2–3 3 1.000R .800 2–3 2 1.000R 2.025 1–3 2 1.000R	36 12 16 .10 .30 .60 4–5 5 1.000R .960 4–5 1.000R 2.430 4–5 5 1.000R
WI Ax Sport Los On Ax	a. Base le acing ad les 10	E L X X X a ₁ a ₂ a ₃ G N B M G N B M G N B M G N B N B N B N B N B N B N B N B N B N	28 12 8 20 .40 .40 4-5 5 1.000R .640 3-5 4 .667R 1.814 2-5 4 2.000R 3.706 1-5 3	28 12 8 .20 .50 .30 .30 2-3 3 1.0000R .800 2 4 3 154L 2.150 2-5 3 1.250L 4.042	32 12 12 .10 .30 .60 4-5 5 1.000R 2-430 2-5 4 1.667R 4.134 2-5 4	32 12 12 .10 .40 .50 4-5 5 1.000R .800 4-5 5 2.025 2-5 4 2.556R 3.647 2-5 4	32 12 12 .10 .45 .45 .45 5 1.000R .720 4-5 5 1.000R 1.823 2-5 4 3.000R 3.420	32 12 12 .10 .50 .40 2-3 3 1.000R 2-3 2.025 2-5 3 2.556L 3.647	32 12 12 .20 .30 .50 4-5 5 1.000R 2.025 2-5 4 2.000R 3.506 2-5 4	32 12 12 .20 .40 .40 4-5 5 1.000R .640 4-5 5 1.000R 3.040 1-5 3	32 12 12 .20 .50 .30 2-3 3 1.000R .800 2-3 1.000R 3.573 1-5 3	36 12 16 .10 .30 .60 4-5 5 1.000R .960 4-5 5 1.000R 2.430 4-5 1.000R 3.920 2.5 4
WI Ax Sport Los On Ax	a. Base le acing ad les 10 20	XX'X' a1 a2 a3 GN B M GN B M GN B M G	28 12 8 20 40 40 4-5 5 1.000R 3-5 4 667R 1.814 2-5 4 2.000R 3.75	28 12 8 .20 .50 .30 2-3 1.000R .800 2-4 3 .154L 2.150 2-5 3 1.250L 4.042 1-5	32 12 12 .10 .30 .60 4-5 5 1.000R .960 4-5 5 1.000R 2.430 2-5 4 1.667R 4.134 2-5	32 12 12 .10 .40 .50 4–5 5 1.000R .800 4–5 1.000R 2.025 4 2.556R 3.647 2–5	32 12 12 .10 .45 .45 .45 5 1.000R .720 4–5 1.000R 1.823 2–5 4 3.000R 3.420	32 12 10 .50 .40 2-3 3 1.000R .800 2-3 2.025 2-5 3 2.556L 3.647 1-5	32 12 12 20 .30 .50 4–5 5 1.000R .800 4–5 5 1.000R 2.025 2–5 4 2.000R 3.506 2–5	32 12 12 .40 .40 .40 4-5 5 1.000R .640 4-5 5 1.000R 1.620 2-5 4 3.000R 1.5000	32 12 12 .20 .50 .30 2-3 3 1.000R .800 2-3 1.000R 2.0025 1-3 2 1.000R 3.573	36 12 16 .10 .30 .60 4-5 5 1.000R .960 4-5 5 1.000R 2.430 4-5 5 1.000R
an-Feet	le Basele le le le le le le le le le le le le	E L X X Y a1 a2 a3 G N B M G N B M G N B M G N B M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N M B M M G M M M M M M M M M M M M M M M	28 12 8 .20 .40 .40 .4-5 .5 1.000 R .640 3-5 .4 .667 R 1.814 2-5 .4 2.000 R 3.706 1-5 3 0 6.000 1-5	28 12 8 .20 .50 .30 2-3 1.000R .800 2 4 3 1.54L 2.150 2-5 3 1.250L 4.042 1 5 3 .600R 6.409 1-5	32 12 12 .10 .30 .60 4-5 5 1.000R 2-430 2-5 4 1.667R 4.134 2-5 4 1.667R 6.364 2-5	32 12 12 .10 .40 .50 4-5 5 1.000R .800 4-5 1.000R 2.025 2-5 4 2.556R 3.647 2.556R 3.647 1.556R	32 12 12 10 .45 .45 .45 .5 1.000R .720 4-5 5 1.000R 1.823 2-5 4 3.000R 3.420 1-5 3 1.900L 5.690 1-5	32 12 12 1.10 .50 .40 2-3 3 1.000R 2.025 2-5 3 2.556L 3.600L 5.956 1-5	32 12 12 20 .30 .50 4–5 5 1.000R 2.025 2–5 4 2.000R 3.506 2–5 4 2.000R 3.506 1–5	32 12 12 .20 .40 .40 .4-5 5 1.000R 1.620 2-5 4 3.000R 3.040 1-5 3 .800L 5.216 1-5	32 12 12 .20 .50 .30 2-3 3 1.000R .800 2-3 3 1.000R 3.573 1-5 3 0 5.800 1-5	36 12 16 .10 .30 .60 4-5 5 1.000R 2.430 4-5 5 1.000R 3.920 2.5 43 2.333821 2-5
WI Ax Sport Los On Ax	a. Base le acing ad les 10 20	E L X X X a1 a2 a3 G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M C M C G N B M C M C M C M C M C M C M C M C M C M	28 12 8 20 40 40 4-5 5 1.00040 3-5 4 667R 1.814 2-5 2.000R 3.000R 1-5 3.000 1-5 3.00000 1-5 3.00000 1-5 3.00000 1-5 3.00000 1-5 3.00000 1-5 3.00000 1-5 3.00000 1-5 3.00000 1-5 3.	28 12 8 .20 .50 .30 2-3 3 1.000R .800 2 4 3.154L 2.150 2-5 3 1.250L 4.042 1-5 3 .600R 6.409 1-5 3 .600R	32 12 12 12 30 .60 4-5 5 1.000R 2.430 2-5 4 1.667R 4.134 2-5 4 6.364 2-5 4 1.667R	32 12 12 .10 .40 .50 4-5 5 1.000R 2.025 2-5 4 2.556R 3.647 2-5 4 2.556R 3.647 1-5 4 3.700R	32 12 12 .10 .45 .45 .45 .45 1.000R .720 4-5 1.000R 1.823 2-5 4 3.000R 3.420 1-5 5.690 1-5 3 1.900L	32 12 12 1.10 .50 .40 2-3 3 1.000R 2.025 2-5 3 2.5566L 3.647 1-5 3 1.500L 5.956 1-5 3	32 12 12 20 .30 .50 4-5 1.000R 2.025 2-5 4 2.000R 3.506 2-5 4 2.000R 3.506 1-5 4 4.000R 4.5 5.4 4.5 5.4 6.5 7.5 8.6 8.6 8.6 8.6 8.6 8.6 8.6 8.6 8.6 8.6	32 12 12 20 .40 .40 .40 .405 5 1.000R 1.620 2-5 4 3.000R 3.040 1-5 3 8.00L 5.216 1-5 3.800L	32 12 12 12 12 20 50 30 3 1.000R 2-3 3 1.000R 2.025 1-3 2 1.000R 3.573 3 0 0 1-5 3 0 0 1-5 1-5 1.000R 3.50 1-5 1.000R 3.50 1-5 1.000R 3.50 3.50 1.000R 3.50 1.000R 3.50 1.000R 3.50 1.000R 3.50 3.50 1.000R 3.50 3.50 1.000R 3.50 3.	36 12 16 .30 .60 .60 .960 4-5 5 1.000R 2.430 4-5 1.000R 2.430 4-5 5 1.000R 2.2333R 2.333R 5.821 2-5 4 2.3333R
an-Feet	le Basele le le le le le le le le le le le le	E L X X X a1 a2 a3 G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M M G N B M M M M M M M M M M M M M M M M M M	28 12 8 .20 .40 .40 .40 .40 .640 .640 .640 .647 1.814 2.5 .4 2.000R 3.706 1.5 3 0 6.000 1.5 3 0 8.000 1.0000 1.000 1.000 1.000 1.000 1.0000 1.000 1.000 1.000	28 12 8 8 .20 .50 .30 2-3 3 1.000R .800 2 4 3 1.54L 2.150 2-5 3 1.250L 4.042 1-5 3 .600R 6.409 1-5 3 600R 8.907	32 12 12 10 30 .60 4-5 5 1.000R 2.430 2-5 4 1.667R 4.134 2-5 4 1.667R 6.864 2.5 4 1.667R	32 12 12 .10 .40 .50 4-5 5 1.000R .800 4-5 1.000R 2.025 2-5 4 2.556R 3.647 2-5 4 2.556R 3.647 1.05 4 2.556R 3.647 3.700R 8.074	32 12 12 10 .45 .45 .45 .45 .5 1.000R 1.823 2-5 4 3.000R 3.420 1-5 3 1.900L 8.172	32 12 12 1.10 .50 .40 2-3 3 1.000R 2.025 2-5 3 2.556L 3.650L 5.956 1-5 3 1.500L 8.445	32 12 12 20 .30 .50 4–5 5 1.000R 2.025 2–5 4 2.000R 3.506 2–5 4 2.000R 4–4 2.000R 3.506 4–4 4–5 4–5 4–5 4–6 4–7 4–7 4–7 4–7 4–7 4–7 4–7 4–7	32 12 12 .20 .40 .40 .40 .40 .40 .640 4-5 1.000R 1.620 2-5 4 3.000R 3.040 1-5 3 .800L 5.216 1-5 3.800L 7.713	32 12 12 .50 .50 .30 2-3 3 1.000R 2.025 1-3 2 1.000R 3.573 1-5 3 0 5.800 1-5 3 0 8.300	36 12 16 .10 .30 .60 4-5 5 1.000R 2.430 4-5 5 1.000R 2.430 4-5 5 1.000R 2.339 4-5 4-5 2.338 8.047
an-Feet	le Basele le le le le le le le le le le le le	E L XXX' a1 a2 a3 GN BM BM GN BM BM GN BM BM GN BM BM GN BM BM BM BM BM BM BM BM BM BM BM BM BM	28 12 8 20 40 40 4-5 5 1.000R 3-5 4 667R 1.814 2.5 4 2.000R 3.7 6.000 1.5 3 0 6.000 1.5 3 0 6.000 1.5 3 0 6.000 1.5 3 0 6.000 1.5 3 0 6.000 1.5 3 0 6.000 1.5 4 2.000 1.5 4 6.000 1.5 4 6.000 1.5	28 12 8 .20 .50 .30 .30 1.000R .800 2 4 3 .154L 2.150 2-5 3 1.250L 4.042 1-5 3 .600R 6.409 1-5 3 .600R 8.907 1-5 3	32 12 12 12 10 .30 .60 4-5 5 1.000R 2.430 2-5 4 1.667R 4.134 2-5 4 6.364 2-5 4 1.667R 8.601 1-5	32 12 12 12 .40 .50 4-5 5 1.000R 2.025 2-5 4 2.556R 3.647 2-5 5.847 1-5 4 3.700R 8.074	32 12 12 10 .45 .45 .45 1.000R .720 4-5 5 1.000R 1.823 2-5 4 3.000R 3.420 1-5 3 1.900L 8.172 1-5 3	32 12 12 12 1.10 .50 .40 2-3 3 1.000R 2.025 2-5 3 2.55647 1-5 3 1.500L 8.445 1-5 3	32 12 12 20 30 50 4-5 1.000R 2.025 2-5 4 2.000R 3.506 2-5 4 4.000R 3.506 1-5 4 4.400R 7.487 1-5 4	32 12 12 20 40 40 4-5 5 1.000R 1.620 2-5 4 3.000R 3.040 1-5 3.800L 7.713 1-5 3	32 12 12 12 20 .50 .30 .30 .3 3 1.000R .800 2-3 3 1.000R 2.025 1-3 1.000R 3.573 3 0 5.800 1-5 3 0 8.300	36 12 16 .30 .60 .60 .960 4-5 5 1.000R 2.430 4-5 1.000R 2.430 4-5 5 1.000R 2.25 4 2.333R 8.047 1-5 4
an-Feet	a. Basselle lecting and less 10 20 30 40 50	E L X X X	28 12 8 20 .40 .40 .40 .40 .55 1.000R .640 3-5 .667R 1.814 2-5 4 2.000R 3.706 1-5 3 0 6.000 1-5 3 0 6.000 1-5 3 0 6.000 1-5 6.0000 1-5 6.000 1-5 6.0000 1-5 6.000 1-5 6.0000 1-5 6.00	28 12 8 .20 .50 .30 2-3 1.000R .800 2 4 3 1.54L 2.150 2-5 3 1.250L 4.042 1 5 3 .600R 6.409 1-5 3 .600R 8.907 1-5 3 .600R	32 12 12 13 .30 .60 4-5 5 1.000R 2-430 2-5 4 1.667R 4.134 2-5 4 1.667R 8.601 1-5 4 2.900R	32 12 12 10 .40 .50 4-5 5 1.000R .800 4-5 1.000R 2.025 2-5 4 2.556R 3.647 2-5 4 2.556R 5.847 1-5 4 3.700R 8.074 1-5 4 3.700R	32 12 12 10 .45 .45 .45 .45 .5 1.000R 1.823 2-5 4 3.000R 3.420 1-5 3 1.900L 8.172 1-5 3 1.900L 8.172 1-5 3 1.900L 8.172	32 12 12 1.10 .50 .40 2-3 3 1.000R 2.025 2-5 3 2.556L 3.647 1.5 3 1.500L 8.445 1-5 3 1.500L 8.445	32 12 12 20 .30 .50 4-5 5 1.000R 2.025 2-5 4 2.000R 3.506 2-5 4 4.400R 7.487 1-5 4 4.400R	32 12 12 .20 .40 .40 .40 .4-5 5 1.000R 1.620 2-5 4 3.000R 3.040 1-5 3 .800L 7.713 1-5 3 .800L	32 12 12 12 12 10 10 10 10 10 10 10 10 10 10	36 12 16 .10 .30 .60 .4-5 5 1.000R 2.430 4-5 5 1.000R 3.920 2.5 4 2.333R 2.433R 2.433R 3.920 3.920 4.5 5 4.5 4.5 5 4.5 5 4.5 5 4.5 5 1.000R 3.920 2.430 4.5 5 4.5 4.5 5 4.5 5 4.5 5 4.5 5 4.5 5 4.5 5 4.5 5 4.5 5 4.5 5 4.5 5 4.5 5 4.5 5 4.5 5 4.5 5 4.5 4.
an-Feet	1. Base 1 le ceing de les 10 20 30 40 50 60	E L X X A1 A2 A3 G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N G N B M G N B M G N G N B M G N G N B M G N G N B M G N	28 12 8 20 40 40 4-5 5 1.000R 3-5 4 667R 1.814 2.5 4 2.000R 3.705 6.000 1-5 3 0 8.500 1.55 3 1.500 1.50	28 12 8 .20 .50 .30 .30 2-3 3 1.000R .800 2 4 3 .154L 2.150 2-5 3 1.250L 4.042 1-5 3 .600R 8.907 1-5 3 .600R 1.406 1 5	32 12 12 12 10 .30 .60 4-5 5 1.000R 2.430 2-5 4 1.667R 4.134 2-5 4 1.667R 8.601 1-5 4 2.900R 11.040	32 12 12 12 10 .40 .50 4-5 5 1.000R 2.025 2-5 4 2.556R 3.647 2-5 4 3.700R 8.074 1-5 4 3.700R 1.050R	32 12 12 12 .10 .45 .45 .45 .45 1.000R 1.823 2-5 1.000R 3.420 1-5 3 1.900L 8.172 1-5 3 1.900L 8.172 1-5 1.000R	32 12 12 12 10 .50 .40 2-3 3 1.000R 2.025 2-5 3 2.55647 1.5 3 1.500L 8.445 1-5 3 1.500L 8.445 1.000R	32 12 12 12 20 .30 .50 .50 .50 .60 .800 4–5 1.000R 2.025 2–5 4 2.000R 3.506 2–5 4 4.000R 2.4 2.025 4 4.5 1.000R 2.4 2.025 4 4.5 1.000R 2.025 4 4.000R 2.025 4 4.000R 2.025 4 4.000R 4.	32 12 12 12 20 40 40 4-5 5 1.000R 1.620 2-5 4 3.000R 3.040 1-5 3 800L 7.713 1-5 3 800L 1.001	32 12 12 12 12 20 50 30 2-3 3 1.000R 2.025 1-3 2 1.000R 3.573 3 0 5.800 1-5 3 0 0 1.000R 3.573 3 0 0 1.000R 3.573 3 0 0 1.000R 3.573 3 0 0 1.000R 3.573 3 0 0 1.000R 3.000	36 12 16 .30 .40 .40 .960 4-5 5 1.000R 2.430 4-5 5 1.000R 2.430 4-5 5 1.000R 2.25 4 2.333R 8.047 1-5 4 3.700R 1.000R
an-Feet	a. Basselle lecting and less 10 20 30 40 50	E L XXX a1 a2 a2 A3 GN BM GN BM GN BM GN BM GN BM GN BM GN BM GN BM M M GN BM M M GN BM M M GN BM M M M GN BM M M M M M M M M M M M M M M M M M M	28 12 8 20 40 40 44 5 1.000R .640 3-5 4 2.667R 1.814 2.5 4 2.000R 3.706 1-5 3 0 8.500 1-5 3 0 1.000 1.	28 12 8 .20 .50 .30 2-3 3 1.000R .800 2 4 3.154L 2.150 2-5 3 1.250L 4.042 1-5 3.600R 8.907 1-5 3.600R 8.907 1-5 3.600R 11.406	32 12 12 13 .30 .60 4-5 5 1.000R .960 4-5 1.000R 2.430 2-5 4 1.667R 4.134 2-5 4 1.667R 8.601 1-5 47 1.667R 8.601	32 12 12 10 .40 .50 4-5 5 1.000R 2.025 2-5 4 2.556R 3.647 2-5 4 2.556R 5.847 1-5 4 3.700R 10.528	32 12 12 12 10 .45 .45 .45 5 1.000R .720 4-5 5 1.000R 1.823 2-5 4 3.000R 3.420 1-5 3 1.900L 5.690 1-5 3 1.900L 5.1000L 5.1000L 5.1000L 5.1000L 5.1000L 5.1000L 5.1000L 5.1000L 5.1000L 5.1000L 5.1000L 5.1000L 5.1000L 5.1000L	32 12 12 10 .50 .40 2-3 3 1.000R 2.025 2-5 3 2.556L 3.6500L 5.956 1-5 3 1.500L 8.445 1.500L 1.0938 1.500L 1.0938 1.500L 1.0938	32 12 12 20 .30 .50 4–5 5 1.000R 2.025 2–5 4 2.000R 3.506 2–5 4 4.400R 7.487 1–5 4 4.400R 9.923 1–5 4	32 12 12 20 .40 .40 .40 4-5 5 1.000R .640 4-5 5 1.000R 3.040 1-5 3 .800L 5.216 1-5 3 .800L 7.713 1-5 3 800L 10.211	32 12 12 12 12 10 10 10 10 10 10 10 10 10 10	36 12 16 .10 .30 .60 4-5 5 1.000R 2.430 4-5 5 1.000R 3.920 2.5 4 2.333R 5.821 2-5 4 3.700R 10.328 1-5 4
an-Feet	1. Base 1 le ceing de les 10 20 30 40 50 60	E L XX X A1 A2 A3 GN BM GN BM GN BM GN BM GN BM GN BM GN BM GN BM GN BM GN BM GN BM GN BM GN BM GN BM GN BM GN BM GN BM GN BM	28 12 8 20 40 40 4-5 5 1.000R 3-5 4 667R 1.814 2.5 4 2.000R 3-6 6.000 1-5 3 0 8.500 1-5 3 0 1.55 1.500 1.55 3 0 1.55 1.500 1.55 3 0 1.500 1.5	28 12 8 .20 .50 .30 .30 .31 .000R .800 2 4 3 1.54L 2.150 2-5 3 1.250L 4.042 1-5 3 .600R 8.907 1-5 3 .600R 11.406 1 5 3 .600R 11.406 1 5 3 .600R 16.405	32 12 12 12 10 .30 .60 4-5 5 1.000R 2.430 2-5 4 1.667R 4.134 2-5 4 1.667R 8.601 1-5 4 2.900R 11.040	32 12 12 12 10 .40 .50 4-5 5 1.000R .800 4-5 5 1.000R 2.025 2-5 4 2.556R 3.647 2-5 4 3.700R 8.074 1-5 4 3.700R 1.54 4 3.700R 1.54 4 3.700R 1.54	32 12 12 12 10 .45 .45 .45 .45 1.000R .720 4-5 5 1.000R 1.823 2-5 4 3.000R 3.420 1-5 3 1.900L 8.172 1-5 3 1.900L 8.172 1-5 3 1.900L 8.172 1-5 3 1.900L 8.172 1-5 3 1.900L 8.172 1-5 3 1.900L 8.172 1-5 3 1.900L 8.172 1-5 3 1.900L 8.172 1-5 3 1.900L 8.172 1-5 3 1.900L	32 12 12 12 13 10 .50 .40 2-3 3 1.000R 2.025 2-5 3 1.000R 2.025 2-5 3 1.500L 8.445 1-5 3 1.500L 8.445 1-5 3 1.500L 8.445 1-5 3 1.500L 8.445 1-5 3 1.500L 8.445 1-5 3 1.500L 8.445 1.500L 8.445 1.500L 8.445 1.500L 8.445 1.500L 8.445 1.500L 8.500L	32 12 12 12 20 .30 .50 .50 .50 .60 .800 4–5 1.000R 2.025 2–5 4 2.000R 3.506 2–5 4 4.400R 7.487 1–5 4 4.400R 9.923 1–5 4 4.400R 1–5 4 4.400R 1–5 4 4.400R 1–5 4 4.400R 1–5 4 4.400R 4.400R 4.400R 4.400R 4.400R 4.400R 4.400R 4.400R 4.400R 4.400R 4.400R 4.400R 4.400R 4.400R 4.400R 4.400R	32 12 12 12 20 40 40 4-5 5 1.000R 1.620 2-5 4 3.000R 3.040 1-5 3 800L 7.713 1-5 3 800L 10.211 1-5 3 800L 15.208	32 12 12 12 12 20 .50 .30 .30 .30 .800 2-3 3 1.000R 2.025 1-3 2 1.000R 3.573 0 5.800 1-5 3 0 8.300 1-5 3 0 1.000R	36 12 16 .30 .60 .60 .960 4-5 5 1.000R 2.430 4-5 5 1.000R 2.430 4-5 5 1.000R 2.25 4 2.333R 8.047 1-5 4 3.700R 10.03
an-Feet	1. Base 1 le ceing de les 10 20 30 40 50 60	E L X X X A 1 A 1 A 1 A 1 A 1 A 1 A 1 A 1 A	28 12 8 20 40 40 44 5 1.000R .640 3-5 4 2.667R 1.814 2.5 4 2.000R 3.706 1-5 3 0 8.500 1-5 3 0 1.000 1.	28 12 8 .20 .50 .30 2-8 3 1.000R .800 2 4 3.154L 2.150 2-5 3 1.2504 1-5 3.600R 6.409 1-5 3.600R 8.907 1-5 3 .600R 8.907 1-5 3 .600R 1.500R	32 12 12 12 10 .30 .60 4-5 5 1.000R 2.430 2-5 4 1.667R 4.134 2-5 4 4.667R 8.601 1-5 4 2.900R	32 12 12 10 .40 .50 4-5 5 1.000R .800 4-5 1.000R 2.025 2-5 4 2.556R 5.847 1-5 4 3.700R 8.074 1-5 4 3.700R 8.074 4.5 1.000R	32 12 12 12 10 .45 .45 .45 .45 1.000R 1.823 2-5 1.000R 1.823 2-5 3.000R 1.5 3.420 1-5 3.420 1-5 3.000L 8.172 1-5 3.000L 8.172 1-5 3.000L 8.172 1-5 3.000L 8.172 1-5 3.000L 8.172 1.000L	32 12 12 12 10 .50 .40 2-3 3 1.000R 2.025 2-5 3 2.556L 5.956 1-5 3 1.500L 8.447 1-5 3 1.500L 8.403 8.403	32 12 12 12 12 20 30 4-5 5 1.000R 2.025 2-5 4 2.000R 3.506 2-5 4 4.400R 7.487 1-5 4 4.400R 9.923 1-5 4 4.400R 9.923 1-5 4 4.400R 1-5 4 4 4 4 4 4 4 4 4 4 4 4 4	32 12 12 12 12 14 40 40 40 40 5 1.000R .640 4-5 5 1.000R 1.620 2-5 4 3.000R 3.040 1-5 3.800L 7.713 1-5 3.800L 10.211 1.5 3.800L	32 12 12 12 12 12 12 12 12 12 1	36 12 16 .30 .4-5 5 1.000R .960 4-5 5 1.000R 2.430 4-5 5 1.000R 2.430 4-5 5 1.000R 2.333R 5.821 2-5 4 2.333R 8.047 1-5 4 3.700R
an-Feet	1. Base 1 le ceing ad les 10 20 30 40 50 60 80	E L XX X A1 A2 A3 A3 A3 BM GNBM GNBM GNBM GNBM GNBM GNBM GNBM G	28 12 8 20 .40 .40 .40 .40 .640 3-5 .640 3-5 .667R 1.814 2-5 .814 2.000R 3.706 1-5 .8500 1-5 .8500 1-5 .8500 1-5 .8000 1-5	28 12 8 .20 .50 .30 2-3 3 1.000R .800 2 4 3 1.54L 2.150 2-5 3 1.250L 4.042 1-5 3 6.00R 8.907 1-5 3 6.00R 11.406 1 5 3 6.00R 1.406 1 5 3 6.00R 1.4065 1-5 3 1.600R	32 12 12 13 .30 .60 4-5 5 1.000R 2.430 2-5 4 1.667R 4.134 2-5 4 4.667R 8.601 1-5 4 2.900R 1.040 1.55 1.000R 2.430 2.4	32 12 12 10 .40 .50 4-5 5 1.000R .800 4-5 1.000R 2.025 2-5 4 2.556R 3.647 2-5 4 2.556R 3.700R 8.074 1-5 4 3.700R 10.528 1-5 4 3.700R 1.50	32 12 12 10 .45 .45 .45 .45 .5 1.000R 1.823 2-5 4 3.000R 3.420 1-5 3 1.900L 1.560	32 12 12 12 10 .50 .40 2-3 3 1.000R .800 2-3 3 2.025 2-5 3 1.500L 8.445 1-5 3 1.500L 10.938 1-509L 15.928 1-5928	32 12 12 20 .30 .50 4-5 5 1.000R 2.025 2-5 4 2.000R 3.506 2-5 4 2.000R 7.487 1-5 4 4.400R 9.923 1-5 4 4.400R 1-4	32 12 12 12 .20 .40 .40 .40 .4-5 5 1.000R 1.620 2-5 4 3.000R 3.040 1-5 3 .800L 7.713 1-5 3 .800L 10.211 1-5 3 .800L 15.208	32 12 12 12 12 12 12 12 12 10 10 10 10 10 10 10 10 10 10 10 10 10	36 12 16 .30 .60 .60 .60 .60 .60 .60 .960 4–5 5 1.000R 2.430 4–5 5 1.000R 2.920 2.5 4 2.333R 5.821 2–5 4 3.700R 10.328 1–5 4 3.700R 10.328 1.55

84 METHOD OF CONVERTING HEAVY MOTOR VEHICLE LOADS TABLE 7.7 (Continued)

-			Continue									
	ck No		51 36	52 36	53 36	54 36	55 36	56 36	57 40	58 40	59 40	60 40
Ax	le	X	12	12	12	12	12	12	12	12	12	12
Spa	icing	X'	.10	<u>.16</u>	.10		.20	.20	.10	.10	.10	.10
On		\mathbf{a}_2	.40	.45	.50	.30	.40	.50	.30	.40	.45	.50
Ax	les	a ₃	.50 45	$\frac{.45}{4-5}$	$\frac{.40}{2-3}$	$\frac{.50}{4-5}$.40 4-5	$\frac{.30}{2-3}$.60 4-5	.50 4–5	.45 4–5	2-3
	10	N B	5	5	3 1.000R	5 1.000R	$_{ m 1.000R}^{ m 5}$	3 1.000R	$_{1.000\mathrm{R}}^{5}$	5 1.000R	5 1.000R	3 1.000R
		M	1.000R .800	1.000R .720	.800	.800	.640	.800	.960	.800	.720	.800
	20	G N	4-5 5	4–5 5	2-3 3	4–5 5	4-5 5	$^{2-3}_{3}$	4-5 5	4-5 5	4–5 5	2-3 3
	20	В	$1.000\mathbf{R}$	1.000R	1.000R	1.000R	1.000R	1.000R	1.000R	1.000R	1.000R	1.000R
		M G	2.025	1.823	2.025	2.025 4-5	1.620 1-3	$\frac{2.025}{1-3}$	2.430 4-5	$\frac{2.025}{4-5}$	1.823	2.025
	30	Ñ B	5 1.000R	.273R	2 .167R	5 1.000R	2 1.333R	2 1.000R	5 1.000R	5 1.000R	$^{2}_{.273\mathrm{R}}$	2 .167R
		M	3.267	3.075	3.402	3.267	2.934	3.573	3.920	3.267	3.075	3.402
	40	G N	2-5 4	1-5 3	1–5 3	2-5 4	1-5 3	$^{1-4}_{2}$	3–5 4	3–5 4	1-3 2	$^{1-3}_{2}$
eet	10	В	3.445R	2.800L	2.300 L	2.750R	1.600L	.941L	1.200R	2.143R	.273R	.167R
Span-Feet		M G	5.167 2-5	$\frac{4.896}{1-5}$	5.232 1-5	$\frac{4.951}{2-5}$	$\frac{4.464}{1-5}$	5.320 1-5	5.427 2-5	$\frac{4.579}{2-5}$	4.450 1-5	$\frac{4.902}{1-5}$
Spa	50	N B	4	3 2.800L	3 2.300L	4	3 1.600L	3 .600L	4	4 4.333R	3	3
		M	3.445R 7.363	7.357	7.706	2.750R 6.921	6.951	7.707	3.000R 7.512	6.687	3.700L 6.574	3.100L 6.992
	60	G N	1-5 4	1–5 3	1-5 3	1-5 4	$^{1-5}_{3}$	1-5 3	$^{2-5}_{4}$	$\frac{2-5}{4}$	1–5 3	1-5 3
	00	В	4.700R	2.800 L	2.300 L	5.400R	1.600L	.600L	$3.000\mathbf{R}$	4.333R	3.700L	3.100L
		M G	9.668 1–5	$\frac{9.831}{1-5}$	10.188 1_5	9.086 1-5	9.443 $1-5$	10.206 1_5	9.735 1–5	8.880 1–5	9.028 1-5	9.460 1-5
	80	N B	4 4.700R	3 2.800L	3 2.300L	4 5.400R	3 1.600L	3 .600L	4 4.500R	4 5.700R	3 3.700L	3 3.100L
		M	14.576	14.798	15.166	13.965	14.432	15.205	14.553	13.706	13.971	14.420
	100	G N	$^{1-5}_{4}$	$^{1-5}_{3}$	$^{1-5}_{3}$	$^{1-5}_{4}$	1–5 3	$_{3}^{1-5}$	1-5 4	$^{1-5}_{4}$	1–5 3	1–5 3
	100	B M	4.700R	2.800 L	2.300L	5.400R	1.600L	.600L	4.500R	5.700R	3.700L	3.100L
The	ıck No		19.521	19.778 62	20.153 63	18.892	19.426	20.204	19.503	18.625	18.937 69	19.396 70
												44
	ı. Base		40	40	40	44	44	44	44	44	44	44
Ax	le	X	12	12	12	12	12	12	12	12	12	12
	le acing						and the same of					
Sp: Lo: On	le acing ad	X X' a ₁ a ₂	12 20 .20 .30	12 20 .20 .40	12 20 .20 .50	12 24 .10 .30	12 24 .10 .40	12 24 .10 .45	12 24 .10 .50	12 24 .20 .30	12 24 .20 .40	12 24 .20 .50
Spa Lo	le acing ad les	X X' a ₁ a ₂ a ₃	12 20 .20 .30 .50	12 20 .20 .40 .40 4-5	12 20 .20 .50 .30 2-3	12 24 .10 .30 .60 4 5	12 24 .10 .40 .50 4-5	12 24 .10 .45 .45 4-5	12 24 .10 .50 .40 2-3	12 24 .20 .30 .50 4-5	12 24 .20 .40 .40 4-5	12 24 .20 .50 .30
Sp: Lo: On	le acing ad	X X' a_1 a_2 a_3	12 20 .20 .30 .50	12 20 .20 .40 .40	12 20 .20 .50 .30	12 24 .10 .30 .60 4-5 5 1.000R	12 24 .10 .40 .50	12 24 .10 .45 .45 4-5 5 1.000R	12 24 .10 .50 .40	12 24 .20 .30 .50	12 24 .20 .40 .40	12 24 .20 .50 .30
Sp: Lo: On	le acing ad les	X X' a ₁ a ₂ a ₃ G N B	12 20 .20 .30 .50 4–5 5 1.000R .800	12 20 .20 .40 .40 4-5 5 1.000R .640	12 20 .20 .50 .30 2-8 3 1.000R .800	12 24 .10 .30 .60 4-5 5 1.000R .960	12 24 .10 .40 .50 4-5 5 1.000R .800	12 24 .10 .45 .45 4-5 5 1.000R .720	12 24 .10 .50 .40 2-3 3 1.000R .800	12 24 .20 .30 .50 4-5 5 1.000R .800	12 24 .20 .40 .40 4–5 5 1.000R .640	12 24 .20 .50 .30 2-3 3 1.000R .800
Sp: Lo: On	le acing ad les	X X' a ₁ a ₂ a ₃ G N B M	12 20 .20 .30 .50 4–5 5 1.000R .800 4–5 5	12 20 .20 .40 .40 4-5 5 1.000R .640 4-5 5	12 20 .20 .50 .30 2-3 1.000R .800 2-3 3	12 24 .10 .30 .60 4-5 5 1.000R .960 4-5 5	12 24 .10 .40 .50 4-5 5 1.000R .800 4-5 5	12 24 .10 .45 .45 4-5 5 1.000R .720 2-3 3	12 24 .10 .50 .40 2-3 3 1.000R .800 2-3 3	12 24 .20 .30 .50 4-5 5 1.000R .800 4-5 5	12 24 .20 .40 .40 4–5 5 1.000R .640 4–5 5	12 24 .20 .50 .30 2-3 3 1.000R .800 2-3 3
Sp: Lo: On	le acing ad les	X X' a ₁ a ₂ a ₃ G N B M	12 20 .20 .30 .50 4–5 5 1.000R .800	12 20 .20 .40 .40 4-5 5 1.000R .640	12 20 .20 .50 .30 2-3 3 1.000R .800 2-3	12 24 .10 .30 .60 4-5 5 1.000R .960 4-5	12 24 .10 .40 .50 4-5 5 1.000R .800	12 24 .10 .45 .45 .45 4-5 5 1.000R .720 2-3	12 24 .10 .50 .40 2-3 3 1.000R .800	12 24 .20 .30 .50 4-5 5 1.000R .800 4-5 5 1.000R	12 24 .20 .40 .40 4–5 5 1.000R .640 4–5 5 1.000R	12 24 .20 .50 .30 2-3 3 1.000R .800 2-3 3 1.000R
Spa Loa On	le acing ad les 10	X X' a ₁ a ₂ a ₃ G N B M G N B M	12 20 .20 .30 .50 4-5 5 1.000R .800 4-5 5 1.000R 2.025	12 20 .20 .40 .40 4-5 5 1.000R .640 4-5 1.000R 1.620	12 20 .20 .50 .30 2-3 3 1.000R .800 2-3 1.000R 2.025	12 24 .10 .30 .60 4-5 5 1.000R .960 4-5 1.000R 2.430	12 24 .10 .40 .50 4-5 5 1.000R .800 4-5 5 1.000R 2.025	12 24 .10 .45 .45 4-5 5 1.000R .720 2-3 3 1.000R 1.823	12 24 .10 .50 .40 2-3 3 1.000R .800 2-3 3 1.000R 2.025	12 24 .20 .30 .50 4-5 5 1.000R .800 4-5 5 1.000R 2.025	12 24 .20 .40 .40 4-5 5 1.000R .640 4-5 5 1.000R 1.620	12 24 .20 .50 .30 2-3 3 1.000R .800 2-3 3 1.000R 2.025
Sp: Lo: On	le acing ad les	X X' a ₁ a ₂ a ₃ G N B M G N B	12 20 .20 .30 .50 4-5 5 1.000R .800 4-5 5 1.000R 2.025	12 20 .20 .40 .40 4-5 5 1.000R .640 4-5 1.000R 1.620 1-3 1.333R	12 20 .20 .50 .30 2-3 1.000R .800 2-3 1.000R 2.025 1-8 2.000R	12 24 .10 .30 .60 4-5 1.000R .960 4-5 1.000R 2.430 4-5 1.000R	12 24 .10 .40 .50 4-5 5 1.000R .800 4-5 5 1.000R 2.025 4-5 1.000R	12 24 .10 .45 .45 4-5 5 1.000R .720 2-3 3 1.000R 1.823	12 24 .10 .50 .40 2-3 3 1.000R .800 2-3 3 1.000R 2.025 1-3 2 .167R	12 24 .20 .30 .50 4-5 5 1.000R .800 4-5 5 1.000R 2.025	12 24 .20 .40 .40 4-5 5 1.000R .640 4-5 5 1.000R 1.620	12 24 .20 .50 .30 2-3 3 1.000R .800 2-3 3 1.000R 2.025
Sp: Lo: On	le acing ad les 10	X X' a ₁ a ₂ a ₃ G N B M G N B M	12 20 .20 .30 .50 4-5 5 1.000R .800 4-5 5 1.000R 2.025 4-5 5	12 20 .20 .40 .40 4-5 5 1.000R .640 4-5 5 1.000R 1.620 1-3 2 1.333R 2.934	12 20 .20 .50 .30 2-3 3 1.000R .800 2-3 3 1.000R 2.025 1-3 2 1.000R	12 24 .10 .30 .60 4-5 5 1.000R .960 4-5 5 1.000R 2.430 4-5 5 1.000R 3.920	12 24 .10 .40 .50 4-5 5 1.000R .800 4-5 5 1.000R 2.025 4-5 5 1.000R	12 24 .10 .45 .45 .45 .720 2-3 3 .1000R 1.823 1-3 2.273R 3.075	12 24 .10 .50 .40 2-3 3 1.000R .800 2-3 3 1.000R 2.025 1-3 2 1.167R 3.402	12 24 .20 .30 .50 4-5 5 1.000R .800 4-5 5 5 1.000R 2.025 4-5 5 1.000R 3.267	12 24 .20 .40 .40 4-5 5 1.000R 4-5 5 1.000R 1.620 1-3 2 2.934	12 24 .20 .50 .30 2-3 3 1.000R .800 2-3 3 1.000R 2.025 1-3 2 1.000R 3.573
Spa Loa On Ax	le acing ad les 10	X X' a ₁ a ₂ a ₃ G N B M G N B M G N B M	12 20 .20 .30 .50 4-5 5 1.000R .800 4-5 5 1.000R 2.025 4-5 1.000R 3.267 3-5 4	12 20 .20 .40 .40 .40 4-5 5 1.000R .640 4-5 5 1.000R 1.620 1-3 2 1.333R 2.934	12 20 .20 .50 .30 2-3 1.000R .800 2-3 1.000R 2.025 1-8 2 1.000R 3.573	12 24 .10 .30 .60 4-5 5 1.000R .960 4-5 5 1.000R 2.430 4-5 5 1.000R 3.920 4-5 5	12 24 .10 .40 .50 4-5 5 1.000R .800 4-5 5 1.000R 2.025 4-5 1.000R 3.267 4-5 5	12 24 .10 .45 .45 .45 -5 5 1.000R .720 2—3 3 1.000R 1.823 1—3 2 .273R 3.075	12 24 .10 .50 .40 2-3 3 1.000R .800 2-3 3 1.000R 2.025 1-3 2 .167R 3.402	12 24 .20 .30 .50 4-5 5 1.000R .800 4-5 5 1.000R 2.025 4-5 5 1.000R 3.267 4-5 5	12 24 .20 .40 .40 .40 .40 .5 5 1.000R .640 4-5 5 1.000R 1.620 1-3 2 1.333R 2.934	12 24 .20 .50 .30 2-3 3 1.000R .800 2-3 3 1.000R 2.025 1-3 2 1.000R 3.573
Spa Loa On Ax	le acing ad les 10 20 30	X X' a ₁ a ₂ a ₃ G N B M G N B M G N B M	12 20 .20 .30 .50 4-5 5 1.000R .800 4-5 5 1.000R 2.025 4-5 5 1.000R 3.267 3.267	12 20 .20 .40 .40 4-5 5 1.000R .640 4-5 5 1.000R 1.620 1-3 2 1.333R 2.934	12 20 .20 .50 .30 2-3 1.000R .800 2-3 3 1.000R 2.025 1-8 2 1.000R 3.573 1-3 2 1.000R	12 24 .10 .30 .60 4-5 5 1.000R .960 4-5 1.000R 2.430 4-5 1.000R 3.920 4-5	12 24 .10 .40 .50 4-5 5 1.000R .800 4-5 5 1.000R 2.025 4-5 5 1.000R 3.267 4-5 5 1.000R	12 24 .10 .45 .45 .45 .5 1.000R .720 2-3 3 1.000R 1.823 1-3 2.273R 3.075 1-3 2.273R	12 24 .10 .50 .40 2-3 3 1.000R .800 2-3 3 1.000R 2-025 1-3 2 1.67R 3.402	12 24 .20 .30 .50 4-5 1.000R .800 4-5 5 1.000R 2.025 4-5 5 1.000R 3.267 4-5 5 1.000R	12 24 .20 .40 .40 .40 .5 1.000R 1.620 1-3 2 1.333R 2-32 1.333R	12 24
Sp: Lo: On Ax	le acing ad les 10 20 30 40	X X X	12 20 .20 .30 .50 4-5 5 1.000R 2.025 4-5 5 1.000R 3.267 3-5 4 1.539R 4.537	12 20 .20 .40 .40 .40 4-5 5 1.000R 1.620 1-3 2 1.333R 2.934 1-3 2 1.333R 4.426 1-5	12 20 .50 .50 .30 2-3 3 1.000R 800 2-3 1.000R 3.573 1-3 2 1.000R 5.318	12 24 .10 .30 .60 4 -5 5 1.000R 2.430 4-5 1.000R 3.920 4-5 1.000R 5.5 1.000R 3.920	12 24 .10 .40 .50 4-5 5 1.000R 800 4-5 5 1.000R 3.267 4-5 5 1.000R 4.51 5 1.000R 3.267 4.51 5	12 24 .10 .45 .45 .45 .5 1.000R .720 2-3 3 1.000R 1.823 1-3 2 .273R 3.075 1-3 2 .213R 4.450	12 24 .10 .50 .40 2-3 3 1.000R 2.025 1-3 2 .167R 3.402 1-3 2 .167R 4.902	12 24 .20 .30 .50 4-5 5 1.000R 2.025 4-5 5 1.000R 3.267 4-5 5 1.000R 4.513 2.025	12 24 .40 .40 .40 4-5 5 1.000R 1-620 1-3 2 1.333R 2.934 1-3 2 1.333R 4.426	12 24
Sp: Lo: On Ax	le acing ad les 10 20 30	X X' a1 a2 a3 G N B M G N B M G N B M M G N B M M M M B M M M M M M M M M M M M M	12 20 .30 .50 4-5 1.000R 2.025 4-5 1.000R 2.025 4-5 1.000R 3.267 3-5 4 1.539R 4.539R	12 20 .20 .40 .40 .40 4-5 5 1.000R 1.620 1-3 2 1.333R 2.934 1-3 2 1.333R 4.426	12 20 .20 .50 .30 2-3 1.000R .800 2-3 3 1.000R 2.025 1-8 2 1.000R 3.573 1-3 2 1.000R	12 24 .10 .30 .60 4-5 1.000R 2.430 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 5 1.000R	12 24 .10 .40 .50 4-5 5 1.000R .800 4-5 5 1.000R 2.025 4-5 5 1.000R 3.267 4-5 5 1.000R 4-5 1.000R 4-6 1.000R 4-6 1.000R 4-6 1.000R 4-6 1.000R 4-6 1.000R 4-6 1.000R 4-6	12 24 .10 .45 .45 .45 .5 1.000R .720 2-3 3 1.000R 1.823 1-3 2 .273R 3,075 1-3 2 .213R 4,450	12 24 .10 .50 .40 2-3 3 1.000R .800 2-3 3 1.000R 2.025 1-3 2 167R 4.902 1-3 2	12 24 .20 .30 .50 4-5 5 1.000R .800 4-5 5 1.000R 2.025 4-5 5 1.000R 4.513 2-5 4.513	12 24 .20 .40 .40 .4-5 5 1.000R 1.620 1-3 2 1.333R 2.934 1-3 2 1.333R 4.426	12 24
Sp: Lo: On Ax	le acing ad les 10 20 30 40	X X X Y	12 20 .30 .50 4-5 5 1.000R 8.00 4-5 5 1.000R 3.267 3-5 4-1.5398 4.5397 2-5 4.5396	12 20 .20 .40 .40 .40 .45 .5 1.000R 1.620 1-3 2 1.333R 2.934 1-3 2 1.333R 4.426 1-5 3 2.400L 6.215	12 20 .50 .50 .30 2-3 3 1.000R 800 2-3 1.000R 2.025 1-8 2 1.000R 3.573 1-3 2 1.000R 3.573 1-3 1.000R 7.153	12 24 .10 .30 .60 4-5 5 1.000R 2.430 4-5 1.000R 3.920 4-5 1.000R 5.5 1.000R 5.415 8-5 1.600R 7.013	12 24 .10 .40 .50 4-5 5 1.000R 800 4-5 5 1.000R 3.267 4-5 5 1.000R 4.51 2.025 4-5 5 1.000R 3.267 4.51 5 5 1.000R 3.267 4.51 6.000R	12 24 .10 .45 .45 .45 .5 1.000R .720 2-3 3 1.000R 1.823 1-3 2 .273R 3.075 1-3 2 .213R 4.450 1-3 2 .213R 5.5 2.213R 5.5 1.023 2.213R 5.5 2.213R 5.5 2.213R 5.5 2.213R 5.5 5.5 5.5 6.000R 7.720 7.	12 24 .10 .50 .40 2.3 3 1.000R 2.025 1.000R 2.025 1-3 2.167R 3.402 1-3 2.167R 4.902 1-3 2.167R	12 24 .20 .30 .50 4-5 5 1.000R 2.025 4-5 5 1.000R 3.267 4-5 5 1.000R 4.513 2.025 4-5 4.513 2.025	12 24 .20 .40 .40 .4-5 5 1.000R 1-620 1-3 2 1.333R 2.934 1-3 2 1.333R 4.426 1-3 2 1.333R 5.921	12 24
Sp: Lo: On Ax	le acing ad les 10 20 30 40	X X X X X X X X X X X X X X X X X X X	12 20 .30 .50 4-5 5 1.000R 2.025 4-5 5 1.000R 2.025 4-5 5 1.000R 3.267 3-5 4 1.539R 4.537 2-5 4 3.500R 6.396	12 20 .20 .40 .40 .40 .45 .5 1.000R .640 .4-5 .5 1.000R 1.620 1-3 2 1.333R 2.934 1-3 2 1.4326 1-5 3 2.400L 6.215 1-5 3	12 20 .20 .50 .30 2-3 3 1.000R 2.025 1-3 2 1.000R 3.573 1-3 2 1.000R 3.573 1-3 2 1.000R 3.573 1-3 1.000R 3.573 1-3 1.000R 3.573 1-3 1.000R	12 24 .10 .30 .60 4-5 5 1.000R 2.430 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 5 1.000R 3.960 4-5 5 1.000R 3.960 4-5 5 1.000R 4.00	12 24 .10 .40 .50 4-5 5 1.000R 2.025 4-5 1.000R 3.267 4-5 1.000R 4.513 2-5 4.6043 2-5 4.0043	12 24 .10 .45 .45 .4-5 .5 1.000R .720 2-3 3 1.000R 1.823 1-3 2.273R 3.075 1-3 2.273R 4.450 1-3 2.273R 5.825 1-5 3	12 24 .10 .50 .40 2 -3 3 1.000R 2.025 1-3 2 .167R 3.402 1-3 2 .167R 4.902 1-3 2 .167R 6.402 1-5 3	12 24 20 .30 .50 4-5 5 1.000R 2.025 4-5 5 1.000R 3.267 4-5 5 1.000R 4.513 2-5 4.250R 5.889 2-5 4	12 24 .20 .40 .40 .4-5 5 1.000R 1.620 1-3 2 1.333R 2.934 1-3 2 1.333R 4.426 1-3 2 1.333R 5.921	12 24
Sp: Lo: Con Ax	le le le le le le le le le le le le le l	X X X Y 1 81 1 82 1 83 1 84 1 84 1 84 1 84 1 84 1 84 1 84	12 20 .20 .30 .50 4-5 5 1.000R 2.025 4-5 5 1.000R 3.267 3-5 4.539R 4.539R 4.539R 4.539R 4.539R 4.539R 4.539R 4.539R 4.539R 4.539R	12 20 .20 .40 .40 .40 .40 .40 .640 .640 .640 .620 .1.333R .2.934 .4.426 .1.5 .3 .2 .400L .3.4 .401 .5 .3 .400L .4.426 .2.5 .2.5 .4.426 .2.5 .2.5 .2.5 .2.5 .2.5 .2.5 .2.5 .2	12 20 .50 .50 .30 2-3 3 1.000R 800 2-3 1.000R 2.025 1-3 2 1.000R 5.318 1-4 2 1.294L 7.153 1-5 3 1.200L	12 24 .10 .30 .60 4-5 5 1.000R 2.430 4-5 5 1.000R 3.920 4-5 5 1.000R 5.415 8-5 4 1.600R 7.013	12 24 .10 .40 .50 4-5 5 1.000R 800 4-5 5 1.000R 8.267 4-5 5 1.000R 4.513 2-5 4 5.222R 6.043 2-5 4 5.222R	12 24 .10 .45 .45 .45 .5 1.000R .720 2-3 3 1.000R 1.823 1-3 2 .273R 3.075 1-3 2 .273R 4.450 1-8 2 .273R 5.825 1-5 3 4.450 1-8 2 .273R 4.450 1-8 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	12 24 .10 .50 .40 2-3 3 1.000R 800 2-3 1.000R 2.025 1-3 2 .167R 4.902 1-3 2 .167R 4.902 1-3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	12 24 .20 .30 .50 4-5 5 1.000R 800 4-5 5 1.000R 3.267 4-5 5 1.000R 4.51 2.025 4-5 5 1.000R 4.55 4.250R 4.250R 4.250R	12 24	12 24
Sp: Lo: On Ax	20 30 40 50 60	XXX' a1 a2 a3 G N B M G R B M R B M R B R B	12 20 .30 .50 4-5 5 1.000R 2.025 4-5 5 1.000R 2.025 4-5 1.000R 3.267 3-5 4 1.539R 4.587 2-5 4 3.500R 6.396 2-5 4 3.500R 8.363 1-5	12 20 .20 .40 .40 .40 .45 .5 1.000R .640 .4-5 .5 1.000R 1.620 1-3 2 1.333R 2.934 .426 1-5 3 2.400L 6.215 1-5 3 2.400L 8.696 1-5	12 20 .20 .50 .30 2-3 3 1.000R 2.025 1-3 2 1.000R 3.573 2 1.2001 1-4 2 1.294L 7.153 1-5 3 1.2001 1.294L 7.153	12 24 .10 .30 .60 4-5 5 1.000R 2.430 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 5 1.000R 4.920 4.900 4.900 4.900 4.900 4.900 4.900 4.900 4.900 4.900 4.900 4.9	12 24 .10 .40 .50 4-5 5 1.000R 2.025 4-5 1.000R 3.267 4-5 5 1.000R 3.267 4-5 5 4.513 2-5 4.0043 2-5 4.522R 6.043 2-5 4.522R 8.211	12 24 .10 .45 .45 .45 .5 1.000R .720 2-3 3 1.000R 1.823 1-3 2 .273R 3.075 1-3 2 .273R 4.450 1-3 2 .273R 5.825 1-5 3 4.6051 8.0051	12 24 .10 .50 .40 2 -3 3 1.000R 2.025 1-3 2 .167R 3.402 1-3 2 .167R 4.902 1-3 2 .167R 6.402 1-5	12 24 20 .30 .50 4-5 5 1.000R 2.025 4-5 5 1.000R 3.267 4-5 5 1.000R 3.267 4-5 5 1.000R 4.513 2-5 4.250R 5.889 2-5 4.250R 7.841 7.842 7.842 7.843	12 24 .20 .40 .40 .4-5 5 1.000R 1.620 1-3 2 1.333R 2.933R 4.426 1-3 2 1.333R 5.921 1-5 3 3.200L 7.971 1-5	12 24
Sp: Lo: On Ax	le le le le le le le le le le le le le l	X X X X X X X X X X X X X X X X X X X	12 20 .30 .50 4-5 5 1.000R .800 4-5 5 1.000R 2.025 4-5 5 1.000R 3.267 3-5 4 4.539R 4.539R 4.539R 4.539R 5.500R 6.396 6.396 6.396 8.3600 8.363	12 20 .20 .40 .40 .40 .45 5 1.000R 1.620 1-3 2 1.333R 2.934 1-5 3 2.400L 6.215 1-5 3 2.400L 8.696	12 20 .20 .20 .50 .30 .30 .800 .2-3 .3 .000R .800 .2.025 .1-8 .2 .1.000R .5.318 .1-4 .2 .1.201L .9.624 .1.200L .9.624	12 24 .10 .30 .60 4-5 5 1.000R 2.430 4-5 5 1.000R 3.920 4-5 5 1.000R 5.415 8-5 4 1.600R 7.013 2-5 4 4.6667R 9.203	12 24 .10 .40 .50 4-5 5 1.000R 8.00 4-5 5 1.000R 3.267 4-5 5 1.000R 4.513 2-5 4.522R 6.043 2-5 4.522R 8.211	12 24 .10 .45 .45 .45 .5 1.0000R .720 2-3 3 1.000R 1.823 1-3 2.273R 3.075 1-3 2.273R 4.450 1-3 2.273R 4.450 1-3 2.273R 4.450 1-3 2.273R 4.50 1-8 2.273R 4.50 1-8 2.273R 4.50 1-8 2.273R 4.50 1-8 2.273R 4.50 1-8 2.273R 4.50 1-8 2.273R 4.50 1-8 2.273R 4.50 1-8 2.273R 4.50 1-8 2.273R 4.50 1-8 2.273R 4.50 1-8 2.273R 4.50 1-8 2.273R 4.500 1.8253	12 24 .10 .50 .40 2-3 3 1.000R 800 2-3 3 1.000R 2.025 1-3 2 .167R 4.902 1-3 2 .167R 4.902 1-3 2 .167R 4.902	12 24 .20 .30 .50 4-5 5 1.000R 2.025 4-5 5 1.000R 4.51 2.025 4-5 5 1.000R 4.513 2-5 4 4.250R 7.841 1-5 4	12 24 .20 .40 .40 .40 .640 4-5 5 1.000R 1.620 1-3 2 1.333R 2.934 1-3 2 1.333R 4.426 1-3 2 1.333R 3.200L 7.971	12 24 .20 .50 .30 .30 .30 .30 .2-3 .3 1.000R .800 .2-3 .2 1.000R .3.573 1-3 2 1.000R .5.318 .1-3 2 1.000R .5.318 .1-5 .3 1.800L 9.054 1-5 3
Sp: Lo: Con Ax	20 30 40 50 60	XXX' a1 a2 a3 GN BM GN BM GN BM GN BM GN BM GN BM GN BM GN BM GN BM MBM GN BM MBM GN BM MBM GN BM MBM GN BM MBM GN BM MBM MBM MBM MBM MBM MBM MBM MBM MBM	12 20 .30 .50 4-5 5 1.000R 2.025 4-5 5 1.000R 2.025 4-5 5 1.000R 3.267 3-5 4 1.539R 4.537 2-5 4 3.500R 8.363 1-5 4 3.500R 8.363 1-5 6.400R	12 20 .20 .40 .40 .40 .45 .5 1.000R .640 .4-5 .5 1.000R 1.620 1-3 2 1.333R 2.934 .426 1-5 3 2.400L 8.696 1-5 3 2.400L 8.696 1-5 3 2.400L 13.672	12 20 .20 .20 .20 .30 .30 .30 .30 .30 .30 .30 .30 .2-3 .3 1.000R .2.025 .1 .3 1.000R .3.573 .2 1.200L .7.153 .1 .5 3 1.200L .9.624 .1 .5 3 1.200L .9.624 .1 .4.618	12 24 .10 .30 .60 4-5 5 1.000R 2.430 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 5 1.000R 4-5 4.000R 4-5 5 4.000R 4-5 4.000R 4-5 4.000R 4-6 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	12 24 .10 .40 .50 4-5 5 1.000R 2.025 4-5 1.000R 3.267 4-5 1.000R 3.267 4-5 5 1.000R 3.267 4-5 5 1.000R 3.262 4.5 1.000R 4.5 1.000R 3.263 4.5 1.000R 4.5 5 1.000R 4.5 5 1.000R 4.5 5 1.000R 4.5 5 1.000R 4.5 5 1.000R 4.5 5 1.000R 4.5 5 1.000R 4.5 5 1.000R 4.5 5 1.000R 4.5 5 1.000R 4.5 5 1.000R 4.5 5 1.000R 4.5 5 1.000R 4.5 5 4.5 5 4.5 5 4.5 5 4.5 5 4.5 6.04 4.5 6.04 4.5 5 4.5 6.04 4.04 4.04 4.04 4.04 4.04 4.04 4.04	12 24 .10 .45 .45 .45 .5 1.000R .720 2-3 3 1.000R 1.823 1-3 2.273R 3.075 1-3 2.273R 4.450 1-3 2.273R 5.825 1-5 3 4.600L 8.253 1-5 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	12 24 .10 .50 .40 .3 3 1.000R .800 2-3 3 1.000R 2.025 1-3 2 .167R 4.902 1-3 2 .167R 6.402 1-5 3 3.900L 8.754 1-5 3 3.900L 8.754 1.5 3 3.900L 1.3690	12 24 20 .30 .50 4-5 5 1.000R 2.025 4-5 5 1.000R 3.267 4-5 5 1.000R 4.513 2-5 4 4.250R 5.889 2-5 4 4.250R 7.841 1-5 4 7.400R 12.285	12 24	12 24
Sp: Lo: Con Ax	20 30 40 50 60	XXX' a1 a2 a3 G N B M B M G N B M B M B M B M B M B M B M B M B M B	12 20 20 .30 .50 4-5 5 1.000R .800 4-5 5 1.000R 3.267 3-5 4-5 5 1.000R 3.267 3-5 4 4.539R 4.537 2-5 4 3.500R 6.396 2-5 4 3.500R 8.363 1-5 4 4.5 4.5 4 4.5 5 5 5 6.396 2.096 4-5 6.396 2.096 4-5 4.096	12 20 .20 .40 .40 .40 .40 .40 .40 .640 .45 .5 .5 .60 .60 .620 .1-3 .2 .934 .4.26 .1-5 .3 .2.400L .8.696 .1-5 .3 .2.400L .3.672 .1-5 .3	12 20 .20 .20 .20 .30 .30 .30 .30 .30 .30 .30 .30 .2-3 .3 1.000R .2.025 .1-3 .2 1.000R .5.318 .1-4 .2 1.294L .7.153 .1-5 .3 1.200L .9.624 .1-5 .3 1.200L	12 24 .10 .30 .60 4-5 5 1.000R .960 4-5 5 1.000R 3.920 4-5 5 1.000R 5.415 8-5 4 1.600R 7.013 2-5 4 4.600R 7.013 2-5 4.667R 9.203 1-5 4.5 5.000R	12 24 .10 .40 .50 4-5 5 1.000R 8.000 4-5 5 1.000R 3.267 4-5 5 1.000R 4.513 2-5 4 5.222R 6.043 2-5 4 5.222R 6.040 4-5 7	12 24 .10 .45 .45 .45 .45 .5 1.000R .720 .2-3 3 1.000R 1.823 .273R 3.075 1-3 2 .273R 4.450 1.32 .273R 5.825 .1-5 3 4.600L 8.253 1.5 3 4.600L	12 24	12 24	12 24	12 24
Spa Loa On	le le le le le le le le	XXX a1 a2 a3 GNBM GNBM GNBM GNBM GNBM GNBM GNBM GNBM	12 20 .30 .50 4-5 5 1.000R 2.025 4-5 5 1.000R 3.267 3-5 4 1.539R 4.5397 2-5 4 3.500R 8.363 1-5 4 4.6400R	12 20 .20 .40 .40 .40 .40 .45 .5 1.000R .640 .4-5 .5 1.000R 1.620 1-3 2 1.333R 2.934 1-3 2 1.333R 2.400L 6.215 1-5 3 2.400L 8.696 1-5 3 2.400L 13.672 1-5 3 2.400L 13.672 1-5 3 2.400L 13.672 1-5 3 2.400L	12 20 .20 .20 .20 .20 .30 .30 .30 .30 .30 .30 .30 .30 .30 .3	12 24 .10 .30 .60 4-5 5 1.000R 2.430 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 5 1.000R 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 4-5 4-5 4-5 4-5 4-5 4-6 4-5 5 4-6 4-6 4-6 4-6 4-6 4-6 4-7 4-7 4-7 4-7 8-7 8-7 8-7 8-7 8-7 8-7 8-7 8-7 8-7 8	12 24 .10 .40 .50 4-5 5 1.000R 2.025 4-5 1.000R 3.267 4-5 1.000R 4.513 2-5 4 4.513 2-5 4 5.222R 8.211 1-5 6.700R 12.881 1-5 4.700R	12 24 .10 .45 .45 .45 .5 1.000R .720 2-3 3 .000R 1.823 1-3 2 .273R 3.075 1-3 2 .273R 3.075 1-3 2 .273R 3.075 1-3 2 .273R 3.075 1-3 2 .273R 4.450 1-3 2 .273R 5.825 1-5 3 4.600L 8.253 1-5 3 4.600L 8.155 3 4.600L	12 24 .10 .50 .40 .23 3 1.000R .800 2-3 3 1.000R 2.025 1-3 2 .167R 4.902 1-3 2 .167R 6.402 1-5 3 3.900L 8.754 1-5 3 3.900L 1.5690 1-5 3 3.900L 3.900L	12 24 20 .30 .50 4-5 5 1.000R 2.025 4-5 5 1.000R 3.267 4-5 5 1.000R 4.513 2-5 4 4.250R 7.841 1-5 4 7.400R 12.285 1-5 4 7.400R	12 24	12 24
Sp: Lo: On Ax	le le le le le le le le	XXX' a1 a2 a3 GN BM GN BM GN BM GN BM GN BM GN BM GN BM GN BM GN BM GN BM	12 20 .30 .50 4-5 5 1.000R .800 4-5 5 1.000R 2.025 4-5 5 1.000R 3.267 3-5 4 4.539R 4.539R 4.539R 4.539R 4.5300R 8.363 1-5 4 6.400R 13.112	12 20 .20 .40 .40 .40 .40 .40 .40 .640 .45 .5 .5 .60 .60 .620 .1-3 .2 .934 .4.26 .1-5 .3 .2.400L .8.696 .1-5 .3 .2.400L .3.672 .1-5 .3	12 20 .20 .20 .20 .30 .30 .30 .800 .2-3 .3 .000R .800 .2-25 .1-8 .2 .1.000R .5.318 .1-4 .2 .1.201L .9.624 .1-5 .3 .1.200L .14.618 .1-5 .3	12 24 .10 .30 .60 4-5 5 1.000R .960 4-5 5 1.000R 3.920 4-5 5 1.000R 5.415 8-5 4 1.600R 7.013 2-5 4 667R 9.203 1-5 4 5.300R 1.5 4 5.5 1.000R 5.5	12 24 .10 .40 .50 .40 .50 .800 .4-5 .50 .000R .800 .4-5 .5 .1.000R .8.267 .4-5 .5 .1.000R .4.513 .2-5 .4 .5.222R .6.043 .2-5 .4 .5.222R .8.211 .1-5 .4 .6.700R .12.861 .1-5 .4	12 24 .10 .45 .45 .45 .45 .5 1.000 R .720 2-3 3 1.000 R 1.823 1-3 2 .273 R 3.075 1-3 2 .273 R 4.450 1-3 2 .273 R 5.825 1-5 3 4.600 L 8.253 1-5 3 4.600 L 13.165 1-5 3	12 24 .10 .50 .40 .2-3 3 1.000R 800 2-3 3 1.000R 2.025 1-3 2 1.67R 4.902 1-3 2 .167R 6.402 1-5 3 3.900L 13.690 1-5 3	12 24	12 24	12 24

Truck N. Base Axle Spacing Load On Axles 10 20 30 40 Spacing Load On Axles 10 100 Spacing Load On Axles 10 100 Spacing Load On	No. ase J	X X X' a ₁ a ₂ a ₃ G N B M	71 48 12 28 .10 .30 .60 4-5 5 1.000R .960 4-5 5 1.000R	72 48 12 28 .10 .40 .50 4-5 1.000R .800 4-5	73 48 12 28 .10 .45 .45 4-5 5	74 48 12 28 .10 .50 .40 2-3	75 48 12 28	76 48	77 48	78 36	79	80
Axle Spacing Load On Axles 10 20 30 40 20 20 20 20 20 20 2	1	X X' a ₁ a ₂ a ₃ G N B M	12 28 .10 .30 .60 4-5 5 1.000R .960 4-5 5	12 28 .10 .40 .50 4-5 5 1.000R .800	12 28 .10 .45 .45 4–5 5	12 28 .10 .50 .40	12	48	48	26		
spacing load on the spacing sp	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	X' a1 a2 a3 N B M G N B M	28 .10 .30 .60 4-5 5 1.000R .960 4-5 5	28 .10 .40 .50 4-5 5 1.000R .800	28 .10 .45 .45 .45 4–5 5	.10 .50 .40					36	36
10 20 30 40 50 10 20 30 40 30 40 30 40 50 50 50 50 50 50 5	0 P	a ₁ a ₂ a ₃ G N B M G N B M	.10 .30 .60 4-5 5 1.000R .960 4-5	.10 .40 .50 4-5 5 1.000R .800	.10 .45 .45 .45 4–5 5	.10 .50 .40		12 28	$\begin{array}{c} 12 \\ 28 \end{array}$	16 12	16 12	16 12
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30 40 40 50 60 100 Fruck N. Wh. Base Spacing Load In Loa	0 1 1 I	M G N B M	.960 4-5 5	.800		3 1,000R	$_{1.000\mathrm{R}}^{5}$	$_{1.000 m R}^{5}$	3 1.000R	$_{1.000\mathrm{R}}^{5}$	5 1.000R	5 1.000
30 40 40 50 60 100 Fruck N. Wh. Base Spacing Load In Loa	0 P	N B M	5	A E	.720	.800	.800	.640	.800	.960	.800	7:
30 40 40 80 100 Fruck N. Wh. Bassaries 10 20 30 40 50 50 50	- I	B M		4-5 5	45 5	2-3 3	4-5 5	4–5 5	2-3 3	4–5 5	4–5 5	4–5 5
40 50 60 80 100 Fruck N. Wh. Basis Anders 10 20 30 40 50	(1.000R	1.000R	1.000R	1.000R	1.000R	$1.000\mathbf{R}$	1.000R	1.000R	1.000
40 50 60 80 100 Fruck N. Wh. Basis Anders 10 20 30 40 50			$\frac{2.430}{4-5}$	$\frac{2.025}{4-5}$	1.823 1-3	2.025	2.025	$\frac{1.620}{1-3}$	2.025 1-3	$\frac{2.430}{2-5}$	2.025	1.85 2-5
50 60 80 100 Fruck No. Base Spacing Local In		N	5	5	2	2	5	2	2	4	4	4
50 60 80 100 Fruck No. Base Spacing Local In		B ML	1.000R 3.920	1.000R 3.267	3.078	3.402	1.000R 3.267	1.333R 2.934	$1.000 \mathbf{R} \\ 3.573$	1.667R 4.134	2.556R 3.647	3.000
80 100 Cruck No. Base Ander poach of the state of the s	(G	4-5	4-5	1–3	1-3	4-5	1-3	1-3	2-5	2-5	25
80 100 Cruck No. Basis Ander Spacing Local In 20 20 30 40 50		N B	5 1,000R	$_{1.000\mathrm{R}}^{5}$	$^2_{.273\mathrm{R}}$	$^2_{.167 m R}$	$_{1.000\mathrm{R}}^{5}$	$^2_{1.333\mathrm{R}}$	$\frac{2}{1.000}$ R	$^4_{1.667 m R}$	$^{4}_{2.556 m R}$	4 3.000
80 100 Fruck No Wh. Basis Anle Docad In 200 20 30 40 50	1	M	5.415	4.513	4.450	4.902	4.513	4.426	5.318	6.364	5.847	5.6
80 100 Fruck No Wh. Basis Anle Docad In 200 20 30 40 50		G N	4–5 5	4-5 5	1-3 2	1–3 2	4-5 5	1-3	1-3 2	2-5 4	2-5 4	1-5 3
100 Truck N.Wh. Bas. Wh. Bas. Anle spacing load In stress I 10 20 30 40 50	F	В	1.000R	1.000R	.273R	.167R	1.000R	1.333R	1.000R	1.667R	2.556R	1.700
100 Truck N.Wh. Bas. Anle pacing load in trucks. 10 20 30 40 50		M G	$\frac{6.912}{2-5}$	$\frac{5.760}{2-5}$	5.825 1–5	6.402 1-5	5.760 2-5	5.921 1-3	7.064	8.601 1-5	8.068 1-5	7.9 1-5
100 Cruck No. Base No. Control of the Control of th			4	4	1–5 3	3	2-5 4	$\frac{1-3}{2}$	2	4	1ə 4	3
100 Fruck No. Wh. Base Anle Spacing Load Jn Street Spacing Load Jn Spacing Load Jn Street Spacing Load Jn Street Spacing Load Jn Street Spacing Load Jn Street Spacing Load Jn Spacing Load Jn Spacing Load Jn Spacing Load Jn Spacing Load Jn Spacing Load Jn Spacing Load Jn Spacing Load Jn Spacing Load Jn Spacing Load Jn Spacing Load Jn Spacing Load Jn Spacing Load Jn Spacing Load Jn Spacin	ŀ	B Mu	4.333R 8.680	6.111R 7.561	5.500L 7.504	4.700L 8.068	5.000R 7.334	1.333R 7.417	1.000R 8.812	3.100R 10.860	3.900R 10.354	1.700 10.4
100 Cruck No. Base No. Control of the Control of th			1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5
Truck No. Wh. Base Anle spacing sould for the space sould for the spac	0 1		$^{4}_{6.100\mathrm{R}}$	$^4_{7.700 m R}$	$^3_{5.500 m L}$	$^{3}_{4.700\mathbf{L}}$	4 8.400R	3 4.000L	3 2.400L	4 3.100R	$^4_{3.900 m R}$	3 1.700
Truck No. Cruck No. Base Anle Spacing Load In Street Load Load Load Load Load Load Load Load		MI.	13.165	12.041	12.378	12.976	11.482	12.200	13.472	15.820	15.290	15.4
Truck No. Wh. Base Anle spacing sould for the space sould for the spac		G.	1-5	1-5	1-5	1-5	1-5	1-5	1–5	1-5	1-5	1-5
Wh. Base Arile Spacing Load In Land Land Land Land Land Land Land Lan	0 N 1		$_{6.100R}^{4}$	$^4_{7.700 m R}$	$_{5.500L}^{3}$	$^{3}_{4.700\mathrm{L}}$	$^{4}_{8.400\mathrm{R}}$	$^3_{4.000L}$	$\frac{3}{2.400}$ L	$^{4}_{3.100\mathrm{R}}$	4 3.900R	3 1.700
Wh. Base Arile pacing load in a see See See See See See See See See See		VI.	18.072	16.893	17.303	17.921	16.306	17.160	18.458	20.796	20.252	20.43
Arle spacing load In sales 10 20 30 40 50 50		-	_ 81	⁸²	83	84	85	86	87	88	89	90
pacing load IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII		X	36 16	16	36 16	36 16	40 16	40 16	40 16	40 16	40 16	40
10 20 30 40 50		X'	12	12	12	12	16	16	16	16	16	16
20 30 40 50		aı aı	.10 .50	.20 .30	.20 .40	.20 .50	.10 .30	.10 .40	.10 .45	.10 .50	.20 .30	.20
20 30 40 50		a s	.40	.50	.40	.30	.60	.50	.45	.40	.50	.40
20 30 40 50	- (3	2-3	4-5		2-3	4–5 5	4–5 5	4–5 5	2-3 3	4-5 5	4–5 5
30 40 50	0 1	V	3		4-5 5					1.000R	1.000R	1,000
30 40 50	I		3 1.000R	$_{1.000\mathrm{R}}^{5}$	$_{1.000\mathrm{R}}^{5}$	$^{3}_{1,000\mathrm{R}}$	$1.000\mathbf{R}$	1.000R	1.000R			
40 40 50	I	B MI	1.000R .800	5 1.000R .800	5 1.000R .640	3 1,000R .800	1.000R .960	.800	.720	.800	.800	.6
40 50	0 1	B M G	1.000R .800 2-3 3	1.000R .800 4 5 5	5 1.000R .640 4-5 5	3 1.000R .800 2-3 3	1.000R .960 45 5	$-\frac{.800}{4-5}$	720 4-5 5	2-3 3	4-5 5	.6- 4-5 5
40 50	0 N	B M N B	1.000R .800 2-3 3 1.000R	1.000R .800 4 5 1.000R	1.000R .640 4-5 5 1.000R	3 1.000R .800 2-3 3 1.000R	1.000R .960 4-5 5 1.000R	.800 4-5 5 1.000R	.720 4-5 5 1.000R	.800 2-3 3 1.000R	4-5 5 1.000R	4-5 5 1.000
Spar-read 50	0 N	B M N N B M G	1.000R .800 2-3 3 1.000R 2.025 2-5	5 1.000R .800 4 5 5 1.000R 2.025 2-5	5 1.000R .640 4-5 5 1.000R 1.620 2-5	3 1,000R .800 2-3 3 1,000R 2.025 2-5	1.000R .960 4-5 5 1.000R 2.430 4-5	.800 4-5 5 1.000R 2.025 4-5	720 4-5 5 1.000R 1.823 4-5	.800 2-3 3 1.000R 2.025 2-3	4-5 5 1.000R 2.025 4-5	.6 4-5 5 1.000 1.6: 4-5
50	0 N 0 N 0 N	B M N B M G	$1.000R \\ .800$ $2-3 \\ 3 \\ 1.000R \\ 2.025$ $2-5 \\ 3$	5 1.000R .800 4 5 5 1.000R 2.025 2-5 4	5 1.000R .640 4-5 5 1.000R 1.620 2-5 4	3 1.000R .800 2-3 3 1.000R 2.025 2-5 3	1.000R .960 4-5 5 1.000R 2.430 4-5 5	.800 4-5 5 1.000R 2.025 4-5 5	720 4-5 5 1.000R 1.823 4-5 5	.800 2-3 3 1.000R 2.025 2-3 3	4-5 5 1.000R 2.025 4-5 5	3-5 5 1.000 1.6: 4-5 5
	0 P 0 P N 0 P	B M N B M G N B M	1.000R .800 2-3 3 1.000R 2.025 2-5 3 2.556L 3.647	5 1.000R .800 4 5 5 1.000R 2.025 2-5 4 2.000R 3.506	5 1.000R .640 4-5 5 1.000R 1.620 2-5 4 3.000R 3.040	3 1.000R .800 2-3 3 1.000R 2.025 2-5 3 2.000I 3.506	1.000R .960 4-5 5 1.000R 2.430 4-5 5 1.000R 3.920	.800 4-5 5 1.000R 2.025 4-5 5 1.000R 3.267	720 4-5 5 1.000R 1.823 4-5 5 1.000R 2.940	.800 2-3 3 1.000R 2.025 2-3 3 1.000R 3.267	4-5 5 1.000R 2.025 4-5 5 1.000R 3.267	.6 4-5 5 1.000 1.6 4-5 5 1.000 2.6
	0 N 0 N 0 N 0 N 0 N 0 N	B M G N B M G N B M	1.000R .800 2-3 3 1.000R 2.025 2-5 3 2.556L 3.647	5 1.000R .800 4 5 5 1.000R 2.025 2-5 4 2.000R	5 1.000R .640 4-5 5 1.000R 1.620 2-5 4 3.000R	3 1.000R .800 2-3 3 1.000R 2.025 2-5 3 2.000L 3.506	1.000R .960 4-5 5 1.000R 2.430 4-5 5 1.000R	.800 4-5 5 1.000R 2.025 4-5 5 1.000R 3.267 2-5	.720 4-5 5 1.000R 1.823 4-5 5 1.000R 2.940 2-5	.800 2-3 3 1.000R 2.025 2-3 3 1.000R 3.267 2-5	4-5 5 1,000R 2.025 4-5 5 1,000R 3.267 2-5	.6 5 1.000 1.6 4-5 5 1.000
	0 N 0 N 0 N 0 N 0 N 0 N	BMGNBMGNBM	1.000R .800 2-3 3 1.000R 2.025 2-5 3 2.556L 3.647 2-5 3 2.556L	5 1.000R .800 4 5 5 1.000R 2.025 2-5 4 2.000R 3.506 2-5 4 2.000R	5 1.000R .640 4-5 5 1.000R 1.620 2-5 4 3.000R 3.040 2-5 4 3.000R	3 1.000R .800 2-3 3 1.000R 2.025 2-5 3 2.000L 3.506 2-5 3 2.000L	1.000R .960 4-5 5 1.000R 2.430 4-5 5 1.000R 3.920 2-5 4 2.333R	.800 4-5 5 1.000R 2.025 4-5 5 1.000R 3.267 2-5 4 3.445R	.720 4-5 5 1.000R 1.823 4-5 5 1.000R 2.940 2-5 4	.800 2-3 3 1.000R 2.025 2-3 3 1.000R 3.267 2-5 3 3.445L	4-5 5 1.000R 2.025 4-5 5 1.000R 3.267 2-5 4 2.750R	.6 4-5 5 1.000 1.6 4-5 5 1.000 2.6 2-5 4
	0 P O O O O O O O O O O O O O O O O O O	B M G N B M G N B M G N B M	1.000R .800 2-3 3 1.000R 2.025 2-5 3 2.556L 3.647 2-5 3 2.556L 5.847	5 1.000R .800 4 5 5 1.000R 2.025 2-5 4 2.000R 3.506 2-5 4 2.000R 5.480	5 1.000R .640 4-5 5 1.000R 1.620 2-5 4 3.000R 3.040 2-5 4 3.000R 4.980	3 1.000R .800 2-3 3 1.000R 2.025 2-5 3 2.000L 3.506 2-5 3 2.000L 5.480	1.000R .960 4-5 5 1.000R 2.430 4-5 5 1.000R 3.920 2-5 4 2.333R 5.821	.800 4-5 5 1.000R 2.025 4-5 5 1.000R 3.267 2-5 4 3.445R 5.167	.720 4-5 5 1.000R 1.823 4-5 5 1.000R 2.940 2-5 4 4.000R 4.860	.800 2-3 3 1.000R 2.025 2-3 3 1.000R 3.267 2-5 3 3.445L 5.167	4-5 5 1.000R 2.025 4-5 5 1.000R 3.267 2-5 4 2.750R 4.951	.6 4-5 5 1.000 1.6 4-5 5 1.000 2.6 2-5 4 4.000 4.3
60		B M G N B M G N B M G N B M G N B M	1.000R .800 2-3 3 1.000R 2.025 2.556L 3.647 2-5 3 2.556L 5.847 1-5	5 1.000R .800 4 5 5 1.000R 2.025 2-5 4 2.000R 3.506 2-5 4 2.000R 5.480 2-5 4	5 1.000R .640 4-5 5 1.000R 1.620 2-5 4 3.000R 3.040 2-5 4 3.000R 4.980 1-5 3	3 1.000R .800 2-3 3 1.000R 2.025 2-5 3 2.000I ₄ 3.506 2-5 3 2.000L 5.480 1-5 3	1.000R .960 4-5 5 1.000R 2.430 4-5 5 1.000R 3.920 2-5 4 2.333R 5.821 2-5 4	.800 4-5 5 1.000R 2.025 4-5 5 1.000R 3.267 2-5 4 3.445R 5.167 2-5 4	.720 4-5 5 1.000R 1.823 4-5 5 1.000R 2.940 2-5 4 4.000R 4.860 1-5 3	.800 2-3 3 1.000R 2.025 2-3 3 1.000R 3.267 2-5 3 3.445L 5.167 1-5 3	4-5 5 1.000R 2.025 4-5 1.000R 3.267 2-5 4 2.750R 4.951 2-5 4	.6 4-5 5 1.000 1.6 4-5 5 1.000 2.6 2-5 4 4.000 4.3 1-5 3
60		BM GNBM GNBM GNBM	1.000R .800 2-3 3 1.000R 2.025 2-5 3 2.556L 3.647 2-5 3 2.556L 5.847 1-5 3	5 1.000R .800 4 5 5 5 5 1.000R 2.025 2-5 4 2.000R 5.480 2-5 4 2.000R	5 1.000R .640 4-5 1.000R 1.620 2-5 4 3.000R 3.040 2-5 4 3.000R 4.980 1-5 3.400L	3 1.000R .800 2-3 3 1.000R 2.025 2-5 3.506 2-5 3 2.000L 5.480 1-5 3	1,000R ,960 4-5 5 1,000R 2,430 4-5 5 1,000R 3,920 2-5 4 2,333R 5,821 2-5 4 2,333R	.800 4-5 5 1.000R 2.025 4-5 5 1.000R 3.267 2-5 4 3.445R 5.167 2-5 4 3.445R	.720 4-5 5 1.000R 1.823 4-5 5 1.000R 2.940 2-5 4 4.000R 4.860 1-5 3 2.600L	.800 2-3 3 1.000R 2.025 2-3 3 1.000R 3.267 2-5 3 3.445L 5.167 1-5 2.100L	4-5 5 1.000R 2.025 4-5 1.000R 3.267 2-5 4 2.750R 4.951 2-5 4 2.750R	.6 4-5 5 1.000 1.6 4-5 5 1.000 2.6 2.5 4 4.000 4.3 1-5 3 1.200
		B M G N B M G N B M G N B M G N B M	1.000R .800 2-3 3 1.000R 2.025 2.556L 3.647 2-5 3 2.556L 5.847 1-5	5 1.000R .800 4 5 5 1.000R 2.025 2-5 4 2.000R 3.506 2-5 4 2.000R 5.480 2-5 4	5 1.000R .640 4-5 5 1.000R 1.620 2-5 4 3.000R 3.040 2-5 4 3.000R 4.980 1-5 3	3 1.000R .800 2-3 3 1.000R 2.025 2-5 3 2.000I ₄ 3.506 2-5 3 2.000L 5.480 1-5 3	1.000R .960 4-5 5 1.000R 2.430 4-5 5 1.000R 3.920 2-5 4 2.333R 5.821 2-5 4	.800 4-5 5 1.000R 2.025 4-5 5 1.000R 3.267 2-5 4 3.445R 5.167 2-5 4	.720 4-5 5 1.000R 1.823 4-5 5 1.000R 2.940 2-5 4 4.000R 4.860 1-5 3	.800 2-3 3 1.000R 2.025 2-3 3 1.000R 3.267 2-5 3 3.445L 5.167 1-5 3 2.100L 7.488	4-5 5 1.000R 2.025 4-5 1.000R 3.267 2-5 4 2.750R 4.951 2-5 4	.6 4-5 5 1.000 1.6 4-5 5 1.000 2.6 2.6 4.000 4.3 1-5 3 1.200 6.5
	H N N N N N N N N N N N N N N N N N N N	B M G G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M M M G N B M M M M M M M M M M M M M M M M M M	$\begin{array}{c} 1.000\mathrm{R} \\ .800 \\ 2-3 \\ 3 \\ 1.000\mathrm{R} \\ 2.025 \\ 2-5 \\ 3 \\ 2.556\mathrm{L} \\ 3.647 \\ 2-5 \\ 3 \\ 2.556\mathrm{L} \\ 5.847 \\ 1-5 \\ 3 \\ 1.300\mathrm{L} \\ 8.234 \\ 1-5 \\ 3 \end{array}$	5 1.000R .800 4 5 5 1.000R 2.025 4 2.000R 3.506 2-5 4 2.000R 5.480 2-5 4 2.000R 7.464 1-5 4	5 .640 4-5 1.000R 1.620 2-5 4 3.000R 3.040 2-5 4 3.000R 4.980 1-5 3 4.400L 7.303	3 1.000R .800 2-3 3 1.000R 2.025 2-5 3 2.000I 3.506 2-5 3 2.000L 5.480 1-5 3 400R 7.903	1,000R ,960 4-5 5 1,000R 2,430 4-5 5 1,000R 3,920 2-5 4 2,333R 5,821 2-5 4 2,333R 8,047 2-5 4	.800 4-5 5 1.000R 2.025 4-5 5 1.000R 3.267 2-5 4 3.445R 5.167 2-5 4 3.445R 7.368 2-5 4	720 4-5 5 1.000R 1.823 4-5 5 1.000R 2.940 2-5 4 4.000R 4.860 1-5 3 2.600L 7.135 1-5 3	.800 2-3 1.000R 2.025 2-3 3 1.000R 2.025 2-5 3.267 2-5 3.445L 5.167 1-5 3 2.100L 7.488 1-5 3	4-5 1,000R 2,025 4-5 1,000R 3,267 2-5 4 2,750R 4,951 2-5 4 2,750R 6,921 2-5 4	.6 4-5 5 1.000 1.6 4-5 5 1.000 2.6 4.000 4.3 1.200 6.5 1.5 3
80		BM GNB BM	1.000R .800 2-3 3 1.000R 2.025 2-5 3 2.556L 3.647 2-5 3 2.556L 5.847 1.300L 8.234 1.301L	5.000 R.800 4.5 5.000 R.2.025 2-5 4.2.000 R.3.506 2-5 4.2.000 R.5.480 2-5 4.2.000 R.7.464 1-5	5 1.000R .640 4-5 5 1.000R 1.620 2-5 4 3.000R 3.040 2-5 4 3.000R 4.980 1.5 3 .400L, 7.303 1-5	3 1.000R .800 2-3 3 1.000R 2.025 2-5 3 2.000L 5.480 1-5 3 .400R 7.903	1.000R .960 4-5 5 1.000R 2.430 4-5 5 1.000R 3.920 2-5 4 2.333R 5.821 2-5 4 2.3338 R 8.047 8.047	.800 4-5 5 1.000R 2.025 4-5 1.000R 3.267 2-5 4 3.445R 5.167 2-5 4 3.445R 7.363 2-5	720 4-5 5 1.000R 1.823 4-5 1.000R 2.940 2-5 4.000R 4.860 1-5 3 2.600L 7.135 1-5	.800 2-3 3 1.000R 2.025 2-3 1.000R 3.267 2-5 3 3.445L 5.167 1-5 3 2.100L 7.488 1-5	4-5 1,000R 2,025 4-5 1,000R 3,267 2-5 4 2,750R 4,951 2-5 4 2,750R 6,921 2-5	.6 4-5 5 1.000 1.6 4-5 5 1.000 2.6 4.000 4.3 1.200 6.5 1.200 1.5 3 1.200 1.5
1		B M G N B M G	1.000R .800 2-3 3 1.000R 2.025 2-5 3 2.556L 3.647 2-5 3 2.556L 5.847 1-5 3 1.300L 8.234 1-5 3 1.300L 10.728	50 1.000R .800 4 5 5 1.000R 2.025 4 2.000R 3.506 2-5 4 2.000R 5.480 2-5 4 2.000R 7.464 1-5 4 4.800R 9.584	5 1.000R .640 4-5 1.000R 1.620 2-5 4 3.000R 3.040 2-5 4.980 1-5 3.400L 7.303 1-5 9.803	3 1.000R .800 2-3 3 1.000R 2.025 2-5 3 2.0001 5.480 1-5 3 400R 7.903 1-5 3 .400R 10.403	1,000R ,960 4-5 5 1,000R 2,430 4-5 5 1,000R 3,920 2-5 4 2,333R 5,821 2-5 4 2,333R 8,047 2-5 4 2,333R 10,280	.800 4-5 5 1.000R 2.025 4-5 1.000R 3.267 2-5 4 3.445R 7.363 2-5 4 3.445R 7.363 2-5 4 3.445R 7.363	720 4-5 5 1.000R 1.823 4-5 5 1.000R 2.940 2-5 4 4.000R 4.860 1-5 3 2.600L 7.135 1-5 3 2.600L 7.9613 1-5	.800 2-3 1.000R 2.025 2-3 3 1.000R 3.267 2-5 3 3.445L 5.167 1-5 3 2.100L 7.488 1-5 3 2.100L 9.974 1-5	4-5 1.000R 2.025 4-5 1.000R 3.267 2-5 4 2.750R 4.951 2-5 4 2.750R 6.921 2-5 4 2.750R 8.267	.6 4-5 5 1.000 2.6 2-5 4 4.000 4.3 1.200 6.5 15 3 1.200 9.0
		B	1.000R .800 2-3 3 1.000R 2.025 2-5 3 2.556L 3.647 2-5 3 2.556L 5.847 1-5 3 1.300L 8.234 1-5 3 3.300L 10.728	5 1.000 R .800 4 5 5 1.000 R 2.025 4 2.000 R 3.506 2-5 4 2.000 R 5.480 2-5 4 2.000 R 1-5 4 4 2.000 R 7.464 1-5 4 4.800 R 9.584	5 1.000R .640 4-5 5 1.000R 1.620 2-5 4 3.000R 4.980 1-5 3 4.001L 7.303 1-5 3.400L 9.803 1-5 3	3 1.000R .800 2-3 3 1.000R 2.025 2-5 3 2.000L 5.480 1-5 3 .400R 7.993 1-5 3 4.400R 10.403	1.000R .960 4-5 5 1.000R 2.430 4-5 5 1.000R 3.920 2-5 4 2.3333R 5.821 2-5 4 2.333R 1.000R 1.0	.800 4-5 5 1.000R 2.025 4-5 5 1.000R 3.267 2-5 4 3.445R 7.363 2-5 4 3.445R 7.363 2-5 4 3.445R 7.363 1.000R	720 4-5 5 1.000R 1.823 4-5 5 1.000R 2.940 2-5 4 4.000R 4.860 1-5 3 2.600L 7.135 1-5 3 2.600L 9.613 1-5 3	.800 2-3 3 1.000R 2.025 2-3 3 1.000R 2.5 3 3.267 2-5 3 3.445L 5.167 1-5 3 2.100L 9.974 1-5 3	4-5 1.000R 2.025 4-5 1.000R 3.267 2-5 4 2.750R 4.951 2-5 4 2.750R 6.921 2-5 4 2.750R 8.901 1-5 4	.6 4-5 1.000 1.6: 4-5 5 1.000 2.6 2-5 4 4.000 4.3 1.200 6.5 1.200 9.0 1.5 3
100		BM GNBM GNBM GNBM GNBM GNBM GNBM GNBM	1.000R .800 2-3 3 1.000R 2.025 2-5 3 2.556L 5.847 1-5 3 1.300L 8.234 1-5 3 1.301L 8.234 1-5 3 1.300L 8.235 1.301L 8.234 1-5 3 1.300L 8.235 1.536	50 1.000R .800 4 5 5 1.000R 2.025 4 2.000R 3.506 2-5 4 2.000R 5.480 2-5 4 2.000R 7.464 1-5 4.800R 9.584 1-5 4.800R 9.584	5 1.000R .640 4-5 5 1.000R 1.620 2-5 4 3.000R 3.040 2-5 4.980 1-5 3.400L 7.303 1-5 3.400L 9.803 1-5 3.400L 1.401L	3 1.000R .800 2-3 3 1.000R 2.025 2-5 3 2.000L 5.480 1-5 3 .400R 7.903 1-5 3 .400R 10.403 1-5 3 .400R 15.400R	1.000R .960 4-5 1.000R 2.430 4-5 5 1.000R 3.920 2-5 4 2.333R 5.821 2-5 4 2.333R 8.047 2-5 4 2.333R 10.280 1-5 4 2.333R	.800 4-5 5 1.000R 2.025 4-5 1.000R 3.267 2-5 4 3.445R 5.167 2-5 4 3.445R 7.363 2-5 4 3.445R 9.578 1-5 4 4.900R 14.400	720 4-5 1.000R 1.823 4-5 5 1.000R 2.940 2-5 4 4.000R 4.860 1-5 3 2.600L 7.135 1-5 3 2.600L 1-5 3 2.600L 1-5 3 1-5	.800 2-3 1.000R 2.025 2-3 3 1.000R 3.267 2-5 3.3445L 5.167 1-5 3 2.100L 7.488 1-5 3 2.100L 9.974 1-5 3 2.100L 1-5 4 9.974	4-5 1.000 R 2.025 4-5 1.000 R 3.267 2-5 4 2.750 R 4.951 2-5 4 2.750 R 6.921 2-5 4 2.750 R 8.901 1-5 4 2.750 R 8.901 1-5 4 1-5 1-5 1-5 1-5 1-5 1-5 1-5 1-5	.6.4 4-5 5 1.0000 1.6: 4-5 5 1.0000 2.6: 4 4.0000 4.3: 1-5 3 1.2000 9.0: 1-5 3 1.2000 1.4.0
! 200	0 P P P P P P P P P P P P P P P P P P P	BM GNBM GNBM GNBM GNBM GNBM GNBM GNBM	1.000R .800 2-3 3 1.000R 2.025 2-5 3 2.556L 5.847 1-5 3 1.300L 10.728 1-5 3 3 1.300L	5 1.000R .800 4 5 5 1.000R 2.025 4 2.000R 3.506 2-5 4 2.000R 5.480 2-5 4 4.800R 4.800R 4.800R 4.800R 4.800R	5 .640 4-5 5 1.000R 1.620 2-5 4 3.000R 2-5 4 4.980 1-5 3 .400L 9.803 1-5 3 3.400L 9.803	3 1.000R .800 2-3 3 1.000R 2.025 2-5 3 2.000L 5.480 1-5 3 400R 1-5 3 400R 10.403 1-5 3 400R	1.000R .960 4-5 5 1.000R 2.430 4-5 5 1.000R 3.920 2-5 4 2.333R 5.821 2-5 4 2.3338 8.047 2-5 4 2.3338 8.047 2-5 4 3.900 2-5	.800 4-5 5 1.0000R 2.025 4-5 5 1.000R 3.267 2-5 4 3.445R 7.363 2-5 4 3.445R 7.363 2-5 4 3.445R 7.363 1-5 4 3.445R 7.363 2-5 4 3.445R 7.363 2-5 4 3.445R 7.363 2-5 4 3.445R 7.363 2-5 4 3.445R 7.363 2-5 4 3.445R 7.363 2-5 4 3.445R 7.363 2-5 4 3.445R 7.363 2-5 4 3.445R 7.363 2-5 4 3.445R 7.363 2-5 4 3.445R 7.363 2-5 4 3.445R 7.363 2-5 4 3.445R 7.363 2-5 4 3.445R 7.363 2-5 4 3.445R 7.363 2-5 4 3.445R 7.363 2-5 4 3.445R 7.363 2-7 4 4 4.45R 7.363 4 4 4.45R 7.363 4 4 4 4 4 4 4 4 4 4 4 4 4	720 4-5 1.000R 1.823 4-5 5 1.000R 2.940 2-5 4 4.000R 4.860 1-5 3 2.600L 7.135 9.613 1-5 3 2.600L	.800 2-3 1.000R 2.025 3 1.000R 3.267 2-5 3 3.445L 5.167 1-5 3 2.100L 7.488 1-5 3 2.100L 9.974 1-5 3 2.100L	4-5 1.000R 2.025 4-5 1.000R 3.267 2-5 4 2.750R 4.951 2-5 4 2.750R 6.921 2-5 4 2.750R 8.901 1-5 4 5.800R	.6 4-5 1.000 1.6: 4-5 1.000 2.6 2-5 4 4.000 4.3: 1.200 6.5: 1.200 9.0: 1.5 3 1.200 9.0:

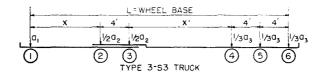
86 METHOD OF CONVERTING HEAVY MOTOR VEHICLE LOADS

86 Tal	ble 7.7	(Co	ntinued)									
	ick No		91	92	93	94	95	96	97	98	99	100
	. Base		40	44	44	44	44	44	44	44	48	48
Ax		X	16	16	16	16	16	16	16	16	16	16
	cing	X'	16	20	20	20	20	20	20	20	24	24
Loa	ıd	81 82	.20 .50	.10 .30	.10 .40	.10 .45	.10 .50	$.20 \\ .30$.20 .40	.20 .50	.10 .30	.10 .40
Ax	les	a 3	.30	.60	.50	.45	.40	.50	.40	.30	.60	.50
	10	G	2–3	4-5	4-5	4-5	2-3	45	45	2-3	4-5	4-5
- 1	10	$_{ m B}^{ m N}$	3	$_{1.000\mathrm{R}}^{5}$	$_{ m 1.000R}^{ m 5}$	$_{1.000 m R}^{5}$	$^{3}_{1.000 m R}$	$_{1.000\mathrm{R}}^{5}$	$_{1.000\mathrm{R}}^{5}$	3 1.000 R	$_{1.000\mathrm{R}}^{5}$	5 1.000R
į		M	.800	.960	.800	.720	.800	.800	.640	.800	.960	.800
Ì	20	G N	23 3	4-5	4 -5	4-5	2-3	4-5	45	2-3	4-5	4-5
	40	B	1.000R	$_{1.000\mathrm{R}}^{5}$	$_{1.000\mathrm{R}}^{5}$	5 1.000R	$^3_{1.000\mathrm{R}}$	$_{1.000R}^{5}$	$_{1.000\mathrm{R}}^{5}$	$^{3}_{1.000 m R}$	5 1.000R	$_{1.000\mathrm{R}}^{5}$
i		M	2.025	2.430	2.025	1.823	2.025	2.025	1.620	2.025	2.430	2.025
l	30	G N	$^{2-3}_3$	4–5 5	$^{4-5}_{5}$	4–5 5	$\frac{2-3}{3}$	45 5	$\substack{4-5\\5}$	$^{2-3}_{3}$	4-5 5	4–5 5
ĺ	90	B	1.000R	1.000R	1.000R	1.000R	1.000R	1.000R	1.000R	1.000R	1.000R	1.000R
١		M	3.267	3.920	3.267	2.940	3.267	3.267	2.613	3.267	3.920	3.267
	40	G N	$^{2-5}$	3-5 4	3-5 4	$^{1-3}_{2}$	1-3	$_{4}^{3-5}$	$^{1-3}_2$	$^{1-3}_{2}$	4-5 5	4–5 5
ę	40	В	2.750L	1.200R	2.143R	.637R	$^2_{.500 m R}$	1.539R	2.000R	1.572R	1.000R	1.000R
Ĕ		M	4.951	5.427	4.579	4.256	4.704	4.537	4.060	4.944	5.415	4.513
Span-Feet	50	G N	15 3	$^{2-5}$	25	15 3	1-5	$^{2-5}$	1-5	1-4	3-5	2-5
S.	30	В	.200 L	$^{4}_{3.000R}$	$^{4}_{4.333R}$	3.500L	$^{3}_{2.900L}$	4 3.500R	$^{3}_{2.000 m L}$	$^{2}_{.825L}$	4 1.600R	$\frac{4}{5.222R}$
		M	7.301	7.512	6.687	6.345	6.768	6.396	5.780	6.736	7.013	6.043
	60	G N	1–5 3	2-5	2-5	1-5	1-5	$^{2-5}$	$^{1-5}$	1–5	2-5	$^{2-5}$
	00	В	.200L	$3.000\mathrm{R}$	$^{4}_{4.333\mathrm{R}}$	$3 \\ 3.500 $ L	$^{3}_{2.900 m L}$	$^4_{3.500 m R}$	$^{3}_{2.000 m L}$	3 .800L	$^4_{3.667 m R}$	$\frac{4}{5.222R}$
1		M	9.801	9.735	8.880	8.804	9.240	8.363	8.267	9.211	9.203	8.211
- 1	80	G N	$^{1-5}_{3}$	$^{1-5}_{4}$	$^{1-5}$	15 3	1-5	$^{\mathbf{1-5}}_{4}$	$^{1-5}_3$	1-5	1-5	1-5 4
]	00	В	.200L	4.700R	$_{5.900\mathrm{R}}^{4}$	3.500L	$^{3}_{2.900L}$	6.800R	2.000L	$^{3}_{.800L}$	4 5.500R	6.900R
		M	14.801	14.376	13.535	13.753	14.205	12.778	13.250	14.208	13.678	12.695
l	100	G N	15 3	$^{1-5}_{4}$	1-5 4	$^{1-5}_{3}$	$^{1-5}_3$	1–5 4	15 3	15 3	$^{1-5}_{4}$	$^{1-5}$
	100	В	.200L	4.700R	5.900R	3.500L	2.900L	6.800R	2.000L	.800L	5.500R	6.900R
		M	19.800	19.321	18.448	18.723	10 104	15 000	10 040	19.206	18.603	17.576
		141	15.000	13,341	10.440	10.140	19.184	17.662	18.240	13.200	10.003	11.010
-	ick No) ,	101	102	103	104	105	106	107	108	109	110
W	ı. Base), e L	101 48	102 48	103 48	104 48	105 48	106 52	107 52	108 52	109 52	110 52
Wh Ax	ı. Base) ,	101	102	103	104	105	106	107	108	109	110
What Ax Spa	ı. Base le acing ad	D. E. L. X. X' 81	101 48 16 24	102 48 16 24 .10	103 48 16 24 .20	104 48 16 24 .20	105 48 16 24 .20	106 52 16 28 .10	107 52 16 28 .10	108 52 16 28	109 52 16 28 .10	110 52 16 28 .20
Whax Spa Loa On	i. Base le acing ad	0. e L X X' a ₁ a ₂	101 48 16 24 .10 .45	102 48 16 24 .10 .50	103 48 16 24 .20 .30	104 48 16 24 .20 .40	105 48 16 24 .20 .50	106 52 16 28 .10 .30	107 52 16 28 .10 .40	108 52 16 28 .10 .45	109 52 16 28 .10 .50	110 52 16 28 .20 .30
What Ax Spa	i. Base le acing ad	0. 2 L X X' 81 82 83	101 48 16 24 .10 .45 .45	102 48 16 24 .10 .50 .40	103 48 16 24 .20	104 48 16 24 .20	105 48 16 24 .20 .50	106 52 16 28 .10 .30 .60	107 52 16 28 .10 .40 .50	108 52 16 28 .10 .45	109 52 16 28 .10 .50	110 52 16 28 .20 .30 .50
Whax Spa Loa On	i. Base le acing ad	0. 2 L X X' 81 82 83 G	101 48 16 24 .10 .45 .45 4-5 5	102 48 16 24 .10 .50 .40 2-3 3	103 48 16 24 .20 .30 .50 4-5 5	104 48 16 24 .20 .40 .40 4-5 5	105 48 16 24 .20 .50 .30 2-3 3	106 52 16 28 .10 .30 .60 4-5 5	107 52 16 28 .10 .40 .50 4-5 5	108 52 16 28 .10 .45 .45 4-5 5	109 52 16 28 .10 .50 .40 2-3 3	110 52 16 28 .20 .30 .50 4-5
Whax Spa Loa On	n. Base le acing ad les	0, 2 L X X' 81 82 83 G N B	101 48 16 24 .10 .45 .45 4-5 5 1.000R	102 48 16 24 .10 .50 .40 2–3 3 1.000R	103 48 16 24 .20 .30 .50 4-5 5	104 48 16 24 .20 .40 .40 4-5 5 1.000R	105 48 16 24 .20 .50 .30 2-3 3 1,000R	106 52 16 28 .10 .30 .60 4-5 5 1.000R	107 52 16 28 .10 .40 .50 4–5 5 1.000R	108 52 16 28 .10 .45 .45 4-5 5 1.000R	109 52 16 28 .10 .50 .40 2-3 3 1.000R	110 52 16 28 .20 .30 .50 4–5 5 1.000R
Whax Spa Loa On	a. Base le acing ad les	0. 2 L X X' 81 82 83 G N B M	101 48 16 24 .10 .45 .45 4-5 5	102 48 16 24 .10 .50 .40 2-3 3	103 48 16 24 .20 .30 .50 4-5 5	104 48 16 24 .20 .40 .40 4-5 5	105 48 16 24 .20 .50 .30 2-3 3	106 52 16 28 .10 .30 .60 4-5 5	107 52 16 28 .10 .40 .50 4-5 5	108 52 16 28 .10 .45 .45 4-5 5	109 52 16 28 .10 .50 .40 2-3 3	110 52 16 28 .20 .30 .50 4-5
Whax Spa Loa On	n. Base le acing ad les	C L X X' 81 82 83 G N B M G N	101 48 16 24 .10 .45 .45 4–5 5 1.000R .720 4–5 5	102 48 16 24 .10 .50 .40 2-3 3 1.000R .800 2-3 3	103 48 16 24 .20 .30 .50 4-5 5 1.000R .800 4-5 5	104 48 16 24 .20 .40 .40 4-5 5 1.000R .640 4-5 5	105 48 16 24 .20 .50 .30 2-3 3 1.000R .800 2-3 3	106 52 16 28 .10 .30 .60 4-5 5 1.000R .960 4-5 5	107 52 16 28 .10 .40 .50 4–5 5 1.000R .800 4–5 5	108 52 16 28 .10 .45 .45 4-5 5 1.000R .720 4-5 5	109 52 16 28 .10 .50 .40 2-3 3 1.000R .800 2-3 3	110 52 16 28 .20 .30 .50 4–5 5 1.000R .800 4–5 5
Whax Spa Loa On	a. Base le acing ad les	0. 2 L X X' 81 82 83 G N B M	101 48 16 24 .10 .45 .45 4-5 5 1.000R .720 4-5	102 48 16 24 .10 .50 .40 2-3 1.000R .800 2-3	103 48 16 24 .20 .30 .50 4-5 5 1.000R .800	104 48 16 24 .20 .40 .40 4–5 5 1.000R .640	105 48 16 24 .20 .50 .30 2-3 3 1.000R .800 2-3	106 52 16 28 .10 .30 .60 4-5 1.000R .960 4-5	107 52 16 28 .10 .40 .50 4–5 5 1.000R .800 4–5	108 52 16 28 .10 .45 .45 4-5 5 1.000R .720 4-5 5 1.000R	109 52 16 28 .10 .50 .40 2-3 3 1.000R .800 2-3	110 52 16 28 .20 .30 .50 4-5 5 1.000R .800 4-5
Whax Spa Loa On	a. Base le acing ad les 10	O. 2 L X X' 81 82 83 G N B M G N B M G	101 48 16 24 .10 .45 .45 4-5 5 1.000R 1.823 4-5	102 48 16 24 .10 .50 .40 2-3 3 1.000R .800 2-3 3 3 2-3 2-3 2.025 2-3	103 48 16 24 .20 .30 .50 4-5 5 1.000R .800 4-5 5 1.000R 2.025 4-5	104 48 16 24 .20 .40 .40 4-5 5 1.000R .640 4-5 5 1.000R 1.620 4-5	105 48 16 24 .20 .50 .30 2–3 3 1,000R .800 2–3 3 1,000R 2,025 2–3	106 52 16 28 .10 .30 .60 4-5 5 1.000R .960 4-5 5	107 52 16 28 .10 .40 .50 4-5 5 1.000R .800 4-5 5	108 52 16 28 .10 .45 .45 4-5 5 1.000R .720 4-5 5	109 52 16 28 .10 .50 .40 2-3 3 1.000R .800 2-3 3 1.000R 2.025 2-3	110 52 16 28 .20 .30 .50 4–5 5 1.000R .800 4–5 5 1.000R
Whax Spa Loa On	a. Base le acing ad les	C. L. X. X'. a1 a2 a3 G. N. B. M. G. N. B. M. G. N. B. M. G. N. B. M. G. N. B. M. G. N. C.	101 48 16 24 .10 .45 .45 4-5 5 1.000R .720 4-5 5 1.000R 1.823 4-5 5	102 48 16 24 .10 .50 .40 2-8 3 1.000R .800 2-3 1.000R 2.025 2-3 3	103 48 16 24 .20 .30 .50 4-5 1.000R .800 4-5 5 1.000R 2.025 4-5 5	104 48 16 24 .20 .40 .40 .40 .40 .640 4-5 5 1.000R 1.620 4-5 5	105 48 16 24 .20 .50 .30 2-3 3 1.000R .800 2-3 1.000R 2.025 2-3 3	106 52 16 28 .10 .30 .60 4-5 5 1.000R .960 4-5 5 1.000R 2.430 4-5 5	107 52 16 28 .10 .40 .50 4-5 5 1.000R .800 4-5 5 1.000R 2.025 4-5 5	108 52 16 28 .10 .45 .45 .45 4-5 5 1.000R .720 4-5 5 1.000R 1.823 4-5 5	109 52 16 28 .10 .50 .40 2-3 3 1.000R .800 2-3 1.000R 2.025 2-3 3	110 52 16 28 .20 .30 .50 4–5 5 1.000R .800 4–5 5 1.000R 2.025 4–5 5
Whax Spa Loa On	a. Base le acing ad les 10	O. 2 L X X' 81 82 83 G N B M G N B M G	101 48 16 24 .10 .45 .45 4-5 5 1.000R 1.823 4-5	102 48 16 24 .10 .50 .40 2-3 3 1.000R .800 2-3 3 3 2-3 2-3 2.025 2-3	103 48 16 24 .20 .30 .50 4-5 5 1.000R .800 4-5 5 1.000R 2.025 4-5	104 48 16 24 .20 .40 .40 4-5 5 1.000R .640 4-5 5 1.000R 1.620 4-5	105 48 16 24 .20 .50 .30 2-3 3 1.000R 2.025 2-8 3 1.000R	106 52 16 28 .10 .60 4-5 5 1.000R .960 4-5 5 1.000R 2.430 4-5	107 52 16 28 .10 .40 .50 4–5 5 1.000R 2.025 4–5	108 52 16 28 10 .45 .45 .45 1.000R .720 4-5 5 1.000R 1.823	109 52 16 28 .10 .50 .40 2-3 3 1.000R .800 2-3 3 1.000R 2.025 2-3	110 52 16 28 20 .50 4-5 5 1.000R 800 4-5 5 1.000R 2.025 4-5 1.000R
Whax Spa Loa On	a. Base le acing ad les 10 20	O. 22 L X X' 81 82 83 G N B M G N B M G N B M G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G M M M M M M M M M M M M M M M	101 48 16 24 .10 .45 .45 .45 1.000R .720 4-5 1.000R 1.823 4-5 5 1.000R 2.940 1-3	102 48 16 24 .10 .50 .40 2-3 3 1.000R .800 2-3 3 1.000R 2.025 2-3 3 1.000R 2.025 1.000R	103 48 16 24 .20 .30 .50 4-5 5 1.000R 2.025 4-5 1.000R 2.025 4-5 4-5 4-5	104 48 16 24 .20 .40 .40 .40 .40 .640 .640 4-5 5 1.000R 1.620 4-5 5 1.000R 1.620	105 48 16 24 .20 .50 .30 2-3 3 1.000R .800 2-3 3 1.000R 2.025 2-3 3 1.000R 2.025 1.000R	106 52 16 28 .10 .30 .60 4-5 5 1.000R 2.430 4-5 5 1.000R 2.430 4-5 5 1.000R	107 52 16 28 .10 .40 .50 4-5 5 1.000R .800 4-5 5 1.000R 2.025 4-5 5 1.000R 3.006 4-5 5 1.000R 3.04 4-5 5 1.000R	108 52 16 28 10 45 45 45 4-5 5 1.000R 1.823 4-5 5 1.000R 1.923 1.000R 2.940 1-3	109 52 16 28 .10 .50 .40 2-3 3 1.000R 2.025 2-3 3 1.000R 2.025 7 1-3	110 52 16 28 .20 .30 .50 4–5 5 1.000R 2.025 4–5 1.000R 2.025 4–5 1.000R 3.267 4–5
What Ax Spart Loo On Ax	a. Base le acing ad les 10	C N B M G N B M G N B M M G N B M M G N B M M M M M M M M M M M M M M M M M M	101 48 16 24 .10 .45 .45 .45 1.0000R 1.823 4-5 5 1.000R 2.940 1-3 2	102 48 16 24 .10 .50 .40 2-3 3 1.000R 2.025 2-3 3 1.000R 2.025 2-3 1.000R 2.025	103 48 16 24 .20 .30 .50 4-5 5 1.000R 2.025 4-5 5 1.000R 3.267 4-5 5	104 48 16 24 .20 .40 .40 .5 5 1.000R .640 4-5 5 1.000R 2.613 1-3 2	105 48 16 24 .20 .50 .30 2-3 3 1.000R 2-3 3 1.000R 2.025 2-3 3 1.000R 3.267	106 52 16 28 .10 .30 .60 4-5 5 1.000R 2.430 4-5 5 1.000R 3.920 4-5 5	107 52 16 28 .10 .40 .50 4-5 5 1.000R .800 4-5 5 1.000R 2.025 4-5 5 1.000R 3.267 4-5 5	108 52 16 28 100 45 45 45 4-5 5 1.000R 1.823 4-5 5 1.000R 2.940 1-3 2	109 52 16 28 .10 .50 .40 2-3 1.000R .800 2-3 3 1.000R 3.267 1-3 2	110 52 16 28 20 .30 .50 4–5 5 1.000R 2.025 4–5 5 1.000R 3.267 4–5 5
What Ax Spart Loo On Ax	a. Base le acing ad les 10 20	O. 22 L X X' 81 82 83 G N B M G N B M G N B M G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G M M M M M M M M M M M M M M M	101 48 16 24 .10 .45 .45 .45 1.000R .720 4-5 1.000R 1.823 4-5 5 1.000R 2.940 1-3	102 48 16 24 .10 .50 .40 2-3 3 1.000R .800 2-3 3 1.000R 2.025 2-3 3 1.000R 2.025 1.000R	103 48 16 24 .20 .30 .50 4-5 5 1.000R 2.025 4-5 1.000R 2.025 4-5 4-5 4-5	104 48 16 24 .20 .40 .40 .40 .40 .640 .640 4-5 5 1.000R 1.620 4-5 5 1.000R 1.620	105 48 16 24 .20 .50 .30 2-3 3 1.000R .800 2-3 3 1.000R 2.025 2-3 3 1.000R 2.025 1.000R	106 52 16 28 .10 .30 .60 4-5 5 1.000R 2.430 4-5 5 1.000R 2.430 4-5 5 1.000R	107 52 16 28 .10 .40 .50 4-5 5 1.000R .800 4-5 5 1.000R 2.025 4-5 5 1.000R 3.006 4-5 5 1.000R 3.04 4-5 5 1.000R	108 52 16 28 10 45 45 45 4-5 5 1.000R 1.823 4-5 5 1.000R 1.923 1.000R 2.940 1-3	109 52 16 28 .10 .50 .40 2-3 3 1.000R 2.025 2-3 3 1.000R 2.025 7 1-3	110 52 16 28 .20 .30 .50 4–5 5 1.000R 2.025 4–5 1.000R 2.025 4–5 1.000R 3.267 4–5
Wr Ax Spa Loo On Ax	a. Base le acing ad les 10 20 30	D. D. S. C. C. C. C. C. C. C. C. C. C. C. C. C.	101 48 16 24 .10 .45 .45 .45 .0000 R .720 4–5 5 1.000 R 2.940 1–3 2 .637 R 4.256 1–3	102 48 16 24 .10 .50 .40 2-3 3 1.000R 2.025 2-3 1.000R 3.267 1-3	103 48 16 24 .20 .30 .50 4-5 5 1.000R 2.025 4-5 1.000R 3.267 4-5 1.000R 4.51 5 1.000R 3.267 4.51 3.267	104 48 16 24 .20 .40 .40 4-5 5 1.000R 1.620 4-5 5 1.000R 2.613 1-3 2.0000R 4.060 1-3	105 48 16 24 .20 .50 .30 2-3 3 1.000R 2.025 2-8 3 1.000R 3.267 1-3 2 1.572R 4.944	106 52 16 28 .10 .30 .60 4-5 1.000R 2.430 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 5 4-5 5 4-5 5 4-5 5 4-5 5 4-5 5 1.000R 4-5 5 5 1.000R 4-5 5 4-5 4-5 4-6 4-7 4-7 4-7 4-7 4-7 4-7 4-7 4-7	107 52 16 28 .10 .40 .50 4-5 5.000R .800 4-5 5.1.000R 2.025 4-5 1.000R 3.267 4-5 5.1.000R	108 52 16 28 100 45 45 45 4-5 5 1.000R 1.823 4-5 5 1.000R 2.940 1-3 2 .637R 4.256 1-3	109 52 16 28 10 .50 .40 2-3 3 1.000R 2.025 2-3 3 1.000R 3.267 1-3 2.500R 4.704 1-3	110 52 16 28 20 30 50 4-5 1.000R 2.025 4-5 5 1.000R 3.267 4-5 5 1.000R 4.55 5 5 1.000R 4.55 5 1.000R 4.55 5 5 1.000R 4.55 5 5 1.000R 4.55 5 5 1.000R 4.55 5 5 1.000R 4.55 5 5 6 1.000R 4.55 5 5 6 1.000R 4.55 5 5 6 1.000R 4.55 5 6 1.000R 4.55 5 6 1.000R 4.55 5 6 1.000R 4.55 5 6 1.000R 4.55 5 6 1.000R 4.55 5 6 1.000R 4.55 6 4.55 6 6 6 6 6 6 6 6 6 6 6 6 6
What Ax Spart Loo On Ax	a. Base le acing ad les 10 20	B M G N B M G N B M G N B M G N B M G N B M B M G N B M B M B M G N B M B M B M G N B M B M G N B M B M B M B M B M B M B M B M B M B	101 48 16 24 .10 .45 .45 .4000R .720 4–5 5 1.000R .823 4–5 5 1.000R .823 4–5 1.000R 2.940 1–3 2.637R 4.256 1–3 2	102 48 16 24 .10 .50 .40 2-3 3 1.000R .800 2-3 3 1.000R 3.267 1-3 2 .500R 4.704 1-3 2	103 48 16 24 .20 .30 .50 4-5 5 1.000R .800 4-5 5 1.000R 3.267 4-5 5 1.000R 4.513 2-5 4.513	104 48 16 24 .20 .40 .40 4-5 5 1.000R 1.620 4-5 5 1.000R 2.613 1-3 2 2.000R 4.060 1-3 2	105 48 16 24 .20 .50 .30 2-3 3 1.0000R .800 2-3 3 1.000R 2.025 2-3 3 1.000R 3.267 1-3 2 1.572R 4.944 1-3 2	106 52 16 28 .10 .30 .60 4-5 5 1.000R .960 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 5 1.000R 5.415 4-5 5	107 52 16 28 .10 .40 .50 4-5 5 1.000R .800 4-5 5 1.000R 3.267 4-5 5 1.000R 3.267 4-5 5 1.000R 3.267 4-5 5 1.000R 3.267 4.50 4.50 4.50 4.50 4.50 5.50 5.50 4.50 5.50 4.50 5.50 5.50 6.50	108 52 16 28 .10 .45 .45 4-5 5 1.000R .720 4-5 5 1.000R 1.823 4-5 5 1.000R 1.823 4-5 5 1.000R 1.825 637R 4.256 1-3 2	109 52 16 28 .10 .50 .40 2-3 3 1.000R .800 2-3 3 1.000R 2.025 2-3 3 1.000R 3.267 1-3 2 500R 4.704	110 52 16 28 .20 .30 .50 4-5 1.000R 2.025 4-5 5 1.000R 2.025 4-5 5 1.000R 4-5 5 5 1.000R 4-5 5 5 1.000R 4-5 5 5 5 1.000R 4-5 5 5 5 5 6 6 6 7 8 8 8 8 8 8 8 8 8 8 8 8 8
Wr Ax Spa Loo On Ax	a. Base le acing ad les 10 20 30	D. D. S. C. C. C. C. C. C. C. C. C. C. C. C. C.	101 48 16 24 .10 .45 .45 .45 .0000 R .720 4–5 5 1.000 R 2.940 1–3 2 .637 R 4.256 1–3	102 48 16 24 .10 .50 .40 2-3 3 1.000R 2.025 2-3 1.000R 3.267 1-3	103 48 16 24 .20 .30 .50 4-5 5 1.000R 2.025 4-5 1.000R 3.267 4-5 1.000R 4.51 5 1.000R 3.267 4.51 3.267	104 48 16 24 .20 .40 .40 4-5 5 1.000R 1.620 4-5 5 1.000R 2.613 1-3 2.0000R 4.060 1-3	105 48 16 24 .20 .50 .30 2-3 3 1.000R 2.025 2-8 3 1.000R 3.267 1-3 2 1.572R 4.944	106 52 16 28 .10 .30 .60 4-5 1.000R 2.430 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 5 4-5 5 4-5 5 4-5 5 4-5 5 4-5 5 1.000R 4-5 5 5 1.000R 4-5 5 4-5 4-5 4-6 4-7 4-7 4-7 4-7 4-7 4-7 4-7 4-7	107 52 16 28 .10 .40 .50 4-5 1.000R 2.025 4-5 5 1.000R 3.267 4-5 5 1.000R 3.4-5 5 1.000R 3.4-5 5 1.000R 3.4-5 5 1.000R 4.51 3.4-5	108 52 16 28 100 45 45 45 4-5 5 1.000R 1.823 4-5 5 1.000R 2.940 1-3 2 .637R 4.256 1-3	109 52 16 28 10 .50 .40 2-3 3 1.000R 2.025 2-3 3 1.000R 3.267 1-3 2.500R 4.704 1-3	110 52 16 28 .20 .30 .4–5 5 1.000R 2.025 4–5 5 1.000R 3.267 4–5 5 1.000R 4.5 5 1.000R 3.267 4–5 5 1.000R
Wr Ax Spa Loo On Ax	a. Basele teing ad les 10 20 30 40 50	G N B B M G N B M G N B	101 48 16 24 .10 .45 .45 .5 1.000R .720 4-5 5 1.000R 1.823 4-6 5 1.000R 2.940 1-3 2 637R 4.256 1-3 2 637R 5.630	102 48 16 24 .10 .50 .40 2-3 3 1.000R 2.025 2-3 1.000R 3.267 1-3 2 .500R 4.704 1-3 2 .500R 6.203	103 48 16 24 .20 .30 .50 4-5 5 1.000R .800 4-5 5 1.000R 3.267 4-5 1.000R 4.25 4 4.250R 5.889 2-5	104 48 16 24 .20 .40 .40 .40 5 1.000R 1.620 4-5 5 1.000R 2.613 1-3 2.000R 4.060 1-3 2.000R 4.060 1-3 2.000R	105 48 16 24 .20 .50 .30 2-3 3 1.000R .800 2-3 3 1.000R 3.267 1-3 2 1.572R 4.944 1-3 2 1.572R 6.685 1-5	106 52 16 28 10 30 .60 4-5 5 1.000R 2.430 4-5 5 1.000R 3.920 4-5 5 1.000R 5.415 4-5 5 1.000R 5.415 6.912 2-5	107 52 16 28 .10 .40 .50 4-5 1.000R .800 4-5 5 1.000R 2.025 4-5 1.000R 4.513 4-5 5 1.000R	108 52 16 28 10 45 45 45 5 1.000R 720 4-5 5 1.000R 1.823 4-5 5 1.000R 2.940 1-3 2 637R 4.256 1-3 2 .637R 5.630 1-5	109 52 16 28 .10 .50 .40 2-3 3 1.000R .800 2-3 3 1.000R 2.025 2-3 3 1.000R 3.267 1-3 2 .500R 4.704 1-3 2 .500R 6.203 1-5	110 52 16 28 20 .30 .50 4-5 5 1.000R 2.025 4-5 5 1.000R 3.267 4-5 5 1.000R 3.267 4-5 5 1.000R 3.267 4-5 5 1.000R 3.267 4-5 5 1.000R 3.267 4-5 5 1.000R 3.267 4-5 5 1.000R 3.267 4-5 5 1.000R 3.267 4-5 5 1.000R 4-5 5 1.000R 3.267 4-5 5 1.000R 4-5 5 1.000R 3.267 4-5 5 1.000R 5 1.000R 5 1.0
Wr Ax Spa Loo On Ax	a. Base le acing ad les 10 20 30	E L X X X X X X X X X X X X X X X X X X	101 48 16 24 .10 .45 .45 .4-5 5 1.000R 1.823 4-5 1.000R 2.940 1-3 2.637R 4.256 1-3 2 637R 5.630 1-5 3	102 48 16 16 24 .10 .50 .40 2-3 3 1.000R .800 2-3 3 1.000R 2.025 2-3 1.000R 3.267 4.704 1-3 2 500R 4.704 1-5 3	103 48 16 24 .20 .30 .50 4-5 5 1.000R 2.025 4-5 1.000R 2.025 4-5 1.000R 3.267 4-5 1.000R 4.513 2-5 4 4.250R 5.889 2-5 4	104 48 16 24 .20 .40 .40 .40 .40 .40 .640 .640 .640 .620 .620 .620 .620 .620 .620 .620 .620 .630	105 48 16 24 .20 .50 .30 2-3 8 1.000R .800 2-3 3 1.000R 2.025 2-3 1.000R 3.267 1-3 2 1.572R 4.944 1-3 2 1.572R 6.685 1-5 3	106 52 16 28 .10 .30 .60 4-5 5 1.000R .960 4-5 5 1.000R 2.430 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 5 1.000R 6.912 2-5 4	107 52 16 28 .10 .40 .50 4-5 1.000R .800 4-5 5 1.000R 2.025 4-5 1.000R 4.513 4-5 5 1.000R 5.760 2.5760	108 52 16 28 10 45 45 45 4-5 5 1.000R 1.823 4-5 5 1.000R 1.823 4-5 5 1.000R 2.940 1-3 2 637R 4.256 1-3 2 637R 5.630 1-5 3	109 52 16 28 .10 .50 .40 .2-3 3 1.000R .800 2-3 3 1.000R 2.025 2-3 1.000R 3.267 1-3 2 .500R 4.704 1-3 2 .500R 6.203 1-5 3	110 52 16 28 .20 .30 .50 4-5 5 1.000R 2.025 4-5 5 1.000R 3.267 5 1.000R 4.513 4-5 5 1.000R 5 1.000R 3.267 5 1.000R 4.5 5 1.000R 3.267 5 1.000R 4.5 5 1.000R 3.267 5 1.000R 4.5 5 1.000R 3.267 5 1.000R 4.5 5 1.000R 4.5 5 1.000R 3.267 5 1.000R 4.5 5 1.000R
Wr Ax Spa Loo On Ax	a. Basele teing ad les 10 20 30 40 50	G N B B M G N B M G N B	101 48 16 24 .10 .45 .45 .5 1.000R .720 4-5 5 1.000R 1.823 4-6 5 1.000R 2.940 1-3 2 637R 4.256 1-3 2 637R 5.630	102 48 16 24 .10 .50 .40 2-3 3 1.000R 2.025 2-3 1.000R 3.267 1-3 2 .500R 4.704 1-3 2 .500R 6.203	103 48 16 24 .20 .30 .50 4-5 5 1.000R .800 4-5 5 1.000R 3.267 4-5 1.000R 4.25 4 4.250R 5.889 2-5	104 48 16 24 .20 .40 .40 .40 5 1.000R 1.620 4-5 5 1.000R 2.613 1-3 2.000R 4.060 1-3 2.000R 4.060 1-3 2.000R	105 48 16 24 .20 .50 .30 2-3 3 1.000R .800 2-3 3 1.000R 3.267 1-3 2 1.572R 4.944 1-3 2 1.572R 6.685 1-5	106 52 16 28 10 30 .60 4-5 5 1.000R 2.430 4-5 5 1.000R 3.920 4-5 5 1.000R 5.415 4-5 5 1.000R 5.415 6.912 2-5	107 52 16 28 10 .40 .50 4-5 5 1.000R .800 4-5 5 1.000R 3.267 4-5 5 1.000R 4.53 6 1.000R 5.760 2-5	108 52 16 28 10 45 45 45 5 1.000R 720 4-5 5 1.000R 1.823 4-5 5 1.000R 2.940 1-3 2 637R 4.256 1-3 2 .637R 5.630 1-5	109 52 16 28 .10 .50 .40 2-3 3 1.000R .800 2-3 3 1.000R 2.025 2-3 3 1.000R 3.267 1-3 2 .500R 4.704 1-3 2 .500R 6.203 1-5	110 52 16 28 20 .30 .50 4–5 5 1.000R 2.025 4–5 5 1.000R 3.267 4–5 5 1.000R 3.267 4–5 5 1.000R 3.267 4–5 5 1.000R 3.267 4–5 5 1.000R 3.267 4–5 5 1.000R 3.267 4–5 5 1.000R 4–5 5 1.000R 3.267 4–5 5 1.000R 4–5 5 1.000R 3.267 4–5 5 1.000R 4–5 5 1.000R 3.267 4–5 5 1.000R 5.700R 5
Wr Ax Spa Loo On Ax	1. Basele eacing ad less 10 20 30 40 50 60	D. B. C. C. C. C. C. C. C. C. C. C. C. C. C.	101 48 16 24 .10 .45 .45 .4-5 5 1.000R 1.823 4-5 1.000R 2.940 1-3 2.637R 4.256 1-3 2.637R 5.630 1-5 3 4.400L 8.023	102 48 16 24 .10 .50 .40 2-3 3 1.000R .800 2-3 3 1.000R 2.025 2-3 3.000R 3.267 1-3 2 .500R 4.704 1-3 2 .500R 6.203 1-5 3 3.700L 8.528 1-5	103 48 16 24 .20 .30 .50 4-5 1.000R .800 4-5 5 1.000R 2.025 4-5 1.000R 3.267 4-5 5 1.000R 4.513 2-5 4 4.250R 7.841 1-5	104 48 16 24 .20 .40 .40 4-5 5 1.000R 1.620 4-5 5 1.000R 2.613 1-3 2 2.000R 5.548 1-5 3 2.800L 7.531 1-5	105 48 16 24 .20 .50 .30 2-3 8 1.000R .800 2-3 3 1.000R 2.025 2-3 1.000R 3.267 1-3 2 1.572R 4.944 1-3 2 1.572R 6.685 1-5 3 1.400L 8.633	106 52 16 28 .10 .30 .60 4-5 5 1.000R .960 4-5 5 1.000R 2.430 4-5 5 1.000R 3.920 4-5 5 1.000R 6.912 2-5 4 4.3338 8.680 2-5	107 52 16 28 .10 .40 .50 4-5 1.000R .800 4-5 5 1.000R 2.025 4-5 1.000R 4.513 4-5 5 1.000R 5.760 2-5 4 6.111R 7.561 2-5	108 52 16 28 10 45 45 4-5 5 1.000R 1.823 4-5 5 1.000R 2.940 1-3 2 637R 4.256 1-3 2 637R 5.630 1-5 5.300L 7.268	109 52 16 28 .10 .50 .40 .2-3 3 1.000R .800 2-3 3 1.000R 2.025 2-3 1.000R 3.267 1-3 2 .500R 4.704 1-3 2 4.500L 7.838	110 52 16 28 .20 .30 .50 4-5 1.000R 2.025 4-5 1.000R 3.267 4-5 1.000R 4.513 4-5 1.000R 5.760 2-5 4 5.000R 7.334 2-5
Wr Ax Spa Loo On Ax	a. Basele teing ad les 10 20 30 40 50	E L X X X X X X X X X X X X X X X X X X	101 48 16 24 10 .45 .45 .45 .5 1.000R 1.823 4-5 5 1.000R 2.940 1-3 2 .637R 4.256 1-3 2 .637R 4.256 3 4.400L 8.023 1-5 3	102 48 16 24 .10 .50 .40 2-3 3 1.000R 2.025 2-3 3 1.000R 3.267 1-3 2 .500R 4.704 1-3 2 5.00R 3.700L 8.528 1-5 3	103 48 16 24 .20 .30 .50 4-5 5 1.000R 2.025 4-5 5 1.000R 3.267 4-5 1.000R 4.51 5 1.000R 4.52 4 4.250R 7.841 1-5 4	104 48 16 24 .20 .40 .40 .40 4-5 1.000R 1.620 4-5 1.000R 2.613 1-3 2.0000R 4.060 1-3 2.000R 1-5 5.548 1-5 3.000R	105 48 16 24 .20 .50 .30 2-3 3 1,000R 2,025 2-3 1,000R 3,267 1-3 2 1,572R 4,944 1-3 2 1,572R 6,685 1-5 3 1,400L 8,633 1-5 3	106 52 16 28 10 .30 .60 4-5 1.000R 2.430 4-5 5 1.000R 3.920 4-5 5 1.000R 3.920 4-5 5 1.000R 4-5 4-5 5 4-6 6.912 2-5 4 4.333R 8.680 2-5 4	107 52 16 28 .10 .40 .50 4-5 1.000R 2.025 4-5 5.1000R 3.267 4-5 5.1000R 4.513 4-6 5.760 2-5 4 6.111R 7.561 2-5 4	108 52 16 28 10 45 45 45 4-5 5 1.000R 1.823 4-5 5 1.000R 2.940 1-3 2 637R 4.256 1-3 2 637R 5.630 1-5 3 5.300L 7.268 1-5 8	109 52 16 28 10 .50 .40 2-3 3 1.000R 2.025 2-3 3 1.000R 3.267 1-3 2.500R 4.704 1-3 2 .500R 4.704 1-3 2 .500R 7.838 1-5 3	110 52 16 28 28 20 30 .50 4-5 1.000R 2.025 4-5 5 1.000R 3.267 4-5 5 1.000R 4.513 4-5 5 1.000R 4.513 4-5 5 1.000R 7.334 2-5 4
Wr Ax Spa Loo On Ax	1. Basele eacing ad less 10 20 30 40 50 60	D. B. C. C. C. C. C. C. C. C. C. C. C. C. C.	101 48 16 24 .10 .45 .45 .4-5 5 1.000R 1.823 4-5 1.000R 2.940 1-3 2.637R 4.256 1-3 2.637R 5.630 1-5 3 4.400L 8.023	102 48 16 24 .10 .50 .40 2-3 3 1.000R .800 2-3 3 1.000R 2.025 2-3 3.000R 3.267 1-3 2 .500R 4.704 1-3 2 .500R 6.203 1-5 3 3.700L 8.528 1-5	103 48 16 24 .20 .30 .50 4-5 1.000R .800 4-5 5 1.000R 2.025 4-5 1.000R 3.267 4-5 5 1.000R 4.513 2-5 4 4.250R 7.841 1-5	104 48 16 24 .20 .40 .40 4-5 5 1.000R 1.620 4-5 5 1.000R 2.613 1-3 2 2.000R 5.548 1-5 3 2.800L 7.531 1-5	105 48 16 24 .20 .50 .30 2-3 8 1.000R .800 2-3 3 1.000R 2.025 2-3 1.000R 3.267 1-3 2 1.572R 4.944 1-3 2 1.572R 6.685 1-5 3 1.400L 8.633	106 52 16 28 .10 .30 .60 4-5 5 1.000R .960 4-5 5 1.000R 2.430 4-5 5 1.000R 3.920 4-5 5 1.000R 6.912 2-5 4 4.3338 8.680 2-5	107 52 16 28 .10 .40 .50 4-5 1.000R .800 4-5 5 1.000R 2.025 4-5 1.000R 4.513 4-5 5 1.000R 5.760 2-5 4 6.111R 7.561 2-5	108 52 16 28 10 45 45 4-5 5 1.000R 1.823 4-5 5 1.000R 2.940 1-3 2 637R 4.256 1-3 2 637R 5.630 1-5 5.300L 7.268	109 52 16 28 .10 .50 .40 .2-3 3 1.000R .800 2-3 3 1.000R 2.025 2-3 1.000R 3.267 1-3 2 .500R 4.704 1-3 2 4.500L 7.838	110 52 16 28 .20 .30 .50 4-5 1.000R 2.025 4-5 1.000R 3.267 4-5 1.000R 4.513 4-5 1.000R 5.760 2-5 4 5.000R 7.334 2-5
Wr Ax Spa Loo On Ax	1. Basele eacing ad eacing 10 20 20 40 50 60 80	CONTRACTOR OF CO	101 48 16 24 10 .45 .45 4-5 1.000R 1.823 4-5 5 1.000R 2.940 1-3 2 637R 4.256 1-3 2 4.400L 8.023 1-5 3 4.400L 12.942 1-5	102 48 16 24 .10 .50 .40 2-3 3 1.000R 2.025 2-3 1.000R 3.267 1-3 2 .500R 4.704 1-3 2 3 3.700L 8.528 1-5 3 3.700L 13.471 1-5	103 48 16 24 .20 .30 .50 4-5 1.000R 2.025 4-5 1.000R 2.025 4-5 1.000R 3.267 4-5 5 1.000R 4.513 2-5 4 4.250R 7.841 1-5 4 7.800R 11.961	104 48 16 24 .20 .40 .40 4-5 1.000R 1.620 4-5 5 1.000R 2.613 1-3 2 2.000R 4.060 1-3 2 2.000R 5.548 1-5 3 2.800L 7.531 1-5 3 2.8081 1-5 3 1.408	105 48 16 24 .20 .50 .30 2-3 1.000R 2-3 1.000R 2.025 2-3 1.000R 3.267 1-3 2 1.572R 4.944 1-3 2 1.572R 4.944 1-5 3 1.400L 8.633 1-401 8.635 1-5 3 1.400L	106 52 16 28 .10 .30 .60 4-5 5 1.000R 2.430 4-5 5 1.000R 3.920 4-5 5 1.000R 4-5 5 5 1.000R 4-5 5 5 1.000R 4-5 5 5 1.000R 4-5 5 5 1.000R 4-5 5 5 1.000R 4-5 5 5 1.000R 4-5 5 5 5 1.000R 4-5 5 5 5 5 6 6 6 9 1.000R 4 4 4 4 3333R 4 4 4 4 3333R 4 4 4 4 3333R 4 4 4 4	107 52 16 28 .10 .40 .50 4-5 5 1.000R 2.025 4-5 5 1.000R 3.267 4-5 5 1.000R 5.760 2-5 4 6.111R 7.561 2-5 4 6.111R 1.921	108 52 16 28 10 45 45 45 4-5 1.000R 1.823 4-5 1.000R 2.940 1-3 2.637R 4.256 1-3 2.637R 5.630 1-5 3 5.300L 7.268 1-5 8 5.300L 7.268 1-5 8 5.301L 7.268 1-5 1.201L 1.51	109 52 16 28 10 .50 .40 .50 .40 2-3 3 1.000R 2.025 2-3 3 1.000R 3.267 1-3 2 .500R 4.704 1-3 2 500R 6.203 1-5 3 4.500L 7.838 1-5 3 4.500L 12.753	110 52 16 28 20 30 .50 4-5 1.000R 2.025 4-5 5 1.000R 3.267 4-5 5 1.000R 4.513 4-5 5 1.000R 7.334 2-5 4 5.000R 7.334 2-5 4 5.000R 11.250
Wr Ax Spa Loo On Ax	1. Basele eacing ad less 10 20 30 40 50 60	S. L. X.Y. B. L. B. B. B. B. B. B. B. B. B. B. B. B. B.	101 48 16 24 .10 .45 .45 .45 .400R .720 4-5 1.000R 1.823 4-6 1.000R 1.823 4-6 1.000R 1.825 1.000	102 48 16 24 .10 .50 .40 2-3 3 1.000R 2.025 2-3 3 1.000R 2.025 2-3 3 1.000R 4.704 1-3 2 .500R 6.203 1-5 3 3.700L 13.471 1-5 3	103 48 16 24 .20 .30 .50 4-5 5 1.000R 2.025 4-5 5 1.000R 2.025 4-5 5 1.000R 4.513 2-5 4 4.250R 5.889 4.250R 7.841 1-5 4 7.800R 11.961 1-6	104 48 16 24 .20 .40 .40 .40 4-5 5 1.000R 1.620 4-5 5 1.000R 1.620 4-5 2.000R 2.613 1-3 2.000R 5.548 1-5 3 2.800L 1-5 3 2.800L 12.498 1-5 3	105 48 16 24 .20 .50 .30 .30 2-3 3 1.000R 2.025 2-3 3 1.000R 2.025 2-3 3 1.000R 2.025 2-3 3 1.000R 3.267 1-3 2 1.572R 4.944 1-3 2 1.572R 6.685 1-5 3 1.400L 18.625 1-5 3	106 52 16 28 .10 .30 .60 4-5 5 1.000R 2.430 4-5 5 1.000R 2.430 4-5 1.000R 3.920 4-5 5 1.000R 5.415 4-5 5 1.000R 6.912 4-5 4 4.333R 8.680 2-5 4 4.333R 13.110	107 52 16 28 .10 .40 .50 4-5 1.000R .800 4-5 5 1.000R 2.025 4-5 5 1.000R 4.513 4-5 5 1.000R 4.513 4-6 5.760 2-5 4 6.111R 7.561 2-5 4 6.111R 11.921	108 52 16 28 10 45 4-5 1.000R 1.823 4-5 5 1.000R 1.823 4-5 5 1.000R 1.823 4-5 5 1.000R 1.93 2 637R 4.256 1-3 2 637R 5.630L 7.268 1-5 8 5.300L 12.151 1-5 8	109 52 16 28 .10 .50 .40 2-3 3 1.000R .800 2-3 3 1.000R 2.025 2-3 3 1.000R 3.267 1-3 2 500R 4.704 1-3 500R 6.203 1-5 3 4.500L 12.753 1-5 3	110 52 16 28 .20 .30 .50 4-5 1.000R .800 4-5 5 1.000R 2.025 4-5 5 1.000R 3.267 4-5 5 1.000R 4.513 4-5 5 1.000R 7.334 2-5 4 5.000R 11.250 1-5
Wr Ax Spa Loo On Ax	1. Basele eacing ad eacing 10 20 20 40 50 60 80	CONTRACTOR OF CO	101 48 16 24 10 .45 .45 4-5 1.000R 1.823 4-5 5 1.000R 2.940 1-3 2 637R 4.256 1-3 2 4.400L 8.023 1-5 3 4.400L 12.942 1-5	102 48 16 24 .10 .50 .40 2-3 3 1.000R 2.025 2-3 1.000R 3.267 1-3 2 .500R 4.704 1-3 2 3 3.700L 8.528 1-5 3 3.700L 13.471 1-5	103 48 16 24 .20 .30 .50 4-5 1.000R 2.025 4-5 1.000R 2.025 4-5 1.000R 3.267 4-5 5 1.000R 4.513 2-5 4 4.250R 7.841 1-5 4 7.800R 11.961	104 48 16 24 .20 .40 .40 4-5 1.000R 1.620 4-5 5 1.000R 2.613 1-3 2 2.000R 4.060 1-3 2 2.000R 5.548 1-5 3 2.800L 7.531 1-5 3 2.8081 1-5 3 1.408	105 48 16 24 .20 .50 .30 2-3 1.000R 2-3 1.000R 2.025 2-3 1.000R 3.267 1-3 2 1.572R 4.944 1-3 2 1.572R 4.944 1-5 3 1.400L 8.633 1-401 8.635 1-5 3 1.400L	106 52 16 28 .10 .30 .60 4-5 5 1.000R 2.430 4-5 5 1.000R 3.920 4-5 5 1.000R 4-5 5 5 1.000R 4-5 5 5 1.000R 4-5 5 5 1.000R 4-5 5 5 1.000R 4-5 5 5 1.000R 4-5 5 5 1.000R 4-5 5 5 5 1.000R 4-5 5 5 5 5 6 6 6 9 1.000R 4 4 4 4 3333R 4 4 4 4 3333R 4 4 4 4 3333R 4 4 4 4	107 52 16 28 .10 .40 .50 4-5 5 1.000R 2.025 4-5 5 1.000R 3.267 4-5 5 1.000R 5.760 2-5 4 6.111R 7.561 2-5 4 6.111R 1.921	108 52 16 28 10 45 45 45 4-5 1.000R 1.823 4-5 1.000R 2.940 1-3 2.637R 4.256 1-3 2.637R 5.630 1-5 3 5.300L 7.268 1-5 8 5.300L 7.268 1-5 8 5.301L 7.268 1-5 1.201L 1.51	109 52 16 28 10 .50 .40 .50 .40 2-3 3 1.000R 2.025 2-3 3 1.000R 3.267 1-3 2 .500R 4.704 1-3 2 500R 6.203 1-5 3 4.500L 7.838 1-5 3 4.500L 12.753	110 52 16 28 20 30 .50 4-5 1.000R 2.025 4-5 5 1.000R 3.267 4-5 5 1.000R 4.513 4-5 5 1.000R 7.334 2-5 4 5.000R 7.334 2-5 4 5.000R 11.250

			ontinued)	
	ck No		111	112
	Base		52	52
Axl		X.	16	16
	cing	_X'_	28	28
Loa	d	\mathbf{a}_1	.20	.20
On Axle		\mathbf{a}_2	.40	.50 $.30$
AXI		a ₃	.40	
1	10	G N	4–5 5	$^{2-3}_{3}$
- 1	10	B	1.000R	1.000R
		M	.640	.800
-		G	45	23
- 1	20	Ñ	5	3
ļ		В	$1.000\mathbf{R}$	1.000R
1.		M	1.620	2.025
1		G	4-5	2-3
-	30	N	5	3
- 1		B M	1.000R 2.613	$1.000R \\ 3.267$
-			1-3	1-3
i	40	G N	1-3 2	2
et l	40	B	2.000R	1.572R
E.		M	4.060	4.944
Span-Feet		G	1-3	1-3
bę	50	N	2	2
إين		В	2.000R	1.572R
<u> </u>		M	5.548	6.685
	co	G	1-3	1-3
- 1	60	N B	$^2_{2.000 m R}$	$^{2}_{1.572R}$
1		M	7.040	8.430
- -		G	1-5	1-5
1	80	N	3	3
		В	3.600 L	2.000L
		M	11.762	13.050
		G	1–5	1-5
	100	N	3	3
		B M	3.600L 16.730	2.000L 18.040
		TAT	10.100	10.040

Table 7.8

CONTROLLING CONDITIONS AND MAXIMUM MOMENTS IN SIMPLE SPANS PRODUCED BY THE TYPE 3-S3 TRUCKS WEIGHING ONE KIP EACH



One hundred five variations in the Type 3-S3 truck are given in this Table. Each truck number from 1 to 105, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

Tru	ick No	э.	1	2	3	4	5	6	7	8	9	10
Wh	. Base	e L	32	32	32	32	32	32	32	36	36	36
Ax		X	8	8	8	8	8	8	8	8	8	8
	acing	X'	12	12	12	12	12	12	12	16	16	16
Los		aı	.10	.10	.10	.10	.20	.20	.20	.10	.10	.10
On		\mathbf{a}_2	.30	.36	.40	.50	.30	.40	.50	.30	.36	.40
Ax	les	a 3	.60	.54	.50	40	.50	.40	.80	.60		.50
		G	4-6	4-6	2-3	2-3	4-6	$^{2-3}$	$^{2-3}$	4-6	4-6	2-3
	10	N	5	5	3	3	5	3	3	5	5	3
Ì		В	0	0	1.000R	1.000R	0	1.000R	1.000R	0	0	1.000R
- 1		M	.700	.630	.640	.800	.582	.640	.800	.700	.630	.640
- 1	00	G	4-6 5	$^{4-6}$	4-6	$^{1-3}_{2}$	4-6	1-3 2	1 3	4-8	4-6	4-6
İ	20	N	о 0	5 0	5 0	$^{2}_{.167L}$	5 0	.667R	$^{2}_{.429R}$	5	5 0	5 0
1		B M	2.200	1.980	1.832	2.101	1.832	1.814	2.207	$^{0}_{2,200}$	1,980	1.832
-			4-6	3-6	4-6	1-4	3.6	1-3	1-3	4-6	4-6	4-6
	30	G N	4-6 5	ა—ი 5	4- b 5	3	ა. ი 5	$\frac{1-3}{2}$	2	46 5	4-6 5	4-6 5
j	30	В	ő	2.000R	0	.412R	1.844R	.667R	.429R	0	0	0
1		M	3.700	3.336	3.082	3.604	3.083	3.309	3.955	3.700	3.330	3.082
ì		-G	2-6	2-6	2-6	1-6	2-6	1-6	1-5	3-6	2-6	2-6
	40	Ň	4	4	4	3	4	3	2	5	4	4
t t	40	B	1.000R	1.600R	1.996R	2.094L	1.371R	1.594L	1.667L	2.000R	2.400R	2.884R
Span-Feet		M	5.723	5.458	5.290	5.816	4.937	5.270	5.963	5.275	4.810	4.588
ġl		G	1-6	1-6	1-6	16	1-6	1-6	1-6	2-6	2-6	1-6
ğ	50	N	4	4	4	3	4	3	3	4	4	4
02		В	2.100R	2.640R	2.995R	2.094L	3.495R	1.594L	.700L	1.667R	2.400R	3.994R
		M	8.088	7.839	7.680	8.294	7.246	7.757	8.410	7.400	7.034	6.821
		G	1-6	1-6	1-6	1-6	1-6	1-6	1-6	1-6	1-6	1-6
-	60	N	4	4	4	3	4	3	3	4	4	4
		В	$2.100 \mathrm{R}$	2.640R	2.995R	2.094L	3.495R	1.594L	.700L	2.900R	3.560R	3.994R
		M	10.574	10.316	10.151	10.779	9.705	10.249	10.908	9.840	9.491	9.268
		G	1-6	16	16	1-6	1-6	16	1-6	1-6	1-6	1-6
	80	\mathbf{N}	4	4	4	3	4	3	3	4	4	4
		\mathbf{B}	$2.100\mathrm{R}$	2.640R	2.995R	2.0941.	3.495R	1.594L	.700L	2.900R	3.560R	3.994R
		M	15.555	15.287	15.113	15.761	14.654	15.238	15,906	14.805	14.438	14.201
		G	1-6	1–6	1-6	1-6	1-6	1-6	1-6	1-6	1-6	16
	100	N	4	4	4	3	4	3	3	4	4	4
		В	2.100R	2.640R	2.995R	2.094L	3.495R	1.594L	.700L	2.900R	3.560R	3.994R
	<u> </u>	M	20.544	20.270	20.091	20.750	19.624	20.232	20.905	19.784	19,407	19.162

a1, a2, and a3-Represent the ratio of gross vehicle weight on axles.

G-Axle group causing maximum moment, thus, 1-3 means axles 1, 2, and 3.

N-Number of critical axle under which maximum moment occurs.

B-Distance to right or left of mid-span to point of maximum moment.

M-Maximum moment.

12.019

1-6

4

6.320R

16.919

12.651

1-6

4

5.300R

17.581

METHOD FOR RATING HEAVY VEHICLE LOADS 89 TABLE 7.8 (Continued) 20 Truck No. 12 13 15 16 17 18 19 11 14 Wh. Base L <u>40</u> 40 40 40 36 36 36 36 40 40 8 Ayle X 8 8 8 8 Я 9 × Я 20 20 20 20 Spacing 20 20 16 16 16 16 .20 .20 Load а. .10 .20 .20 .20 .10 .10 .10 .10 .30 .30 On .50 .40 .50 .30 .36 .40 .50 .40 a: Axles .40 .50 .40 .30 .60 .54 .50 .40 .50 .40 \mathbf{a}_3 G 2-3 4-6 2-3 2-3 4-6 4--6 2-3 2-3 4-6 2-3 3 10 N 3 5 3 5 5 3 3 õ з \mathbf{B} 1.000R0 1.000R1.000R 0 0 1.000R 1.000R 0 1.000R .582 M .800 .582 .640 .800 .700 .630 .640 .800 .640 1-3 G 1--3 4-61-3 1-3 4-6 4--6 4-61-3 4-6 20 9 2 N 2 5 9 2 5 5 5 5 0 $\frac{1}{167}$ L 667R 429R .167L .667R R n n 0 Ω 1.832 1.832 2.101 2,207 2.200 1.980 1.332 2.101 1.814 M 1.8144-6 1-3 G 1---3 4-6 1-3 4-6 4-6 4-61-3 1-3 30 N 2 5 2 2 5 5 5 5 2 .667R .429R .667R $.\overline{167}$ L .167L В n 0 0 n 3.600 \bar{M} 3.600 3.082 3.309 3,955 3,700 3,330 3.082 3.082 3.309 G 1--5 3-6 1-4 1-4 4-64-6 4-6 1-3 4-6 1-3 40 N 3 5 4) 2 5 5 õ 0 5 9 Span-Feet .875L167L 667R R 1.494L2.304R1.269L0 0 0 a M 5.2154.421 4.829 5.7155.2004.680 4.3325.101 4.332 4.807 G 1-6 1-6 1-6 1-6 3-6 2-6 2-6 1-6 2-6 1-4 2 50 N 2 4 3 3 5 4 4 3 4 1.632L2.893L 4.494R2.393L 1.300L 2.400R 3.200R 3.772R 3.692L2.869R R 7.5747.0226.861 6.881 5.833 6.406 M 6.406 7.8346.3956.108G 1-6 1-61--6 1--6 1--6 1-6 1-61-6 1-6 1-6 60 3 3 N 3 3 4 4 3 4 4 2.393L 4.993R В 2.893L 4.494R1.300L 3.700R $4.4\hat{8}0R$ 3.692L 5.493R 3.1911.8.779 M 10.047 8.839 9.503 10.328 9.128 8.6958.411 9.336 8.006 1--6 G 1-6 1-61-6 1-6 1-6 1-6 1-6 1-6 1-620 N 3 3 3 4 4 3 4 3 4 4 2.893L5.493R3 191 L R 4.494R 2.393L1.300L3.700R 4.480R 4.993R3.692L 13.755 M 15.012 14.479 15.321 14.071 13.611 13.31514.279 12.881 13.736G 1--6 1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6 100 3 3 N 3 4 3 3 1 4 4 1 2.893L 4.494R 2.393L3.700R 4.480R 4.993R 3,6921 5.493R 3,191L В 1 300T. 20.317 M 19.991 18,704 18,561 18.252 19.245 17.805 18.711 19,465 19.037 Truck No. 21 22 23 24 25 26 27 28 29 30 Wh. Base L 40 44 44 44 44 44 44 44 48 48 Axle 8 8 8 8 8 8 8 8 Я x Spacing 20 $2\overline{4}$ 24 24 24 24 24 24 28 28 Load .20 .20 .20 .10 .10 aı .10 .10 .10 .10 .20 On .50 .50 a: .30 .36 .40 .50 .30 .40 .30 .36 Axles \mathbf{a}_3 .30 .60 .54 .50 ,40 .50 .40 .30 .60 .54 2-3 G $^{2-3}$ 4-6 4--6 2-3 4-6 4--6 2 3 4 - 62 - 310 Ñ 3 5 5 ត 3 3 5 3 3 5 B 1.000R 1.000R 1.000R 1.000R 1.000R 0 0 O .640 M .800 .700 .630 .582 .800 .700 .630 .640 .800 4-6 1-3 G 1--3 4-6 4-6 4-6 1--3 1-3 4-6 4-6 20 N 2 5 5 5 2 5 2 2 5 Б 429R \mathbf{R} n n ñ 167Lብ .667R429R n 0 2.207 2.200 1.980 2.200 2.207 M 1.980 1.832 2.101 1.832 1.814 4--6 4--6 G 1-3 4 6 4-6 4-6 1-3 4-61-3 1 - 330 5 5 5 2 5 2 5 5 В 429R ő .167Ló .667R .429R ó ń M 3.955 3.700 $3.\bar{3}30$ 3.082 3.082 3,309 3.955 3.700 3.330 3.600 1--3 4-6 1-3 1-3 1-6 4-6 4-6 1-34-6 G 4-640 N 2 2 2 5 55 อ 2 5 5 Span-Feet В 429R ñ .167L .667 R.429R 0 0 0 0 0 4.332 5.200 4.680 M 5.703 5.200 4.680 5.1014.332 4.807 5.703 G 1-5 4-6 4-64 -6 1--3 4--6 1-3 1 - 34-6 4-6 50 N 3 5 5 5 2 5 2 2 5 5 В .556L .167I. $.\overline{667}$ R .429R ñ O 6.7006.030 5.582 5.582 7.4536.700 6,030 M 8.556 6.600 6.305 2-6 2-6 2-6 1-6 2-6 3-6 G 1 - 61-6 1-54-6 60 5 N 3 4 4 4 3 4 3 3 5 4.000R 1.900L 4.000R4.660R 3.618R3.990L R 3 000 R 4.496L 1.000T 0 8.075 8.200 8.646 7.392M 9.7608.535 7.980 7.6287.27610.415 1-6 1--6 1-6 G 1-6 1-6 1-6 1--6 1-6 1-6 1-6 80 N 3 4 3 3 4 4 4 4 3 4 В 1.900L 4.500R 5.400R5.992R4.496L 6.492R 3.990L 2.500L5.300R6.320R

M

G

 \mathbf{R}

100 N 14.745

1-6

3

1.900L

19.736

13.353

1-6

4

4.500R

18.303

12.805

1--6

4

5.400R

17.732

12,453

1-6

4

5.992R

17.363

13.562

1-6

3

4.496L

18.511

12.031

1--6

4

6.492R

16.926

13.009

1-6

3

3.990L

17.969

14.178

1-6

3

2.500L

19,163

90 METHOD OF CONVERTING HEAVY MOTOR VEHICLE LOADS TABLE 7.8 (Continued)

	SLE		Continued		0.0	0.4						
	ek No Base		31 48	32 48	<u>33</u> 48	34 48	35 48	$\frac{36}{36}$	$\frac{37}{36}$	38	39	40 36
Axl		X X'	8 28	8 28	8 28	8 28	8 28	12 12	12 12	12 12	12 12	12 12
Loa		a ₁	.10	.10	.20	.20	.20	.10	.10	.10	.10	.20
On Axl	20	\mathbf{a}_2 \mathbf{a}_3	.40 .50	.50 .40	.30 .50	.40 .40	.50 .30	.30 .60	$.36 \\ .54$.40 .50	.50 .40	.30 .50
AAI		- G *	2-3	2-3	46	2-3	2-3		4-6	2-3	2-3	4-6
	10	N B	$^{3}_{1.000 m R}$	3 1.000R	5 0	$^3_{1.000\mathrm{R}}$	$^3_{1.000\mathrm{R}}$	5 0	5	3	$^3_{1.000\mathrm{R}}$	5 0
		M	.640	.800	.582	.640	.800	.700	.630	1.000R $.640$.800	.582
	20	G N	4–6 5	$^{1-3}_2$	4–6 5	1-3 2	1-3 2	46 5	4_6	4-6	2–3	4–6
	20	В	0	.167L	0	.667R	.429R	0	5 0	5 0	3 1.000R	5 0
-		_M G	1.832	$\frac{2.101}{1-3}$	1.832	1.81 <u>4</u> 1-3	$\frac{2.207}{1-3}$	2.200 4-6	$\frac{1.980}{3-6}$	1.832	$\frac{2.025}{2-5}$	1.832 3–6
1	30	N	5	2	5	2	2	5	5	$^{4-6}_{5}$	3	5
		В М	$\substack{0\\3.082}$	3.600	$\frac{0}{3.082}$	$\frac{.667 R}{3.309}$	3.955	$\frac{0}{3.700}$	$^{2.000 m R}_{3.336}$	$\substack{0\\3.082}$	1.778L 3.463	1.844R 3.083
-		G	4-6	1-3	4-6	1-3	1–3	2-6	2-6	2-6	1-6	2-6
±	40	N B	5 0	$^2_{.167 m L}$	5 0	$^2_{.667 m R}$	$^2_{.429 m R}$	$^4_{1.000 m R}$	$^4_{1.600\mathrm{R}}$	$^{4}_{1.996\mathrm{R}}$	$^{3}_{1.894L}$	4 1.371R
Fee		M	4.332	5.101	4.332	4.807	6.703	5.723	5.458	5.290	5.596	4.937
Span-Feet	50	G N	4-6 5	1–3 2	4–6 5	$\frac{1-3}{2}$	1-3 2	2–6	2-6	2-6	1–6 3	2-6
$^{\mathrm{S}}$	50	В	0	.167L	0	.667R	.429R	$^4_{1.000 m R}$	$^4_{1.600 m R}$	1.996R	1.894L	4 1.371R
		M	5.582	6.600	5.582	$\frac{6.305}{1-3}$	7.453	7.968	7.696	7.522	8.078	6.930
	60	G N	$\substack{2-6\\4}$	1–3 2	$_{5}^{3-6}$	2	$\overset{1-3}{2}$	$^{1-6}_{4}$	$^{1-6}$	1-6 4	1–6 3	$^{1-6}$
		B M	6.965	8.100	$\frac{3.687R}{6.833}$	$\frac{.667 ext{R}}{7.805}$.429R 9.203	2.300R 10.388	2.840R 10.134	3.195R 9.971	1.894L 10.566	3.894R 9.355
- 1		- G	1-6	1-6	1-6	1-6	1-6	1-6	1-6	1-6	1-6	1-6
	80	N B	4 6.991R	3 5.290L	$^{\hphantom{0}4}_{7.491\mathrm{R}}$	$^{3}_{4.789\mathrm{L}}$	$^{3}_{3.100L}$	$^{4}_{2.300\mathrm{R}}$	$^{4}_{2.840 m R}$	$^{4}_{3.195R}$	$^{3}_{1.894L}$	4 3.894R
		м	11.616	12.860	11.207	12.298	13.620	15.366	15,101	14.929	15,551	14.292
	100	G N	$^{1-6}_{4}$	1-6 3	1-6 4	1-6 3	1-6 3	1-6	1-6 4	1-6	1–6 3	1-6
	100	\mathbf{B}	6.991R	5.290L	7.491R	4.789L	3.100L	$^{4}_{2.300\mathrm{R}}$	2.340R	$^4_{3.195\mathrm{R}}$	1.894L	$^4_{3.894R}$
		M	16.494	17.790	16.067	17.240	18.596	20.353	20.081	19.903	20.542	19.254
	. Bas		41 36	42 36	43	44	45	46	47	48	49	50 44
Ax		X	12	12	12	12	12	12	12	12	12	12
	cing	X'	12	12	16	16	16	16	16	16	16	20
Loa	ıd	aı a2	.20 .40	.20 .50	.10 .30	$.10 \\ .36$.10 .40	.10 .50	.20 .30	.20 .40	.20 .50	.10 .30
Ax	les	a ₃	.40	30	.60	.54	.50	.40	.50	.40	.30	.60
	10	G N	$^{2-3}_3$	2-3 3	$^{4-6}_{5}$	46 5	$^{2-3}_{3}$	$^{2-3}_{3}$	4–6 5	$^{2-3}_{3}$	$^{2 ext{}3}_3$	$^{4-6}_{5}$
		B	1.000R .640	1.000R .800	0 .700	$^{0}_{.630}$	1.000R .640	1.000R $.800$	$\frac{0}{.582}$	1.000R .640	1.000R .800	0 .700
Ì		- G	$$ $^{.040}_{2-3}$ $$	2-3	4-6		4-6	23	4-6	2-3	2-3	4-6
	20	N B	3	3	5	5 0	5	3	5	3	$^3_{1.000 m R}$	5
1		M	1.000R 1.620	$1.000R \\ 2.025$	$\substack{0\\2.200}$	1.980	$\substack{0\\1.832}$	$1.000 m R \ 2.025$	$\substack{0\\1.832}$	1.000R 1.620	2.025	$\begin{array}{c} 0 \\ 2.200 \end{array}$
İ	0.0	G	1-3	1-3	4-6	4-6	4-6	13	4_6	1-3	1–3	4-6
	30	N B	$^2_{1.333R}$	$1.000\mathrm{R}$	5 0	5 0	5 0	$^2_{.167 m R}$	5 0	$^2_{1.333 m R}$	$^2_{1.000 m R}$	5 0
1		M	2.935	3.573	3.700	3,330	3.082	3.401	3.082	2,935	3.573	3.700
	40	G N	$^{1-6}_{3}$	${\overset{1-5}{2}}$	$^{3-6}_{5}$	$^{2-6}_{4}$	$^{2-6}_{4}$	$^{1-5}_{3}$	$^{3-6}_{5}$	13 2	1-3 2	4–6 5
an-Feet		В	1.193L 4.843	1.222L	2.000R	2.400R	2.884R	1.264L	2.304R	1.333R 4.427	1.000R 5.318	0 5.200
님			1-6	5.534 1-6	$\frac{5.275}{2-6}$	$\frac{4.810}{2-6}$	$\frac{4.588}{2-6}$	5.000 1–6	$\frac{4.421}{2-6}$	1-6	1–5	3-6
				3	4	4	4 2.884R	3	4	3	2	5
ba	50	N	3					2.698L	2.120R	1.992L	1.667L	2.400R
Spa	50	В	1.193L	.300L	1.667R 7.400	2.400R 7.034			6.372	6.587	7.600	6.861
Spa		B M G	1.193L 7.335 1–6	.300L 8.002 1-6	7.400 1-6	$\frac{7.034}{1-6}$	6.801 1–6	7.353 1-6	6.372 1–6	6.587 1–6	7.600 1-6	2-6
Spa	50 60	B M G N	1.193L 7.335 1–6 3	.300L 8.002 1-6 3	$\frac{7.400}{1-6}$	$\frac{7.034}{1-6}$	6.801	7.353 $1-6$ 3	1–6 4	1–6 3	$^{1-6}_{3}$	2–6 4
Spa		B M G N B	1.193L 7.335 1–6 3 1.193L 9.831	.300L 8.002 1-6 3 .300L 10.502	7.400 1-6 4 3.100R 9.660	7.034 1-6 4 3.760R 9.316	6.801 1-6 4 4.194R 9.095	7.353 1-6 3 2.698L 9.828	1–6 4 4.893R 8.502	1-6 3 1.992L 9.074	1-6 3 .900L 9.914	2-6 4 2.334R 9.081
Spa	60	B M G N B M	1.193L 7.335 1-6 3 1.193L 9.831	.300L 8.002 1-6 3 .300L 10.502	7.400 1-6 4 3.100R 9.660 1-6	7.034 1-6 4 3.760R 9.316 1-6	6.801 1-6 4 4.194R 9.095 1-6	7.353 1-6 3 2.698L 9.828 1-6	1-6 4 4.893R 8.502 1-6	1-6 3 1.992L 9.074 1-6	1-6 3 .900L 9.914 1-6	2-6 4 2.334R 9.081 1-6
Spa		B M G N B M G N B	1.193L 7.335 1-6 3 1.193L 9.831 1-6 3 1.193L	.300L 8.002 1-6 3 .300L 10.502 1-6 3 .300L	7.400 1-6 4 3.100R 9.660 1-6 4 3.100R	7.034 1-6 4 3.760R 9.316 1-6 4 3.760R	6.801 1-6 4 4.194R 9.095 1-6 4 4.194R	7.353 1-6 3 2.698L 9.828 1-6 3 2.698L	1-6 4 4.893R 8.502 1-6 4 4.893R	1-6 3 1.992L 9.074 1-6 3 1.992L	1-6 3 .900L 9.914 1-6 3 .900L	2-6 4 2.334R 9.081 1-6 4 3.900R
Spa	60	B M G N B M G N B	1.193L 7.335 1-6 3 1.193L 9.831 1-6 3 1.193L 14.825	.300L 8.002 1-6 3 .300L 10.502 1-6 3 .300L 15.501	7.400 1-6 4 3.100R 9.660 1-6 4 3.100R 14.620	7.034 1-6 4 3.760R 9.316 1-6 4 3.760R 14.257	6.801 1-6 4 4.194R 9.095 1-6 4 4.194R 14.022	7.353 1-6 3 2.698L 9.828 1-6 3 2.698L 14.798	1-6 4 4.893R 8.502 1-6 4 4.893R 13.402	1-6 3 1.992L 9.074 1-6 3 1.992L 14.058	1-6 3 .900L 9.914 1-6 3 .900L 14.910	2-6 4 2.334R 9.081 1-6 4 3.900R 13.890
Spa	60	B M G N B M G N B M	1.193L 7.335 1-6 3 1.193L 9.831 1-6 3 1.193L 14.825 1-6 3	300L 8.002 1-6 3 .300L 10.502 1-6 3.300L 15.501 1-6 3	7.400 1-6 4 3.100R 9.660 1-6 4 3.100R 14.620 1-6 4	7.034 1-6 4 3.760R 9.316 1-6 4 3.760R 14.257 1-6 4	6.801 1-6 4 4.194R 9.095 1-6 4 4.194R 14.022 1-6 4	7.353 1-6 3 2.698L 9.828 1-6 3 2.698L 14.798 1-6 3	1-6 4 4.893R 8.502 1-6 4 4.893R 13.402 1-6 4	1-6 3 1.992L 9.074 1-6 3 1.992L 14.058 1-6 3	1-6 3 .900L 9.914 1-6 3 .900L 14.910 1-6 3	2-6 4 2.334R 9.081 1-6 4 3.900R 13.890 1-6 4
Spa	80	G N B M G N B M G N B	1.193L 7.335 1-6 3 1.193L 9.831 1-6 3 1.193L 14.825 1-6 3 1.193L	.300L 8.002 1-6 3 .300L 10.502 1-6 3 .300L 15.501 1-6 3 .300L	7.400 1-6 4 3.100R 9.660 1-6 4 3.100R 14.620 1-6 4 3.100R	7.034 1-6 4 3.760R 9.316 1-6 4 3.760R 14.257 1-6 4 3.760R	6.801 1-6 4 4.194R 9.095 1-6 4 4.194R 14.022 1-6 4 4.194R	7.353 1-6 3 2.698L 9.828 1-6 3 2.698L 14.798 1-6 3 2.698L	1-6 4 4.893R 8.502 1-6 4 4.893R 13.402 1-6 4 4.893R	1-6 3 1.992L 9.074 1-6 3 1.992L 14.058 1-6 3 1.992L	1-6 3 .900L 9.914 1-6 3 .900L 14.910 1-6 3 .900L	2-6 4 2.334R 9.081 1-6 4 3.900R 13.890 1-6 4 3.900R
Spa	80	B M G N B M G N B M	1.193L 7.335 1-6 3 1.193L 9.831 1-6 3 1.193L 14.825 1-6 3	300L 8.002 1-6 3 .300L 10.502 1-6 3.300L 15.501 1-6 3	7.400 1-6 4 3.100R 9.660 1-6 4 3.100R 14.620 1-6 4	7.034 1-6 4 3.760R 9.316 1-6 4 3.760R 14.257 1-6 4	6.801 1-6 4 4.194R 9.095 1-6 4 4.194R 14.022 1-6 4	7.353 1-6 3 2.698L 9.828 1-6 3 2.698L 14.798 1-6 3	1-6 4 4.893R 8.502 1-6 4 4.893R 13.402 1-6 4	1-6 3 1.992L 9.074 1-6 3 1.992L 14.058 1-6 3	1-6 3 .900L 9.914 1-6 3 .900L 14.910 1-6 3	2-6 4 2.334R 9.081 1-6 4 3.900R 13.890 1-6 4

T.	ABL	E	7.8	(Conti	inued)

TA	BLE	7.8 (Continue	d)								
~~	ick N		51	52	53	54	55	56	57	58	59	60
$\frac{\mathbf{W}\mathbf{F}}{\mathbf{A}\mathbf{x}}$	ı. Bası	e L X	$\frac{44}{12}$	12	12	$\frac{44}{12}$	12	12	12	12	12	12
Sp	acing	X'	20	20	20	20	20	20	24	24	24	24
Lo		a ₁	$.10 \\ .36$.10 .40	.10	.20 .30	.20 .40	.20 $.50$.10 .30	.10 .36	.10 .40	.10 .50
Ax		a ₃	.54	.50	.40	.50	.40	.30	.60	.54	.50	.40
	10	G N	4-6 5	23 3	2-3	4-6	2–3	2–3	4-6	4-6	2–3 3	$^{2-3}_{3}$
	10	В	0	1.000R	$^3_{1.000\mathrm{R}}$	$\frac{5}{0}$	$^3_{1.000 m R}$	$^3_{1.000 m R}$	5 0	5 0	1.000R	$1.000\mathbf{R}$
		M. G	.630	.640	.800	.582	.640	.800	.700	.630	.640	$\frac{.800}{2-3}$
	20	N	4-6 5	46 5	2–3 3	$^{4-6}_{5}$	$^{2-3}_{3}$	$^{2-3}_{3}$	4-6 5	$^{4-6}_{5}$	$^{4-6}_{5}$	2–3 3
		B M	$\frac{0}{1.980}$	$\substack{0\\1.832}$	1.000R 2.025	$\substack{0\\1.832}$	$1.000\mathbf{R} \\ 1.620$	$1.000 \mathrm{R} \ 2.025$	$0 \\ 2.200$	$0 \\ 1.980$	$^{0}_{1.832}$	$1.000\mathbf{R} \\ 2.025$
		-G	4-6	4-6	13	4-6	1-3	1-3	4-6	4-6	4-6	1-3
	30	N B	5 0	5 0	$^2_{.167 m R}$	5 0	$^2_{1.333\mathrm{R}}$	$\frac{2}{1.000\mathrm{R}}$	5 0	5 0	5 0	$^2_{.167 m R}$
		M	3.330	3.082	3.401	3.082	2.935	3.573	3.700	3.330	3.082	3.401
	40	G N	4-6	4_6	1-3	4_6	1–3	1-3	4-6	4-6	4-6	$^{-1}_2$
et	40	В	5 0	5 0	$^2_{.167 m R}$	5 0	$^2_{1.333\mathrm{R}}$	$^2_{1.000 m R}$	5 0	5 0	5 0	.167R
F.		_M	4.680	4.332	4.901	4.332	4.427	5.318	5.200	4.680	4.332	4.901
Span-Feet	50	G N	26 4	$^{2-6}_{4}$	$^{1-5}_3$	$\frac{2-6}{4}$	$^{1-4}_2$	$^{1-4}_2$	$^{4-6}_{5}$	$^{4-6}_{5}$	$^{4-6}_{5}$	$_{2}^{1-3}$
S		B M	3.200R 6.395	3.791R 6.105	1.878L 6.660	$2.887\mathbf{R} \\ 5.832$	1.086L 5.934	$625L \\ 7.106$	$\frac{0}{6.700}$	$\substack{0\\6.030}$	$\frac{0}{5,582}$	6.400
		G	26	2-6	1-6	2-6	1-6	1-6	26	2-6	2-6	1-6
İ	60	$_{ m B}^{ m N}$	$^4_{3.200\mathrm{R}}$	$\frac{4}{3.791}$ R	$^{3}_{3.492L}$	$^4_{2.887 m R}$	$\overset{3}{2.791}\mathbf{L}$	$^{3}_{1.500 \rm L}$	$^4_{3.000\mathrm{R}}$	$_{4.000\mathrm{R}}^{4}$	$^{4}_{4.682\mathrm{R}}$	3 4.291 I ₄
		м	8.614	8.312	9.112	7.810	8.339	9.338	8.535	7.980	7.624	8.416
	80	G N	$^{1-6}_{4}$	$^{1-6}_{4}$	$^{1-6}_{3}$	${\overset{1-6}{4}}$	$_3^{1-6}$	$^{1-6}_3$	$^{1-6}_{4}$	$^{1-6}_{4}$	$^{1-6}$	16 3
	(.0	В	4.680R	5.215R	3.492L	5.916R	2.791L	1.500L	4.700R	5.600R	6.217R	4.291L
		M G	12.994 1-6	13.133	14.061 1-6	12.530 1-6	13.306 1–6	$\frac{14.328}{1-6}$	$\frac{13.176}{1-6}$	12.632 1-6	$\frac{12.275}{1-6}$	13.340
	100	N	4	4	3	4	3	3	4	4	4	3
ì		B M	4.680R 17.939	5.215R 18.065	3.492L 19.030	5.916R 17.442	2.791L 18.287	1.500L 19.323	4.700R 18.121	5.600R 17.554	$6.217\mathbf{R} \\ 17.178$	4.291L 18.294
Tr	uck N	o .	61	62	63	64	65	66	67	68	69	70
W	ı. Bas	e L	48	48	48	52	52	52	52	52	52	52
Ax	le acing	$\mathbf{X} \\ \mathbf{X}'$	$\frac{12}{24}$	$\frac{12}{24}$	$\frac{12}{24}$	$\frac{12}{28}$	$\frac{12}{28}$	$\frac{12}{28}$	$\frac{12}{28}$	$\frac{12}{28}$	$\frac{12}{28}$	12 28
Lo		aı	.20	.20	.20	.10	.10	.10	.10	.20	.20	.20
On Ax		\mathbf{a}_2	.30 .50	.40 .40	.50 .30	.30 .60	.36 .54	.40 .50	.50 .40	.30 .50	.40 .40	.50 .30
		G	4-6	2-3	2-3	4-6	46	2-3	23	4-6	2-3	2-3
	10	N B	5 0	3 1.000R	1.000R	5 0	5 0	$^3_{1.000\mathrm{R}}$	$^{3}_{1.000R}$	5 0	3 1.000R	$^3_{1.000 m R}$
		M	.582	.640	.800	.700	.630	.640	.800	.582	.640	.800
	20	G N	46 5	23 3	23 3	$^{4-6}_{5}$	4-6 5	4-6 5	$_{3}^{2-3}$	4-6 5	23 3	23 3
	20	В	0	1.000R	1.000R	0	0	0	1.000R	0	1.000R	1.000R
		- M G	1.832	1.620 1-3	2.025 1-3	2.200	1.980 46	$-\frac{1.832}{4.6}$	2.025 1-3	1.832 4-6	$\frac{1.620}{1-3}$	$-rac{2.025}{1-3}$
	30	N	5	2	2	5	5	5	2	5	2	2
		B M	$\substack{0\\3.082}$	1.333R 2.935	1.000R 3.573	$\frac{0}{3.700}$	$\frac{0}{3.330}$	$\substack{0\\3.082}$	3.401	$\frac{0}{3.082}$	1.333R 2.935	1.000R 3.573
		G	4-6	13	1-3	4-6	4-6	46	1-3	4-6	1-3	1-3
t	40	$_{ m B}^{ m N}$	5 0	2 1.333R	$^2_{1.000\mathrm{R}}$	5 0	5 0	5 0	2 .167R	5 0	$^2_{1.333\mathrm{R}}$	$^{2}_{1.000R}$
-Fe		M	4.332	4.427	5.318	5.200	4.680	4.332	4.901	4.332	4.427	5.318
Span-Feet		\mathbf{G}	4 6	$^{1-3}_{2}$	1-3	46	46 5	$^{4-6}_{5}$	13 2	4–6 5	$\frac{1-3}{2}$	$^{1-3}_{2}$
	50	N	Ð									
S	50	N B	5 0	1.333R	2 1.000R	5 0	0	0	.167R	0	1.333R	1.000R
S	50	B M	0 5.582	1.333R 5.921	1.000R 7.064	6.700	0 6.030	5.582	6.400	5.582	5.921	7.064
S	60	B M G N	$\begin{array}{r} 0 \\ 5.582 \\ \hline 2-6 \\ 4 \end{array}$	1.333R 5.921 1-6 3	1.000R 7.064 1-4 2	$\begin{array}{r} 0 \\ 6.700 \\ \hline 4-6 \\ 5 \end{array}$	$\begin{array}{r} 0 \\ 6.030 \\ \hline 3-6 \\ 5 \end{array}$	$\frac{5.582}{2-6}$	$\frac{6.400}{1-3}$	5.582 4-6 5	5.921 1-3 2	7.064 1-3 2
S	,	B M G	$\frac{0}{5.582}$ $\frac{2-6}{}$	1.333R 5.921 $1-6$	1.000R 7.064 1-4	6.700 4-6	$ \begin{array}{r} 0 \\ 6.030 \\ 3-6 \\ 5 \\ 4.000R \end{array} $	5.582 2-6 4 5.573R	6.400 1-3 2 .167R	5.582 4-6	5.921 1-3 2 1.333R	7.064 1-3
S	60	B M G N B M	0 5.582 2-6 4 3.639R 7.274 1-6	1.333R 5.921 1-6 3 3.590L 7.625 1-6	1.000R 7.064 1-4 2 .875L 8.910 1-6	$ \begin{array}{r} 0 \\ 6.700 \\ 4-6 \\ 5 \\ 0 \\ 8.200 \\ 1-6 \end{array} $	$\begin{array}{c} 0\\6.030\\\hline 3-6\\5\\4.000R\\7.392\\\hline 1-6\end{array}$	5.582 2-6 4 5.573R 6.959 1-6	6.400 1-3 2 .167R 7.900 1-6	5.582 4-6 5 0 6.832 1-6	5.921 1-3 2 1.333R 7.418 1-6	7.064 1-3 2 1.000R 8.814 1-6
S	,	B M G N B	0 5.582 2-6 4 3.639R 7.274	1.333R 5.921 1-6 3 3.590L 7.625	1.000R 7.064 1-4 2 .875L 8.910	$ \begin{array}{r} 0 \\ 6.700 \\ \hline 4-6 \\ 5 \\ 0 \\ 8.200 \end{array} $	$0 \\ 6.030 \\ 3-6 \\ 5 \\ 4.000 \\ R \\ 7.392$	5.582 2-6 4 5.573R 6.959	6.400 1-3 2 .167R 7.900	5.582 4-6 5 0 6.832	5.921 1-3 2 1.333R 7.418 1-6 3 4.389L	7.064 1-3 2 1.000R 8.814
S	60	B M G N B M G N B	0 5.582 2-6 4 3.639R 7.274 1-6 4 6.918R 11.688	1.333R 5.921 1-6 3 3.590L 7.625 1-6 3 3.590L 12.572	1.000R 7.064 1-4 2 .875L 8.910 1-6 3 2.100L 13.755	0 6.700 4-6 5 0 8.200 1-6 4 5.500R 12.478	0 6.030 3-6 5 4.000R 7.392 1-6 4 6.520R 11.851	5.582 2-6 4 5.573R 6.959 1-6 4 7.219R 11.441	6.400 1-3 2 .167R 7.900 1-6 3 5.089L 12.635	5.582 4-6 5 0 6.832 1-6 4 7.920R 10.872	5.921 1-3 2 1.333R 7.418 1-6 3 4.389L 11.852	7.064 1-3 2 1.000R 8.814 1-6 3 2.700L 13.191
S	80	G N B M G N B M	0 5.582 2-6 4 3.639R 7.274 1-6 4 6.918R	1.333R 5.921 1-6 3 3.590L 7.625 1-6 3 3.590L 12.572 1-6	1.000R 7.064 1-4 2 .875L 8.910 1-6 3 2.100L 13.755 1-6	0 6.700 4-6 5 0 8.200 1-6 4 5.500R 12.478	0 6.030 3-6 5 4.000R 7.392 1-6 4 6.520R 11.851 1-6	5.582 2-6 4 5.573R 6.959 1-6 4 7.219R 11.441 1-6	6.400 1-3 2 .167R 7.900 1-6 3 5.089L 12.635 1-6	5.582 4-6 5 0 6.832 1-6 4 7.920R 10.872 1-6	5.921 1-3 2 1.333R 7.418 1-6 3 4.389L 11.852 1-6	7.064 1-3 2 1.000R 8.814 1-6 3 2.700L 13.191 1-6
S	60	B M G N B M G N B	0 5.582 2-6 4 3.639R 7.274 1-6 4 6.918R 11.688	1.333R 5.921 1-6 3 3.590L 7.625 1-6 3 3.590L 12.572	1.000R 7.064 1-4 2 .875L 8.910 1-6 3 2.100L 13.755	0 6.700 4-6 5 0 8.200 1-6 4 5.500R 12.478	0 6.030 3-6 5 4.000R 7.392 1-6 4 6.520R 11.851	5.582 2-6 4 5.573R 6.959 1-6 4 7.219R 11.441	6.400 1-3 2 .167R 7.900 1-6 3 5.089L 12.635	5.582 4-6 5 0 6.832 1-6 4 7.920R 10.872	5.921 1-3 2 1.333R 7.418 1-6 3 4.389L 11.852	7.064 1-3 2 1.000R 8.814 1-6 3 2.700L 13.191

92 METHOD OF CONVERTING HEAVY MOTOR VEHICLE LOADS TABLE 7.8 (Continued)

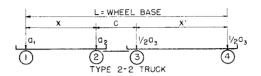
			Continue									
	ick No		71	72	73	74	75	76	77	78	79	80
Axl	l. Base	2 L X	40 	16	40 16	$-\frac{40}{16}$	16	$\frac{40}{16}$	40 16	16	44 16	16
	ie icing	$\hat{\mathbf{X}}'$	12	12	12	12	12	12	12	16	16	16 16
Loa	ad	a ₁	.10	.10	.10	.10	.20	.20	.20	.10	.10	.10
On Ax	les	\mathbf{a}_2	.30 .60	.36 $.54$.40 .50	.50	.30 .50	.40 .40	.50 .30	.30 .60	.36 .54	.40 .50
1		G	4-6	4-6	2-3	23	4-6	2-3	2-3	4-6	4-6	2-3
	10	N	5	5	3	3	5	3	3	5	5	3
		B M	.70 0	0	1.000R .640	1.000R .800	$^{0}_{.582}$	1.000R $.640$	1.000R .800	0 .700	0 .630	1.000R .640
		G	4-6	4-6	46	2-3	4–6	2-3	2-3	4-6	4-6	46
	20	$_{ m B}^{ m N}$	5 0	5 0	5 0	3 1.000R	5 0	$^{3}_{1.000 m R}$	3 1.000R	5 0	5 0	5 0
		M	2.200	1.980	1.832	2.025	1.832	1.620	2.025	2.200	1.980	1.832
		G	4-6	36	4-6	2-5	4–6	2–5	2-4	4-6	4-6	4-6
	30	N B	5 0	$_{2.000\mathrm{R}}^{5}$	5 0	$^{3}_{1.778 \rm L}$	5 0	$^{3}_{2,195L}$	3 .167L	5 0	5 0	5 0
		M	3.700	3.336	3.082	3.463	3.082	2.840	3.400	3.700	3.330	3.082
		G	2–6	2–6	2-6	2-6	2-6	2–6	2–6	3-6	2–6	2-6
et	40	N B	$^4_{1.000\mathrm{R}}$	$^{4}_{1.600R}$	$^{4}_{2.009\mathrm{R}}$	$\begin{array}{c} 3 \\ 2.995 \mathbf{L} \end{array}$	$^4_{1.384\mathrm{R}}$	$^3_{3,495 m L}$	$^3_{2.375 m L}$	$^{5}_{2.000 m R}$	4 2.400R	$^{4}_{2.900\mathrm{R}}$
Fe		М	5.723	5.458	5.291	5.507	4.939	4.649	5.213	5.275	4.810	4.587
Span-Feet	50	G N	$^{2-6}_{4}$	2-6 4	2-6 4	$^{1-6}_{3}$	$^{2-6}_{4}$	$^{1-6}$	16 3	2-6	2–6 4	2-6 4
Sp	30	В	1.000R	1.600R	2.009R	1.694L	1.384R	.793L	$.100\mathbf{R}$	$^4_{1.667 m R}$	2.400R	2.900R
-		M	7.968	7.696	7.523	7.864	6.932	6.920	7.400	7.400	7.034	6.799
	60	G N	$^{2-6}$	$^{1-6}$	$^{1-6}_{4}$	$^{1-6}_{3}$	$^{1-6}$	$^{1-6}_3$	$^{1-6}_{3}$	$^{2-6}_{4}$	2-6 4	$\substack{2-6\\4}$
	00	\mathbf{B}	1.000R	3.040R	3.411R	1.694L	4.313R	.793L	.100R	1.667R	2.400R	2.900R
		_M	10.215	9.954	9.791	10.354	9.005	9.418	$-\frac{9.900}{1.0}$	9.642	9.266	9.024
	80	G N	1–6 4	$^{1-6}$	$^{1-6}_{4}$	1-6 3	$^{1-6}_{4}$	$^{1-6}$	$^{1-6}_3$	16 4	1–6 4	1–6 4
		В	2.500R	3.040R	3.411R	1.694L	4.313R	.793L	.100R	3.300R	3.960R	4.413R
		M G	15.178	$\frac{14.916}{1-6}$	$\frac{14.742}{1-6}$	$\frac{15.342}{1-6}$	13.928 1-6	14.415 1-6	14.900 1-6	14.436 1-6	14.076	$\frac{13.838}{1-6}$
	100	Ŋ	$^{1-6}_{4}$	4	4	3	4	3	$\frac{1-6}{3}$	4	4	1-6 4
		В	2.500R	3.040R 19.892	3.411R	1.694L	4.313R	.793L	100R 19.900	3.300R	3.960R	4.413R
= 1	7. NT	М	20.163		19.713	20.335	18.881	19.413		19.409	19.037	18.790
	uck No		81 44	82	83	<u>84</u> 	85 48	- 86 48	87 48	88 48	89 48	90 48
Ax		X	16	16	16	16	16	16	16	16	16	16
Sp	acing	X'	16	16	16	16	20	20	20	20	20	20
Lo: On		\mathbf{a}_1	.10 .50	.20 .30	.20 $.40$.20 .50	.10 .30	.10 .36	.10 .40	.10 .50	.20 .30	.20 .40
Ax		a 3	.40	.50	.40	.30	.60	.54	.50	.40	.50	.40
		G	2–3	4-6	2-3	2 -3	4_6	46	2-3	2–3	4_6	2–3
	10	N B	$^3_{1.000 m R}$	5 0	3 1.000R	$^3_{1.000 m R}$	5 0	5 0	3 $^{1.000R}$	$^3_{1.000 m R}$	5 0	3 1.000 R
ļ		M	.800									
- 1	20	G		.582	.640	.800	.700	.630	.640	.800	.582	.640
Ì	20	NT	2-3	46	$\frac{.640}{2-3}$			$\frac{.630}{4-6}$		$\frac{.800}{2-3}$.582 4-6	2-3
		N B			.640	.800	.700	.630	.640	.800	.582	
		B M	2-3 3 1.000R 2.025	4-6 5 0 1.832	2-3 3 1.000R 1.620	.800 2-3 3 1.000R 2.025	.700 4-6 5 0 2.200	$ \begin{array}{r} .630 \\ 4-6 \\ 5 \\ 0 \\ 1.980 \end{array} $.640 4-6 5 0 1.832	.800 2-3 3 1.000R 2.025	.582 4-6 5 0 1.832	2-3 3 1.000R 1.620
	20	B M G	2-3 3 1.000R 2.025 2-3	4-6 5 0 1.832 4-6	.640 2-3 3 1.000R 1.620 2-3	.800 2-3 3 1.000R 2.025 2-3	.700 4-6 5 0 2.200 4-6	$ \begin{array}{r} $.640 4-6 5 0 1.832 4-6	2-3 3 1.000R 2.025 2-3	.582 4-6 5 0 1.832 4-6	2-3 3 1.000R 1.620 2-3
	30	B M G N B	2-3 3 1.000R 2.025 2-3 3 1.000R	4-6 5 0 1.832 4-6 5 0	2-3 3 1.000R 1.620 2-3 3 1.000R	.800 2-3 3 1.000R 2.025 2-3 3 1.000R	.700 4-6 5 0 2.200 4-6 5 0	$ \begin{array}{r} $.640 4-6 5 0 1.832 4-6 5 0	.800 2-3 3 1.000R 2.025 2-3 3 1.000R	.582 4-6 5 0 1.832 4-6 5 0	2-3 3 1.000R 1.620 2-3 3 1.000R
	30	B M G N B	2-3 3 1.000R 2.025 2-3 3 1.000R 3.267	4-6 5 0 1.832 4-6 5 0 3.082	.640 2-3 3 1.000R 1.620 2-3 3 1.000R 2.613	.800 2-3 3 1.000R 2.025 2-3 3 1.000R 3.267	.700 4-6 5 0 2.200 4-6 5 0 3.700	.630 4-6 5 0 1.980 4-6 5 0 3.330	.640 4-6 5 0 1.832 4-6 5 0 3.082	.800 2-3 3 1.000R 2.025 2-3 3 1.000R 3.267	.582 4-6 5 0 1.832 4-6 5 0 3.082	2-3 3 1.000R 1.620 2-3 3 1.000R 2.613
		B M G N B M	2-3 3 1.000R 2.025 2-3 3 1.000R 3.267	4-6 5 0 1.832 4-6 5 0 3.082 3-6	.640 2-3 3 1.000R 1.620 2-3 3 1.000R 2.613	.800 2-3 3 1.000R 2.025 2-3 3 1.000R 3.267	.700 4-6 5 0 2.200 4-6 5 0 3.700 4-6	.630 4-6 5 0 1.980 4-6 5 0 3.330 4-6	.640 4-6 5 0 1.832 4-6 5 0 3.082 4-6	.800 2-3 3 1.000R 2.025 2-3 3 1.000R 3.267	.582 4-6 5 0 1.832 4-6 5 0 3.082 4-6	2-3 3 1.000R 1.620 2-3 3 1.000R 2.613 1-3
eet	30	B M G N B M G N B	2-3 3 1.000R 2.025 2-3 3 1.000R 3.267 2-5 3 2.473L	4-6 5 0 1.832 4-6 5 0 3.082 3-6 5 2.315 R	.640 2-3 3 1.000R 1.620 2-3 3 1.000R 2.613 1-3 2	.800 2-3 3 1.000R 2.025 2-3 3 1.000R 3.267 1-3 2 1.572R	.700 4-6 5 0 2.200 4-6 5 0 3.700 4-6 5 0	.630 4-6 5 0 1.980 4-6 5 0 3.330 4-6 5 0	.640 4-6 5 0 1.832 4-6 5 0 3.082 4-6 5	.800 2-3 3 1.000R 2.025 2-3 3 1.000R 3.267 1-3 2 .500R	.582 4-6 5 0 1.832 4-6 5 0 3.082 4-6 5	2-3 3 1.000R 1.620 2-3 3 1.000R 2.613 1-3 2 2.000R
ı-Feet		B M G N B M G N B	2-3 3 1.000R 2.025 2-3 3 1.000R 3.267 2-5 3 2.473L 4.914	4-6 5 0 1.832 4-6 5 0 3.082 3-6 5 2.315R 4.418	.640 2-3 3 1.000R 1.620 2-3 3 1.000R 2.613 1-3 2 2.000R 4.060	.800 2-3 3 1.000R 2.025 2-3 3 1.000R 3.267 1-3 2 1.572R 4.943	.700 4-6 5 0 2.200 4-6 5 0 3.700 4-6 5 0 5.200	.630 4-6 5 0 1.980 4-6 5 0 3.330 4-6 5 0 4.680	.640 4-6 5 0 1.832 4-6 5 0 3.082 4-6 5 0 4.332	.800 2-3 3 1.000R 2.025 2-3 3 1.000R 3.267 1-3 2 .500R 4.704	.582 4-6 5 0 1.832 4-6 5 0 3.082 4-6 5 0 4.332	2-3 3 1.000R 1.620 2-3 3 1.000R 2.613 1-3 2 2.000R 4.060
pan-Feet	40	B M G N B M G N B	2-3 3 1.000R 2.025 2-3 3 1.000R 3.267 2-5 3 2.473L 4.914 1-6	4-6 5 0 1.832 4-6 5 0 3.082 3-6 5 2.315 R 4.418 2-6	.640 2-3 3 1.000R 1.620 2-3 3 1.000R 2.613 1-3 2 2.000R 4.060 1-6	.800 2-3 3 1.000R 2.025 2-3 3 1.000R 3.267 1-3 2 1.572R 4.943 1-6	.700 4-6 5 0 2.200 4-6 5 0 3.700 4-6 5 0 5.200 3.700	.630 4-6 5 0 1.980 4-6 5 0 3.330 4-6 5 0 4.680 2-6	.640 4-6 5 0 1.832 4-6 5 0 3.082 4-6 5 0 4.332 2-6	.800 2-3 3 1.000R 2.025 2-3 3 1.000R 3.267 1-3 2 .500R 4.704 1-5	.582 4-6 5 0 1.832 4-6 5 0 3.082 4-6 5 0 4.332 2-6	2-3 3 1.000R 1.620 2-3 3 1.000R 2.613 1-3 2 2.000R 4.060 1-4
Span-Feet		B M G N B M G N B M	2-3 3 1.000R 2.025 2-3 3 1.000R 3.267 2-5 3 2.473L 4.914 1-6 3 2.493L	4-6 5 0 1.832 4-6 5 0 3.082 3-6 5 2.315R 4.418 2-6 4 2.136R	.640 2-3 3 1.000R 1.620 2-3 3 1.000R 2.613 1-3 2.000R 4.060 1-6 3	.800 2-3 3 1.000R 2.025 2-3 3 1.000R 3.267 1-3 2 1.572R 4.943 1-6 3	.700 4-6 5 0 2.200 4-6 5 0 3.700 4-6 5 0 5.200 3-6 5.200 8-6 2.400R	.630 4-6 5 0 1.980 4-6 5 0 3.330 4-6 5 0 4.680 2-6 3.200R	.640 4-6 5 0 1.832 4-6 5 0 3.082 4-6 5 0 4.332 2-6 4 3.791R	.800 2-3 3 1.000R 2.025 2-3 3 1.000R 3.267 1-3 2 .500R 4.704 1-5 3	.582 4-6 5 0 1.832 4-6 5 0 3.082 4-6 5 0 4.332 2-6 4 2.887R	2-3 3 1.000R 1.620 2-3 3 1.000R 2.613 1-3 2 2.000R 4.060 1-4 2 .540L
Span-Feet	40	B M G N B M G N B M	2-3 3 1.000R 2.025 2-3 3 1.000R 3.267 2-5 3 2.473L 4.914 1-6 3 2.493L 7.132	4-6 5 0 1.832 4-6 5 0 3.082 3-6 5 2.315R 4.418 2-6 4 2.136R 6.373	.640 2-3 3 1.000R 1.620 2-3 3 .000R 2.613 1-3 2 2.000R 4.060 1-6 3 1.592L 6.159	.800 2-3 1.000R 2.025 2-3 3 1.000R 3.267 1-3 2 1.572R 4.943 1-6 3.500L 7.005	.700 4-6 5 0 2.200 4-6 5 0 3.700 4-6 5 0 5.200 3-6 5.200 3-6 5 2.400R 6.861	.630 4-6 5 0 1.980 4-6 5 0 3.330 4-6 5 0 4.680 2-6 4.200R 6.395	.640 4-6 5 0 1.832 4-6 5 0 3.082 4-6 5 0 4.332 2-6 4 3.791R 6.105	.800 2-3 3 1.000R 2.025 2-3 3 1.000R 3.267 1-3 2 5.500R 4.704 1-5 3 1.647L 6.446	.582 4-6 5 0 1.832 4-6 5 0 3.082 4-6 5 0 4.332 2-6 4 2.887R 5.832	2-3 3 1.000R 1.620 2-3 3 1.000R 2.613 1-3 2 2.000R 4.060 1-4 2.540L 5.571
Span-Feet	40	B M G N B M G N B M	2-3 3 1.000R 2.025 2-3 3 1.000R 3.267 2-5 3 2.473L 4.914 1-6 3 2.493L	4-6 5 0 1.832 4-6 5 0 3.082 3-6 5 2.315R 4.418 2-6 4 2.136R	.640 2-3 3 1.000R 1.620 2-3 3 1.000R 2.613 1-3 2.000R 4.060 1-6 3	.800 2-3 3 1.000R 2.025 2-3 3 1.000R 3.267 1-3 2 1.572R 4.943 1-6 3	.700 4-6 5 0 2.200 4-6 5 0 3.700 4-6 5 0 5.200 3-6 5.200 8-6 2.400R	.630 4-6 5 0 1.980 4-6 5 0 3.330 4-6 5 0 4.680 2-6 3.200R	.640 4-6 5 0 1.832 4-6 5 0 3.082 4-6 5 0 4.332 2-6 4 3.791R	.800 2-3 3 1.000R 2.025 2-3 3 1.000R 3.267 1-3 2 .500R 4.704 1-5 3	.582 4-6 5 0 1.832 4-6 5 0 3.082 4-6 5 0 4.332 2-6 4 2.887R	2-3 3 1.000R 1.620 2-3 3 1.000R 2.613 1-3 2 2.000R 4.060 1-4 2 .540L
Span-Feet	50	B M G N B M G N B M G N B M B M	2-3 3.000R 2.025 2-3 3 1.000R 3.267 2-5 3 2.473L 4.914 1-6 3 2.493L 1-6 3 2.493L	4-6 5 0 1.832 4-6 5 0 3.082 3-6 5 2.315R 4.418 2-6 4 2.136R 6.373 2-6 4 2.136R	.640 2-3 3 1.000R 1.620 2-3 1.000R 2.613 1-3 2 2.000R 4.060 1-6 3 1.592L 6.159 1-6 3 1.592L	.800 2-3 3 1.000R 2.025 2-3 3.000R 3.267 1-3 2.1.572R 4.943 1-6 3.500L 7.005 1-6 3.500L	.700 4-6 5 0 2.200 4-6 5 0 3.700 4-6 5 0 5.200 3-6 5.200 3-6 5.2400R 6.861 2-6 4 2.3333R	.630 4-6 5 0 1.980 4-6 5 0 3.330 4-6 5 0 4.680 2-6 4 3.200R 6.395 2-6 4 3.200R	.640 4-6 5 0 1.832 4-6 5 0 3.082 4-6 5 0 4.332 2-6 4 5.791R 6.105 2-6 4 3.791R	.800 2-3 3 1.000R 2.025 2-3 3.000R 3.267 1-3 2.500R 4.704 1-5 3.647L 6.446 1-6 3 3.292L	.582 4-6 5 0 1.832 4-6 5 0 3.082 4-6 5 0 4.332 2-6 4 2.887R 4 2.887R	2-3 3 1.000R 1.620 2-3 3 1.000R 2.613 1-3 2 2.000R 4.060 1-4 2.540L 5.571 1-6 3 2.391L
Span-Feet	50	B M G N B M G N B M G N B M G N B M	2-3 3.000R 2.025 2-3 3.1.000R 3.267 2-5 3.2.473L 4.914 1-6 3.2.493L 1-6 3.2.493L 9.611	$\begin{array}{c} 4-6\\ 5\\ 0\\ 1.832\\ 4-6\\ 5\\ 0\\ 3.082\\ 3-6\\ 5\\ 2.315R\\ 4.418\\ 2-6\\ 4\\ 2.136R\\ 6.373\\ 2-6\\ 4\\ 2.136R\\ 8.361\\ \end{array}$.640 2-3 3 1.000R 1.620 2-3 3 1.000R 2.613 1-3 2.2000R 4.060 1-6 3 1.592L 6.159 1-6 3 1.592L 8.651	.800 2-3 3 1.000R 2.025 2-3 1.000R 3.267 1-3 2 2.1.572R 4.943 1-6 3.500L 7.005 1-6 3.500L 9.500L 9.500L	.700 4-6 5 0 2.200 4-6 5 0 3.700 4-6 5 0 5.200 3-6 5 2.400R 6.861 2-6 4 2.333R 9.081	.680 4-6 5 0 1.980 4-6 5 0 3.330 4-6 5 0 4.680 2-6 4 3.200R 6.395 2-6 4 3.200R 8.614	.640 4-6 5 0 1.832 4-6 5 0 3.082 4-6 5 0 4.332 2-6 4 3.791R 6.105 2-6 4 3.791R 8.312	.800 2-3 3 1.000R 2.025 2-3 3 1.000R 3.267 1-3 2.500R 4.704 1-5 3 1.64746 1-6 3 3.292L 8.889	.582 4-6 5 0 1.832 4-6 5 0 3.082 4-6 5 0 4.332 2-6 4 2.887R 7.810	2-3 3 1.000R 1.620 2-3 3 1.000R 2.613 1-3 2 2.000R 4.060 1-4 2 .540L 5.571 1-6 3 2.391L 7.905
Span-Feet	50	B M G N B M G N B M G N B M B M	2-3 3.000R 2.025 2-3 3 1.000R 3.267 2-5 3 2.473L 4.914 1-6 3 2.493L 1-6 3 2.493L	4-6 5 0 1.832 4-6 5 0 3.082 3-6 5 2.315R 4.418 2-6 4 2.136R 6.373 2-6 4 2.136R	.640 2-3 3 1.000R 1.620 2-3 1.000R 2.613 1-3 2 2.000R 4.060 1-6 3 1.592L 6.159 1-6 3 1.592L	.800 2-3 3 1.000R 2.025 2-3 3.000R 3.267 1-3 2.1.572R 4.943 1-6 3.500L 7.005 1-6 3.500L	.700 4-6 5 0 2.200 4-6 5 0 3.700 4-6 5 0 5.200 3-6 5.200 3-6 5.2400R 6.861 2-6 4 2.3333R	.630 4-6 5 0 1.980 4-6 5 0 3.330 4-6 5 0 4.680 2-6 4 3.200R 6.395 2-6 4 3.200R	.640 4-6 5 0 1.832 4-6 5 0 3.082 4-6 5 0 4.332 2-6 4 5.791R 6.105 2-6 4 3.791R	.800 2-3 3 1.000R 2.025 2-3 3.000R 3.267 1-3 2.500R 4.704 1-5 3.647L 6.446 1-6 3 3.292L	.582 4-6 5 0 1.832 4-6 5 0 3.082 4-6 5 0 4.332 2-6 4 2.887R 4 2.887R	2-3 3 1.000R 1.620 2-3 3 1.000R 2.613 1-3 2 2.000R 4.060 1-4 2.540L 5.571 1-6 3 2.391L
Span-Feet	50	B M G N B M G	2-3 3.000R 2.025 2-3 3.1.000R 3.267 2-5 3.2.473L 4.914 1-6 3.2.493L 7.132 1-6 3.2.493L 1-6 3.2.493L	4-6 5 0 1.832 4-6 5 0 3.082 3-6 5 2.315R 4.418 2-6 4 2.136R 6.373 2-6 4 2.136R 8.361 1-6 4 5	.640 2-3 3 1.000R 1.620 2-3 3 1.000R 2-613 1-3 2.000R 4.060 1-6 3 1.592L 6.159 1-6 3 1.592L 8.651 1-6 3 1.592L 3 1.592L	.800 2-3 3 1.000R 2.025 2-3 1.000R 8.267 1-3 2.572R 4.943 1-6 3 .500L 7.005 1-6 3 .500L 9.504 1-6 3 .500L 9.504	.700 4-6 5 0 2.200 4-6 5 0 3.700 4-6 5 0 5.200 3-6 5 2.400R 6.861 2-6 4 2.333R 9.081 1-6 4 4.100R	.630 4-6 5 0 1.980 4-6 5 0 3.330 4-6 5 0 4.680 2-6 4 3.200R 6.395 2-6 4 3.200R 8.614 1-6 4	.640 4-6 5 0 1.832 4-6 5 0 3.082 4-6 5 0 4.332 2-6 4 3.791R 6.105 2-6 4 3.791R 8.312 1-6 4 5.415R	.800 2-3 3 1.000R 2.025 2-3 3 1.000R 3.267 1-3 2.500R 4.704 1-5 3 1.6471L 6.446 1-6 3 3.292L 8.889 1-6 3 3.292L	.582 4-6 5 0 1.832 4-6 5 0 3.082 4-6 5 0 4.332 2-6 4 2.887R 5.832 2-6 4 2.887R 7.810 1-6 4 6.317R	2-3 3 1.000R 1.620 2-3 3 1.000R 2.613 1-3 2 2.000R 4.060 1-4 2 .540L 5.571 1-6 3 2.391L 7.905 1-6 3
Span-Feet	50	G N B M G N B M G N B M B M B M B M B M B M B M B M B M B	2-3 3.000R 2.025 2-3 3.000R 3.267 2-5 3.2.473L 4.914 1-6 3.2.493L 7.132 1-6 3 2.493L 1-6 3 2.493L 1-6 3 2.493L 1-3 1-6 3 2.493L	4-6 5 0 1.832 4-6 5 0 3.082 3-6 5 2.315R 4.418 2-6 4 2.136R 6.373 2-6 4 2.136R 8.361 1-6 4 3.082 3.082 3.082 4.418 3.082 4.418 4	.640 2-3 3 1.000R 1.620 2-3 3 1.000R 2-3 2-3 1.000R 4.060 1-6 3 1.592L 6.159 1-6 3 1.592L 8.6611 1-6 3 1.592L 1.66	.800 2-3 3 1.000R 2.025 2-3 1.000R 3.207 1-3 2 1.572R 4.943 1-6 3 .500L 7.005 1-6 3 .500L 1-6 3 .500L 1-6 3 .500L 1-6 3 .500L 1-6 3 .500L	.700 4-6 5 0 2.200 4-6 5 0 3.700 4-6 5 0 5.200 3-6 5 2.400R 6.861 2-6 4 2.333R 1-6 4 4.100R 13.710	.630 4-6 5 0 1.980 4-6 5 0 3.330 4-6 5 0 4.680 2-6 4 3.200R 6.395 2-6 4 3.200R 4.200R 4.200R 4.800R 1.980R 4.800R 4.880R 1.980R	.640 4-6 5 0 1.832 4-6 5 0 3.082 4-6 5 0 4.332 2-6 4 3.791R 6.105 2-6 4 3.791R 6.105 1-6 4 5.415R 12.960	.800 2-3 3 1.000R 2.025 2-3 3 1.000R 3.267 1-3 2.500R 4.704 1-5 3 1.6471L 6.446 1-6 3 3.292L 1.3.844	.582 4-6 5 0 1.832 4-6 5 0 3.082 4-6 5 0 4.332 2-6 4 2.887R 5.832 2-6 4 2.887R 7.810 1-6 4 1-6 5 0 1.832 1-6 1.832 1-6 1.832 1-6 1.832 1-6 1.832 1-6 1.832	2-3 3 1.000R 1.620 2-3 3 1.000R 2.613 1-3 2 2.000R 4.060 1-4 2 5.540L 5.571 1-6 3 2.391L 7.905 3 2.391L 12.881
Span-Feet	50	B M G N B M G	2-3 3.000R 2.025 2-3 3.1.000R 3.267 2-5 3.2.473L 4.914 1-6 3.2.493L 1-6 3.2.493L 1-6 3.2.493L 1.14.585 1-6 3.2.493L	4-6 5 0 1.832 4-6 5 0 3.082 3-6 5 2.315R 4.418 2-6 4 2.136R 8.361 1-6 4 5.315R 13.047 1-6 4	.640 2-3 3 1.000R 1.620 2-3 3 1.000R 2-613 1-3 2.613 1-3 2.000R 4.060 1-6 3 1.592L 8.651 1-6 3 1.592L 13.640 1-6 3	.800 2-3 3 1.000R 2.025 2-3 3.000R 3.267 1-3 2.572R 4.943 1-6 3.500L 7.005 3.500L 1-6 3.500L 14.503 1-6 3 5.500L 14.503	.700 4-6 5 0 2.200 4-6 5 0 3.700 4-6 5 0 5.200 3-6 5 2.400R 6.861 2-6 4 2.333R 9.081 1-6 4 4.100R 13.710 1-6	.630 4-6 5 0 1.980 4-6 5 0 3.330 4-6 5 0 4.680 2-6 4 3.200R 6.395 2-6 4 3.200R 8.614 1-6 4 4.880R 1-6 1-6 1-6 1-7 1-7 1-7 1-7 1-7 1-7 1-7 1-7	.640 4-6 5 0 1.832 4-6 5 0 3.082 4-6 5 0 4.332 2-6 4 3.791R 6.105 2-6 4 3.791R 8.312 1-6 4 5.415R	.800 2-3 3 1.000R 2.025 2-3 3 1.000R 3.267 1-3 2.500R 4.704 1-5 3 1.647L 6.446 1-6 3 3.292L 8.889 1-6 3 3.292L 13.844 1-6 3	.582 4-6 5 0 1.832 4-6 5 0 3.082 4-6 5 0 4.332 2-6 4 2.887R 7.810 1-6 4 6.317R 12.190 1-6 4	2-3 3 1.000R 1.620 2-3 3 1.000R 2.613 1-3 2 2.000R 4.060 1-4 2 .540L 5.571 1-6 3 2.391L 12.881 1-6 3
Span-Feet	50 60 80	B M G N B M G N B M G N B M G N B M B M G N B M B M G N B M B M G N B M B M B M B M B M B M B M B M B M B	2-3 1.000R 2.025 2-3 3 1.000R 3.267 2-5 3 2.473L 4.914 1-6 3 2.493L 9.611 1-6 3 2.493L 9.111 1-6 3 2.493L 9.114,585	4-6 5 0 1.832 4-6 5 0 3.082 3-6 5 2.315R 4.418 2-6 4 2.136R 8.361 1-6 4 5.315R 1-6 4 5.315R	.640 2-3 3 1.000R 1.620 2-3 1.000R 2-3 1.000R 2.613 1-3 2.000R 4.060 1-6 3 1.592L 8.651 1-6 3 1.592L 8.651 1-6 3 1.592L 8.651 1-6 3 1.592L 3 1.592L 3 1.592L 3 1.592L 3 1.592L 3 1.592L 3 1.592L 3 1.592L 3 1.592L 3 1.592L	.800 2-3 3 1.000R 2.025 2-3 1.000R 3.2 1.572R 4.943 1-6 3.500L 7.005 1-6 3.500L 1-6 3.500L 1-6 3.500L 1-6 3.500L 1-6 3.500L 1-6 3.500L 1-6 3.500L 1-6 3.500L	.700 4-6 5 0 2.200 4-6 5 0 3.700 4-6 5 0 5.200 3-6 5 2.400R 6.861 2-6 4 2.3333R 9.081 1-6 4 4.100R 1-6 4 4.100R	.630 4-6 5 0 1.980 4-6 5 0 3.330 4-6 5 0 4.680 2-6 4 3.200R 6.395 2-6 4 3.200R 8.614 1-6 4 4.880R 13.258 1-6 4 4.880R	.640 4-6 5 0 1.832 4-6 5 0 3.082 4-6 5 0 4.332 2-6 4 3.791R 6.105 2-6 4 3.791R 8.312 1-6 4 5.415R 12.960 1-6 4 5.415R	.800 2-3 3 1.000R 2.025 2-3 3 1.000R 3.267 1-3 2.500R 4.704 1-5 3 1.647L 6.446 1-6 3 3.292L 13.844 1-6 3 3.292L 3 3.292L	.582 4-6 5 0 1.832 4-6 5 0 3.082 4-6 5 0 4.332 2-6 4 2.887R 7.810 1-6 4 1.190 1-6 3.17R 1.190 1-6 3.17R	2-3 1.000R 1.620 2-3 3 1.000R 2.613 1-3 2 2.000R 4.060 1-4 2.540L 5.571 1-6 3 2.391L 7.905 1-3 2.391L 12.881 1-6 3 2.391L
Span-Feet	50 60 80	G N B M G N B	2-3 3.000R 2.025 2-3 3.1.000R 3.267 2-5 3.2.473L 4.914 1-6 3.2.493L 1-6 3.2.493L 1-6 3.2.493L 1.14.585 1-6 3.2.493L	4-6 5 0 1.832 4-6 5 0 3.082 3-6 5 2.315R 4.418 2-6 4 2.136R 8.361 1-6 4 5.315R 13.047 1-6 4	.640 2-3 3 1.000R 1.620 2-3 3 1.000R 2-613 1-3 2.613 1-3 2.000R 4.060 1-6 3 1.592L 8.651 1-6 3 1.592L 13.640 1-6 3	.800 2-3 3 1.000R 2.025 2-3 3.000R 3.267 1-3 2.572R 4.943 1-6 3.500L 7.005 3.500L 1-6 3.500L 14.503 1-6 3 5.500L 14.503	.700 4-6 5 0 2.200 4-6 5 0 3.700 4-6 5 0 5.200 3-6 5 2.400R 6.861 2-6 4 2.333R 9.081 1-6 4 4.100R 13.710 1-6	.630 4-6 5 0 1.980 4-6 5 0 3.330 4-6 5 0 4.680 2-6 4 3.200R 6.395 2-6 4 3.200R 8.614 1-6 4 4.880R 1-6 1-6 1-6 1-7 1-7 1-7 1-7 1-7 1-7 1-7 1-7	.640 4-6 5 0 1.832 4-6 5 0 3.082 4-6 5 0 4.332 2-6 4 3.791R 6.105 2-6 4 3.791R 8.312 1-6 4 5.415R 12.960 1-6 4	.800 2-3 3 1.000R 2.025 2-3 3 1.000R 3.267 1-3 2.500R 4.704 1-5 3 1.647L 6.446 1-6 3 3.292L 8.889 1-6 3 3.292L 13.844 1-6 3	.582 4-6 5 0 1.832 4-6 5 0 3.082 4-6 5 0 4.332 2-6 4 2.887R 7.810 1-6 4 6.317R 12.190 1-6 4	2-3 3 1.000R 1.620 2-3 3 1.000R 2.613 1-3 2 2.000R 4.060 1-4 2 .540L 5.571 1-6 3 2.391L 12.881 1-6 3

METHOD FOR RATING HEAVY VEHICLE LOADS

Table 7.8 (Continued) 99 100 Truck No. 91 92 93 94 95 96 97 98 Wh. Base L 48 52 52 52 52 52 52 52 56 56 16 16 16 16 16 Axle 16 16 16 16 16 Spacing \mathbf{X} 20 24 24 24 24 24 24 24 28 28 Load .20 .10 .10 .10 .20.20 .20 .10 .10 aı On a .50 .30 .36 .40 .50 .30 .40 .50 .30 .36 Axles .30 .60 .54 .50 .40 .50 .40 .30 .60 .54 2-3 $^{2-3}$ 4-6 4-6 G 4-6 4.6 2 - 32 3 4-6 2-3 N 10 3 5 5 3 3 5 3 3 5 0 5 9 $\hat{\mathbf{B}}$ 0 1.000R ő 1.000R 1.000R 1.000R 1.000R 0 .800 .630 .800 .700 .630 M .700.640 .582.640 .800G 2-3 4-6 4 6 4-62-3 4--6 2--3 2-3 4-6 4-620 N 3 5 5 5 3 5 3 3 5 В 1.000R 0 n 1.000R 0 1.000R1.000R ō ō M 2.025 2.260 1.980 1.832 2.025 1.832 1.620 2.025 2.200 1.980 $^{2-3}$ G 2 - 34 -6 4 6 4-62-3 4--6 2-3 4-6 1-6 30 NB 5 3 3 5 5 5 3 3 ă 5 1.000R 0 0 0 1.000R 0 1.000R 1.000R 0 0 M 3.267 3.700 3.330 3.082 3.2673.082 2.613 3.267 3.700 3.330 G 1-3 4--6 4-64-6 1-3 4-6 1-3 1-3 4-6 4-6 40 N 2 5 5 5 2 5 9 2 5 5 $1.5\overline{7}2R$ В .500R Span-Feet 0 0 0 0 2.000R1.572R0 0 M 4.943 5.2004.680 4.332 4.704 4.332 4.0604.943 5.200 4.680 G 1-4 4--6 4-6 4-6 1-3 4-6 1--3 1-3 4-6 4-6 50 N B 2 5 5 2 2 2 5 5 5 5 .500R .125L 0 Ω 0 0 2.000R1.572R0 0 6.700 6.700 6.030 5.582 6.2035.582 5.548 6.700 6.030 M 6.685 G 1-6 2-6 2-6 2-6 1-6 2-61-6 1--4 4-6 3-6 N 3 4 4 4 3 2 5 5 60 \mathbf{B} 1.100L3.000R4.000R4.682R4.090L 3.639R 3.189L375L 4.000R M 8.920 8,535 7.980 7.6248.189 7.2747.1818.5028.200 7.392G 2-61-6 1-61-6 1 - 61-6 1-6 1-6 $^{2-6}$ 2-63 3 3 4 3 80 4 4 4 4 4 B 3.000R 6.417R 4.090L 7.319R1.100L5.800R3.189L 1.700L 3.667R4 800R M 13.915 13.002 12.461 12.106 13.119 11.359 12.138 13.336 12.452 11.779 1-6 G 1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6 100 N 3 3 3 6.417R R 1.100L 4.900R 5.800R4.090L7.319R3.189L 1.700L 5.700R 6.720R M 18.912 17.940 17.376 17.003 18.077 16.225 17.113 18.329 Truck No. 101 102 103 104 105 Wh. Base L 56 56 56 56 56 16 16 Axle 16 \mathbf{X} 28 28 28 28 28 Spacing .10 .20 .20 .20 Load a 1 .10 .30 .50 On a .40 .50 .40 .50 Axles **a**.3 .40 .50 .40 .30 2-32-3 4-62-3 2-3 10 N 3 3 5 3 3 В 1.000R 1.000R0 1.000R 1,000R M .640 .800 .582 .640 .800 G $^{-2}$ 4~6 2-3 2-3 4 - 65 3 5 3 3 20 N В 1.000R 1.000R 1.000R M 1.832 2.0251.832 1.620 2.0252--3 G 4-6 $^{2-3}$ 4 - 62-330 N B 5 3 5 3 3 1.000R 1.000R 1.000R 0 M 3.082 3.267 3.082 2.613 3.267 G 4-6 1 - 34-61-3 1--3 N 5 2 5 2 2 Span-Feet В 0 .500R 0 2.000R 1.572RM 4.332 4.7044.332 4.060 4.943G N B 4-6 $\frac{1-3}{2}$ 4-6 1-3 1-3 2 2 50 5 5 ő 0 .500R 2.000R 1.572R M 5.582 6.203 5.5825.548 6.685 G 2-6 1 - 34-6 1-3 1-3 60 Ñ 4 2 5 2 2 В 5.573R .500R2.000R 1.572R M 6.959 7.7026.8327.040 8.429 2-6 2-6 1--6 G 1-6 1-64 80 4 5.573R 3 3 N 3 4.391R 4.889L 3.988L 2.300L R 10.688 M 11.342 12,410 11.411 12.766G 1-6 1-6 1-6 1-6 1--6 100 3 4 3 3 В 7.419R 4.889L 8.221R3.988L 2.300L 17.350 15.380 16.371 17.753

CONTROLLING CONDITIONS AND MAXIMUM MOMENTS IN SIMPLE SPANS
PRODUCED BY THE TYPE 2-2 TRUCKS WEIGHING ONE KIP EACH

Table 7.9



One hundred forty-four variations in the Type 2-2 truck are given in this Table. Each truck number, from 1 to 144_{\odot} represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

Wh. Base L 28 28 28 28 28 28 32 32 32 Axle X 12
Spacing X'
Hitch C 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
Load
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$
Axles
G 4 4 2 2 4 2 2 2 4 4 2 2 2 4 4 2 2 2 4 4 4 2 2 4 4 2 2 2 4 4 4 2 2 4 4 2 2 2 4 4 4 2 2 4 4 2 2 2 4 4 4 2 2 4 4 2 2 2 4 4 4 4 2 2 4 4 2 3 2 4 4 2 2 2 4 4 4 4
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$
B 0 0 0 0 0 0 0 0 0
M
G 2-4 2-4 2 3 2-4 2-3 2-3 2-3 2-3 2-3 2-3 2-3 2-3 2-3 2-3
20 N 3 3 2 2 3 2 2 2 3 2 2
B
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$
$ \begin{bmatrix} G & 2-4 & 1-4 & 1-4 & 1-4 & 1-4 & 1-4 & 2-4 & 2-4 & 2-4 & 1-4 & 2\\ 40 & N & 3 & 3 & 2 & 3 & 3 & 3 & 2\\ B & .667L & 1.000R & 2.400L & 1.600R & 2.200R & 1.200L & 1.445L & .667L & 2.900L & 1.2\\ M & 6.811 & 6.625 & 6.544 & 6.064 & 5.921 & 6.436 & 6.147 & 6.011 & 6.110 & 5\\ G & 1-4 & 1-4 & 1-4 & 1-4 & 1-4 & 1-4 & 1-4 & 1-4 & 1-4\\ 50 & N & 3 & 3 & 2 & 3 & 3 & 2 & 3\\ B & .400R & 1.000R & 2.400L & 1.600R & 2.200R & 1.200L & .300L & .400R & 2.900L & 1.6\\ M & 9.303 & 9.120 & 9.015 & 8.551 & 8.397 & 8.929 & 8.602 & 8.503 & 8.568 & 7\\ G & 1-4 & 1-4 & 1-4 & 1-4 & 1-4 & 1-4 & 1-4 & 1-4\\ G & N & 3 & 3 & 2 & 3 & 3 & 2 & 3\\ \end{bmatrix} $
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$
B 6.67L 1.000R 2.400L 1.600R 2.200R 1.200L 1.445L 6.67L 2.900L 1.200L 1.200L 1.445L 6.67L 2.900L 1.200L
M 6.811 6.625 6.544 6.064 5.921 6.436 6.147 6.011 6.110 5
M 9.303 9.120 9.015 8.551 8.397 8.929 8.602 8.503 8.568 7 G 1-4 1-4 1-4 1-4 1-4 1-4 1-4 1-4 1-4 1-4
M 9.303 9.120 9.015 8.551 8.397 8.929 8.602 8.503 8.568 7 G 1-4 1-4 1-4 1-4 1-4 1-4 1-4 1-4 1-4 1-4
M 9.303 9.120 9.015 8.551 8.397 8.929 8.602 8.503 8.568 7 G 1-4 1-4 1-4 1-4 1-4 1-4 1-4 1-4 1-4 1-4
M 9.303 9.120 9.015 8.551 8.397 8.929 8.602 8.503 8.568 7 G 1-4 1-4 1-4 1-4 1-4 1-4 1-4 1-4 1-4 1-4
G 1-4 1-4 1-4 1-4 1-4 1-4 1-4 1-4 1-4 1-4
60 N 3 3 2 3 3 2 3 3 2
M 11.803 11.617 11.496 11.043 10.881 11.424 11.102 11.003 11.040 10
G 1-4 1-4 1-4 1-4 1-4 1-4 1-4 1-4 1-4 1-4
80 N 3 3 2 3 3 2 3 3 2
B .400R 1.000R 2.400L 1.600R 2.200R 1.200L .300L .400R 2.900L 1.0
M 16.802 16.613 16.472 16.032 15.861 16.418 16.101 16.002 16.005 15
G 1-4 1-4 1-4 1-4 1-4 1-4 1-4 1-4 1-4 1-4
100 N 3 3 2 3 3 2 3 3 2
B .400R 1.000R 2.400L 1.600R 2.200R 1.200L .300L .400R 2.900L 1.0
M 21.802 21.610 21.458 21.026 20.848 21.414 21.101 21.002 20.984 20

a1, a2, and a3-Represent the ratio of gross vehicle weight on axles.

G-Axle group causing maximum moment, thus, 1-3 means axles 1, 2, and 3.

N-Number of critical axle under which maximum moment occurs.

B-Distance to right or left of mid-span to point of maximum moment.

M-Maximum moment.

Fruck N Wh. Bas		11 32	$-\frac{12}{32}$	$\frac{13}{36}$	36	15 36	16 36	36	18 36	$-\frac{19}{40}$	20 40
Axle	X	12	12	12	12	12	12	12	12	12	12
Spacing	X'	12	12	16	16	16	16	16	16	20	20
Iitch	_ C	8	8	8	- 8	8	8	8	8	- 8	8
Load On	\mathbf{a}_1 \mathbf{a}_2	.20 .30	.20 $.40$.10 .20	.10	.10 .40	.20	.20	.20	.10	.10
Axles	83	.50	.40	.70	.30 .60	.50	.20 .60	.30 $.50$	$.40 \\ .40$.20 .70	.30 .60
	G	2	2	4	4	2	4	2	2	4	4
10	N B	2	2	$\frac{4}{0}$	4	2	4	2	2	4	4
i	M	.750	$0 \\ 1.000$.875	$0 \\ .750$	0 1.000	$^{0}_{.750}$	$^{0}_{.750}$	$\substack{0\\1.000}$	$^{0}_{.875}$	$0 \\ .75$
	G	2-3	23	2-3	23	2-3	23	2-3	2-3	2-3	2-3
20	N	2	2	3	3	2	3	2	2	3	3
1	B M	1.818L 1.841	$1.334L \\ 2.253$	1.455R 2.008	$\frac{2.000 \mathrm{R}}{1.920}$	1.539L 2.327	1.600R 1.764	1.818L 1.841	$^{1.334 m L}_{2.253}$	$1.455\mathbf{R} \ 2.008$	2.0001 1.92
	- G -	1-3	1–3	2-3	1-3	1-3	2-3	1-3	1-3	2-3	1-3
30	N	2	2	3	2	2	3	2	2	3	2
	B M	3.427	$0.500\mathrm{R}$ $0.500\mathrm{R}$	$1.455\mathbf{R} \\ 3.364$	3.467	$_{4.032}^{.534 m L}$	$1.600\mathrm{R} \\ 2.993$	$\begin{array}{c} .267\mathrm{R} \\ 3.427 \end{array}$	$_{4.006}^{500\mathrm{R}}$	1.455R 3.364	$\frac{.8571}{3.46}$
	G	1-4	1-4	2-4	2-4	1-3	2-4	1-3	1-3	2 4	13
40	N	2	2	3	3	2	3	2	2	3	2
Span-Feet	B M	$2.300L \\ 5.432$	6.064	2.222I. 5.511	$1.334L \\ 5.440$	5.94L 5.906	2.000L 4.880	0.267R 0.301	6.00R	$3.000 L \\ 4.903$	$0.8571 \\ 5.21$
김	-G	1-4	1-4	1-4	1.4	1-4	1-4	1-4	1-4	1-4	1-4
g 50	N	2	2	3	3	2	3	2	2	3	3
20	B M	$\frac{2.300 L}{7.906}$	$\frac{1.600 L}{8.551}$	$rac{1.000 extbf{L}}{7.920}$	$\frac{.200 \mathrm{L}}{7.901}$	8.131	7.303	$2.800L \\ 7.457$	$\frac{2.000 L}{8.180}$	$1.700L \\ 7.258$.8001 7.31
	G	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4
60	N	2	2	3	3	2	3	2	2	3	3
Ì	B M	2,300L 10.388	1.600L 11.043	1.000L 10.417	.200L 10.401	3.400L 10.593	0.400 R 0.803	2.800L	2.000L	1.700L	.800
	_ <u>~</u> _	1-4	1-4	1-4	1-4	1-4	1-4	$\frac{9.931}{1-4}$	10.667	$\frac{9.748}{1-4}$	$\frac{9.81}{1-4}$
80	N	2	2	3	3	2	3	2	2	3	3
1	\mathbf{B}	2.300L	1.600L 16.032	1.000L 15.413	.200L	3.400L 15.545	.400R	2.800L	2.000L	1.700L 14.736	.800
j					15.401	10.040	14.802	14.898	15.650		14.80
	M	15.366		14	1_4	1-4	1_1	1_4	1_1	14	1_4
100	G N	1-4 2	1-4 2	1-4 3	1–4 3	1-4 2	$^{1-4}_3$	$\frac{1-4}{2}$	$_{2}^{1-4}$	$\frac{1-4}{3}$	$^{1-4}_{3}$
100	G N B	1-4 2 2.300L	1-4 2 1.600L	$^{3}_{1.000}$ L	$^{3}_{.200L}$	$\frac{2}{3.400}$ L	$^{3}_{.400\mathrm{R}}$	$\frac{2}{2.800}$ L	$\overset{2}{2.000}$ L	$^3_{1.700}$ L	$\frac{3}{.800}$
	G N B	1-4 2 2.300L 20.353	1-4 2 $1.600L$ 21.026	3 1.000L 20.410	3 .200L 20.400	2 3.400L 20.516	3 .400R 19.802	2 2.800L 19.878	2 2.000L 20.640	$^{3}_{1.700L}_{19.729}$	$\begin{array}{c} 3 \\ .800 \\ 19.80 \end{array}$
Truck N	M G N B M	1-4 2 2.300L 20.353	1-4 2 1.600L 21.026	3 1.000L 20.410 23	3 .200L 20.400 24	2 3.400L 20.516	3 .400R 19.802	2 2.800L 19.878	2 2,000L 20.640	3 1.700 L 19.729	$\begin{array}{c} 3 \\ .800 \\ 19.80 \\ 30 \end{array}$
Truck N Wh. Bas	G N B M	$ \begin{array}{r} 1-4 \\ 2 \\ 2.300L \\ 20.353 \end{array} $	1-4 2 1.600L 21.026	3 1.000L 20.410 23 40	3 .200L 20.400 24 40	2 3.400L 20.516 25 32	3 .400R 19.802 26 32	2 2.800L 19.878 27 32	2 2,000L 20.640 28 32	3 1.700 L 19.729 29 32	$ \begin{array}{r} 3 \\ .800 \\ 19.80 \\ $
Truck N Wh. Bas Axle Spacing	M G N B M	1-4 2 2.300L 20.353	1-4 2 1.600L 21.026	3 1.000L 20.410 23	3 .200L 20.400 24	2 3.400L 20.516	3 .400R 19.802	2 2.800L 19.878	2 2,000L 20.640	3 1.700 L 19.729	$\begin{array}{c} 3 \\ .800 \\ 19.80 \\ 30 \end{array}$
Truck N Wh, Bas Axle Spacing Hitch	M G N B M	1-4 2 2,300L 20,353 21 40 12 20 8	1-4 2 1.600L 21.026 22 40 12 20	3 1.000L 20.410 23 40 12 20 8	3 .2001, 20.400 24 40 12 20 8	2 3.400L 20.516 25 32 12 8 12	3 .400R 19.802 26 32 12	2.800 L 19.878 27 32 12	22.000 L 20.640 28 32 12 8 12	3 1.700L 19.729 29 32 12 8 12	3 .800 19.80 30 32 12 8
Truck N Wh. Bas Axle Spacing Hitch Load	M G N B M To. se L X X C a ₁	1-4 2 2,300L 20,353 21 40 12 20 8	1-4 2 1.600L 21.026 22 40 12 20 8	3 1.000 L 20.410 23 40 12 20 8 .20	3 .200L 20.400 24 40 12 20 8 .20	3.400L 20.516 25 32 12 8 12 .10	3 .400R 19.802 26 32 12 8 12 .10	2 2.800L 19.878 27 32 12 8 12 .10	2 2,000 L 20.640 28 32 12 8 12 ,20	3 1.700L 19.729 29 32 12 8 12 .20	$ \begin{array}{r} 3\\.800\\19.80\\ 19.80\\ 30\\ 32\\ 12\\ 8\\ 12\\ .20 \end{array} $
Truck N Wh, Bas Axle Spacing Hitch	M G N B M To, se L X X X' C	1-4 2 2,300L 20,353 21 40 12 20 8	1-4 2 1.600L 21.026 22 40 12 20	3 1.000L 20.410 23 40 12 20 8	3 .200L 20.400 24 40 12 20 8 .20 .40	3.400 L 20.516 25 32 12 8 12 .10 .20	3 .400R 19.802 26 32 12 8 12	2 2.800 L 19.878 27 32 12 8 12 .10 .40	2 2,000 L 20.640 28 32 12 8 12 .20 .20	3 1.700L 19.729 29 32 12 8 12	$ \begin{array}{r} 3 \\ .800 \\ 19.80 \\ 30 \\ 32 \\ 12 \\ 8 \\ 12 \\ .20 \\ .40 \end{array} $
Truck N Wh, Bas Axle Spacing Hitch Load On Axles	M G N B M Jo. se L X X C a ₁ a ₂ a ₃ G	1-4 2 2.300L 20.353 21 40 12 20 8 .10 .40 .50	1-4 2 1.600L 21.026 22 40 12 20 8 .20 .20 .60	3 1.000 L 20.410 23 40 12 20 8 .20 .30 .50	3 .2001, 20.400 24 40 12 20 8 .20 .40 .40	2 3.400L 20.516 25 32 12 8 12 .10 .20 .70	3 .400R 19.802 26 32 12 8 12 .10 .30 .60	2 2.800L 19.878 27 32 12 8 12 .10 .40 .50	2 2,000 L 20.640 28 32 12 8 12 ,20	3 1.700L 19.729 29 32 12 8 12 .20 .30 .50	$ \begin{array}{r} 3 \\ .800 \\ 19.80 \\ 30 \\ 32 \\ 12 \\ .8 \\ 12 \\ .40 \\ .40 \\ 2 \end{array} $
Truck N Wh. Bas Axle Spacing Hitch Load On	M G N B M No. se L X X C a ₁ a ₂ a ₃ G N	1-4 2 2.300L 20.353 21 40 12 20 8 .10 .40 .50	1-4 2 1.600L 21.026 22 40 12 20 8 .20 .20 .60	3 1.000L 20.410 23 40 12 20 8 .20 .30 .50	3 .2001, 20.400 24 40 12 20 8 .20 .40 .40	2 3.400L 20.516 25 32 12 8 12 .10 .20 .70 4	3 400R 19.802 26 32 12 8 12 .10 .30 .60 4	2 2.8001L 19.878 27 32 12 8 12 .10 .40 .50	2 2.000 L 20.640 28 32 12 8 12 .20 .60 4 4	3 1.700L 19.729 29 32 12 8 12 .20 .30 .50	3 .800 19.80 30 32 12 8 12 .20 .40 .40
Truck N Wh, Bas Axle Spacing Hitch Load On Axles	M G N B M Jo. se L X X C a ₁ a ₂ a ₃ G	1-4 2 2.300L 20.353 21 40 12 20 8 .10 .40 .50	1-4 2 1.600L 21.026 22 40 12 20 8 .20 .20 .60	3 1.000L 20.410 23 40 12 20 8 .20 .30 .50 2	3 .2001, 20.400 24 40 12 20 8 .20 .40 .40	2 3.400L 20.516 25 32 12 8 12 .10 .20 .70	3 .400R 19.802 26 32 12 8 12 .10 .30 .60 4 4	2 2.800L 19.878 27 32 12 8 12 .10 .40 .50	2 2,000 L 20,640 28 32 12 8 12 .20 .60 4 4 0	3 1.700L 19.729 29 32 12 8 12 .20 .30 .50	3 .800 19.80 30 32 12 8 12 .20 .40 .40 2 0
Truck N Wh. Bas Axle Spacing Hitch Load On Axles	M G N B M M Jo. se L X C a ₁ a ₂ a ₃ G N B M G	1-4 2.300 L 20.353 21 40 12 20 8 .10 .50 2 2 0 1.000 2-3	1-4 21.600L 21.026 22 40 12 20 8 .20 .20 .60 4 4 0 750 2-3	3 1.000L 20.410 23 40 12 20 8 .20 .30 .50 2 2 0 .750 2 3	3.2001, 20.400 24 40 12 20 8 .20 .40 .40 .2 2 0 1.000 2–3	2 3.400L 20.516 25 32 12 8 12 .10 .20 .70 4 4 0	3 400R 19.802 26 32 12 8 12 .10 .30 .60 4	2 2.800L 19.878 27 32 12 8 12 .10 .40 .50 2 2 0 1.000 2	2 2.000 L 20.640 28 32 12 8 12 .20 .60 4 4	3 1.700L 19.729 29 32 12 8 12 .20 .30 .50	3 800 19.80 30 32 12 8 12 .20 .40 .40 2 2 0 1.00
Truck N Wh, Bas Axle Spacing Hitch Load On Axles	M G N B M M Io. se L X C a ₁ a ₂ a ₃ G N B M G N	1-4 2.300 L 20.353 21 40 12 20 8 1.10 .50 2 2 0 1.000 2-3 2	1-4 21.600L 21.026 22 40 12 20 8 .20 .20 .60 4 4 0 .750 2-3 3	3 1.000L 20.410 23 40 12 20 8 .20 .30 .50 2 2 0 .750 2 3	$\begin{matrix} 3\\ 2001\\ 20.400 \end{matrix}$ $\begin{matrix} 24\\ 40\\ 12\\ 20\\ 8\\ .20\\ .40\\ .40\\ .40\\ 2\\ 0\\ 1.000\\ 2-3\\ 2\end{matrix}$	$\begin{array}{c} 2\\ 3.4001L\\ 20.516\\ \hline \\ 25\\ 32\\ 12\\ 8\\ 12\\ .10\\ .20\\ .70\\ 4\\ 4\\ 0\\ .875\\ \hline \\ 3-4\\ 4\\ \end{array}$	3 4400R 19.802 26 32 12 8 12 .10 .30 .60 4 4 0 .750	2 2.800L 19.878 27 32 12 8 12 .10 .40 .50 2 2 0 1.000	2 2.0001L 20.640 28 32 12 8 12 .20 .60 4 4 4 0 .750	3 1.700L 19.729 29 32 12 8 12 .20 .30 .50 2 2 2 0 .750	3 800 19.80 30 32 12 8 12 .40 .40 2 2 0 1.00 2
Truck N Wh. Bas Axle Spacing Hitch Load On Axles	M G N B M M Jo. se L X C a ₁ a ₂ a ₃ G N B M G	1-4 2.300 L 20.353 21 40 12 20 8 .10 .50 2 2 0 1.000 2-3	1-4 21.600L 21.026 22 40 12 20 8 .20 .20 .60 4 4 0 750 2-3	3 1.000L 20.410 23 40 12 20 8 .20 .30 .50 2 2 0 .750 2 3	3 .2001L 20.400 24 40 12 20 .8 .20 .40 .40 .2 2 0 1.000 2–3 2 1.3344L	2 3.400L 20.516 25 32 12 8 12 .10 .20 .70 4 4 0 .875 3–4 4 2.000R	3.400R 19.802 26 32 12 8 12 .10 .30 .60 4 4 0 .750	2 2.800L 19.878 27 32 12 8 12 .10 .40 .50 2 2 0 1.000 2	2 2.000 L 20.640 28 32 12 8 12 .20 .60 4 4 0 .750 3 -4 4 .000 R	3 1.700L 19.729 29 32 12 8 12 .20 .30 .50 2 2 0 .750 8-4 4 2.000R	3 800 19.80 30 32 12 8 12 .20 .40 .40 2 2 0 1.00 2 2
Truck N Wh. Bas Axle Spacing Hitch Load On Axles	M G N B M G G N B M G G	1-4 2.300 L 20.353 21 40 12 20 8 1.10 .50 2 2 0 1.000 2-3 2 1.539 L 2.339 L 2.339 L	1-4 21.600L 21.026 22 40 12 20 8 .20 .60 4 4 0 .750 2-3 3 1.600R 1.764 2-3	3 1.000L 20.410 23 40 12 20 8 .20 .30 .50 2 2 0 .750 2 1.818L 1.841 1-3	3 .2001L 20.400 24 40 12 20 8 .20 .40 .40 .2 2 2 0 1.000 2-3 2 1.334L 2.2.53 1-3	2 3.400L 20.516 25 32 12 8 12 .10 .20 .70 4 4 0 .875 3–4 2.000R 2.240	3 .400R 19.802 26 32 12 8 12 .10 .30 .60 4 4 0 .750 3-4 4 2.000R 1.920	2 2.800L 19.878 27 32 12 8 12 .10 .40 .50 2 2 0 1.000 2 2 0 0 1.3000 1-3	2 2.0001L 20.640 28 32 12 8 12 .20 .60 4 4 4 0 .750	3 1.700L 19.729 29 32 12 8 12 .20 .50 2 2 0 .750 2 2 2 0 2.000R 1.600 2-4	3 .800. 19.80 30 32 12 .8 8 12 .20 .40 .40 2 2 0 1.00 2 2 0 2.00 1-3
Truck N Wh. Bas Axle Spacing Hitch Load On Axles	M G N B M M Jo. se L X C a ₁ a ₂ a ₃ G N B M G N B M	1-4 2.300L 20.353 21 40 12 20 8 .10 .40 .50 2 2 0 1.000 2-3 2.1.539L 2.327	1-4 21.600L 21.026 22 40 12 20 8 .20 .20 .60 4 4 0 .750 2-3 3 1.600R 1.764 2-3	3 1.000L 20.410 23 40 12 20 .30 .50 .50 .2 2 0 .750 2 3 2 1.818L 1.841 1-3 2	3 .2001L 20.400 24 40 12 20 8 .20 .40 .40 .2 2 2 0 1.000 2-3 2.253 1-3 2	2 3.400L 20.516 25 32 12 8 12 .10 .20 .70 4 4 0 .875 3–4 2.2000R 2.240 2–4 3	3 .400R 19.802 26 32 12 8 12 .10 .30 .60 4 4 0 .750 3-4 4 2.000R 1.920 2-4 3	2 2.800L 19.878 27 32 12 8 12 .10 .40 .50 2 2 2 0 1.000 2 2.000 1-3	2 2.0001L 20.640 28 32 12 8 12 .20 .20 .60 4 4 0 .750 3 · 4 2.000R 1.920 2 · 4	3 1,700L 19,729 29 32 12 8 12 .20 .30 .50 2 2 2 0 .750 8-4 4 2.000R 1,600	3 .800. 19.80 32 12 .20 .40 .40 .2 2 0 1.00 2 2 0 2.00 1.30 3.2 1.2 0 1.2 0 1.0 1.
Truck N Wh. Bas Axle Spacing Hitch Load On Axles	M G N B M M Joo. see L X Y C a ₁ a ₂ a ₃ G N B M G N B M G N B M G N B M G N B M B	1-4 2.300 L 20.353 21 40 12 20 8 1.00 50 2 2 0 1.000 2-3 2.1.539 L 2.327 1-3 2.534 L	1-4 2 1.600 L 21.026 22 40 12 20 8 .20 .60 4 4 0 .750 2-3 3 1.600 R	3 1.000L 20.410 23 40 12 20 8 20 .30 .50 2 2 0 .750 2 3 1.841 1-3 2 2.67R	3 .2001L 20.400 24 40 12 20 8 .20 .40 .40 2 2 0 1.000 2-3 2 1.3341L 2.253 1-3 2.500R	2 3.400L 20.516 25 32 12 8 12 .70 .4 4 0 .875 3-4 4 2.000R 2.240 2-4 3	3 .400R 19.802 26 32 12 8 12 .10 .30 .60 4 4 2.000R 1.920 2-4 3 .667R	2 2.800L 19.878 27 32 12 8 12 .50 2 2 0 1.000 2 2 0 2.000 1-3 1.200L	2 2,0001L 20,640 28 32 12 8 12 .20 .20 .60 4 4 0 .7550 3 -4 2.000R 1,920 2 -4 3 0	3 1.700L 19.729 29 32 12 8 12 .20 .50 2 2 0 .750 2 2 0 .750 3-4 4 2.0000R 1.6000R	3 .8000 19.86 30 32 12 8 12 .20 .40 .40 2 2 0 1.00 2.00 1-3 2 0
Truck N Wh. Bas Axle Spacing Hitch Load On Axles	M G N B M M Jo. se L X C a ₁ a ₂ a ₃ G N B M G N B M	1-4 2.300L 20.353 21 40 12 20 8 .10 .40 .50 2 2 0 1.000 2-3 2.1.539L 2.327	1-4 21.600L 21.026 22 40 12 20 8 .20 .20 .60 4 4 0 .750 2-3 3 1.600R 1.764 2-3	3 1.000L 20.410 23 40 12 20 .30 .50 .50 .2 2 0 .750 2 3 2 1.818L 1.841 1-3 2	3 .2001L 20.400 24 40 12 20 8 .20 .40 .40 .2 2 2 0 1.000 2-3 2.253 1-3 2	2 3.400L 20.516 25 32 12 8 12 .10 .20 .70 4 4 0 .875 3–4 2.2000R 2.240 2–4 3	3 .400R 19.802 26 32 12 8 12 .10 .30 .60 4 4 0 .750 3-4 4 2.000R 1.920 2-4 3	2 2.800L 19.878 27 32 12 8 12 .10 .40 .50 2 2 2 0 1.000 2 2.000 1-3	2 2.0001L 20.640 28 32 12 8 12 .20 .20 .60 4 4 0 .750 3 · 4 2.000R 1.920 2 · 4	3 1,700L 19,729 29 32 12 8 12 .20 .30 .50 2 2 2 0 .750 8-4 4 2.000R 1,600	30 19.80 32 12 8 12 .20 .40 2 2 0 1.00 2 2 0 2.00 1-3 2 0
Truck N Wh. Bas Axle Spacing Hitch Load On Axles 10 30	M G N B M M To. see L X X C a1 a2 a3 G N B M G G N B M G N B M G N B N B N B N B N B N B N B N B N B N	1-4 2.300 L 20.353 21 40 12 20 8 1.00 50 2 2 0 1.000 2-3 2.1.539 L 2.327 1-3 2.534 L 4.032 1-3 2	1-4 21.600L 21.026 22 40 12 20 8 .20 .60 4 4 0 .750 2-8 3 1.600R 2.993 13 2	3 1.000L 20.410 23 40 12 20 8 20 .30 .50 2 2 0 .750 2 3 2 1.818L 1-3 2.267R 3.427 1-3 2	3 .2001L 20.400 24 40 12 20 8 .20 .40 .40 2 2 0 1.000 2-3 2.253 1-3 2.500R 4.006 1-3 2	$\begin{array}{c} 2\\ 3.400 L\\ 20.516 \\ \hline \\ 25\\ 32\\ 12\\ 8\\ 12\\ .70\\ .70\\ 4\\ 4\\ 0\\ .875\\ 3-4\\ 4\\ 2.000 R\\ 2.22 L\\ 4.152\\ 2-4\\ 3\\ .222 L\\ 4.152\\ 2-4\\ 3\\ \end{array}$	3 .400R 19.802 26 32 12 8 12 .10 .30 .60 4 4 2.000R 1.920 2-4 3.763 2-4 3.763	2 2.800L 19.878 27 32 12 8 12 .50 2 2 0 1.000 2 2 0 2.000 1-3 2 1.200L 3.561 1-4 2	2 2,0001L 20,640 28 32 12 8 12 2,20 2,0 60 4 4 0 .750 3 4 4 2,0004 1,920 2-4 3 0 3,600	3 1.700L 19.729 29 32 12 8 12 .20 .30 .50 2 2 0 .750 2 2 0 .750 3–4 4 2.0000 1.000R 3.226 2–4 3	30,800 19,800 30 32 12 8 8 12 2,20 40 40 2 2 2 0 0 1.00 1-3 2 2 0 0 3.00 1-3 1-3 1-3 1-3 1-3 1-3 1-3 1-3 1-3 1-3
Truck N Wh. Bas Axle Spacing Hitch Load On Axles 10 30 40	M G N B M To. see L X X C a1 a2 a3 G N B M G N B M G N B B M G N B B B M G N B B B B B B B B B B B B B B B B B B	1-4 2.300 L 20.353 21 40 12 20 8 1.00 2-2 2 0 1.000 2-3 2 1.539 L 2.332 T 1-3 2 5.534 L 4.032	1-4 21.600L 21.026 22 40 12 20 8 .20 .60 4 4 0 .750 2-3 3 1.600R 1.764 2-3 3 1.600R 2.993	3 1.000L 20.410 23 40 12 20 8 .20 .30 .50 2 2 2 0 .750 2 3 2 1.818L 1.841 1-3 2.667R 3.427 1-3 2.267R	3 .2001L 20.400 24 40 12 20 8 .20 .40 .40 .2 2 2 1.000 2–3 2 1.334L 2.253 1–3 2.500R 5.00R	2 3.400L 20.516 25 32 12 8 12 .10 .20 .70 4 4 0 .875 3–4 2.000R 2.240 2-4 3.222L 4.152 2-4 3.222L	3 .400R 19.802 26 32 12 8 12 .10 .30 .60 4 4 2.0000R 1.920 2–4 3.667R 3.763 2–4 3.667R	2 2800L 19.878 27 32 12 8 12 .10 .40 .50 2 2 0 1.000 2 2 0 2.000 1-3 2 1.200L 3.561 1-4 2 3.400L	2 2,0001L 20.640 28 32 12 8 12 .20 .20 .60 4 4 2,000R 1,920 2-4 3 0 3,600 2-4 3	3 1.700L 19.729 29 32 12 8 12 .20 .30 .50 2 2 2 0 .750 2 2 2.0000R 1.6000 2-4 3 1.000R 3.226	3,800 19.80 30 32 12,88 12,20 .40 .40 .40 2 2 0 1.00 2.00 3.60 3.60 1.42 2 2.00 1.40 1.40 1.40 1.40 1.40 1.40 1.40 1
Truck N Wh. Bas Axle Spacing Hitch Load On Axles 10 30 40	M G N B M M To. see L X X C a1 a2 a3 G N B M G G N B M G N B M G N B N B N B N B N B N B N B N B N B N	1-4 2.300 L 20.353 21 40 12 20 8 1.00 50 2 2 0 1.000 2-3 2.1.539 L 2.327 1-3 2.534 L 4.032 1-3 2	1-4 21.600L 21.026 22 40 12 20 8 .20 .60 4 4 0 .750 2-8 3 1.600R 2.993 13 2	3 1.000L 20.410 23 40 12 20 8 20 .30 .50 2 2 0 .750 2 3 2 1.818L 1-3 2.267R 3.427 1-3 2	3 .2001L 20.400 24 40 12 20 8 .20 .40 .40 2 2 0 1.000 2-3 2 1.3341L 2.253 1-3 2.500R 4.006 1-3 2	$\begin{array}{c} 2\\ 3.400 L\\ 20.516 \\ \hline \\ 25\\ 32\\ 12\\ 8\\ 12\\ .70\\ .70\\ 4\\ 4\\ 0\\ .875\\ 3-4\\ 4\\ 2.000 R\\ 2.22 L\\ 4.152\\ 2-4\\ 3\\ .222 L\\ 4.152\\ 2-4\\ 3\\ \end{array}$	3 .400R 19.802 26 32 12 8 12 .10 .30 .60 4 4 2.000R 1.920 2-4 3.763 2-4 3.763	2 2.800L 19.878 27 32 12 8 12 .50 2 2 0 1.000 2 2 0 2.000 1-3 2 1.200L 3.561 1-4 2	2 2,0001L 20,640 28 32 12 8 12 2,20 2,0 60 4 4 0 .750 3 4 4 2,0004 1,920 2-4 3 0 3,600	3 1.700L 19.729 29 32 12 8 12 .20 .30 .50 2 2 0 .750 2 2 0 .750 3–4 4 2.0000 1.000R 3.226 2–4 3	3 .800.119.80 30 32 12 8 8 12 2 .200 .40
Truck N Wh. Bas Axle Spacing Hitch Load On Axles 10 30 40	M G N B M M G N B B M G N B B M G N B B M G N B B M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N N B B M M G N N B B M M G N N B B M M G N N B B M M G N N B B M M M G N N B B M M G N N B B M M G N N B B M M G N N B B M M G N N B B M M G N N B B M M G N N B B M M G N N B M M G N N B M M G N N B M M M M M M M M M M M M M M M M M	$\begin{array}{c} 1-4\\ 2\\ 2.3001L\\ 20.353\\ \hline \\ 21\\ 40\\ 12\\ 20\\ \\ 8\\ 1.0\\ 1.000\\ 2-3\\ 2\\ 2\\ 0\\ 1.000\\ 2-3\\ 2\\ 1.5391L\\ 2.332\\ 1-3\\ 2\\ 4.032\\ 1-3\\ 2\\ 5.534L\\ 5.906\\ 1-3\\ 2\\ \end{array}$	1-4 21.600L 21.026 22 40 12 20 8 20 .60 4 4 4 0 .750 2-3 3 1.600R 1.764 2-3 3 1.600R 2.993 1-3 2 0 4.600 1-3 1-3 2 0 4.600 1-3 1-3 1-3 1-4 1-3 1-3 1-4 1-3 1-3 1-4 1-3 1-3 1-3 1-3 1-3 1-3 1-3 1-3	3 1.000L 20.410 23 40 12 20 8 .20 .30 .50 2 2 0 .750 2 3 2 1.818L 1.841 1-3 2 .267R 3.427 1-3 2 2.67R 5.801	3 .2001L 20.400 24 40 12 20 8 .20 .40 .40 .2 2 0 1.000 2–3 1.334 L.2.253 1–3 2 .500R 4.006 1-3 2 2 500R	2 3.400L 20.516 25 32 12 8 12 .10 .20 .70 4 4 0 .875 3–4 2.000R 2.24 3 3 .222L 4.152 2–4 3 .222L 6.401 1-4	3 .400R 19.802 26 32 12 8 12 .10 .30 .60 4 4 0 .7550 3–4 2.000R 1.920 2–4 3.763 2–4 3.763 2–4 3.667R 6.011	2 2.800L 19.878 27 32 12 8 12 .10 .40 .50 2 2 0 1.000 2 2 2 0 2.000 1-3 2 1.200L 3.561 1-4 2 3.400L 5.689	2 2,000 L 20.640 28 32 12 8 12 .20 .20 .60 4 4 2 .000 R 1.920 2 -4 3 0 5.600 1 -4 3	3 1.700L 19.729 29 32 12 8 8 12 .20 .50 2 2 0 .750 2 2 2 0 2.000R 1.600 2-4 3 1.000R 5.226 2-4 3 1.000R 5.226	3
Truck N Wh. Bas Axle Spacing Hitch Load On Axles 10 30 40	M G N B M M O O O O O O O O O O O O O O O O O	1-4 2.300 L 20.353 21 40 12 20 8 .10 .40 .50 2 2 0 1.000 2-3 2 1.539 L 2.327 1-3 2 534 L 4.032 1-3 2 5.54 L 5.596 1-3 2 5.596	1-4 2 1.600 L 21.026 22 40 12 20 8 8 .20 .20 .60 4 4 0 .750 2-3 3 1.600 R 2.93 1.600 R 2.93 1.600 R 2.93 1.43 2 4.600 1-4 3 2.00 L	3 1.000L 20.410 23 40 12 20 8 .20 .30 .50 2 2 0 .750 2 3 2 1.818L 1.841 1-3 2 .267R 5.301 1-3 2 2.267R	3 .2001L 20.400 24 40 12 20 .8 .20 .40 .40 .2 2 2 0 1.000 2-3 2 1.334L 2.253 1-3 2 .500R 4.006 1-3 2 .500R 5.005	2 3.400L 20.516 25 32 12 8 12 .10 .20 .70 4 4 0 .875 3-4 2.240 2-4 3 .222L 4.152 2-4 3 .222L 6.401 1-4 3 1.000R	3 .400R 19.802 26 32 12 8 12 .10 .30 .60 4 4 0 .750 3-4 2.000R 1.920 2-4 3.667R 3.763 2-4 3.667R 6.011 1-4 3 1.800R	2 19.870 L 19.878 27 32 12 8 12 .10 .40 .50 2 2 0 1.000 2 1.200 L 3.561 1-4 2 3.400 L 5.689 1-4 2 3.400 L	2 2.0001L 20.640 28 32 12 8 12 .20 .20 .60 4 4 0 .750 3 -4 2.000R 1.920 2 -4 3 0 5.600 1 -4 3 2.400R	3 1.700L 19.729 29 32 12 8 12 .20 .30 .50 2 2 2 0 .750 8-4 2.000R 1.600 2-4 3 1.000R 5.220 1-4 3 3.226 3.3200R	3
Truck N Wh. Bas Axle Spacing Hitch Load On Axles 10 30 40	M G N B M M G N B B M G N B B M G N B B M G N B B M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N N B B M M G N N B B M M G N N B B M M G N N B B M M G N N B B M M M G N N B B M M G N N B B M M G N N B B M M G N N B B M M G N N B B M M G N N B B M M G N N B B M M G N N B M M G N N B M M G N N B M M M M M M M M M M M M M M M M M	$\begin{array}{c} 1-4\\ 2\\ 2.3001L\\ 20.353\\ \hline \\ 21\\ 40\\ 12\\ 20\\ \\ 8\\ 1.0\\ 1.000\\ 2-3\\ 2\\ 2\\ 0\\ 1.000\\ 2-3\\ 2\\ 1.5391L\\ 2.332\\ 1-3\\ 2\\ 4.032\\ 1-3\\ 2\\ 5.534L\\ 5.906\\ 1-3\\ 2\\ \end{array}$	1-4 21.600L 21.026 22 40 12 20 8 20 .60 4 4 4 0 .750 2-3 3 1.600R 1.764 2-3 3 1.600R 2.993 1-3 2 0 4.600 1-3 1-3 2 0 4.600 1-3 1-3 1-3 1-4 1-3 1-3 1-4 1-3 1-3 1-4 1-3 1-3 1-3 1-3 1-3 1-3 1-3 1-3	3 1.000L 20.410 23 40 12 20 8 .20 .30 .50 2 2 0 .750 2 3 2 1.818L 1.841 1-3 2 .267R 3.427 1-3 2 2.67R 5.801	3 .2001L 20.400 24 40 12 20 8 .20 .40 .40 .2 2 0 1.000 2–3 1.334 L.2.253 1–3 2 .500R 4.006 1-3 2 2 500R	2 3.400L 20.516 25 32 12 8 12 .10 .20 .70 4 4 0 .875 3–4 2.000R 2.24 3 3 .222L 4.152 2–4 3 .222L 6.401 1-4	3 .400R 19.802 26 32 12 8 12 .10 .30 .60 4 4 0 .7550 3–4 2.000R 1.920 2–4 3.763 2–4 3.763 2–4 3.667R 6.011	2 2.800L 19.878 27 32 12 8 12 .10 .40 .50 2 2 0 1.000 2 2 2 0 2.000 1-3 2 1.200L 3.561 1-4 2 3.400L 5.689	2 2,000 L 20.640 28 32 12 8 12 .20 .20 .60 4 4 2 .000 R 1.920 2 -4 3 0 5.600 1 -4 3	3 1.700L 19.729 29 32 12 8 8 12 .20 .50 2 2 0 .750 2 2 2 0 2.000R 1.600 2-4 3 1.000R 5.226 2-4 3 1.000R 5.226	3
Truck N Wh. Bas Axle Spacing Hitch Load On Axles 10 30 40	M G G N B M M O O O O O O O O O O O O O O O O O	1-4 2.300 L 20.353 21 40 12 20 8 .10 .40 .50 2 2 0 1.000 2-3 2 .539 L 2.327 1-3 2 .534 L 4.032 1-3 2 .544 L 4.07 1-3 2 .544 L 4.07 1-3 2 .544 L 4.07 1-3 2 1-3 1-3 1-3 1-3 1-3 1-3 1-3 1-3 1-3 1-3	1-4 2 1.600 L 21.026 22 40 12 20 8 8 .20 .20 .60 4 4 0 .750 2-3 3 1.600 R 2.93 1.600 R 2.93 1.600 R 2.90 4.600 1-4 3 2.200 L 6.701 1-4 3	3 1.000L 20.410 23 40 12 20 8 .20 .30 .50 2 2 0 .750 2 3 2 1.841 1-3 2 .267R 5.301 1-3 2 .267R 7.176	3 .2001L 20.400 24 40 12 20 8 .20 .40 .40 2 2 0 1.000 2-3 2 1.334L 2.253 1-3 2 .500R 4.006 1-3 2 .500R 8.004	2 3.400L 20.516 25 32 12 8 12 .10 .20 .70 4 4 0 .875 3-4 2.2000R 2.240 2-4 3 .222L 4.152 2-4 3 .222L 6.401 1 4 3 1.000R 8.720 1 4 4 1.15 2.15 2.15 3.15 4 4 4 1.15 2.15 3.15 3.15 4 4 4 1.15 3.15 3.15 3.15 3.15 3.15 3.15 3.15	3 400R 19.802 26 32 12 8 12 .10 .30 .60 4 4 0 .750 3-4 4 2.000R 1.920 2-4 3 .667R 3.763 2-4 3 6.667R 3.763 1.800R 8.365 1-4 3	2 2 800 L 19.878 27 32 12 8 12 .10 .40 .50 2 2 0 1.000 2 2 0 2.000 1-3 2 1.200 L 3.561 1-4 2 3.400 L 8.131 1-4 2	2 2,000 L 20.640 28 32 12 8 12 .20 .20 .60 4 4 0 .750 3 -4 4 2.000 R 1.920 2 -4 3 0 .600 2 -4 3 0 .5.600 1 -4 3 2.400 R 7.815 1 -4 3	3 1.700L 19.729 29 32 12 8 12 .20 .30 .50 2 2 2 0 .750 3-4 4 2.000R 1.600 2-4 3 1.000R 5.220 1-4 3 3.226 2-4 3 3.206 7.500 1.600 2-4 3	3
Truck N Wh, Bas Axle Spacing Hitch Load On Axles 10 30 40 50 50	M G N B M Jo. see L X X C C a1 a2 a2 a3 G N B M G N B M G N B M G N B M G N B M G N B M B M G N B M B M B M B M B M B M B M B M B M B	1-4 2.300L 20.353 21 40 12 20 8 8 .10 .50 2 0 1.000 2-3 2.32 1.32 2.534L 4.032 1-3 2.534L 5.906 1-3 2.534L 7.779 1-4 2.3,900L	1-4 2 1.600 L 21.026 22 40 12 20 8 .20 .60 4 0 .750 2-3 3 1.600 R 2.993 1-3 2 0 4.600 1-4 3 2.200 L 6.701 1-4 3 2.200 L	3 1.000L 20.410 23 40 12 20 8 .20 .30 .50 2 2 0 .750 2 3 2 1.818L 1.841 1-3 2.267R 3.427 1-3 2.267R 5.301 1-3 2.267R 5.301 1-3 2.267R 5.301 1-3 2.301 1-	3 .2001L 20.400 24 40 12 20 8 .20 .40 .2 2 1.000 2-3 2 1.334L 2.253 1-3 2.500R 4.006 1-3 2 5.500R 6.005 1-3 2 5.500R 8.004	2 3.400L 20.516 25 32 12 8 12 .10 .20 .70 4 4 0 .875 3-4 2.000R 2.24 3.222L 4.152 2-4 3.222L 6.401 1.4 3 1.000R 8.720	3 .400R 19.802 26 32 12 8 12 .10 .30 .60 4 4 0 .7550 3-4 2.0000R 1.920 2-4 3.6667R 6.001 1-4 3 1.800R 8.365 1-4 3 1.800R	2 2800L 19.878 27 32 12 8 12 .50 .50 2 2 0 1.000 2 2 0 2.000 1-3 2 1.200L 3.561 1-4 2 3.400L 5.88 1-4 2 3.400L 8.131	20001L 20.640 28 32 12 8 12 .20 .20 .60 4 4 0 .7550 3-4 2.00020 2-4 3 0 5.600 1-4 3 2.400R 7.815	3 1.700L 19.729 29 32 12 8 12 .20 .50 2 2 0 .750 2 2 2 0 .750 2-4 4 4 2.000R 1.600 2-4 3 1.000R 3.226 2-4 3 1.000R 5.220 1-4 1.000R 5.220 1-4 1.000R 5.200R 5	3
Truck N Wh, Bas Axle Spacing Hitch Load On Axles 20 30 40 50 50	M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M M G N B M M M M M M M M M M M M M M M M M M	$\begin{array}{c} 1-4\\ 2.3001L\\ 20.353\\ \hline \\ 21\\ 40\\ 12\\ 20\\ \hline \\ 8\\ 1.00\\ .50\\ \hline \\ 2\\ 0\\ 1.000\\ \hline \\ 2-3\\ 2\\ 1.5391L\\ 2.327\\ \hline \\ 1-3\\ 2\\ .5341L\\ 4.032\\ \hline \\ 1-3\\ 2\\ .534L\\ 5.906\\ \hline \\ 1-3\\ 2\\ .534L\\ 7.779\\ \hline \\ 1-4\\ 2\\ .5341L\\ 7.779\\ \hline \\ 1-4\\ 2\\ .5341L\\ 1.514\\ \hline \\ 1.514$	1-4 2 1.600 L 21.026 22 40 12 20 8 .20 .60 4 4 0 .750 2-3 3 1.600 R 2.993 1-60 4.600 1-4 3 .200 L 3 2.001 1-4 3 .200 L 9.201	3 1.000L 20.410 23 40 12 20 8 .20 .30 .50 .50 .750 2 2 1.818L 1.841 1-3 2.667R 3.427 1-3 2.267R 5.801 1-3 2.267R 5.801 1-4 2.3800L 9.482	3 .2001L 20.400 24 40 12 20 8 .20 .40 .40 2 2 2 0 1.000 2-3 2 1.334L 2.253 1-3 2 5.00R 6.005 1-3 2 2.500R 6.005	2 3.400L 20.516 25 32 12 8 12 .10 .20 .70 4 4 4 2.0000R 2.24 3.222L 4.152 2-4 3.222L 6.401 1-4 3.000R 8.720 1.000R	3 .400R 19.802 26 32 12 8 12 .10 .30 .60 4 4 2.0000R 1.920 2-4 3.667R 3.763 2-4 3 .6667R 6.011 1-4 3 1.800R 8.3055 1-4 3 1.800R	2 2 800 L 19.878 27 32 12 8 12 10 40 50 2 2 0 0 1.000 2 2 0 0 2 2 0 0 1.23 2 1.200 L 3.561 1-4 2 3.400 L 5.689 1-4 2 3.400 L 5.689 1-4 2 3.400 L 10.593	2 2,000 L 20.640 28 32 12 8 12 .20 .20 .60 4 4 4 2.000 R 1.920 2-4 3 0 3.600 2-4 3 0 5.600 1-4 3 2.400 R 7.815 1-4 3 2.400 R 1.920 1.920 1.920 2.400 R 7.815	3 1.700L 19.729 29 32 12 8 12 .20 .30 .50 2 2 2 0 .7550 2 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1	3
Truck N Wh, Bas Axle Spacing Hitch Load On Axles 10 30 40 50 50	M G G N B M M Jo. see L X X C G A A B B M G G N B M G G N B M G G N B M G G N B M M G N B M M M G N B M M M G N B M M M G N B M M M G N B M M M G N B M M M M G N B M M M M M M M M M M M M M M M M M M	1-4 2.300L 20.353 21 40 12 20 8 8 .10 .50 2 0 1.000 2-3 2.32 1.32 2.534L 4.032 1-3 2.534L 5.906 1-7.779 1-4 2 3.900L 10.154 1-4 2	1-4 2 1.600 L 21.026 22 40 12 20 8 .20 .60 4 0 .750 2-3 3 1.600 R 2.993 1-3 2 0 4.600 R 2.901 1-4 3 2.200 L 6.701 1-4 3 2.200 L 9.201 1-4 3	3 1.000L 20.410 23 40 12 20 8 .20 .30 .50 2 2 0 .750 2 3 2 1.818L 1.841 1-3 2.267R 3.427 1-3 2.267R 5.301 1-3 2.267R 5.301 1-3 2.301 1-3	3 .2001L 20.400 24 40 12 20 8 .20 .40 .20 .40 .2 2 1.000 2-3 2 1.3341L 2.253 1-3 2.500R 6.005 1-3 2.500R 6.005 1-3 2 2.500R 8.004 1-4 2 2.400L 10.296	2 3.400L 20.516 25 32 12 8 12 .10 .20 .70 4 4 0 .875 3-4 2.000R 2.24 3.222L 4.152 2-4 3.222L 6.401 1.4 3 1.000R 8.720 1-4 3 1.000R 8.720 1-4 3 1.000R 8.720 1-4 3 1.000R 8.720 1-4 3 1.000R 8.720 1-4 3 1.000R 8.720 1-4 3 1.000R 8.720 1-4 3 1.000R 8.720 1-4 3 1.000R 8.720 1-4 3 1.000R 8.720 1-4 3 1.000R 8.720 1-4 3 1.000R 8.720 1-4 3 1.000R 8.720 1-4 3 1.000R 8.720 1-4 3 1.000R 8.720 1-4 3 1.000R 8.720 1-4 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	3 .400R 19.802 26 32 12 8 12 .10 .30 .60 4 4 0 .7550 3-4 2.0000R 1.920 2-4 3.6667R 6.001 1-4 3 1.800R 8.365 1-4 3 1.800R 10.854 1-4 3	2 2800L 19.878 27 32 12 8 12 .50 2 2 0 1.000 2 2 0 2.000 1-3 2 1.200L 3.561 1-4 2 3.400L 5.88 1-4 2 3.400L 5.10 1-4 2 3.400L 10.59 1	2 20000L 20.640 28 32 12 8 12 .20 .20 .60 4 4 0 .7550 3-4 4 2.00020 2-4 3 0 5.600 1-4 3 2.400R 7.815 1-4 3 2.400R 10.296	3 1.700L 19.729 29 32 12 8 12 2.20 .50 2 2 2 0 .750 2 2 2 2 0 .750 3–4 4 2.000R 1.600 2–4 3 1.000R 3.226 2–4 3 1.000R 5.220 1–4 3 3.200R 5.200	3
Truck N Wh. Bas Axle Spacing Hitch Load On Axles 20 30 40 50 60	M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M M G N B M M G N B M M G N B M M M B M M M B M M M B M M M B M M M B M M M B M M M B M M M B M M M B M M M B M M M B M M M B M M M M B M	1-4 2.300 L 20.353 21 40 12 20 8 8 1.0 40 .50 2 2 0 1.000 2-3 2 1.539 L 2.327 1-3 2 .534 L 4.032 1-3 2 .534 L 7.779 1-4 2 3.900 L 1.0154	1-4 2 1.600L 21.026 22 40 12 20 8 20 .60 4 4 0 .750 2-3 3 1.600R 1.764 2-3 3 6.00R 2.993 1-3 2 0 4.600 1-4 3 2.200L 6.701 1-4 3 2.200L 9.201 1-4 3 2.200L	3 1.000L 20.410 23 40 12 20 8 20 30 50 2 2 0 750 2 3 3 2 1.818L 1.841 1-3 2 267R 3.427 1-3 2 2.667R 7.176 1-3 2.667R 7.176 1-4 2 3.300L 1.9482 1-4 2 3.300L	3 .2001L 20.400 24 40 12 20 8 .20 .40 .40 .40 .40 .40 .40 .2 2 .1.034 .2 1.33 2 1.33 2 .500R 4.006 1-3 2 .500R 6.005 1-3 2 2 .500R 8.004 1-4 2 2 2.400L	2 3.400L 20.516 25 32 12 8 12 .10 .20 .70 4 4 0 .875 3–4 2.000R 2.240 3.222L 4.152 2-4 3.222L 6.401 1-4 3.000R 8.75 3.1.000R	3 .400R 19.802 26 32 12 8 12 .10 .30 .60 4 4 0 .7550 3-4 2.0000R 1.920 2-4 3.667R 3.763 2-4 3.6667R 6.011 1-4 3.800R 8.365 1-4 3 1.800R 8.365 1-4 3 1.800R	2 2 800 L 19.878	2 2,000 L 28 32 12 8 12 .20 .60 4 4 4 0 .7550 2 -4 3 0 5.600 1 -4 3 2.400R 7.815 1 -4 3 2.400R 10.296 1 -4 3 2.400R 10.296 1 -4 3 2.400R 10.296 1 -4 3 2.400R	3 1.700L 19.729 29 32 12 8 12 .20 .50 2 2 2 0 .7550 2 2 12 8 1.000R 1.6000 2-4 3 1.000R 5.220 1-4 3 3.200R 7.550 1-4 3 3.200R 7.550 1-4 3 3.200R	3
Truck N Wh. Bas Axle Spacing Hitch Load On Axles 20 30 40 50 60	M G G N B M M Jo. se L X C C a1 a2 a5 G N B M G G N B M G G N B M G G N B M G G N B M B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M B M G N B M B M G N B M B M G N B M B M B M B M B M B M B M B M B M B	$\begin{array}{c} 1-4\\ 2\\ 2.3001L\\ 20.353\\ \\ 21\\ 40\\ \\ 12\\ \\ 20\\ \\ 8\\ \\ .10\\ \\ .40\\ \\ .50\\ \\ 2\\ \\ 0\\ \\ 1.000\\ \\ 2-3\\ \\ 2\\ \\ 0\\ \\ 1.000\\ \\ 2-3\\ \\ 2\\ \\ .534L\\ 4.032\\ \\ 1-3\\ \\ 2\\ \\ .534L\\ 4.032\\ \\ 1-3\\ \\ 2\\ \\ .534L\\ 7.779\\ \\ 1-4\\ \\ 2\\ 3.990L\\ 10.154\\ \\ 10.154\\ \\ 1-4\\ \\ 2\\ \\ 3.990L\\ 15.090\\ \\ 10.000\\$	1-4 2 1.600 L 21.026 22 40 12 20 8 8 .20 .60 4 4 0 7.750 2-3 3 1.600 R 2.93 1.600 R 2.90 4.600 1-4 3 2.00 L 6.701 1-4 3 2.200 L 3 2.200 L 3 2.200 L 3 2.200 L 3 2.200 L 3 2.200 L 3 2.200 L 3 2.200 L 3 2.200 L 3 2.200 L 3 2.200 L 3 2.200 L 3 3.200 L 4.300 L 3.200 L 4.300 L 3.200 L 4.300 L 3.200 L 4.300 L 3.200 L 3.200 L 4.300 L 3.200 L 4.300 L 3.200 L 4.300 L 3.200 L 4.200 L	3 1.000L 20.410 23 40 12 20 8 20 30 50 2 2 0 750 2 3 2 1.818L 1.841 1-3 2 267R 5.301 1-3 2 267R 7.176 1-4 2 3.300L 1.9.442 1-4 2 3.300L 14.436	3 .2001L 20.400 24 40 12 20 8 .20 .40 .40 .2 2 1.000 2-3 2 1.334L 2.2500R 4.006 1-3 2 .500R 8.004 1-4 2 2.400L 10.296 1-4 2 2.400L 15.272	2 3.400L 20.516 25 32 12 8 12 .10 .20 .70 4 4 0 .875 3–4 2.000R 2.240 3 .222L 4.152 2–4 3 .222L 6.401 1.4 3 1.000R 8.720 1-4 3 1.000R 8.720 1-4 3	3 .400R 19.802 26 32 12 8 12 .10 .30 .60 4 4 2.000R 1.920 2-4 3.763 2-4 3.763 2-4 3.1800R 8.365 1-4 3 1.800R 8.365 1-4 3 1.800R 1.920	2 2 800 L 19.878 27 32 12 8 12 .10 .40 .50 2 2 0 1.000 2 2 2 0 2.000 1-3 2 1.200 L 5.689 1-4 2 3.400 L 8.131 1-4 2 3.400 L 8.131 1-4 2 3.400 L 8.131 1-4 2 3.400 L 8.131 1-4 2 3.400 L 8.131 1-4 2 3.400 L 8.131 1-4 2 3.400 L 15.545	2 2,000 L 28 32 12 8 8 12 20 .20 .60 4 4 4 0 .7550 3 -4 4 2.000 R 1.920 2 -4 3 0 5.600 1 -4 3 2.400 R 7.815 1 -4 3 2.400 R 15.272	3 1.700L 19.709L 19.729 29 32 12 8 12 20 30 6 7.50 2 2 2 0 7.750 2 4 4 2.000R 1.600 2 - 4 3 1.000R 5.220 1 - 4 3 3.200R 7.505 1 - 4 3 3.200R 7.505 1 - 4 3 3.200R 1.928 1 - 4 3 3.200R 1.928 1 - 4 3 3.200R 1.928 1 - 4 3 3.200R 1.928 1 - 4 3 3.200R 1.928 1 - 4 3 3.200R 1.928 1 - 4 3 3.200R 1.928 1 - 4 3 3.200R 1 - 4 3 3 2 3 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	3
Truck N Wh. Bas Axle Spacing Hitch Load On Axles 20 30 40 50 60	M G G N B M M Jo. see L X C G A A B B M G G N B M G G N B M G N B M G G R G R G R G R G R G R G R G R G R	1-4 2.300 L 20.353 21 40 12 20 8 8 1.0 40 .50 2 2 0 1.000 2-3 2 1.539 L 2.327 1-3 2 .534 L 4.032 1-3 2 .534 L 7.779 1-4 2 3.900 L 1.0154	1-4 2 1.600L 21.026 22 40 12 20 8 20 .60 4 4 0 .750 2-3 3 1.600R 1.764 2-3 3 6.00R 2.993 1-3 2 0 4.600 1-4 3 2.200L 6.701 1-4 3 2.200L 9.201 1-4 3 2.200L	3 1.000L 20.410 23 40 12 20 8 20 30 50 2 2 0 750 2 3 3 2 1.818L 1.841 1-3 2 267R 3.427 1-3 2 2.667R 7.176 1-3 2.667R 7.176 1-4 2 3.300L 1.9482 1-4 2 3.300L	3 .2001L 20.400 24 40 12 20 8 .20 .40 .40 .40 .40 .40 .40 .2 2 .1.034 .2 1.33 2 1.33 2 .500R 4.006 1-3 2 .500R 6.005 1-3 2 2 .500R 8.004 1-4 2 2 2.400L	2 3.400L 20.516 25 32 12 8 12 .10 .20 .70 4 4 0 .875 3–4 2.000R 2.240 3.222L 4.152 2-4 3.222L 6.401 1-4 3.000R 8.75 3.1.000R	3 .400R 19.802 26 32 12 8 12 .10 .30 .60 4 4 0 .7550 3-4 2.0000R 1.920 2-4 3.667R 3.763 2-4 3.6667R 6.011 1-4 3.800R 8.365 1-4 3 1.800R 8.365 1-4 3 1.800R	2 2 800 L 19.878	2 2,000 L 28 32 12 8 12 .20 .60 4 4 4 0 .7550 2 -4 3 0 5.600 1 -4 3 2.400R 7.815 1 -4 3 2.400R 10.296 1 -4 3 2.400R 10.296 1 -4 3 2.400R 10.296 1 -4 3 2.400R	3 1.700L 19.729 29 32 12 8 12 .20 .50 2 2 2 0 .7550 2 2 12 8 1.000R 1.6000 2-4 3 1.000R 5.220 1-4 3 3.200R 7.550 1-4 3 3.200R 7.550 1-4 3 3.200R	3 .800.119.80 30 32 122 8 8 122 .200 2 2 2 0 0 1.900 2 2 2 0 2.000 1 -3 3 2 2 0 0 6.111111111111111111111111111111111
Truck N Wh. Bas Axle Spacing Hitch Load On Axles 20 30 40 50 60 80	M G G N B M M Jo. see L X C G A A B B M G G N B M G G N B M G N B M G G R G R G R G R G R G R G R G R G R	1-4 2.300 L 20.353 21 40 12 20 8 8 .10 .50 2 2 0 1.000 2-3 2 1.539 L 2.327 1-3 2 1.539 L 2.327 1-3 2 2.534 L 4.032 1-3 2 1.534 L 7.779 1-4 2 3.900 L 10.154 1-4 2 3.900 L 15.090 1-4	1-4 2 1.600L 21.026 22 40 12 20 8 .20 .60 4 4 0 .750 2-3 3 1.600R 2.993 1-3 2 0 4.600 1-4 3 2.001 1-4 3 2.200L 1-4 3 2.200L 14 201 1-4	3 1.000L 20.410 23 40 12 20 8 20 .30 .50 2 2 0 .750 2 3 2 1.818L 1-3 2.667R 3.427 1-3 2.667R 5.301 1-3 2.300L 1-4 2 3.300L 1.4486 1-4	3 .2001L 20.400 24 40 12 20 8 .20 .40 .20 .40 .2 2 .1.000 2-3 2 1.3341L 2.253 1-3 2.500R 6.005 1-3 2.500R 8.004 1-4 2.400L 10.296 1-4 2 2.400L 15.272 1-4	2 3.400L 20.516 25 32 12 8 12 .10 .20 .70 4 4 4 0 0.875 3-4 2.000R 2.24 3.222L 4.152 2-4 3.222L 6.401 1.4 3 1.000R 8.720 1-4 3 1.000R 11.217 1-4 3 1.000R 11.217	3 .400R 19.802 26 32 12 8 12 .10 .30 .60 4 4 0 .750 3-4 4 2.000R 1.920 2-4 3.667R 6.011 1-4 3 1.800R 8.365 1-4 3 1.800R 10.854 1-4 3 1.800R 15.841 1-4	2 2.800L 19.878 27 32 12 8 12 .50 2 2 0 1.000 2 2 0 2.000 1-3 2 1.200L 3.561 1-4 2 3.400L 8.131 1-4 2 3.400L 10.593 1-4 2 3.400L 10.593 1-4 2 3.400L 10.593 1-4 2 3.400L 10.593 1-4 2 3.400L 10.593 1-4 2 3.400L 10.593 1-4 2 3.400L 10.593 1-4 2 3.400L 10.593 1-4 2 3.400L 10.593 1-4 2 3.400L 10.593 1-4 2 3.400L 10.593 1-4 2 3.400L 10.593 1-4 2 3.400L 10.593 1-4 2 3.400L 10.593 1-4 2 3.400L 10.593 1-4 2 3.400L 10.593 1-4 2 3.400L 10.593 1-4 2 3.400L 10.593 1-4 2 3.400L 10.593 1-4 2 3.400L 10.593 1-4 2 3.400L 10.593 1-4 2 3.400L 10.593 1-4 10.593 1-4 10.593 1-4 10.593 1-4 10.593 1-4 10.593 1-4 10.593 1-4 10.593 1-4 10.593 1-4 10.593 1-4 10.593 1-4 10.593 1-4 10.593 1-4 10.593 1-4 10.593 1-4 10.593 1-4 10.593 1-4 10.593 1-4 10.593 1-5 10.593 1-5 10.593 1-5 10.593 1-5 10.593 1-5 10.593 1-5 10.593 1-5 10.593 1-5 10.593 1-5 10.593 1-5 10.593 1-5 10.593 1-5 10.5 10.5 10.5 10.5 10.5 10.5 10.5 10.	2 2 0000 L 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2	3 1.700L 19.729 29 32 12 8 12 2.20 .50 2 2 2 0 .750 2 2 2 2 0 .750 3-4 4 2.000R 1.6000 3.226 2-4 3 1.000R 3.226 2-4 3 3.200R 7.505 1-4 3.200R 1-4 3.000R 1	3

	uck N		31	32	33	34	35	36	37	38	39	40
Ax	h. Base	e L X	$\frac{36}{12}$	36 12	$\frac{36}{12}$	$\frac{36}{12}$	36 12	36	12	$\frac{40}{12}$	40 12	12
	acing	$\hat{\mathbf{x}}'$	12	12	12	12	12	12	16	16	16	16
_	tch	С	12	12	12	12	12	12	12	12	12	12
Lo On		\mathbf{a}_1 \mathbf{a}_2	.10 .20	$.10 \\ .30$.10 .40	.20 .20	.20 .30	.20	.10 .20	.10 .30	.10 .40	.20 .20
	les	a 3	.70	.60	.50	.60	.50	.40	.70	.60	.50	.60
	1.0	G	4	4	$\frac{2}{2}$	4	2 2	$\frac{2}{2}$	4	4 4	2	4
	10	N B	4 0	4 0	0	4 0	0	0	0	0	$\frac{2}{0}$	4 0
		M	.875	.750	1.000	.750	.750	1.000	.875	.750	1.000	.750
	20	G N	4 4	4	2 2	4 4	2 2	2 2	4 4	4 4	2 2	4 4
		\mathbf{B}	0	0	0	0	0	0	0	0	0	0
		M	$\frac{1.750}{2-4}$	$\frac{1.500}{2-4}$	2.000 1-3	1.500	$\frac{1.500}{1-3}$	$\frac{2.000}{1-3}$	$\frac{1.750}{2-3}$	1.500	2.000 1-3	$\frac{1.500}{2-3}$
	30	G N	3	$\frac{z-4}{3}$	2	$\frac{2-4}{3}$	$\frac{1-3}{2}$	2	3	2	$\frac{1-3}{2}$	2-3 3
		В	1.000L	0	1.200L	.750L	.400L	0	2.182R	1.715L	1.200L 3.561	2.400R
		M G	3.480	$\frac{3.150}{2-4}$	3.561 1–3	$\frac{3.015}{2-4}$	2.929	$\frac{3.600}{1-3}$	$\frac{3.012}{2-4}$	$rac{2.918}{2-4}$ -	1-3	$\frac{2.646}{2-4}$
	40	N	3	3	2	3	2	2	3	3	2	3
eet		B M	1.000L 5.723	$0 \\ 5.400$	1.200L 5.427	$0.750 L \\ 5.011$	4.803	$\overset{0}{5.600}$	1.778L 5.071	.667L 4.811	1.200L 5.427	1.500L 4.445
Span-Feet	i	G	1-4	14	1-4	1-4	1-4	1-4	1-4	1-4	1-3	1-4
ba	50	N	3	3	2	3	2	2	3	3	2	3
02		B M	$0.300 \mathrm{R}$ $0.300 \mathrm{R}$	1.200R 7.729	$3.900L \\ 7.704$	$1.800 \mathbf{R} \\ 7.165$	3.300L 7.018	$\frac{2.400 L}{7.815}$	7.303	7.107	1.200L 7.297	$1.200R \\ 6.529$
		G	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4
	60	N	$^3_{.300 m R}$	$^{3}_{1,200 m R}$	$\frac{2}{3.900L}$	$^{3}_{1.800 m R}$	2 2001	$^{2}_{2.400L}$	3	$^3_{.600 m R}$	2	3
		В М	.300K 10.502	1,200K 10.224	10.154	9.654	$3.300 m L \\ 9.482$	10.296	9.803	9.606	4.400 L 9.723	1.200R 9.024
		G	1-4	1-4	1–4	1-4	1-4	1-4	1-4	1-4	1-4	1-4
	80	N B	$^3_{.300 m R}$	$^3_{1.200 m R}$	$3.900 \mathbf{L}$	1.800R	$^{2}_{3.300 \rm L}$	$\frac{2}{2.400 \mathrm{L}}$	$^{3}_{.400L}$	$^3_{600 m R}$	$^{2}_{4.400L}$	$^3_{1.200\mathrm{R}}$
		M	15.501	15.218	15.090	14.641	14,436	15.272	14.802	14.605	14.642	14.018
		G	1-4	1-4	1–4	1-4	1-4	1-4	1-4	1-4	1-4	1-4
	100	N B	$^3_{.300 m R}$	$^3_{1.200 m R}$	$\begin{array}{c} 2 \\ 3.900 \mathbf{L} \end{array}$	$^3_{1.800 m R}$	$^2_{3.300\mathrm{L}}$	$\frac{2}{2.400 L}$	$^3_{.400 m L}$	$^3_{600 m R}$	$^{2}_{4,400L}$	$^3_{1.200 m R}$
!		M	20.501	20.214	20.052	19,632	19.409	20.258	19.802	19.604	19.594	19.014
****	uck No	0.	41	42	43	44	45	46	47	48	49	50
W	h.Base	o. L	41	42	4344	44	45 44	46 44	47 44	48 44	49	50 32
WI Ax	h.Base le	L X	41 40 12	42 40 12	43	44 44 12	45 44 12	46 44 12	47	48 44 12	49 32 16	50 32 16
WI Ax	h.Base le acing	o. L	41	42	43 44 12	44	45 44	46 44	47 44 12	48 44	49	50 32
Ax Sp. Hit	h.Base le acing tch ad	C a ₁	41 40 12 16 12 .20	42 40 12 16 12 .20	43 44 12 20 12 .10	14 44 12 20 12 .10	45 44 12 20 12 .10	46 44 12 20 12 .20	47 44 12 20 12 .20	48 44 12 20 12 .20	49 32 16 8 8	50 32 16 8 8
Wi Ax Sp: Hit Lo. On	h.Base le acing tch ad	o. L X X' C	41 40 12 16 12	42 40 12 16 12	43 44 12 20 12	44 44 12 20 12	15 44 12 20 12	46 44 12 20 12	47 44 12 20 12	48 44 12 20 12	49 32 16 8	50 32 16 8 8 .10
Wi Ax Sp: Hit Lo. On	h.Base le acing tch ad les	C a ₁ a ₂ a ₃ G	41 40 12 16 12 .20 .30 .50	42 40 12 16 12 .20 .40 .40	48 44 12 20 12 .10 .20 .70 4	14 44 12 20 12 .10 .30 .60	15 44 12 20 12 .10 .40 .50	46 44 12 20 12 .20 .20 .60 4	47 44 12 20 12 .20 .30 .50	48 44 12 20 12 .20 .40 .40 .2	49 32 16 8 8 .10 .20 .70 4	50 32 16 8 8 .10 .30 .60
Wi Ax Sp: Hit Lo. On	h.Base le acing tch ad	o. L X X' C a ₁ a ₂ a ₃ G N	41 40 12 16 12 .20 .30 .50	42 40 12 16 12 .20 .40 .40	43 44 12 20 12 12 .10 .20 .70 4	14 44 12 20 12 .10 .30 .60	15 44 12 20 12 .10 .40 .50	46 44 12 20 12 .20 .20 .60 4	47 44 12 20 12 .20 .30 .50	48 44 12 20 12 .20 .40 .40 2	49 32 16 8 8 .10 .20 .70	50 32 16 8 8 .10 .30 .60
Wi Ax Sp: Hit Lo. On	h.Base le acing tch ad les	C a ₁ a ₂ a ₃ G	41 40 12 16 12 .20 .30 .50	42 40 12 16 12 .20 .40 .40	48 44 12 20 12 .10 .20 .70 4	14 44 12 20 12 .10 .30 .60	15 44 12 20 12 .10 .40 .50	46 44 12 20 12 .20 .20 .60 4	47 44 12 20 12 .20 .30 .50	48 44 12 20 12 .20 .40 .40 .2	49 32 16 8 8 .10 .20 .70 4	50 32 16 8 8 .10 .30 .60
Wi Ax Sp: Hit Lo. On	h.Base le acing tch ad les	C a1 a2 a3 G N B M G	41 40 12 16 12 20 30 .50 2 2 0 .750 2	42 40 12 16 12 .20 .40 .40 2 2 0 1.000	43 44 12 20 12 .10 .20 .70 4 4 0 .875	14 12 20 12 .10 .30 .60 4 4 0 .750	45 44 12 20 12 .10 .40 .50 2 2 0 1.000	46 44 12 20 12 .20 .20 .60 4 4 0 .750	47 44 12 20 12 .20 .30 .50 2 2 0 .750	48 44 12 20 12 .20 .40 .40 2 2 0 1.000 2	49 32 16 8 8 .10 .20 .70 4 4 0 .875 2-4	50 32 16 8 8 .10 .30 .60 4 4 0 .750 2-4
Wi Ax Sp: Hit Lo. On	h.Base le acing tch ad les	C A1 A2 A3 G N B M G N	41 40 12 16 12 .20 .30 .50 2 2 0 .750	42 40 12 16 12 .20 .40 .40 .2 2 0 1.000	48 44 12 20 12 .10 .20 .70 4 4 0 .875	14 12 20 12 .10 .30 .60 4 4 0 .750	45 44 12 20 12 .10 .40 .50 2 2 0 1.000	46 44 12 20 12 .20 .20 .60 4 4 0 .750	47 44 12 20 12 .20 .30 .50 2 2 0 .750	48 44 12 20 12 .20 .40 .40 .40 2 2 0 1.000	49 32 16 8 8 .10 .20 .70 4 4 0 .875 2-4 3	50 32 16 8 8 .10 .30 .60 4 4 0 .750 2-4
Wi Ax Sp: Hit Lo. On	h.Base le acing tch ad les	C a1 a2 a3 G N B M G N B M	41 40 12 16 12 .20 .30 .50 2 2 0 .750 2 2 2 0 .750	42 40 12 16 12 .20 .40 .40 2 2 0 1.000 2 2 0	43 44 12 20 12 10 .20 .70 4 4 0 .875 4 4 0 1.750	12 20 12 10 .30 .60 4 4 0 .750 4 4 0	45 44 12 20 12 10 .40 .50 2 2 0 1.000 2 2	46 44 12 20 12 .20 .20 .60 4 4 0 .750 4 1.500	47 44 12 20 12 20 30 .50 2 2 0 .750 2 2 0	48 44 12 20 12 .20 .40 .40 .40 2 2 0 1.000 2 2	49 32 16 8 8 .10 .20 .70 4 4 0 .875 2-4 3 .667L 2.320	50 32 16 8 8 .10 .30 .60 4 4 0 .750 2-4 3 0 2.100
Wi Ax Sp: Hit Lo. On	h.Base de de acing tch ad des 10	C a1 a2 a3 G N B M G N B M G	41 40 12 16 12 .30 .50 2 2 0 .750 2 2 9 1.500 1-3	42 40 12 16 12 .40 .40 .40 2 2 0 1.000 2 2 0 1.000 1-3	43 44 12 20 12 10 .20 .70 4 4 0 .875 4 4 0 1.750 2-3	44 44 12 20 12 .10 .30 .60 4 4 0 .750 4 0 1.500 1-3	45 44 12 20 12 .10 .40 .50 2 2 0 1.000 2 2 0 1.20 0 1.20 0 1.20 0 1.20 0 1.20 0 1.20 0 1.20 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	46 44 12 20 12 .20 .20 .60 4 4 0 .750 4 4 0 0 1.500 2-3	47 44 12 20 12 .30 .50 .50 2 2 0 .750 2 2 0 1.500 1-3	48 44 12 20 12 .20 .40 .40 .40 2 2 0 1.000 2 2 0 2.00 1.000	49 32 16 8 8 .10 .20 .70 4 4 0 .875 2-4 3 .6671 2.320 2-4	50 32 16 8 8 .10 .30 .60 4 4 0 .750 2-4 3 0 2.100
Wi Ax Sp: Hit Lo. On	h.Base le acing tch ad les	O. L X X C a1 a2 a3 G N B M G N B M G N B M G N B M G N B M B M G N B M B M G N B M B M G N B M B M B M G N B M B M B M G N B M B M B M B M B M B M B M B M B M B	41 40 12 16 12 .30 .50 2 2 0 .750 2 2 9 1.500 1–3 2.400L	42 40 12 16 12 .20 .40 .40 .2 2 0 1.000 2 2 0 2.000 1-3 2 0	43 44 12 20 12 10 .20 .70 4 4 4 0 1.750 2-3 3 2.182R	44 44 12 20 12 10 .30 .60 4 4 0 .750 4 4 0 1.500 13 2 1.715L	45 44 12 20 12 10 .40 .50 2 2 0 1.000 1-3 2 2.000 1-3 2 1.200L	46 44 12 20 12 .20 .20 .60 4 4 0 .750 4 4 0 1.500 2-3 3 2.400 R	47 44 12 20 30 .50 2 2 0 .750 2 2 0 1.500 1-3 2 400L	48 44 12 20 12 .20 .40 .40 .40 2 2 0 1.000 2 2 0 2.00 1.000 2 2 0 2 0 2 0 1.0	49 32 16 8 8 .10 .20 .70 4 4 0 .875 2-4 3 .6671 2.320 2-4 3 .6671	50 32 16 8 8 .10 .30 .60 4 4 0 .750 2-4 3 0 2.100
Wi Ax Sp: Hit Lo. On	h.Base de de acing tch ad des 10	C Au Au B M G N B M G N B M G N B M G N B M M M M	41 40 12 16 12 .20 .30 .50 .50 .750 2 2 0 .750 2 2 9 1.500 1-3 2 400L 2.20 2.20 2.30 2.30 2.40 2.50 2.50 2.50 2.7	42 40 12 16 12 .20 .40 .40 .2 2 0 1.000 2 2 2 0 0 1.3 2 0 0 3 0 0 0 0 0 0 0 0 0 0 0 0 0	43 44 12 20 12 10 .20 .70 .70 4 4 0 .875 4 0 1.750 2-3 3 2.182R 3.012	44 44 12 20 12 .10 .30 .60 4 4 0 .750 4 0 1.500 1-3 2 1.715L 2.918	45 44 12 20 12 10 .40 .50 2 2 0 1.000 2 2 0 1.000 1-3 2 1.200L 3.561	46 44 12 20 12 .20 .20 .20 .60 4 4 0 .750 4 0 0 2-3 3 3 2.400R	47 44 12 20 12 20 30 .50 2 2 0 .750 2 2 0 1.500 1-3 2 400L 2.929	48 44 12 20 12 20 40 .40 2 2 0 1.000 2 2 0 2.000 1-3 2 0 3.600	49 32 16 8 8 .10 .20 .70 4 4 0 .875 2-4 3 .667L 2.320 2-4 3 .667L 4,563	50 32 16 8 8 .10 .30 .60 4 4 0 .756 2-4 3 0 2.100 2-4 3 0 4.35
Wi Ax Sp: Hit Lo. On	h.Base ele acing tch ad eles 10 20	L X X X' C a1 a2 a3 G N B M G N B M G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M M G G N B M M G G N B M M G G M M M M M M M M M M M M M M M	41 40 12 16 12 .20 .30 .50 2 2 0 .750 2 2 2 .400L 2.929 1-3	42 40 12 16 12 .20 .40 2 2 0 1.000 2 2 0 2.000 1-3 2 0 3.600 1-3	43 44 12 20 12 .10 .20 .70 4 4 0 .875 4 0 1.750 2-3 3 2.182R 3.012 2-4	44 44 44 12 20 112 .10 .30 .60 4 4 0 .750 4 0 1.500 130 2 1.715L 2.918 1-3	45 44 12 20 12 10 .40 .50 2 2 0 1.000 2 2 1.2000 1.3561 1-3	46 44 12 20 12 .20 .20 .60 4 4 0 .750 4 4 0 1.500 2-3 3 2.400R 2.640B	47 44 12 20 12 20 30 50 2 2 0 .750 2 2 0 .750 2 2 4001 2.929 1-3	48 44 12 20 12 20 40 40 2 2 0 1.000 2 2 0 2 0 3.600 1-3	49 32 16 8 8 .10 .20 .70 .4 4 0 .875 2-4 3 .667L 2.320 2-4 4.563 2-4	50 32 16 8 8 .10 .30 .60 4 4 0 .750 2-4 3 0 2.100 2-4 3 0 4.350 2-4
WI Axx Sp. Hi ¹ Loo On Axx	h.Base de de acing tch ad des 10	C Au Au B M G N B M G N B M G N B M G N B M M M M	41 40 12 16 12 .20 .30 .50 .50 .750 2 2 0 .750 2 2 2 4.001L 2.929 1-3 2.929 1-3 2.9400L	42 40 12 16 12 .20 .40 .40 .2 2 0 1.000 2 2 0 2.000 1-3 2 0 3.600 1-3 2 0	43 44 12 20 12 10 .20 .70 .70 4 4 0 .875 4 0 1.750 2-3 3 2.182R 3.012	44 44 12 20 12 .10 .30 .60 4 4 0 .750 4 0 1.500 1-3 2 1.715L 2.918	45 44 12 20 12 10 .40 .50 2 2 0 1.000 2 2 0 1.000 1-3 2 1.200L 3.561	46 44 12 20 12 .20 .20 .20 .60 4 4 0 .750 4 0 0 2-3 3 3 2.400R	47 44 12 20 12 20 30 .50 2 2 0 .750 2 2 0 1.500 1-3 2 400L 2.929	48 44 12 20 12 20 .40 .40 2 2 0 1.000 2 2 0 2.000 1-3 2 0 3.600 1-3 2 0	49 32 16 8 8 .10 .20 .70 4 4 0 .875 2-4 3 .667L 2.320 2-4 3 .667L 4,563	50 32 16 8 8 .10 .30 .60 4 4 0 .750 2-4 3 0 2.100 2-4 3 0 4.350 2-4 3 0 3 0 3 0 3 0 3 0 3 0 0 0 0 0 0 0 0 0 0 0 0 0
WI Axx Spp Hi ¹ Loo On Ax	h.Base ele acing tch ad eles 10 20	X X X' C a ₁ a ₂ a ₃ G N B M G N B M G N B M	41 40 12 16 12 .20 .30 .50 2 2 0 .750 2 2 2 .9 1.500 1-3 2 .400L 2.929 4.803	42 40 12 16 12 .20 .40 2 2 0 1.000 2 2 0 2.000 1-3 2 0 3.600 1-3 2 0 5.600	43 44 12 20 112 .10 .20 .70 4 4 0 .875 4 0 1.750 2-3 3 2.182R 3.012 2-4 3 2.556L 4.447	44 44 44 12 20 112 .10 .30 .60 4 4 0 .750 4 0 1.500 1-3 2 1.715L 2.918 1-3 2 1.715L 4.651	45 44 12 20 12 10 .40 .50 .50 2 2 0 1.000 2 1.3 2 1.2001 1-3 2 1.2001 1-3 2 1.2001 5.427	46 44 12 20 12 .20 .20 .60 4 4 0 .750 4 0 1.500 2-3 3 2.400R 2.646 1-3 2 857L 4.013	47 44 12 20 12 20 30 50 2 2 0 .750 2 2 0 .750 2 2 400L 2.929 4.803	48 44 12 20 12 20 40 40 2 2 0 1.000 2 0 2.000 1-3 2 0 5.600	49 32 16 8 8 .10 .20 4 4 0 .875 2-4 3 .6671L 4.563 2-4 3 .6671L 6.811	50 32 16 8 8 .10 .30 .60 4 4 4 0 .750 2-4 3 0 2.100 2-4 3 0 4.350 6.60 6.60 6.60 6.60 6.60 6.75
WI Axx Spp Hi ¹ Loo On Ax	h.Base ele acing tch ad eles 10 20	L X X X' C at a a a a a G N B M G N B M G N B M G N B M B M G N B M B M B M G N B M B M B M B M B M B M B M B M B M B	41 40 12 16 12 .20 .30 .50 .50 .750 2 2 0 .750 2 2 2 4.001L 2.929 1-3 2.929 1-3 2.9400L	42 40 12 16 12 .20 .40 .40 .2 2 0 1.000 2 2 0 2.000 1-3 2 0 3.600 1-3 2 0	43 44 12 20 12 10 .20 .70 4 4 0 .875 4 0 1.750 2-3 3 3.012 2-4 3 2.556L	44 44 12 20 12 10 .30 .60 4 4 0 .750 4 0 1.500 13 2 1.715L 2.918	45 44 12 20 12 10 .40 .50 2 2 0 1.000 2 2 0 1.000 1-3 2 1.200L 1-3 2 1.200L	46 44 12 20 12 .20 .20 .20 .60 4 4 0 .750 4 1.500 2-3 3 8 2.400R 2.646 1-3 2 .857L	47 44 12 20 12 20 30 .50 2 2 0 .750 2 2 0 1.500 1-3 2 400L 2.929 1-3 2 400L	48 44 12 20 12 20 .40 .40 2 2 0 1.000 2 2 0 2.000 1-3 2 0 3.600 1-3 2 0	49 32 16 8 8 .10 .20 .875 2-4 3 .667L 4,563 2-4 3 .667L	50 32 16 8 8 8 10 .30 .60 4 4 4 0 .750 2-4 3 0 4.350 2-4 3 0 6.60 4 4.50 1.750 2-4 3 0 1.750
WI Axx Sp. Hi ¹ Loo On Axx	h.Base le acing tch ad les 10 20 30	L X X X C C a1 a2 a2 a3 G N B M G G N B M G G N B M G G N B M G G N B M M M G G N B M M M G G N B M M M G G N B M M M G G N B M M M G G N B M M M G G N B M M M G G N B M M M M G G N B M M M M M M M M M M M M M M M M M M	41 40 12 16 12 .20 .30 .50 2 2 0 .750 2 2 4001 1-3 2 4001 4.803 1-3 2 400L	42 40 12 16 12 .20 .40 .40 2 2 0 1.000 2 2 0 2.000 1-3 2 0 5.600 1-3 2 0	43 44 12 20 112 .10 .20 .70 4 4 0 .875 4 0 1.750 2-3 3 2.182R 3.012 2-4 3 2.556L 4.447	44 44 44 12 20 112 .10 .30 .60 4 4 0 .750 4 0 1.500 1.500 1-3 2 1.715L 2.918 1-3 2 1.715L 4.651 1-4 3 0	45 44 12 20 10 .10 .40 .50 2 2 0 1.000 2 2 1.2000 1-3 2 1.2001 3.561 1-3 2 1.200L 5.427 1-3 2 1.200L	46 44 12 20 12 .20 .20 .60 4 4 0 .750 4 4 0 1.500 2-3 3 2.400R 2.646 1-3 2 .857L 4.013 1-4 3 600R	47 44 12 20 30 12 20 30 50 2 2 0 750 2 2 400L 2.929 1-3 2 4.00L 4.803 1 3 2 400L	48 44 12 20 12 20 40 40 2 2 0 1.000 2 2 0 2.000 1-3 2 0 5.600 1-3 2 0	49 32 16 8 8 .10 .20 4 4 0 .875 2-4 3 .667L 4.568 3 .668L 6.811 1-4 3 .600R	50 32 16 8 8 .10 .30 .60 4 4 0 .750 2-4 3 0 4.350 2-4 3 0 6.600 1-4 1.200R
WI Axx Spp Hi ¹ Loo On Ax	h.Base le acing tch ad les 10 20 30	C C A B M G N B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M M G N B B M M M M M M M M M M M M M M M M M	41 40 12 16 12 .20 .30 .50 2 2 0 .750 2 2 9 1.500 1-8 2 .4001 2.929 1-8 2 .4001 2.929 1-3 2 .4001 6.677	42 40 12 16 12 .20 .40 .40 .2 2 0 1.000 2 2 0 2.000 1-3 2 0 3.600 1-3 2 0 5.600 1-3 2 0 7.600	43 44 12 20 11 10 .20 .70 4 4 0 .875 4 0 1.750 2-3 2.182R 3.012 2-4 3 2.556L 4.447 2-4 3 2.556L 6.668	44 44 12 20 12 10 .30 .60 4 4 0 .750 4 1.500 1.500 1.715L 2.918 1-3 2 1.715L 4.651 1-4 3 0 6.500	45 44 12 20 10 .40 .50 1.000 2 2 0 1.000 2 2 1.200L 3.561 1-3 2 1.200L 5.427 1-3 2 1.200L 7.297	46 44 12 20 12 20 20 20 60 4 4 0 750 4 0 1.500 2-3 3 2.400R 2.640 1-3 2 .857L 4.013 1-4 3 600R 5.907	47 44 12 20 30 12 20 30 50 2 2 0 1.500 1-3 2 4.001 2.929 1-3 2 4.004 4.803 1 3 2 4001 6.677	48 44 12 20 12 20 40 40 2 2 0 1.000 2 2 0 2.000 1-3 2 0 3.600 1-3 2 0 7.600	49 32 16 8 8 .10 .20 .70 4 4 0 .875 2-4 3 .667L 2.320 2-4 3 .667L 4.563 2-4 3 .667L 6.811 1-4 3 600R 9.107	50 32 16 8 8 .10 .30 .60 4 4 4 0 .750 2-4 3 0 2.100 2-4 3 0 4.350 2-4 3 1.30 1
WI Axx Spp Hi ¹ Loo On Ax	h.Base le acing tch ad les 10 20 30	C C C C C C C C C C C C C C C C C C C	41 40 12 16 12 .20 .30 .50 2 2 0 .750 2 2 1.500 1-8 2 .400L 4.803 1-3 2 .400L 6.677 1-4 2	42 40 12 16 12 .20 .40 2 2 0 1.000 2 2 0 2.000 1-3 2 0 5.600 1-3 2 0 7.600	43 44 12 20 112 .10 .20 .70 4 4 0 .875 4 0 1.750 2-3 3 2.182R 3.012 2-4 3 2.556L 6.668 1-4 3	44 44 44 12 20 112 .10 .30 .60 4 4 0 .750 4 0 1.500 1-3 2 1.715L 2.918 1-3 2 1.715L 1-4 3 0 6.500 1-4 3	45 44 12 20 12 10 .40 .50 .50 2 2 0 1.000 2 1.200L 3.561 1-3 2 1.200L 7.297 1-4 2	46 44 12 20 12 .20 .20 .60 4 4 0 .750 4 0 1.500 2-3 3 2.400R 2.646 1-3 2.857L 4.013 1-4 3 600R 5.907	47 44 12 20 30 12 20 30 50 2 2 0 750 2 2 0 1.500 1-3 2 400L 4.803 1 3 2 400L 6.677 1-4	48 44 12 20 12 20 12 20 10 10 10 20 1.000 2 2 0 2.000 1-3 2 0 5.600 1-3 2 0 7.600 1-3 2	49 32 16 8 8 .10 .20 4 4 0 .875 2-4 3 .6671L 2.320 2-4 3 .6671L 4.563 2-4 3 .66811 1-4 3 .600R 9.107	50 32 16 8 8 .10 .30 .60 4 4 4 0 .750 2-4 3 0 2.100 2-4 3 0 6.600 1-4 3 1.200R 8.929 1-4 3
WI Axx Spp Hi ¹ Loo On Ax	h.Base le acing tuch ad les 10 20 30 40	C a1 a2 G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N M B M M G N M B M M G N M B M M G N M B M M G N M B M M G N M B M M G N M B M M G N M B M M G N M B M M G N M B M M M M M M M M M M M M M M M M M	41 40 12 16 12 .20 .30 .50 .50 .750 2 2 0 .750 2 2 4 001 1-3 2 4001 4.803 1-3 2 4001 6.677 1-4 2 3.8001	42 40 112 16 12 20 40 .40 .40 2 2 0 1.000 2 2 0 2.000 1-3 2 0 3.600 1-3 2 0 7.600 1-4 2 2.800L	43 44 12 20 12 10 .20 .70 4 4 0 .875 4 0 1.750 2-3 3 2.182R 3.012 2-4 3 2.556L 4.447 3 2.556L 6.668 1-4 3 1.100L	12 10 30 12 10 10 10 10 10 10 10 10 10 10 10 10 10	45 44 12 20 12 10 .40 .50 2 2 0 1.000 2 2 0 1.200L 3.561 1-3 2 1.200L 5.427 1-3 2 1.200L 7.297 1-4 4 4900L	46 44 12 20 12 .20 .20 .60 .60 4 4 0 .750 4 4 0 1.500 2-3 3 857L 4.013 1-4 3 .600R 5.907	47 44 12 20 12 20 30 .50 2 2 0 .750 2 2 0 1.500 1-3 2 4.001 4.803 1 3 2 4.00L 6.677 1-4 2 4.300L	48 44 12 20 12 20 40 .40 .40 2 2 0 1.000 2 2 0 2.000 1-3 2 0 5.600 1-3 2 0 7.600 1-3 2 0	49 32 16 8 8 .10 .20 .70 4 4 0 .875 2-4 3 .6667L 4.563 2-4 3 .667L 6.811 1-4 3 .600R 9.107	50 32 16 8 8 .10 .30 .60 4 4 0 .750 2-4 3 0 2.100 2-4 3 0 6.600 1-4 3 1.200R 8.929 1-4 3 1.200R
WI Axx Spp Hi ¹ Loo On Ax	h.Base le acing tuch ad les 10 20 30 40	C C a1 a2 AA G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M M M M M M M M M M M M M M M M M	41 40 12 16 12 .20 .30 .50 .50 .750 2 2 9 1.500 1-3 2 4.001 2.929 1-3 2 4.001 4.803 1-3 2 4.001 1-3 2	42 40 112 16 112 .20 .40 .40 .2 2 0 1.000 2 2 2 0 0.000 1-3 2 0 3.600 1-3 2 0 7.600 1-4 2 2.800L 9.931	43 44 12 20 12 10 .20 .70 4 4 0 .875 4 4 0 1.750 2-3 3 2.182R 3.012 2-4 3 2.556L 4.447 2-4 3 1.6668 1-4 3 1.100L 9.120	44 44 12 20 12 10 .30 .60 4 4 0 .750 4 0 1.500 1.32 1.715L 2.918 1-3 2 1.715L 4.651 1-4 3 0 6.500 1-4 3 0 9.000	45 44 12 20 12 10 .40 .50 2 2 0 1.000 2 2 2 0 2.000 1-3 2 1.200L 5.427 1-3 1.200L 7.297 1-4 2 4.900L 9.300	46 44 12 20 12 .20 .20 .60 4 4 0 .750 4 4 0 1.550 2-3 3 2.400R 2.646 1-3 2 857L 4.013 1-4 3 .600R 5.907 1-4 3 600R 8.406	47 44 12 20 12 20 30 .50 2 2 0 .750 2 2 0 1.550 1-3 2 400L 4.803 1 3 2 400L 4.803 1 3 4 4.804 4.803 1 8 4 8 4.804 8 4 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	48 44 12 20 12 20 40 2 10 1000 2 2 0 1.000 1-3 2 0 3.600 1-3 2 0 7.600 1-3 2 0 9.600	49 32 16 8 8 .10 .20 .70 4 4 0 .875 2-4 3 .667L 2.320 2-4 3 .667L 6.811 1-4 3 .600R 9.107 1-4 3 .600R 11.606	50 32 16 8 8 .10 .30 .60 4 4 4 0 .756 2-4 3 0 2.100 2-4 3 0 6.600 1-4 3 1.200R 8.929 1-4 3 1.200R 1.200R 1.200R
WI Axx Spp Hi ¹ Loo On Ax	h.Base le acing tuch ad les 10 20 30 40	L X X Y C a1 a2 a3 a3 a A3 B M G N B B M M G N B B M G N B	41 40 12 16 12 .20 .30 .50 .50 .750 2 2 0 .750 2 2 9 1.500 1-8 2 400L 2.929 1-8 2 400L 6.677 1-4 2 3.800L 9.041 1-4 2	42 40 112 16 12 20 40 100 2 2 0 1.000 2 2 0 0.000 1-3 2 0 3.600 1-3 2 0 7.600 1-4 2 2.800L 9.931 1-4 2	43 44 12 20 12 10 .20 .70 4 4 0 .875 4 4 0 1.750 2-3 2.182R 3.012 2-4 3 2.556L 4.447 2-7 3 2.556L 9.120 1-4 3	12 10 30 12 10 10 10 10 10 10 10 10 10 10 10 10 10	45 44 12 20 12 10 .40 .50 .50 2 2 0 1.000 2 2 0 1.200L 3.561 1-3 2 1.200L 5.427 1-3 2 1.200L 7.297 1-4 4 9.300 1-4 2	46 44 12 20 12 .20 .20 .60 .60 4 4 0 .750 4 4 0 1.500 2-3 3 3 .600R 2.646 1-3 2.857L 4.013 1-4 3 .600R 8.406 1-4 3	47 44 12 20 12 20 30 .50 2 2 0 .750 2 2 0 1.500 1-3 2 4.001 2.929 1-3 2 4.001 4.803 1 3 2 4.001 8.608 1-4 2	48 44 12 20 12 20 40 .40 .40 2 2 0 1.000 2 2 0 2.000 1-3 2 0 5.600 1-3 2 0 9.600 1-4 2	49 32 16 8 8 .10 .20 .70 4 4 0 .875 2-4 3 .6667L 2.320 2-4 3 .6667L 6.811 1-4 3 .600R 9.107 1-4 3 .600R 11.606	50 32 16 8 8 .10 .30 .60 .4 4 0 .750 2-4 3 0 2.100 2-4 3 0 6.600 1-4 3 1.200R 8.929 1.200R 11.424 3
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$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		loe	\mathbf{a}_2	.40	.20	.30	.40	.20	.30	.40	.20	.30	.40 .40
10 N 2	AX	ies											
M		10	N	2		2	2	4	4	2	4	2	2
20 N	l												1.000
B	1	20											2–3
Section Color Co		20	В	1.539L	.500L	1.818L	1.333L			1.539L	1.600R	1.818L	$^{2}_{1.334\mathrm{L}}$
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B		30											2-3 2
Second Process Seco								1.445L	.667L				1.334L
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M	4	40	N	3	3	3	2	3	3	3	3	3	2
M	Fee												1.200L 5.636
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M	Sp	50											$^2_{1.200 { m L}}$
60 N			M	8.797	8.180	8.035	8.513	8.400	8.307	8.346	7.539	7.488	8.129
B	1	60											$^{1-4}_{2}$
So	. !		В	2.200L	2.000R	2.600R	.×00L	$.100\mathrm{L}$	$.600\mathbf{R}$	2.700L	1.400R	2.100R	1.200L
S0 N													10.624
M 16.261 15.650 15.485 16.008 15.900 15.805 15.791 15.025 14.955 15	-	80	N	2	3	3	2	3	3	2	3	3	2
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Axles	Hit	acing	X'	8	16	16 8	16	16	<u>16</u>	20 8	20	20	8
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R	Los On	acing tch ad	X' C a ₁ a ₂ a ₃	.10 .20 .70	.10 .30	16 8 .10 .40 .50	16 8 .20 .20	16 8 .20 .30 .50	.20 .40 .40	20 8 .10 .20 .70	20 8 .10 .30 .60	20 8 .10 .40 .50	20 8 .20 .20 .60
Column	Los On	acing tch ad les	X' C a ₁ a ₂ a ₃ G	16 8 .10 .20 .70	16 8 .10 .30 .60	16 8 .10 .40 .50	16 8 .20 .20 .60	16 8 .20 .30 .50	.20 .40 .40	20 8 .10 .20 .70 4	20 8 .10 .30 .60	8 .10 .40 .50	20 8 .20 .20 .60 4
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G 2-3 2-3 2-3 2-3 2-3 2-3 2-3 2-3 2-3 2-3	Los On	acing tch ad les 10	X' C a ₁ a ₂ a ₃ G N B M G N	16 8 .10 .20 .70 4 4 0 .875 2-3 3	16 8 .10 .30 .60 4 4 0 .750 2-8 2	16 8 .10 .40 .50 2 2 0 1.600 2-3 2	16 8 .20 .20 .60 4 4 0 .750 2-3 3	16 8 .20 .30 .50 2 2 0 .750 2-3 2	16 8 .20 .40 .40 2 2 0 1.000 2 3	20 8 .10 .20 .70 4 4 0 .875 2-3 3	20 8 .10 .30 .60 4 4 0 .750 2-3 3	20 8 .10 .40 .50 2 2 0 1.000 2-3 2	20 8 .20 .20 .60 4 4 0 .750 2-3 3
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$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Los On	acing tch ad les 10	X' C a1 a2 a3 G N B M G N B M	16 8 .10 .20 .70 4 4 0 .875 2-3 3 1.455R 2.008 2-3	16 8 .10 .30 .60 4 4 0 .750 2-3 2 2.000T, 1.920 2-3	16 8 .10 .40 .50 2 2 0 1.600 2-3 2 1.539L 2.327 2-3	16 8 .20 .20 .60 4 4 0 .750 2-3 3 1.600R 1.764	16 8 .20 .30 .50 2 2 0 .750 2-3 2 1.818L 1.841	16 8 .20 .40 .40 2 2 0 1.000 2 3 2 1.333L 2.253	20 8 .10 .20 .70 4 4 0 .875 2-3 3 1.455R 2.008 2-3	20 8 .10 .30 .60 4 4 0 .750 2-3 3 2.000R 1.920 2-3	20 8 .10 .40 .50 2 2 0 1.000 2-3 2 1.539L 2.327 2-3	20 8 .20 .20 .60 4 0 .750 2-3 3 1.600R 1.764
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Los On	acing tch ad les 10	X' C a ₁ a ₂ a ₃ G N B M G N B M C N B N B N B N	16 8 .10 .20 .70 4 4 0 .875 2-3 3 1.455R 2.008 2-3 3	16 8 .10 .30 .60 4 4 0 .750 2-3 2 2.000T, 1.920 2-3 2	16 8 .10 .40 .50 2 2 0 1.600 2-3 2 1.539L 2.327 2-3 2	16 8 .20 .20 .60 4 4 0 .750 2–3 3 1.600R 1.764	16 8 .20 .30 .50 2 2 0 .750 2–3 2 1.818L 1.841 2–3 2	16 8 .20 .40 .40 2 2 0 1.000 2 3 2 1.338L 2.253 2	20 8 .10 .20 .70 4 4 0 .875 2-3 3 1.455R 2.008 2-3 3	20 8 .10 .30 .60 4 4 0 .750 2-3 3 2.000R 1.920 2-3 3	20 8 .10 .40 .50 2 2 0 1.000 2–3 2 1.539L 2.327 2–3 2	20 8 .20 .20 .60 4 4 0 .750 2-3 3 1.600R 1.764 2 3
B 2.222L 1.333L 2.671L 2.000L 8.00R 1.000R 3.000L 5.77L 2.67L 2.75	Los On	acing tch ad les 10	X' C a ₁ a ₂ a ₃ G N B M G N B N B M G N B M	16 8 .10 .20 .70 4 4 0 .875 2-3 1.455R 2.008 2-3 1.455R	16 8 .10 .30 .60 4 4 0 .750 2-3 2.0001, 1.920 2-3 2.0001,	16 8 .10 .40 .50 2 2 0 1.600 2-3 2 1.539L 2.327 2-3 2 1.539L	16 8 .20 .20 .60 4 4 0 .750 2 3 3 1.600R 1.764 2-3 1.600R	16 8 .20 .30 .50 2 2 0 .750 2–3 2 1.818L 1.841 2–3 1.818L	16 8 .20 .40 .40 2 2 0 1.000 2 3 2 1.3338L 2.253 2 1.3338L	20 8 .10 .20 .70 4 4 0 .875 2-3 3 1.455R 2.008	20 8 .10 .30 .60 4 4 0 .750 2-3 2.000GR 1.920 2-3 3 2.000R	20 8 .10 .40 .50 2 2 0 1.000 2–3 2 1.539L 2.327 2–3 2 1.539L	20 8 .20 .20 .60 4 0 .750 2-3 3 1.600R 1.764
M	Los On	acing teh ad les 10 20	X' C a1 a2 a3 G N B M G N B M G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G M G G M G G M G G M G G M G G M G G M G G M G G M G G M G G M G M G G M G G M G G M G G M G G M G G M G G M G G M G G M G G M G M G G M G G M G G M G G M G G M G G M G G M G G M G G M G G M G M G G M G G M G G M G G M G G M G G M G G M G G M G G M G G M G M G G M G G M G G M G G M G G M G G M G G M G G M G G M G G M G M G G M G G M G G M G G M G G M G G M G G M G G M G G M G G M G M G G M G G M G G M G G M G M G G M G M G G M G M G G M	16 8 .10 .20 .70 4 4 0 .875 2-3 3 1.455R 2.008 2-3 3 1.455R 2-3 3 1.455R	16 8 .10 .30 .60 4 4 0 .750 2-3 2.0001, 1.920 2-3 2.0001, 3.380 2-4	16 8 .10 .40 .50 2 0 1.600 2–3 2 1.539L 2.327 2–3 2 1.3291 3.926 1–3	16 8 .20 .20 .60 4 4 0 .750 2 .3 1.600R 1.764 2-3 3 1.600R 2-993	16 8 .20 .30 .50 2 2 0 .750 2-3 2 1.818L 1.841 2-3 2 1.818L 1-3	16 8 .20 .40 .40 .40 2 2 0 1.000 2 3 2 1.338L 2.253 2 1.333L 3.736 1-3	20 8 .10 .20 .70 4 4 0 .875 2–3 1.455R 2.08 2-3 3 1.455R 2-3 3 1.455R	20 8 .10 .30 .60 4 4 0 .750 2-3 3 2.000R 1.920 2-3 3 2.000R 1.920 1.93 2.000R	20 8 .10 .40 .50 2 2 0 1.000 2–3 2 1.539L 2.327 2–3 2 1.539L 3.926 1–3	20 8 20 .60 4 4 0 .750 2-3 1.600R 2.993 3 1.600R 2.993 3
M 7.789 7.700 7.905 6.913 7.015 7.751 7.112 7.112 7.122 7.576 6 G 1-4 1·4 1-4 1-4 1·4 1·4 1·4 1·4 1·4 1·4 1·4 1·4 1·4 1·	Los On Ax	acing teh ad les 10 20	X' C a1 a2 a3 G N B M G N B M G N B M G N B M G N B M G N B M G N B M C R D R D R D R D R D R D R D R D R D R	16 8 .10 .20 .70 4 4 0 .875 2-3 3 1.455R 2.008 2-3 3 1.455R 3.364 2-4 3	16 8 .10 .30 .60 4 4 0.750 2-3 2.000I, 1.920 2-3 2.000I, 3.380 2-4 3	16 8 .10 .40 .50 2 2 0 1.600 2-3 2.327 2-3 2.327 2-3 2.327 2-3 2.327	16 8 .20 .20 .60 4 4 0 .750 2 .3 1.600R 1.764 2.993 2.993 2-4	16 8 .20 .30 .50 2 2 0 .750 2–3 2 1.818L 1.841 2–3 2 1.818L 3.186 1–3 2	16 8 .20 .40 .40 2 2 0 1.000 2 3 2 1.333L 2.253 2 1.333L 3.736 1-3 2	20 8 .10 .20 .70 4 4 0 .875 2-3 1.455R 2.008 2-3 1.455R 3.364 2-4	20 8 .10 .30 .60 4 4 0 .750 2-3 3 2.000R 1.920 2-3 3 2.000R 3.380 1-3 2	20 8 .10 .40 .50 2 2 0 1.000 2-3 2 1.539L 2.327 2-3 2 1.539L 3.926 1-3 2	20 8 .20 .60 4 4 0 .750 2-3 3 1.600R 1.764 2 3 3 3 3 1.600R 2.993
M 7.789 7.700 7.905 6.913 7.015 7.751 7.112 7.112 7.122 7.576 6 G 1-4 1·4 1-4 1-4 1·4 1·4 1·4 1·4 1·4 1·4 1·4 1·4 1·4 1·	Los On Ax	acing teh ad les 10 20	X' C a1 a2 a3 G N B M B M G N B M B M G N B M B M B M B M B M B M B M B M B M B	16 8 .10 .20 .70 4 4 0 .875 2-3 3 1.455R 2.008 2-3 1.455R 3.364 2-4 3 2.222L 5.511	16 8 .10 .30 .60 4 4 0 .750 2-3 2 2.000I, 3.380 2-4 3 1.338I, 5.440	16 8 .10 .40 .50 .50 .2 .0 .1.600 .2-3 .2 .1.539L .2.327 .3.926 .1-3 .2 .2.677L .5.701	16 8 .20 .20 .20 .60 4 4 0 .750 2 3 1.600R 1.764 2 -3 3 1.600R 2.993 2 -4 3 4.880	16 8 .20 .30 .50 2 0 .750 2-3 2.8181 1.841 2-3 1.8181 3.186 1-3 2.800R 4.912	16 8 .20 .40 .40 .40 2 2 1.000 2 3 2 1.333L 2.253 2 1.333L 3.736 1-3 2 1.000R	20 8 .10 .20 .70 4 4 0 .875 2-3 1.455R 2.008 2-3 1.455R 3.364 3.300L 4.903	20 8 .10 .30 .60 4 4 0 .750 2-3 3 2.000R 1.920 2-3 3 2.000R 1-3 2.577L 5.006	20 8 .10 .40 .50 2 0 1.000 2–3 2 1.539L 2.327 2–3 2 1.539L 3.926 1–3 2 2.5701	20 8 20 20 .60 4 4 0 .750 2-3 3 1.600R 1.764 2.993 2.993 2.4 3 2.750L 4.351
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Los On Ax	acing teh ad les 10 20 30 40	X' C a ₁ a ₂ a ₃ G N B M G N B M G N B M G G N B M G G N B M G G N B G N B G N B G G N B G G N B G G N B G G G G	16 8 .10 .20 .70 4 4 0 .875 2-3 3 .455R 2.008 2-3 3 .1.455R 3.364 2-4 3 2.222L 5.511	16 8 .10 .30 .60 4 4 0 .750 2-3 2 .000I, 1.920 2-3 2 2.000I, 3.380 2-4 3 1.333I, 5.440 1-4	16 8 10 .40 .50 2 0 1.600 2-3 2 1.539L 2.327 2-3 2 1.539L 3.926 1-3 2 2.267L 5.701 1-4	16 8 .20 .20 .60 4 4 0 .750 2 3 3 1.600R 2.993 2-4 3 2.0902 4.880 1-4	16 8 -20 -30 -50 2 0 -750 2-3 2 1.818L 1.841 2-3 2 1.818L 3.186 1-3 2 .800R 4.912	16 8 .20 .40 .40 .40 2 2 0 1.000 2 3 2 1.333L 2.253 2 1.333L 3.736 1-3 1.000R 5.620	20 8 .10 .20 .70 4 4 0 .875 2-3 3 1.455R 3.364 2-4 3 3.0004 4.903 2-4	20 8 .10 .30 .60 4 4 0 .750 2-3 3 2.000R 1.920 2-3 3 2.000R 3.380 1-3 2 .570L 5.006	20 8 .10 .40 .50 2 2 0 1.000 2–3 2 1.539L 2.327 2–3 2 1.539L 3.926 1–3 2 2.5701	20 8 20 .60 4 4 0 .750 2-3 3 1.600R 2.993 2-4 3 2.750L
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Los On Ax	acing teh ad les 10 20 30 40	X' C a1 a2 a3 G N B M G N B M G N B M G N B M G N B M G N B M B M B M B M B M B M B M B M B M B	16 8 .10 .20 .70 4 4 0 .875 2-3 3 1.455R 2.008 2-3 1.455R 3.364 2-4 3 2.222L 2-4 3 2.222L	16 8 .10 .30 .60 4 4 0 .750 2-3 2 2.000I 1.920 2-3 2.000I 3.380 2-4 3 1.3331 5.440 1-4 3 0	16 8 10 40 50 2 0 1.6000 2-3 2.539L 2.927 2-3 2.539L 5.701 1-4 2 3.200L	16 8 .20 .20 .60 4 4 0 .750 2 3 1.600R 1.764 2-3 3 1.600R 2.993 2-4 3 2.000L 4.880 1-4 3.800R	16 8 .20 .30 .50 2 0 .750 2 2 3 1.818L 1.841 2 -3 2.818L 3.186 1 -3 2 .800R 4.912 1 -4 2 2.400L	16 8 .20 .40 .40 .40 2 2 0 1.000 2 3 2 1.3338L 2.253 2 1.3338L 3.736 1-3 2 1.000R 5.620 1-4 2 1.600L	20 8 .10 .20 .70 4 4 0 .875 2-3 3 1.455R 2.008 2-3 3.364 2-4 3 3.000L 4.903 2-4 3 3.000L	20 8 .10 .30 .60 4 4 0 .750 2-3 3 2.000R 3.380 1-3 2.577L 5.006 2-4 3 2.000L	20 8 .10 .40 .50 2 0 1.000 2–3 2 1.539L 2.327 2–3 2 1.539L 3.926 1–3 2 2.667L 5.701	20 8 20 .20 .60 4 4 0 .750 2-3 3 1.600R 1.764 2 3 2.750L 4.351 2-4 3 2.750L
M 10.211 10.200 10.371 9.411 9.496 10.243 9.538 9.606 9.928 8 G 1-4	Los On Ax	acing teh ad les 10 20 30 40	X' C a1 a2 a3 G N B M G N B M G N B M G N B M G N B M G N B M M G N B M M G N B M M M M M M M M M M M M M M M M M M	16 8 .10 .20 .70 4 4 0 .875 2-3 3 1.455R 2.008 2-3 3 1.455R 3.364 2-4 3 2.222L 5.511 2-4 3 2.222L	16 8 .10 .30 .60 4 4 0 .750 2-3 2 .000I, 1,920 2-3 2 2,000I, 3,380 2-4 3 1,3340 1-4 3 0 7,700	16 8 10 .40 .50 2 2 0 1.600 2-3 2 1.539L 2.327 2-3 2 1.539L 3.926 1-3 2 2.267L 5.701 1-4 2 3.200L 7.905	16 8 .20 .20 .60 4 4 0 .750 2 3 1.600R 2.993 2-4 3 2.000L 4.880 1-4 3.800R 6.913	16 8 20 30 .50 2 0 .750 2-3 2 1.818L 1.841 2-3 2 1.818L 3.186 1-3 2 .800R 4.912 1-4 2 2.400L 7.015	16 8 .20 .40 .40 .40 2 0 1.000 2 3 2 1.3338L 2.253 2 -3 2 1.333L 3.736 1 -3 2 1.0000R 5.620 1 -4 2 1.600L 7.751	20 8 .10 .20 .70 4 4 0 .875 2-3 3 1.455R 3.364 2-4 3.00012 4.903 2-4 3.00012 7.112	20 8 .10 .30 .60 4 4 0 .750 2-3 3 2.000R 1.920 2-3 3 2.000R 3.380 1-3 2.570L 5.006 2-4 3 2.000L 7.122	20 8 .10 .40 .50 2 0 1.000 2–3 2 1.539L 2.327 2 1.539L 3.926 1–3 2 .267L 5.701 1–3 2 .267L 7.576	20 8 20 .60 4 4 0 .750 2-3 3 1.600R 2.993 2-4 3 2.750L 4.351 2-4 3 2.750L 6.321
80 N 3 3 2 3 2 3 3 3 2 3 3 2 3 3 2 3 3 2 3 3 3 2 3 3 3 2 3 3 3 2 3 3 3 2 3 3 3 2 3 3 3 2 3 3 3 2 3 3 3 3 2 3	Los On Ax	tch ad les 10 20 30 40 50	X' C a1 a2 a2 G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M B M G N B M B M B M B M B M B M B M B M B M B	16 8 .10 .20 .70 .4 4 0 .8775 2-3 3.455R 2.008 2-3 1.455R 3.364 2-4 3 2.222L 7.739 1-4 3	16 8 .10 .30 .60 4 4 0 .750 2-3 2 2.0001, 1.920 2-3 2.0001, 3.380 2-4 3 1.3331L 5.440 1-4 3 0 7.700 1-4 3	16 8 10 40 50 2 0 1.6000 2-3 2.327 2-3 2.327 2-3 2.539L 3.926 1-3 2 2.267L 5.701 1-4 2 3.200L 7.905	16 8 20 20 60 4 4 0 750 2 3 1,600R 1,764 2-3 3,600R 2,993 2-4 3 2,000L 4,880 1-4 3,800R 6,913 1-4 3	16 8 20 30 .50 2 0 .750 2-3 2.8181L 1.841 2-3 2.800R 4.912 1-4 2.400L 7.015 1-4 2	16 8 .20 .40 .40 .40 2 2 0 1.000 2 3 2 1.3338L 2.253 2 1.3338L 3.736 1-3 2 1.000R 5.620 1-4 2 1.600L 7.751 1-4 2	20 8 .10 .20 .70 4 4 0 .875 2-3 1.455R 2.008 2-3 3.364 2-4 3 3.000L 4.903 2-4 3 3.000L 7.112 1-4 3	20 8 .10 .30 .60 4 4 0 .750 2-3 3 2.000R 3.380 1-3 2.577L 5.006 2-4 3 2.000L 7.122 1-4 3	20 8 .10 .40 .50 2 0 1.000 2–3 2 1.539L 2.327 2–3 2 1.539L 3.926 1–3 2 .267L 5.701 1–3 2 .267L 7.576	20 8 20 .20 .60 4 4 0 .750 2-3 3 1.600R 1.764 2 3 2.750L 4.351 2-4 3 2.750L 6.321 1-4
B .800L 0 3.200L .800R 2.400L 1.600L 1.500L .600L 3.700L .50 M 15.208 15.200 15.828 14.408 14.472 15.282 14.528 14.605 14.871 15 G 1-4 1-4 1-4 1-4 1-4 1-4 1-4 1-4 1-4 1-4	Los On Ax	tch ad les 10 20 30 40 50	X' C a1 a2 a3 G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M B M G N B M B M B M B M B M B M B M B M B M B	16 8 .10 .20 .70 4 4 0 .875 2-3 3 1.455R 2.008 2-3 3 1.455R 3.364 2-4 3 2.222L 5.511 2-4 3 2.222L 7.739 1-4 3 8.8001,	16 8 .10 .30 .60 4 4 0 .750 2-3 2 .000I, 1.920 2-3 2 2.000I, 3.380 2-4 3 1.3331 5.440 1-4 3 0 7.700 1-4 3 0	16 8 .10 .40 .50 2 0 1.600 2-3 2 1.539L 3.926 1-3 2 2.267L 5.701 1-4 2 3.200L 7.905 1-4 2 3.200L	16 8 20 20 60 4 4 0 750 2 3 3 1,600R 2,993 2-4 3 2,0901 4,880 1-4 3 800R 6,913 1-4 3 800R	16 8 20 .30 .50 2 2 0 .750 2-3 2 1.818L 3.186 1-3 2 2.800R 4.912 1-4 2 2.400L 7.015 1-4 2 2.400L	16 8 .20 .40 .40 .40 2 0 1.000 2 3 2 1.3338L 2.253 2 1.3338L 3.736 1-3 2 1.0000R 5.620 1-4 2 1.600L 1-4 2 1.600L	20 8 .10 .20 .70 4 4 0 .875 2-3 3 1.455R 3.364 2-4 3.000L 4.903 2-4 3.000L 7.112 1-4 3.500L	20 8 .10 .30 .60 4 4 0 .750 2-3 3 2.000R 1.920 2-3 3 2.000R 3.380 1-3 2.570L 5.006 2-4 3 2.000L 7.122 1-4 3.600L	20 8 .10 .40 .50 2 2 0 1.000 2-3 2 1.539L 2.327 2-3 2 1.539L 3.926 1-3 2 2.671L 5.701 1-3 2 .2671L 7.576 1-4 2 3.700L	20 8 20 .60 4 4 0 .750 2-3 3 1.600R 2.993 2-4 3 2.750L 4.351 2-4 3 2.750L 4.351 1.602 1.764
M 15.208 15.200 15.328 14.408 14.472 15.232 14.528 14.605 14.871 15 G 1-4 1-4 1-4 1-4 1-4 1-4 1-4 1-4 1-4 1-4	Los On Ax	20 30 40 50	X' C a1 a2 a3 G N B M G N B M G N B M G N B M G G N B M G G N G G N B M G G N G G N G G N G G N G G N G G G G	16 8 .10 .20 .70 4 4 0 .8775 2-3 3 1.455R 2.008 2-3 1.455R 3.364 2-4 3 2.222L 7.739 1-4 3 8.8001, 10.211 1-4	16 8 .10 .30 .60 4 4 0 .750 2-3 2 .0001, 1.920 2-3 2.0001, 3.380 2-4 3 1.3331, 5.440 1-4 3 0 7.700 1-4 3 0 1.200 1-4	16 8 10 .40 .50 2 0 1.600 2-3 2 1.539L 2.327 2-3 2 1.539L 3.926 1-3 2 2.267L 5.701 1-4 2 3.200L 7.905 1-4 2 3.200L 10.371 1-4	16 8 .20 .20 .60 4 4 0 .750 2 3 1.600R 1.764 2-3 3 2.000L 4.880 1-4 3 800R 6.913 1-4 3 800R 9.411 1-4	16 8 20 30 .50 2 0 .750 2-3 2.818.1 1.841 2-3 2.800R 4.912 1-4 2.400L 7.015 1-4 2.400L 9.4966 1-4	16 8 .20 .40 .40 .40 2 0 1.000 2 3 2 1.3338L 2.253 2 1.3333L 3.736 1-3 2 1.000R 5.620 1-4 2 1.600L 7.751 1-4 2 1.600L 7.151 1-4 2 1.600L 7.151 1-4 2 1.600L	20 8 .10 .20 .70 4 4 0 .875 2-3 3 1.455R 2.008 2-3 3.364 2-4 3 3.000L 4.903 2-4 3 3.000L 7.112 1-4 9.538 1.500R	20 8 .10 .30 .60 4 4 0 .750 2-3 3 2.000R 3.380 1-3 2.577L 5.006 2-4 3 2.000L 7.122 1-4 3.600L 7.122 1-4	20 8 .10 .40 .50 2 0 1.000 2–3 2 1.539L 2.327 2–3 2.1539L 3.926 1–3 2 .267L 7.576 1–4 2 3.700L 9.928 1–4	20 8 20 .20 .60 4 4 0 .750 2-3 3 1.600R 2.750 2-4 3 2.750L 4.351 2-4 3 2.750L 6.321 1-4 3 2.00R
100 N 3 3 2 3 2 2 3 3 2 B .800L 0 3.200L .800R 2.400L 1.600L 1.500L .600L 3.700L .2	Los On Ax	20 30 40 50	X' C a1 a2 a3 G N B M B M G N B M G N B M G N B M G N B M G N B M B M G N B M B M G N B M B M G N B M B M G N B M B M G N B M B M B M B M B M B M B M B M B M B	16 8 .10 .20 .70 4 4 0 .875 2-3 3 1.455R 2.008 2-3 3 1.455R 3.364 2-4 3 2.222L 5.511 2-4 3 2.222L 7.739 1-4 3 8001, 10.211 1-4 3	16 8 .10 .30 .60 4 4 0 .750 2-3 2.000I, 1.920 2-3 2.000I, 3.380 2-4 3 1.3381 5.440 1-4 3 0 7.700 1-4 3 0 10.200 1-4 3	16 8 10 .40 .50 2 0 1.000 2-3 2 1.539L 2.327 2-3 2 1.539L 3.926 1-3 2 2.267L 5.701 1-4 2 3.200L 10.371 1-4 2 10.371	16 8 20 20 660 4 4 0 750 2 3 3 1,600R 2,993 2-4 3 2,0901 4,880 1-4 3 800R 6,913 1-4 3 800R 9,411 1-4 3	16 8 20 30 .50 2 0 750 2-3 1.818L 1.841 2-3 2 1.818L 3.186 1-3 2 2.800R 4.912 1-4 2 2.400L 7.015 1-4 2 2.400L 9.496 1-4 2	16 8 20 .40 .40 .40 2 0 1.000 2 3 2 1.3338L 2.253 2 1.3338L 3.736 1-3 2 1.0000R 5.620 1-4 2 1.600L 1.0243 1-4 2	20 8 .10 .20 .70 4 4 0 .875 2-3 3 1.455R 3.364 2-4 3.00012 4.903 2-4 3.00012 7.112 1-4 3 1.500L 9.538 1-4 3	20 8 .10 .30 .60 4 4 0 .750 2-3 3 2.000R 3.380 1-3 2.570L 5.006 2-4 3 2.000L 7.122 1-4 3 600L 9.606 1-4 3	20 8 .10 .40 .50 2 0 1.000 2–3 2 1.539L 2.327 2 1.539L 3.926 1–3 2 2.267L 7.576 1–4 2 3.700L 9.928 1–4	20 8 20 .60 4 4 0 .750 2-3 3 1.600R 2.993 2-4 3 2.750L 4.351 2-4 3 2.750L 4.351 1.602 3 2.750L 4.351 2.451 3 2.750L 4.851 3 2.750L 4.851 3 3.800R 3.800R 3.800R 3.800R 3.800R 4.800R 4.800R 3.800R 4.8
B .800L 0 3.200L .800R 2.400L 1.600L 1.500L .600L 3.700L .2	Los On Ax	20 30 40 50	X' C a1 a2 a3 G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M M G N B M M M M M M M M M M M M M M M M M M	16 8 .10 .20 .70 4 4 0 .8775 2-3 3 1.455R 2.008 2-3 1.455R 3.364 2-4 3 2.222L 7.739 1-4 3 8.8001L 10.211 1-4 3 8.901L 15.208	16 8 .10 .30 .60 4 4 0 .750 2-3 2 2.000I 1.920 2-3 2.000I 3.380 1-4 3 0 7.700 1-4 3 0 10.200 1-4 3 0 15.200	16 8 10 .40 .50 2 0 1.6000 2-3 2.327 2-3 2.539L 2.927 2-3 2.267L 5.701 1-4 2 3.200L 7.905 1-4 2 3.200L 11-4 2 3.200L 11-4 2 3.200L 11-4 2 3.200L 11-4 2 3.200L 11-4 2 3.200L 11-4 2 3.200L 11-5.328	16 8 .20 .20 .60 4 4 0 .750 2 3 1.600R 1.764 2-3 3 2-4 3 2.000L 4.880 1-4 3.800R 6.913 1-4 3.800R 9.411 1-4 3.800R 11-4 3.800R 14.408	16 8 20 30 .50 2 0 .750 2 2 3 1.818.1 1.841 2 3.818.1 3.18.6 1 3 2 2.800R 4.912 1 -4 2 2.400L 7.015 1 4 2 2.400L 1 4.472	16 8 .20 .40 .40 .40 .2 2 0 1.000 2 3 2 1.3338L 2.253 2 1.3338L 3.736 1-3 2 1.000R 5.620 1-4 2 1.600L 7.751 1-4 2 1.600L 10.243 1-4 2 1.600L 11.5232	20 8 .10 .20 .70 4 4 0 .875 2-3 1.455R 2.008 2-3 3.364 2-4 3 3.000L 4.903 2-4 3 3.000L 7.112 1-4 9.538 1-455 1.500L 9.538 1-4 1.500L 9.538	20 8 .10 .30 .60 4 4 0 .750 2-3 3 2.000R 3.380 1-3 2.577L 5.006 2-4 3 2.000L 7.122 1-4 3 .600L 1-4 3 .600L 14.605	20 8 .10 .40 .50 2 0 1.000 2–3 2 1.539L 2.327 2–3 2.359L 3.926 1–3 2 .267L 7.576 1–4 2 3.700L 1-4 2 3.700L 14.871	20 8 20 .20 .60 4 4 0 .750 2-3 3 1.600R 2.750L 4.351 2-4 3 2.750L 6.321 1-4 3 .200R 1.74 3 .200R
M 20.206 20.200 20.302 19.406 19.458 20.226 19.523 19.604 19.837 18	Los On Ax	tch and less 10 20 30 40 60 80	X' C a1 a2 a3 G N B M G R M G N B M G R	16 8 .10 .20 .70 4 4 0 .875 2-3 3 1.455R 2.008 2-3 1.455R 3.864 2-4 3 2.222L 5.511 2-4 3 8.001, 10.211 1-4 3 8.9001, 15.008	16 8 .10 .30 .60 4 4 0 .750 2-3 2 .000I, 1.920 2-3 2 2.000I, 3.380 2-4 3 1.333L 5.440 1-4 3 0 7.700 1-4 3 0 10.200 1-4 3 15.200 1-4	16 8 10 .40 .50 2 0 1.000 2-3 2 1.539L 2.327 2-3 2 1.539L 3.926 1-3 2.267L 5.701 1-4 2 3.200L 10.371 1-4 2 3.200L 15.328 1-4	16 8 20 20 60 4 4 0 750 2 3 1,600R 1,764 2 3 1,600R 2,993 2 4 3 2,0901 4,4880 1 4,880 1 1 4 3 800R 9,411 1 4 3 800R 1,800R 1,4408 1 4,4080 1 4,4080 1 1 4 1 1 4 1 4 1 1 4 1 1 4 1 4 1 4 1	16 8 20 30 .50 2 0 7.50 2 1.818L 1.841 2 3.186 1-3 2 1.818L 3.186 1-4 2 2.400L 9.496 1-4 2 2.400L 9.496 1-4 2 2.400L 1.4472 1-4	16 8 20 .40 .40 .40 2 0 1.000 2 3 2 1.3338L 2.253 2 1.3338L 3.736 1-3 2 1.0000R 5.620 1-4 2 1.600L 10.243 1-4 2 1.600L 10.243 1-4 2 1.600L 15.232 1-4	20 8 .10 .20 .70 4 4 0 .875 2-3 3 1.455R 3.364 2-4 3.000L 7.112 1-4 3 1.500L 9.538 1-4528 1-4528	20 8 .10 .30 .60 4 4 0 .750 2-3 3 2.000R 3.380 1-3 2.570L 5.006 2-4 3 .600L 9.606 1-4 3 .600L 14.605 1-4	20 8 .10 .40 .50 2 0 1.000 2–3 2 1.539L 2.327 2 1.539L 3.926 1–3 2 2.267L 5.701 1–4 2 3.700L 9.928 1–4 2 3.700L 1.4871 1.4871	20 8 20 .60 4 4 0 .750 2-3 3 1.600R 2.993 2-4 3 2.750L 6.321 1-4 3 .206R 8.801 1-4 3 .200R 1.3,801 1.400R
	Los On Ax	tch and less 10 20 30 40 60 80	X' C a1 a2 a3 G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M B M G N B M B M B M B M B M B M B M B M B M B	16 8 .10 .20 .70 4 4 0 .8775 2-3 3 1.455R 2.008 2-3 1.455R 3.364 2-4 3 2.222L 7.739 1-4 3 .8001, 10.211 1-4 3 .8001, 15.208 1-4 3 .8001, 15.208	16 8 .10 .30 .60 4 4 0 .750 2-3 2 2.0001 1.920 2-3 2 2.0001 3.380 1.3331 5.440 1-4 3 0 7.700 1-4 3 0 15.200 1-4 3 0	16 8 10 40 50 2 0 1.6000 2-3 2.539L 2.327 2-3 2.1.539L 3.926 1-3 2 2.267L 7.905 1-4 2 3.200L 10.371 1-4 2 3.200L 11.5328 1-4 2 3.200L	16 8 20 20 60 4 4 0 750 2 3 1.600R 1.764 2 3 2.000L 4.880 1 -4 3.800R 9.411 1 -4 3 800R 1.4408 1 -4 3 800R	16 8 20 30 .50 2 0 .750 2 2 0 .750 2 2.818.BL 1.841 2 2 1.818L 3.186 1 -3 2 2.800R 4.912 1 -4 2 2.400L 9.496 1 2 2.400L 9.446 1 4.472 1 -4 2 2.400L 2 2.400L 2 2.400L 2 2.400L 2 2.400L 2 2.400L 2 2 2.400L 2 2 2.400L 2 2 2.400L 2 2 2.400L 2 2 2.400L 2 2 2.400L 2 2 2.400L 2 2 2.400L 2 2 2.400L 2 2 2.400L 2 2 2.400L	16 8 20 .40 .40 .40 2 1.000 2 3 1.3338L 2.253 2 1.3338L 3.736 1-3 2 1.000R 1-4 2 1.600L 1.10.243 1 1-4 2 1.600L 1.5.232 1-4 2 1.600L 1.5.232 1.600L	20 8 .10 .20 .70 4 4 0 .875 2-3 1.455R 2.008 2-3 3.455R 3.364 2-4 3.000L 7.112 1-4 3.000L 1.500L 9.538 1.4528 1.500L 9.538 1.4528 1.500L 1.500L 1.500L	20 8 .10 .30 .60 4 4 0 .750 2-3 2.000R 3.38 2.000R 3.38 2.577L 5.006 2-4 3.600L 9.600L 1-4 3.600L 1-4 3.600L	20 8 .10 .40 .50 2 0 1.000 2–3 2 1.539L 2.327 2–3 2 2.539L 3.926 1–3 2 2.267L 7.576 1–4 2 3.700L 9.928 1-4 2 3.700L 14.871 1–4 2 3.700L 14.871 1–4 2 3.700L 1.4871 1–4 2 3.700L 1.4871 1–4 2 3.700L 1.4871 1–4 2 3.700L 1.4871	20 8 20 .20 .60 4 4 0 .750 2-3 3 1.600R 2.750L 4.351 2-4 3 2.750L 6.321 1-4 3 .200R 1.74 3 .200R

Trι	ick No	٠.	71	72	73	74	75	76	77	78	79	80
	. Base		44	44	36	36	36	36	36	36	40	40
Axl Spa	le acing	X X'	$\begin{array}{c} 16 \\ 20 \end{array}$	$^{16}_{20}$	$^{16}_{8}$	16 8	16 8	$^{16}_{8}$	16 8	16 8	$\frac{16}{12}$	$\frac{16}{12}$
Hit		C	8	8	12	12	12	12	12	12	12	12
Loa		a ₁	.20	.20	.10	.10	.10	.20	.20	.20	.10	.10
On Axl		\mathbf{a}_2 \mathbf{a}_3	.30 .50	.40 .40	.20 .70	.30 $.60$.40 .50	.20 .60	.30 .50	$.40 \\ .40$.20 .70	.30 .60
ī		G	2	2	4	4	2	4	2	2	4	4
	10	N	2	2	4	4	2	4	2	2	4	4
		B M	0 $.750$	$0 \\ 1.000$	$\frac{0}{.875}$	0 $.750$	$\begin{smallmatrix} 0\\1.000\end{smallmatrix}$	$\frac{0}{.750}$	0 $.750$	$\substack{0\\1.000}$	$\frac{0}{.875}$	0 .750
-		G	2-3	2-3	3-4	3-4	2	3-4	3-4	2	4	4
	20	N B	$^{2}_{1.818 m L}$	$^2_{1.333 m L}$	$^{4}_{2.000 m R}$	$^{4}_{2.000 m R}$	$\frac{2}{0}$	$^{4}_{2.000\mathrm{R}}$	$^{4}_{2.000\mathrm{R}}$	2	4 0	4 0
		M	1.8181	2.253	2.000K 2.240	1.920	2.000	1.920	1.600 K	2.000	1.750	1.500
- (G	2-3	2-3	2~4	2-4	2-3	2-4	2-4	2-3	2-4	2-4
	30	N B	$^2_{1.818 \mathbf{L}}$	$^2_{1.333 m L}$	$^3_{.222}{f L}$	$^3_{.667 m R}$	$^2_{2.308\mathrm{L}}$	3 0	$^3_{1.000 m R}$	$^2_{2.000 m L}$	$^{3}_{1.000 m L}$	3 0
- {		M	3.186	3.736	4.152	3.763	3.491	3.600	3.226	3.380	3.480	3.150
		G	1-3	13	2-4	2–4	2-4	2-4	2-4	1-4	2-4	2-4
r G	40	N B	$^2_{.800 m R}$	$^{2}_{1.000R}$	$^{3}_{.222L}$	$^3_{.667 m R}$	3 $1.556R$	3 0	$^3_{1.000 m R}$	$^2_{1.600 m L}$	$^{3}_{1.000L}$	$\frac{3}{0}$
Span-Feet		M	4.912	5.620	6.401	6.011	5.655	5.600	5.220	5.264	5.723	5.400
Jan	FA	G	1-3	1-3	2-4	2-4	1-4	2-4	2-4	$\frac{1-4}{2}$	2-4	$^{2-4}_{3}$
2	50	N B	$^2_{.800 m R}$	$^{2}_{1.000R}$	$^3_{.222}{f L}$	$^3_{.667 m R}$	$\begin{array}{c} 2 \\ 3.200 \mathbf{L} \end{array}$	3 0	$^3_{1.000 m R}$	1.600L	$^{3}_{1.000 m L}$	0
		M	6.785	7.616	8.651	8.258	7.905	7.600	7.216	7.751	7.968	7.650
	60	G	1–4 2	1-4	1-4	1-4	1–4	1-4	1-4	$^{1-4}_{2}$	1-4	$^{1-4}_{3}$
	00	N B	2.900L	$^{2}_{2.000}$ L	$^3_{1.200 m R}$	$^3_{2.000\mathrm{R}}$	$\begin{array}{c} 2 \\ 3.200 \mathbf{L} \end{array}$	$^3_{2.800 m R}$	$^3_{3.600 m R}$	1.600L	$^3_{.500 m R}$	1.400R
- }		M	9.040	9.867	11.024	10.667	10.371	9.931	9.616	10.243	10.304	10.033
- {	80	G N	$\frac{1-4}{2}$	$\frac{1-4}{2}$	$^{1-4}_3$	$^{1-4}_3$	$^{1-4}_2$	1-4	$^{1-4}_3$	$^{1-4}_{2}$	$\frac{1-4}{3}$	$^{1-4}_{3}$
	60	В	2.900L	2.000L	1.200R	2.000R	3.200L	$^3_{2.800 m R}$	3.600R	1.600L	.500R	1.400R
		M	14.005	14.850	16.018	15.650	15,328	14.898	14.562	15.232	15.303	15.025
-	100	G N	$\frac{1-4}{2}$	$^{1-4}_{2}$	$^{1-4}_3$	$^{1-4}_{3}$	$^{1-4}_2$	$^{1-4}_3$	$^{1-4}_3$	$^{1-4}_2$	$_{3}^{1-4}$	$^{1-4}_{3}$
- 1	100	В	2.900L	2.000L	$1.200\mathrm{R}$	$2.000 \mathrm{R}$	$3.2\overset{2}{0}0L$	2.800R	$3.600\mathbf{R}$	1.600L	.500R	1.400R
		M	18.984	19.840	21.014	20.640	20.302	19.878	19.530	20.226	20.303	20.020
	uck N		81	82	83	84	85	86	87	88	89	90_
	h. Bas		16	16	$\frac{40}{16}$	$\frac{40}{16}$	16	16	44	<u>44</u> 	16	$\frac{44}{16}$
Ax Sp:		X X'	70						16		10	
	acing	Λ	12	12	12	12	16	16	16	16	16	16
Hil	tch	C	12	$\frac{12}{12}$	$\frac{12}{12}$	$-\frac{12}{12}$	$\frac{16}{12}$	16	16	16	16	16 12
Lo	tch ad	C a ₁	.10	.20	.20	.20	.10	12 .10	12 .10	.20	.20	.20
Lo	tch ad	C a ₁ a ₂	12	12	12	12	12	12	12	12	12	12
Lo: On	ad les	C a ₁ a ₂ a ₃ G	12 .10 .40 .50	.20 .20 .60 4	12 .20 .30 .50	12 .20 .40 .40	.10 .20 .70	12 .10 .30 .60	12 .10 .40 .50	.20 .20 .60 4	.20 .30 .50	.20 .40 .40 .2
Lo: On	tch ad	C a ₁ a ₂ a ₃ G N	12 .10 .40 .50	.20 .20 .60 4 4	12 .20 .30 .50	12 .20 .40 .40	12 .10 .20 .70 4 4	12 .10 .30 .60 4 4	12 .10 .40 .50 2 2	12 .20 .20 .60 4 4	12 .20 .30 .50 2 2	12 .20 .40 .40 .2 2
Lo: On	ad les	C a ₁ a ₂ a ₃ G	12 .10 .40 .50	.20 .20 .60 4	12 .20 .30 .50	12 .20 .40 .40	.10 .20 .70	12 .10 .30 .60	12 .10 .40 .50	.20 .20 .60 4	.20 .30 .50	12 .20 .40 .40 2 2 0
Lo: On	tch ad les 10	C a ₁ a ₂ a ₃ G N B M G	12 .10 .40 .50 2 2 0 1.000	12 .20 .20 .60 4 4 0 .750	12 .20 .30 .50 2 2 0 .750 2	12 .20 .40 .40 .2 2 0 1.000	12 .10 .20 .70 4 4 0 .875	12 .10 .30 .60 4 4 0 .750	12 .10 .40 .50 2 2 0 1.000	12 .20 .20 .60 4 4 0 .750	12 .20 .30 .50 2 2 2 0 .750	12 .20 .40 .40 .2 2 0 1.000
Lo: On	ad les	C a ₁ a ₂ a ₃ G N B M G N	12 .10 .40 .50 2 2 0 1.000	12 .20 .20 .60 4 4 0 .750	12 .20 .30 .50 2 2 0 .750 2	12 .20 .40 .40 .2 2 0 1.000	12 .10 .20 .70 4 4 0 .875	12 .10 .30 .60 4 4 0 .750	12 .10 .40 .50 2 2 0 1.000	12 .20 .20 .60 4 4 0 .750	12 .20 .30 .50 2 2 0 .750	12 .20 .40 .40 .2 2 0 1.000
Lo: On	tch ad les 10	C a ₁ a ₂ a ₃ G N B M G	12 .10 .40 .50 2 2 0 1.000	12 .20 .20 .60 4 4 0 .750	12 .20 .30 .50 2 2 0 .750 2 2 0	12 .20 .40 .40 .2 2 0 1.000	12 .10 .20 .70 4 4 0 .875 4 4 0 1.750	12 .10 .30 .60 4 4 0 .750	12 .10 .40 .50 2 2 0 1.000	12 .20 .20 .60 4 4 0 .750	12 .20 .30 .50 2 2 2 0 .750	12 .20 .40 .40 .2 2 0 1.000 2 2
Lo: On	tch ad les 10	C a ₁ a ₂ a ₃ G N B M G N B M	12 .10 .40 .50 2 2 0 1.000 2 2 0 2.000	12 .20 .20 .60 4 4 0 .750 4 4 0 1.500	12 .20 .30 .50 2 2 0 .750 2 2 0 1.500	12 .20 .40 .40 2 2 0 1.000 2 2 0 2.000	12 .10 .20 .70 4 4 0 .875 4 4 0 1.750	12 .10 .30 .60 4 4 0 .750 4 0 1.500	12 .10 .40 .50 2 2 0 1.000 2 2 0 2.000	12 .20 .20 .60 4 4 0 .750 4 4 0 1.500	12 .20 .30 .50 2 2 0 .750 2 2 0 .750 2 2 2 0 .20 .750	12 .20 .40 .40 .2 2 0 1.000 2 2 0 2.000 2-3
Lo: On	tch ad les 10	C a ₁ a ₂ a ₃ G N B M G N B M	12 .10 .40 .50 2 2 0 1.000 2 2 0 2.000 2-3 2	12 .20 .20 .60 4 4 0 .750 4 4 0 1.500 2-4 3	12 .20 .30 .50 2 2 0 .750 2 2 0 1.500	12 .20 .40 .40 2 2 0 1.000 2 2 0 2.000	12 .10 .20 .70 4 4 0 .875 4 4 0 1.750 2-3 3	12 .10 .30 .60 4 4 0 .750 4 4 0 1.500	12 .10 .40 .50 2 2 0 1.000 2 2 0 2.000	12 .20 .20 .60 4 4 0 .750 4 4 0 1.500 2-3 3	12 .20 .30 .50 2 2 0 .750 2 2 0 1.500 2-3 2	12 .20 .40 .40 .2 2 0 1.000 2 2 0 2.000 2-3 2
Lo: On	tch ad les 10	C a ₁ a ₂ a ₃ G N B M G N B M	12 .10 .40 .50 2 2 0 1.000 2 2 0 2.000	12 .20 .20 .60 4 4 0 .750 4 4 0 1.500	12 .20 .30 .50 2 2 0 .750 2 2 0 1.500	12 .20 .40 .40 2 2 0 1.000 2 2 0 2.000	12 .10 .20 .70 4 4 0 .875 4 4 0 1.750	12 .10 .30 .60 4 4 0 .750 4 0 1.500	12 .10 .40 .50 2 2 0 1.000 2 2 0 2.000	12 .20 .20 .60 4 4 0 .750 4 4 0 1.500	12 .20 .30 .50 2 2 0 .750 2 2 0 .750 2 2 2 0 .20 .750	12 .20 .40 .40 2 2 0 1.000 2 2 0 2.000 2-3 2
Lo: On	tch ad les 10 20	C a1 a2 a3 G N B M G N B M G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G M G G G G M G G G G M G G G M G G G M G G G G M G G G G M G G G G M G G G G M G G G G G M G G G G G M G	12 .10 .40 .50 2 2 0 1.000 2 0 2.000 2-3 2 2.308L 3.491 1-3	12 .20 .20 .60 4 4 0 .750 4 4 0 1.500 2-4 3 .750L 3.015 2-4	12 .20 .30 .50 2 2 0 .750 2 0 1.500 2 2 2 2.728L 2.761 2-4	12 .20 .40 .40 .2 2 0 1.000 2 2 0 2.000 2-3 2 2.000L 3.380 1-3	12 .10 .20 .70 4 4 0 .875 4 4 0 1.750 2–3 3 2.182R 3.012	12 .10 .30 .60 4 4 0 .750 4 4 0 0 1.500 2-3 2 3.000L 2.880 2-4	12 .10 .40 .50 2 2 0 1.000 2 2 0 2.000 2-3 2 2.308L 3.491	12 .20 .20 .60 4 4 0 .750 4 4 0 1.500 2-3 3 2.400R 2.646 2-4	12 .20 .30 .50 2 2 0 .750 2 2 2 0 1.500 2-3 2 2.761 1-3	12 .20 .40 .40 .2 2 0 1.000 2 2 0 2.000 2–3 2 2.000L 3.380 1-3
Los On Ax	tch ad les 10	C a1 a2 a3 G N B M G N B M G N B M G N B M G N B M G N B M N B M N B M N B M N B M N B M N B M M G N B M M R M M R M M R M M M M R M M M M M	12 .10 .40 .50 2 2 0 1.000 2 2 0 2.000 2-3 2 2.308L 3.491	12 .20 .20 .60 4 4 0 .750 4 4 0 1.500 2-4 3 .015 2-4 3	12 .20 .30 .50 2 2 0 .750 2 2 0 1.500 2-3 2 2.728L 2.761 2-4 3	12 .20 .40 .40 .40 2 2 0 1.000 2 2 0 2.000 2-3 2 2.000L 3.380	12 .10 .20 .70 4 4 0 .875 4 4 0 1.750 2-3 2.182R 3.012 2-4	12 .10 .30 .60 4 4 0 .750 4 0 1.500 2 3.000L 2.880 2 4.000L 2.880	12 .10 .40 .50 2 2 0 1.000 2 2 0 2.000 2-3 2 2.308L 3.491	12 20 20 .20 .60 4 4 0 .750 4 4 0 1.500 2-3 3 2.400R 2.646 2-4	12 .20 .30 .50 2 2 0 .750 2 2 0 1.500 2–3 2 2.728L 2.761 1–3 2	12 .20 .40 .40 2 2 2 0 1.000 2 2 2 2 2 0 2.000 2.3380 1-3 2
Los On Ax	tch ad les 10 20	C a1 a2 a3 G N B M G N B M G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G M G G G G M G G G G M G G G M G G G M G G G G M G G G G M G G G G M G G G G M G G G G G M G G G G G M G	12 .10 .40 .50 2 2 0 1.000 2 0 2.000 2-3 2 2.308L 3.491 1-3	12 .20 .20 .60 4 4 0 .750 4 0 1.500 2-4 3 .750L 3.015 2-4 3,750L 5.011	12 .20 .30 .50 2 2 0 .750 2 2 0 1.500 2-3 2 2.728 L 2.761 2-4 3.375 R	12 .20 .40 .40 .2 2 0 1.000 2 2 0 2.000 2-3 2 2.000L 3.380 1-3	12 .10 .20 .70 4 4 0 .875 4 4 0 1.750 2–3 3 2.182R 3.012	12 .10 .30 .60 4 4 0 .750 4 4 0 0 1.500 2-3 2 3.000L 2.880 2-4	12 .10 .40 .50 2 2 0 1.000 2 2 0 2.000 2-3 2 2.308L 3.491	12 .20 .20 .60 4 4 0 .750 4 4 0 1.500 2-3 3 2.400R 2.646 2-4	12 .20 .30 .50 2 2 0 .750 2 2 2 0 1.500 2-3 2 2.761 1-3	12 .20 .40 .40 .40 2 2 0 1.000 2 2 2 2 2 2.000 2-3 2 2.000L 3.380 1-3 2 5.500R 5.205
Los On Ax	10 20 30	C a1 a2 a3 G N B M G N B M G N B M G N B M G O N B M G O N B M G O O O O O O O O O O O O O O O O O O	12 .10 .40 .50 .50 2 2 0 1.000 2.000 2.308L 3.491 1–3 2 .934L 5.216	12 .20 .20 .60 4 4 0 .750 4 0 1.500 2-4 3 .750L 3.015 2-4 3 .750L 5.01L	12 .20 .30 .50 2 2 0 .750 2 2 0 1.500 2-3 2.728L 2.728L 2.744 3 .375R 4.703	12 20 .40 .40 2 2 0 1.000 2 2 0 2.000 2-3 2 2.000L 3.380 1-3 2 .500R 5.205 1-4	12 .10 .20 .70 .4 4 0 .875 4 0 1.750 2-3 3 2.182R 3.012 2-4 3 1.778L 5.071 2-4	12 .10 .30 .60 4 4 4 0 .750 4 4 0 1.500 2-3 2.880 2-4 3 .667L 4.811 2-4	12 .10 .40 .50 2 2 0 1.000 2 2 0 2.000 2-3 2 2.308L 3.491 1-3 2 .934L 5.216 1-3	12 .20 .60 .60 .750 4 4 0 .750 4 0 1.500 2-3 3 2.400R 2.646 2-4 4.445 2-4	12 .20 .30 .50 2 2 0 .750 2 2 0 1.500 2-3 2 2.728L 2.728L 2.738L 4.400 1-3	12 .20 .40 .40 2 2 0 1.000 2 2 0 2.000 2-3 2 2.000 L 3.380 1-3 2 5.000 5.000
Los On Ax	tch ad les 10 20	C a1 a2 a3 G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M M G N B M M M M M M M M M M M M M M M M M M	12 .10 .40 .50 .2 2 0 1.000 2 2 0 2.000 2-3 2.308L 3.491 1-3 2 934L 5.216 1-4 2	12 .20 .20 .20 .60 4 4 0 .750 4 0 1.500 2-4 3.015 2-4 3.750L 5.011 2-4 3	12 .20 .30 .50 .50 .2 .2 .0 .750 .2 .0 .750 .2 .0 .1.500 .2-3 .2.728L .2.761 .375R .4.703 .375R .4.703	12 .20 .40 .40 .2 2 0 1.000 2 2 0 2.000 2-3 2.0001 3.380 1-3 2 5.500R 5.205	12 .10 .20 .70 4 4 0 .875 4 0 1.750 2-3 3 2.182R 3.012 2-4 3 1.778L 5.071 2-4 3	12 .10 .30 .60 4 4 0 .750 4 4 0 1.500 2-3 2 3.000 L 2.880 2-4 3.667 L 4.811 2-4 3	12 .10 .40 .50 .2 .2 .0 1.000 .2 .0 2.000 .2 .3 .491 .3 .934L .5.216 .3 .2	12 .20 .60 .60 4 4 0 .750 4 4 0 0 1.500 2-3 3 2.400R 2.646 2-4 3 1.500L 4.445 2-4	12 .20 .30 .50 .50 .750 2 2 0 .750 2-3 2 2.728L 2.761 1-3 2 1.34R 4.400	12 .20 .40 .40 .2 .2 .0 .1.000 .2 .2 .0 .2 .0 .2 .0 .2 .0 .3 .380 .380 .380 .380 .380 .380 .38
Los On Ax	10 20 30	C a1 a2 a3 B M B M G N B B M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M M G N B B M M M M G N B M M M M M M M M M M M M M M M M M M	12 .10 .40 .50 .2 2 0 1.000 2 2 0 2.000 2-3 2.308L 3.491 1-3 2 .9341L 5.216 1-4 2 3.700L 7.474	12 .20 .20 .60 4 4 0 .750 4 0 1.500 2-4 3 .750L 3.015 2-4 3 .750L 5.01L	12 .20 .30 .50 2 2 0 .750 2 2 0 1.500 2-3 2.728L 2.728L 2.744 3 .375R 4.703	12 20 .40 .40 2 2 0 1.000 2 2 0 2.000 2-3 2 2.000L 3.380 1-3 2 .500R 5.205 1-4	12 .10 .20 .70 .4 4 0 .875 4 0 1.750 2-3 3 2.182R 3.012 2-4 3 1.778L 5.071 2-4	12 .10 .30 .60 4 4 4 0 .750 4 4 0 1.500 2-3 2.880 2-4 3 .667L 4.811 2-4	12 .10 .40 .50 2 2 0 1.000 2 2 0 2.000 2-3 2 2.308L 3.491 1-3 2 .934L 5.216 1-3	12 .20 .60 .60 .750 4 4 0 .750 4 0 1.500 2-3 3 2.400R 2.646 2-4 4.445 2-4	12 .20 .30 .50 2 2 0 .750 2 2 0 1.500 2-3 2 2.728L 2.728L 2.738L 4.400 1-3	12 20 40 40 2 2 0 1.000 2 0 2.000 2-3 2.000 1.3.380 1-3 2.500R 5.206 1-3 2 5.500R 7.204
Los On Ax	10 20 30 40 50	C a1 a2 a3 G N B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G G N B B M G G N B B M G G N B B M G G N B B M G G N B B M G G N B B M G G N B B M G G N B B M C G G N B M C G G N B M C G C G M C	12 .10 .40 .50 .50 .2 2 0 1.000 2 2 0 2.000 2-3 2.308L 3.491 1-3 2 934L 5.216 1-4 2 3.700L 7.474 1-4	12 20 20 20 20 60 4 4 4 0 .750 4 4 0 1.500 2-4 3.015 2-4 3.750L 5.011 2-4 3.750L 7.009	12 .20 .30 .50 .50 .50 .750 .750 .750 .750 .750	12 .20 .40 .40 .2 2 0 1.000 2 2 0 0.0001 3.380 1-3 2 2.0001 5.205 1-4 7.380	12 .10 .20 .70 4 4 0 .875 4 0 1.750 2-3 3 2.182R 3.012 2-4 3 1.778L 5.071 2-4 7.307 1-4	12 .10 .30 .60 4 4 0 .750 4 4 0 1.500 2-3 2.000IL 2.880 2-4 3.667L 4.811 2-4 3.667L 7.058	12 .10 .40 .50 .2 2 0 1.000 2 2 2 2 2.308L 3.491 1-3 2 .934L 5.216 1-3 1 7.088	12 .20 .60 .60 .60 .750 4 4 0 0 1.500 2-3 3 2.400R 2-646 2-4 3 1.500L 4.445 2-4 3 1.500L 4.445 1.500L 4.445 1.500L 4.445 1.500L 6.436 1.400C 6.436 1.400C 6.4	12 .20 .30 .50 2 2 0 .750 2 2 0 1.500 2-3 2 2.728L 2.761 1-3 2 1.34R 4.400 1-3 1.34R 6.275	12 .20 .40 .40 .2 .2 .0 .1.000 .2 .2 .0 .2 .0 .2 .0 .2 .0 .3 .3 .80 .3 .5 .5 .5 .5 .5 .7 .2 .5 .5 .7 .2 .5 .5 .7 .2 .5 .5 .7 .2 .5 .7 .2 .5 .7 .2 .5 .7 .2 .5 .7 .2 .5 .7 .2 .5 .7 .2 .5 .7 .2 .7 .7 .2 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7 .7
Los On Ax	10 20 30	C a1 a2 a3 B M B M G N B B M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M M G N B B M M M M G N B M M M M M M M M M M M M M M M M M M	12 .10 .40 .50 .2 2 0 1.000 2 2 0 2.000 2-3 2.308L 3.491 1-3 2 .934IL 5.216 1-4 2 3.700L 7.474	12 .20 .20 .20 .60 4 4 0 .750 4 4 0 1.500 2-4 3 .7501L 2-4 3,750L 7.009 1-4 3	12 .20 .30 .50 2 2 0 .750 2 2 0 1.500 2-3 2 2.728L 2-74 3 .375R 4.703 2-4 3.7576 6.702	12 .20 .40 .40 .40 .2 2 0 1.000 2 2 0 2.000 2-3 2 2.0000L 3.380 1-3 2.500R 5.205 1-4 2 2.000L 7.380 1-4 2	12 .10 .20 .70 4 4 0 .875 4 0 1.750 2-3 3 2.182R 3.012 2-4 3 1.778L 7.307 1-4 3	12 .10 .30 .60 4 4 0 .750 4 4 0 1.500 2-3 2 3.000L 2-4 3 .667L 4.811 2-4 3.667L 7.058	12 .10 .40 .50 2 2 0 1.000 2 2 2 2 2 .308L 3.491 1-3 2 .934L 7.088 1-4 2	12 .20 .60 4 4 0 .750 4 4 0 1.500 2-3 3 2.400R 2.646 2-4 3 1.500L 4.445 2-4 3 1.500L 6.436	12 .20 .30 .50 2 2 0 .750 2 2 0 1.500 2–3 2 2.728L 2.761 1–3 2 134R 4.400 1–3 2 1.34R 6.275	12 .20 .40 .40 .2 .0 .1.000 .2 .0 .0 .2 .0 .0 .2 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0
Los On Ax	10 20 30 40 50	C a1 a2 a3 B M B M M M B M M M B M M M B M M B M M B M M B M M B M M B M M M B M M M B M M M B M M M M M B M M M M B M	12 .10 .40 .50 .2 2 0 1.000 2 2 2 0 2.000 2-3 2 2.308L 3.491 1-3 2 934L 5.216 1-4 2 3.700L 7.474 1-4 2	12 20 20 20 20 60 4 4 4 0 .750 4 4 0 1.500 2-4 3.015 2-4 3.750L 5.011 2-4 3.750L 7.009	12 .20 .30 .50 2 2 0 .750 2 2 0 1.500 2-3 2 2.728L 2.761 2-4 3.375R 4.703 2-4 3.375R 6.702	12 .20 .40 .40 .2 2 0 1.000 2 2 0 0.0001 3.380 1-3 2 2.0001 5.205 1-4 7.380	12 .10 .20 .70 4 4 0 .875 4 0 1.750 2-3 3 2.182R 3.012 2-4 3 1.778L 5.071 2-4 7.307 1-4	12 .10 .30 .60 4 4 0 .750 4 0 1.500 2-3 2 3.000L 2.880 2-4 3 667L 4.811 2-4 3 667L 7.058 1-4 3	12 .10 .40 .50 .2 2 0 1.000 2 2 2 2 2.308L 3.491 1-3 2 .934L 5.216 1-3 1 7.088	12 .20 .60 4 4 0 .750 4 4 0 1.500 2-3 3 2.400R 2-4 3 1.500L 6.436 1-4 3	12 .20 .30 .50 2 2 0 .750 2 2 0 1.500 2-3 2 2.728L 2.761 1-3 2 1.34R 4.400 1-3 1.34R 6.275	12 20 .40 .40 2 2 0 1.000 2 0 2.000 2-3 2 2.0001 3.3860 1-3 2 5.008 5.205 1-3 5.208 7.204 1-4 2.400L
Los On Ax	teh ad les 10 20 30 40 50 60	C a1 a2 a3 G N B B M G N B B M G N B B M G N B B M G G N B B M G G N B B M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N M B M M M M M M M M M M M M M M M M M	12 .10 .40 .50 .2 2 0 1.000 2 2 0 2.000 2-3 2 2.308L 3.491 1-3 2 934L 5.216 1-4 2 3.700L 7.474 1-4 2 3.709L 9.928 1-4	12 .20 .20 .20 .60 4 4 0 .750 4 0 1.500 2-4 3.015 2-4 3.750L 5.011 2-4 3 .750L 7.009 1-4 3 2.200R 9.281 1-4	12 .20 .30 .50 .50 .2 2 0 .750 2 2 2 2.728L 2.761 2-4 3.75R 4.703 2-4 3.75R 6.702 1-4 3.100R 3.100R	12 .20 .40 .40 .40 .2 2 0 1.000 2 2 0 2.000 2-3 2 2.0001 3.380 1-3 2.500R 5.205 1-4 2 2.0001 7.380 1-4 2 2.0001 7.380 1-4 1-4 2 1.0001 1.000 1.0	12 .10 .20 .70 4 4 0 .875 4 0 1.750 2-3 3 2.182R 3.012 2-4 3 1.778L 5.071 2-4 3 1.778L 7.307 1-4 3 2.200L 9.601 1-4	12 .10 .30 .60 4 4 0 .750 4 0 1.500 2-3 2 3.000L 2.880 2-4 3.667L 4.811 2-4 3 .8067 1.7058 1-4 3 8.00R 9.011 1-4	12 .10 .40 .50 .2 .2 .0 .1.000 .2 .2 .2 .2 .2 .3 .491 .3 .491 .5 .2 .934L .5 .2 .934L .7 .088 .4 .4 .2 .4 .2 .9 .4 .2 .4 .4 .4 .4 .4 .4 .4 .4 .4 .4 .4 .4 .4	12 .20 .20 .60 4 4 0 .750 4 4 0 1.500 2-3 3 2.400R 2.646 2-4 3 1.500L 6.436 1-4 3 1.600R 8.643 1-4	12 .20 .30 .50 2 2 0 .750 2 2 2 0 1.500 2-3 2 2.728L 2.761 1-3 2.134R 4.400 1-3 2 1.34R 6.275 1-4 2 3.400L 8.593	12 .20 .40 .40 .2 .0 .1.000 .2 .0 .0 .0 .2 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0
Los On Ax	10 20 30 40 50	C a1 a2 a3 G N B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M C G N B M C G N B B M C G N B M C G N B M C G N B M C G N B M C G N B M C G N B M C G N B M C G N B M C G N B M C G N B M C G N B M C M C G N B M C M C M C M C M C M C M C M C M C M	12 .10 .40 .50 .2 2 0 1.000 2 2 0 2.000 2-3 2.308L 3.491 1-3 2 934L 5.216 1-4 2 3.700L 9.928 1-4 2	12 20 20 20 60 4 4 4 0 .750 4 4 3 .7501L 3.015 2-4 3 .7501L 5.011 2-4 3 .750L 5.011 2-4 3 .750L 1-4 3 2.200R 9.281 1-4 3	12 .20 .30 .50 2 2 0 .750 2 2 0 .750 2 2 2 0 1.500 2 -3 2 2.728L 2.761 2 -4 3 .375R 4.703 2 -4 3 .375R 6.702 1 -4 3 3.100R 9.060 1 -4 3	12 .20 .40 .40 .40 .2 .0 1.000 .2 .0 0.2000 .3.380	12 10 20 .70 4 4 0 .875 4 4 0 1.750 2-3 3 1.778L 5.071 2-4 3 1.778L 7.307 1-4 3 2.206L 9.601 1-4 3	12 .10 .30 .60 4 4 0 .750 4 4 0 1.500 2-3 2 3.000L 2.880 2-4 3 .667L 7.058 1-4 3 .800R 9.411 1-4 3	12 .10 .40 .50 2 2 0 1.000 2 2 2 0 2.000 2-3 2.308L 3.491 1-3 2 .934L 5.216 1-3 2 .934L 7.088 1-4 2 2 9.494 1-4 2	12 .20 .60 4 4 0 .750 4 4 0 1.500 2-3 3 1.500L 4.445 2-4 3 1.500L 4.445 2-4 3 1.500L 4.436 1-4 3 1.600R 8.643 1-4 3	12 .20 .30 .50 .50 .2 2 0 .750 2-3 2.728L 2.761 1-3 2 .134R 4.400 1-3 2 .134R 6.275 1-4 2 3.400L 8.593	12 20 40 40 2 2 0 1.000 2 0 2.000 2-3 2 2.000 L-3.380 1-3 2 5.008 5.205 1-3 2 5.008 7.204 1-4 2 2.400L 9.496 1-4 2
Los On Ax	teh ad les 10 20 30 40 50 60	C a1 a2 a3 G N B B M G N B B M G N B B M G N B B M G G N B B M G G N B B M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N M B M M M M M M M M M M M M M M M M M	12 .10 .40 .50 .2 2 0 1.000 2 2 0 2.000 2-3 2 2.308L 3.491 1-3 2 934L 5.216 1-4 2 3.700L 7.474 1-4 2 3.709L 9.928 1-4	12 .20 .20 .20 .60 4 4 0 .750 4 0 1.500 2-4 3.015 2-4 3.750L 5.011 2-4 3 .750L 7.009 1-4 3 2.200R 9.281 1-4	12 .20 .30 .50 .50 .2 2 0 .750 2 2 2 2.728L 2.761 2-4 3.75R 4.703 2-4 3.75R 6.702 1-4 3.100R 3.100R	12 .20 .40 .40 .40 .2 2 0 1.000 2 2 0 2.000 2-3 2 2.0001 3.380 1-3 2.500R 5.205 1-4 2 2.0001 7.380 1-4 2 2.0001 7.380 1-4 1-4 2 1.0001 1.000 1.0	12 .10 .20 .70 4 4 0 .875 4 0 1.750 2-3 3 2.182R 3.012 2-4 3 1.778L 5.071 2-4 3 1.778L 7.307 1-4 3 2.200L 9.601 1-4	12 .10 .30 .60 4 4 0 .750 4 0 1.500 2-3 2 3.000L 2.880 2-4 3.667L 4.811 2-4 3 .8067 1.7058 1-4 3 8.00R 9.011 1-4	12 .10 .40 .50 .2 .2 .0 .1.000 .2 .2 .2 .2 .2 .3 .491 .3 .491 .5 .2 .934L .5 .2 .934L .7 .088 .4 .4 .2 .4 .2 .9 .4 .2 .4 .4 .4 .4 .4 .4 .4 .4 .4 .4 .4 .4 .4	12 .20 .20 .60 4 4 0 .750 4 4 0 1.500 2-3 3 2.400R 2.646 2-4 3 1.500L 6.436 1-4 3 1.600R 8.643 1-4	12 .20 .30 .50 2 2 0 .750 2 2 2 0 1.500 2-3 2 2.728L 2.761 1-3 2.134R 4.400 1-3 2 1.34R 6.275 1-4 2 3.400L 8.593	12 .20 .40 .40 .2 2 0 1.000 2 2 0 2.000 2-3 2 2.000 1-3 2 2.000 5.205 1-3 2 5.00R 7.204 1-4 2 2.400L 9.496 1-4 2 2.400L
Los On Ax	teh ad deles 10 20 30 40 50 60 80	C a1 a2 a3 G N B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G G N B B M G G N B B M G G N B B M G G N B M G M G M G M G M G M G M G M G M G M	12 .10 .40 .50 .50 .2 .2 .0 .1.000 .2 .2 .0 .2.000 .2-3 .2.308L .3.491 .1-3 .2 .934L .5.216 .7.474 .1-4 .2 .3.700L .9.928 .1-4 .2 .3.700L .1.4871 .1-4 .2 .3.700L .1.4871 .1-4 .2 .3.700L .1.4871 .1-4	12 20 20 20 20 60 4 4 4 0 750 4 1.500 2-4 3.750L 3.015 2-4 3.750L 5.011 2-4 3 2.200R 9.281 1-4 3 2.200R 14.261 1-4	12 .20 .30 .50 2 2 0 .750 2 0 1.500 2-3 2.728L 2.761 2-4 3.375R 4.703 2-4 3 .375R 6.702 1-4 3 3.100R 9.060 1-4 3 3.100R 14.00R 14.00R	12 20 .40 .40 2 0 1.000 2 2 0 2.000 2-3 2.000L 3.380 1-3 2 2.000L 7.380 1-4 2 2.000L 9.867 1-4 2 2.000L 14.850 1-4 2	12 10 20 .70 4 4 0 .875 4 4 0 1.750 2-3 3 1.778L 5.071 1-4 3 1.2-4 3 1.778L 9.601 1-4 3 2.206L 9.601 1-4 1-4 1-4 1-4 1-4 1-4 1-4 1-4 1-4 1-	12 10 .30 .60 4 4 4 0 .7550 4 4 1.500 2-3 2.000L 2.880 2-4 3.6667L 7.058 1-4 3.800R 9.411 1-4 3.800R 14.4088 1-4	12 .10 .40 .50 2 2 0 1.000 2 2 2 0 2.000 2-3 2.308L 3.491 1-3 2 .934L 5.216 1-3 2 .934L 7.088 1-4 2 2.94.200L 9.494 1-4 2 4.200L 14.421 1-4	12 .20 .60 4 4 0 .750 4 4 0 1.500 2-3 3 1.500L 4.445 2-4 3 1.500L 4.445 2-4 3 1.500L 4.436 1-4 3 1.600R 8.643 8.643	12 .20 .30 .50 2 2 0 .750 2 2 0 1.500 2-3 2 .728L 2.761 1-3 2 .134R 4.400 1-3 2 .134R 6.275 1-4 2 3.400L 8.593 1-4 2 3.405L 13.545	12 20 .40 .40 2 2 0 1.000 2–3 2 .000 2–3 2 .5008 5.205 1–3 2 .500R 5.205 1–3 2 .500R 5.205 1–4 2 2.400L 9.496 1–4 2 1.4472
Los On Ax	teh ad les 10 20 30 40 50 60	C a1 a2 a3 G N B M G N B B M G N B B M G N B B M G N B B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M M G N M B M M G N M B M M G N M B M M G N M B M M G N M B M M G N M B M M G N M B M M G N M B M M G N M B M M G N M B M M G N M B M M M M M M M M M M M M M M M M M	12 .10 .40 .50 .50 .2 2 0 1.000 2 2 0 0.000 2-3 2 3.491 1-3 2 2.308L 5.216 1-4 2 3.700L 7.474 1-4 2 3.700L 9.928 1-4 2 3.700L 14.871 1-4 2 1.4871	12 .20 .20 .20 .60 4 4 4 0 .750 4 4 0 1.500 2-4 3.015 2-4 3.750L 5.011 2-4 3.750L 1.000 1-4 3 2.200R 9.281 1-4 3 2.200R 1-4 3 2.200R 1-4 3 3 3 3 3.750L	12 .20 .30 .50 .50 .50 .50 .750 .750 .750 .750 .7	12 .20 .40 .40 .40 .2 2 0 1.000 2 2 0 0.000 2-3 2 2.0001 3.380 1-3 2 2.0001 7.300 1-4 2 2.0001 1-4 2 2.0001 1-4 2 2.0001 1-4 2 1.4.850 1-4 2 1.4.850	12 .10 .20 .70 4 4 0 .875 4 4 0 1.750 2-3 3 2.182R 3.012 2-4 3 1.778L 7.307 1-4 3 2.00L 9.601 1-4 3 2.200L 14.601 1-4 3	12 10 30 .60 4 4 4 0 .750 4 4 0 1.500 2-3 2 3.0001 2.880 2-4 3.6671 4.811 2-4 3.800R 9.411 1-4 3.800R 14.408 1-4 3	12 .10 .40 .50 .2 .2 .0 .1.000 .2 .2 .0 .2 .2 .0 .2 .2 .3 .491 .3 .2 .934L .7.088 .1 .4 .2 .934L .7.088 .1 .4 .2 .934L .7.088 .1 .4 .2 .934L .7.088 .1 .4 .2 .934L .7.088 .1 .4 .2 .934L .7.088 .1 .4 .2 .934L .7.088 .1 .7.088 .1 .7.088 .1 .7.088 .1 .7.088 .1 .7.088 .1 .7.088 .1 .7.088 .1 .7.088 .1 .7.088 .1 .7.088 .1 .7.088	12 .20 .20 .60 4 4 0 .750 4 4 0 1.500 2-3 3 2.400R 2-4 3 1.500L 4.445 2-4 3 1.600R 8.643 1-4 3 1.600R 13.632	12 .20 .30 .50 2 2 0 .750 2 2 0 1.500 2-3 2 2.728L 2.761 1-3 2 1.34R 4.400 1-3 2 3.400L 8.593 1-4 2 3.400L 13.545 1-4 2	12 .20 .40 .40 .2 2 2 0 1.000 2 2 2 0 2.000 2-3 2 2.000 1-3 2 2.000 5.205 1-3 2 2.500R 7.204 1-4 2 2.400L 14.472 1-4 2
Los On Ax	teh ad deles 10 20 30 40 50 60 80	C a1 a2 a3 G N B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G G N B B M G G N B B M G G N B B M G G N B M G M G M G M G M G M G M G M G M G M	12 .10 .40 .50 .50 .2 .2 .0 .1.000 .2 .2 .0 .2.000 .2-3 .2.308L .3.491 .1-3 .2 .934L .5.216 .7.474 .1-4 .2 .3.700L .9.928 .1-4 .2 .3.700L .1.4871 .1-4 .2 .3.700L .1.4871 .1-4 .2 .3.700L .1.4871 .1-4	12 20 20 20 20 60 4 4 4 0 750 4 1.500 2-4 3.750L 3.015 2-4 3.750L 5.011 2-4 3 2.200R 9.281 1-4 3 2.200R 14.261 1-4	12 .20 .30 .50 2 2 0 .750 2 0 1.500 2-3 2.728L 2.761 2-4 3.375R 4.703 2-4 3 .375R 6.702 1-4 3 3.100R 9.060 1-4 3 3.100R 14.00R 14.00R	12 20 .40 .40 2 0 1.000 2 2 0 2.000 2-3 2.000L 3.380 1-3 2 2.000L 7.380 1-4 2 2.000L 9.867 1-4 2 2.000L 14.850 1-4 2	12 10 20 .70 4 4 0 .875 4 4 0 1.750 2-3 3 1.778L 5.071 1-4 3 1.2-4 3 1.778L 9.601 1-4 3 2.206L 9.601 1-4 1-4 1-4 1-4 1-4 1-4 1-4 1-4 1-4 1-	12 10 .30 .60 4 4 4 0 .7550 4 4 1.500 2-3 2.000L 2.880 2-4 3.6667L 7.058 1-4 3.800R 9.411 1-4 3.800R 14.4088 1-4	12 .10 .40 .50 2 2 0 1.000 2 2 2 0 2.000 2-3 2.308L 3.491 1-3 2 .934L 5.216 1-3 2 .934L 7.088 1-4 2 2.94.200L 9.494 1-4 2 4.200L 14.421 1-4	12 .20 .60 4 4 0 .750 4 4 0 1.500 2-3 3 1.500L 4.445 2-4 3 1.500L 4.445 2-4 3 1.500L 4.436 1-4 3 1.600R 8.643 8.643	12 .20 .30 .50 2 2 0 .750 2 2 0 1.500 2-3 2 .728L 2.761 1-3 2 .134R 4.400 1-3 2 .134R 6.275 1-4 2 3.400L 8.593 1-4 2 3.405L 13.545	12 .20 .40 .40 .2 2 0 1.000 2 2 0 2.0001 2.3 2 2.0001 1-3 2 .500R 5.200 1-3 2 2.4001 9.490 1-4 2 2.4001 14.473 1-4

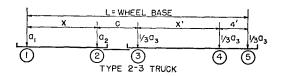
Was a second	uck No		91	92	93	94	95	96	97	98	99	100
	h. Base		48	48	48	48	48	48	36	36	36	36
Ax	le acing	X X'	$\frac{16}{20}$	$\frac{16}{20}$	$\frac{16}{20}$	$\frac{16}{20}$	$\begin{array}{c} 16 \\ 20 \end{array}$	$\frac{16}{20}$	20 8	20 8	20 8	20 8
**,	tch	C	12	12	12	12	12	12	8	8	8	8
Lo		a1	.10	.10	.10	.20	.20	.20	.10	.10	.10	.20
On Ax	les	\mathbf{a}_2	$\frac{.20}{.70}$.30 .60	.40 .50	.20 .60	.30 $.50$.40 $.40$.20 $.70$.30 .60	.40 .50	.20 .60
===	1	G	4	4	2	4	2	2	4	4	2	4
	10	N B	4 0	4 0	2 0	4 0	$\frac{2}{0}$	$\frac{2}{0}$	4	4 0	2 0	4 0
		M	.875	.750	1.000	.750	.750	1.000	$^{0}_{.875}$.750	1.000	.750
		G	4	4	2	4	2	2	3-4	2-4	2-3	2-4
	20	$_{ m B}^{ m N}$	4 0	4	2	4 0	2 0	$\frac{2}{0}$	$^4_{2.000\mathrm{R}}$	3	$^2_{1.539 \rm L}$	3 .500L
		M	1.750	1.500	2.000	1.500	1.500	2.000	2,240	2.100	2.327	2.010
	30	G N	$^{2-3}_{3}$	$\frac{2-3}{3}$	$\frac{2-3}{2}$	$^{2-3}_3$	23 2	$^{2-3}_{2}$	$\frac{2-4}{3}$	$^{2-4}_3$	$\frac{2-4}{3}$	$_{3}^{2-4}$
] 30	\mathbf{B}	2.182R	3.000R	2.3081	2.400R	2.728L	2.009L	.667L	0	.667R	.500L
		_M	3.012	$-^{2.880}$	3.491	2.646	2.761	3.380	4.563	4.350	4.163	4.006
	40	G N	$^{2-4}_3$	$^{1-3}_2$	$_{2}^{1-3}$	$\frac{2-4}{3}$	$^{1-3}_2$	$^{1-3}_{2}$	$\frac{2}{3}$	$\frac{2-4}{3}$	$\frac{2-4}{3}$	$^{2-4}_{3}$
ě		В	$2.556\mathrm{L}$	1.429L	.934L	2.250L	.134R	.500R	.667L	0	.667R	.500L
Span-Feet		<u>М</u> G	$\frac{4.447}{2.4}$	4.436 2-4	$\frac{5.216}{1-3}$	$-\frac{3.902}{2.4}$	$-\frac{4.400}{1 \ 3}$	5.205 1 3	$\frac{-6.811}{2-4}$	$\frac{-6.600}{2 \cdot 4}$	$-\frac{6.411}{2-4}$	$\frac{6.005}{2-4}$
pa	50	N	3	3	2	3	2	2	3	3	3	3
01		B M	$\frac{2.556L}{6.668}$	$rac{1.333 ext{L}}{6.482}$	7.088	2.250L 5.881	6.275	7.204	0.667L 0.058	$\frac{0}{8.850}$	$^{.667 m R}_{8.658}$	$500 { m L} \\ 8.004$
	<u>-</u>	G	$-\frac{0.000}{1-4}$	1 4	1 4	1 4	$-\frac{0.210}{1.4}$	1-3	1-4	1.4	1-4	1-4
	60	N	3	3	2 4,700L	3	2 2001	2 500 D	3	3 1 400D	$^{2}_{2.000L}$	3
		B M	.900L 8.914	$0.200 \mathrm{R} \\ 0.801$	9.068	1.000R 8.017	3.900L 8.154	$500 m R \ 9.203$	$.800 { m R} \\ 11.411$	$1.400 \mathrm{R} \\ 11.233$	11.067	$2.400 \mathrm{R} \\ 10.296$
		G	1-4	1-4	1-4	1-4	14	1-4	1-4	1-4	1-4	1-4
	80	N B	.900L	$^{3}_{.200 m R}$	$^{2}_{4.700 L}$	$^{3}_{1.000 m R}$	$\frac{2}{3.900L}$	$^{2}_{2.800L}$	$^{3}_{.800 m R}$	$^3_{1.400 m R}$	2 2,000L	$^3_{2.400 m R}$
		M	13.910	13.801	13.976	13.013	13.090	14.098	16.408	16.225	16.050	15.272
	100	G N	$\frac{1-4}{3}$	$^{1-4}_{3}$	$^{1-4}_2$	$^{1-4}_{3}$	$\frac{1-4}{2}$	$^{1-4}_2$	$^{1-4}_3$	$^{1-4}_3$	$^{1-4}_2$	$\frac{1-4}{3}$
	100	В	.900L	.200R	4.700L	1.000R	3.900L	2.800 L	.800R	1.400R	2.000L	2.400R
		M	18.908	18.800	18.921	18.010	18.052	19.078	21.406	21.220	21.040	20.258
-	uck No		101	102	103	104	105	106	107	108	109	110
W	h. Base	e L	36	36	40	40	40	40	40	40	44	44
$\frac{\mathbf{W}}{\mathbf{A}_{\mathbf{X}}}$	h. Base											
W Ax Sp Hi	h. Base le acing tch	X X' C	36 20 8 8	36 20 8 8	20 12 8	20 12 8	20 12 8	40 20 12 8	40 20 12 8	40 20 12 8	20 16 8	20 16 8
W Ax Sp Hi	h. Base le acing tch ad	X X' C a ₁	36 20 8 8 .20	36 20 8 8	40 20 12 8 .10	20 12 8 .10	40 20 12 8 .10	20 12 8 .20	40 20 12 8 .20	40 20 12 8 .20	20 16 8 .10	20 16 8 .10
W Ax Sp Hi Lo On	h. Base le acing tch ad	X X' C	36 20 8 8	36 20 8 8	20 12 8	20 12 8	20 12 8	40 20 12 8	40 20 12 8	40 20 12 8	20 16 8	20 16 8
W Ax Sp Hi Lo On	h. Base le acing tch ad les	E L X X' C a ₁ a ₂ a ₃ G	36 20 8 8 .20 .30 .50	36 20 8 8 .20 .40 .40	40 20 12 8 .10 .20 .70	40 20 12 8 .10 .30 .60	40 20 12 8 .10 .40 .50	40 20 12 8 .20 .20 .60	40 20 12 8 .20 .30 .50	40 20 12 8 .20 .40 .40	20 16 8 .10 .20 .70	20 16 8 .10 .30 .60
W Ax Sp Hi Lo On	h. Base le acing tch ad	E L X X X' C a1 a2 a3 G N B	36 20 8 8 .20 .30 .50	36 20 8 8 .20 .40 .40 .2 2 0	40 20 12 8 .10 .20 .70 4 4	40 20 12 8 .10 .30 .60	40 20 12 8 .10 .40 .50	20 12 8 .20 .20 .20	40 20 12 8 .20 .30 .50	40 20 12 8 .20 .40 .40	44 20 16 8 .10 .20 .70 4 4	20 16 8 .10 .30 .60
W Ax Sp Hi Lo On	h. Base le acing tch ad les	E L X X X' C a1 a2 a3 G N B M	36 20 8 8 .20 .30 .50 2 2 0 .750	36 20 8 8 .20 .40 .40 2 2 0 1.000	40 20 12 8 .10 .20 .70 4 4 0 .875	40 20 12 8 .10 .30 .60 4 4 0 .750	40 20 12 8 .10 .40 .50 2 2 0 1.000	40 20 12 8 .20 .20 .60 4 4 0 .750	40 20 12 8 .20 .30 .50 2 2 0 .750	40 20 12 8 .20 .40 .40 2 2 0 1.000	44 20 16 8 .10 .20 .70 4 4 0 .875	44 20 16 8 .10 .30 .60 4 4 0 .750
W Ax Sp Hi Lo On	h. Base le acing tch ad les	E L X X X' C a1 a2 a3 G N B	36 20 8 8 .20 .30 .50 2 2	36 20 8 8 .20 .40 .40 .2 2 0	40 20 12 8 .10 .20 .70 4 4	40 20 12 8 .10 .30 .60 4 4	40 20 12 8 .10 .40 .50	40 20 12 8 .20 .20 .60 4 4	40 20 12 8 .20 .30 .50 2 2 0 .750	40 20 12 8 .20 .40 .40	44 20 16 8 .10 .20 .70 4 4 0 .875 2-3	44 20 16 8 .10 .30 .60 4 4 0 .750 2-3
W Ax Sp Hi Lo On	h. Base le acing tch ad les	E L X X X' C an a2 a3 G N B M G N B	36 20 8 8 .20 .30 .50 2 2 0 .750 2-3 2-3 1.818L	36 20 8 8 .20 .40 .40 .40 2 2 0 1.000 2–3 2 1.333L	40 20 12 8 .10 .20 .70 4 4 0 .875 2-3 1.455R	40 20 12 8 .10 .30 .60 4 4 0 .750 2 2 2.000L	40 20 12 8 .10 .40 .50 2 2 0 1.000 2–3 1.539L	40 20 12 8 .20 .20 .60 4 4 0 .750 2-3 1.600R	40 20 12 8 .20 .30 .50 2 2 0 .750 2-3 2 1.818L	40 20 12 8 .20 .40 .40 .2 0 1.000 2-3 2 1.334L	44 20 16 8 .10 .20 .70 4 0 .875 2-3 3 1.455R	44 20 16 8 .10 .30 .60 4 0 .750 2-3 2.000L
W Ax Sp Hi Lo On	h. Base le acing tch ad les	X X' C a ₁ a ₂ a ₃ G N B M	36 20 8 8 20 .30 .50 2 2 0 .750 2–3 1.818L 1.841	36 20 8 8 .20 .40 .40 .2 2 0 1.000 2-3 2 1.333L 2.253	40 20 12 8 .10 .20 .70 4 4 0 .875 2-3 3 1.455R 2.008	40 20 12 8 .10 .30 .60 4 4 0 .750 2-3 2 2.000L 1.920	40 20 12 8 .10 .40 .50 2 2 0 1.000 2–3 1.539L 2.327	40 20 12 8 .20 .60 4 4 0 .750 2-3 1.600R 1.764	40 20 12 8 .20 .30 .50 2 2 0 .750 2-3 2 1.818L 1.841	40 20 12 8 .20 .40 .40 2 2 0 1.000 2-3 1.334L 2.253	44 20 16 8 .10 .20 .70 4 4 0 .875 2-3 3 1.455R 2.008	44 20 16 8 .10 .30 .60 4 4 0 .750 2-8 2 2.000L 1.920
W Ax Sp Hi Lo On	h. Base le acing tch ad les	X X' C a ₁ a ₂ a ₃ G N B M G N B M	36 20 8 8 .20 .30 .50 2 2 0 .750 2-3 2 1.818L 1.841 2-4 3	36 20 8 8 .20 .40 .40 .2 0 1.000 2–3 2 1.333L 2.253	40 20 12 8 .10 .20 .70 4 4 0 .875 2-3 3 1.455R 2.008 2-4	40 20 12 8 .10 .30 .60 4 4 0 .750 2 2.000L 1.920 2-4	40 20 12 8 .10 .40 .50 2 0 1.000 2–3 2 1.539L 2.327 2–3 2	40 20 12 8 .20 .20 .60 4 4 0 .750 2-3 1.600R 1.764 2-4	40 20 12 8 .20 .30 .50 2 2 0 .750 2-3 2 1.818L 1.841 2-4	40 20 12 8 .20 .40 .40 .40 2 2 0 1.000 2–3 2 1.334L 2.253 2–3 2	44 20 16 8 .10 .20 .70 4 4 0 .875 2-3 1.455R 2.008 2-3 3	44 20 16 8 - .10 .30 .60 4 4 0 .750 2-3 2 2.000 L 1.920 2-3 2
W Ax Sp Hi Lo On	h. Base ile acing tch ad iles 10	C an an an an an an an an an an an an an	36 20 8 8 .20 .30 .50 2 2 0 .750 2–3 2 1.818L 1.841 2–4 3	36 20 8 .20 .40 .40 .40 .2 2 0 1,000 2–3 2,333L 2,253 2–4 2,3000L	40 20 12 8 .10 .20 .70 4 4 0 .875 2–3 3 1.455R 2.008 2–4 3	40 20 12 8 .10 .30 .60 4 4 0 .750 2-3 2 2.000L 1.920 2-4 3 .667L	40 20 12 8 .10 .40 .50 2 2 0 1.000 2-3 2.327 2-3 2.327	40 20 12 8 .20 .20 .60 4 4 0 .750 2-3 3 1.600R 1.764 2-4 3	40 20 12 8 .20 .30 .50 2 2 0 .750 2-3 2 1.818L 1.841 2-4 3.375L	40 20 12 8 .20 .40 .40 .40 2 0 1.000 2-3 2 1.334L 2.253 2-3 2 1.334L	44 20 16 8 .10 .20 .70 4 4 0 .875 2-3 3 1.455R 2.008 2-3	44 20 16 8 -10 .30 .60 4 4 0 .750 2-3 2 2.000L 1.920 2-3
W Ax Sp Hi Lo On	h. Base de acing tch ad des 10	C a1 a2 a3 G N B M G N B B M G N B B M G S N B B M G S N B B M G S N B B M G S N B B M G S N B B M G S N B B M G S N B B M G S N B B M G S N B B M G S N B B M G S N B B M G S N B B M G G N B B M G G S N B B M G G S N B B M G G S N B B M G G S N B B M G G S N B B M G G S N B B M G G S N B B M G G S N B B M G G S N B B M G G S N B B M G G S N B B M G G S N B B M G G S N B B M G G S N B B M M G G S N B M M G G S N B M M G G S N B M M G G S N B M M G G S N B M M G G S N B M M M G G S N B M M M G G S N B M M M G G S N B M M M G G S N B M M M M M M M M M M M M M M M M M M	36 20 8 8 .20 .30 .50 2 2 0 .750 2–3 2 1.818L 1.841 2–4	36 20 8 8 .20 .40 .40 2 2 0 1.000 2-3 2 1.3331L 2.253 2-4 2 3.09040 2-4	40 20 12 8 .10 .20 .70 4 4 0 .875 2-3 3 1.455R 2.008 2-4 3 1.4451 3 91.4451	40 20 12 8 .10 .30 .60 4 4 0 .750 2 2.000L 1.920 2-4 3 .667L 3.763	40 20 12 8 .10 .40 .50 2 2 0 1.000 2–3 2 1.539L 2.327 2–3 1.399L 2.327 2–3 2.327 2–3 2.327 2–3 2–3 2–3 2–3 2–3 2–3 2–3 2–3	40 20 12 8 .20 .20 .60 4 4 0 .750 2-3 3 1.600R 1.764 2-4 3 1.250L 3.442 2 4	40 20 12 8 .20 .30 .50 2 2 0 .750 2-3 2 1.818L 1.841 2-4	40 20 12 8 .20 .40 .40 .40 2 2 0 1.000 2–3 2 1.334L 2.253 2 1.334L 3.736 2–4	20 16 8 .10 .20 .70 .70 .875 2–3 3 1.455R 2.008 2.3 3 1.455R 3.364	44 20 16 8 .10 .30 .60 4 4 0 .750 2-3 2 2.000L 1.920 2-3 2 2.000L 3.380 2 2-2.4
W Axx Sp Hi Lo On Ax	h. Base ile acing tch ad iles 10	C A1 A2 A3 GN B M GN B M GN B M GN B M	36 20 8 8 .20 .30 .50 2 2 0 .750 2–3 2.818L 1.841 2–4 3 8.802 2–4 3	36 20 8 8 .20 .40 .40 .40 .2 2 0 1.000 2–3 2.333L 2.253 2–4 2 3.000L 3.840 2–4 2	40 20 12 8 .10 .20 .70 4 4 0 .875 2-3 3 1.455R 2.008 2-4 3 1.445L 3.913 2.4	40 20 12 8 .10 .30 .60 4 4 0 .750 2-3 2.000L 1.920 2-4 3 .667L 3.763 2-4 3	40 20 12 8 .10 .40 .50 2 2 0 1.000 2–3 2.327 2–3 2 1.539L 3.926 2–4	40 20 12 8 .20 .20 .60 4 4 0 .750 2-3 3 1.600R 1.764 2-4 3 1.250L 3.442 2 4	40 20 12 8 .20 .30 .50 .50 2 2 0 .750 2–3 2 1.818 L 1.841 2–4 3 .375 L 3.304 2–4 3	40 20 12 8 .20 .40 .40 .40 .2 2 0 1.000 2–3 2 1.334L 2.253 2 1.334L 3.736 2–4	44 20 16 8 .10 .20 .70 .4 4 0 .875 2-3 3 1.455R 2.008 2-3 3 1.455R 3.364 2-4	44 20 16 8 .10 .30 .60 4 4 0 .750 2-3 2 2.000L 3.380 2-3 2 2.000L 3.380
W Axx Sp Hi Lo On Axx	h. Base de acing tch ad des 10	C a1 a2 a3 G N B M G N B B M G N B B M G S N B B M G S N B B M G S N B B M G S N B B M G S N B B M G S N B B M G S N B B M G S N B B M G S N B B M G S N B B M G S N B B M G S N B B M G G N B B M G G S N B B M G G S N B B M G G S N B B M G G S N B B M G G S N B B M G G S N B B M G G S N B B M G G S N B B M G G S N B B M G G S N B B M G G S N B B M G G S N B B M G G S N B B M G G S N B B M M G G S N B M M G G S N B M M G G S N B M M G G S N B M M G G S N B M M G G S N B M M M G G S N B M M M G G S N B M M M G G S N B M M M G G S N B M M M M M M M M M M M M M M M M M M	36 20 8 8 .20 .30 .50 2 2 0 .750 2–3 2 1.818L 1.841 2–4	36 20 8 8 .20 .40 .40 2 2 0 1.000 2-3 2 1.3331L 2.253 2-4 2 3.09040 2-4	40 20 12 8 .10 .20 .70 4 4 0 .875 2-3 3 1.455R 2.008 2-4 3 1.4451 3 91.4451	40 20 12 8 .10 .30 .60 4 4 0 .750 2 2.000L 1.920 2-4 3 .667L 3.763	40 20 12 8 .10 .40 .50 2 2 0 1.000 2–3 2 1.539L 2.327 2–3 1.399L 2.327 2–3 2.327 2–3 2.327 2–3 2–3 2–3 2–3 2–3 2–3 2–3 2–3	40 20 12 8 .20 .20 .60 4 4 0 .750 2-3 3 1.600R 1.764 2-4 3 1.250L 3.442 2 4	40 20 12 8 .20 .30 .50 2 2 0 .750 2-3 2 1.818L 1.841 2-4	40 20 12 8 .20 .40 .40 .40 2 2 0 1.000 2–3 2 1.334L 2.253 2 1.334L 3.736 2–4	20 16 8 .10 .20 .70 .70 .875 2–3 3 1.455R 2.008 2.3 3 1.455R 3.364	44 20 16 8 .10 .30 .60 4 4 0 .750 2-3 2 2.000L 1.920 2-3 2 2.000L 3.380 2 2-2.4
W Axx Sp Hi Lo On Axx	h. Base de acing tch ad des 10 20 30	L X X X' C a1 a2 a3 G N B M G N B M G N B M G N B M G N B M G N B M G G N B M G G N B M G G N G G C G C	36 20 8 8 .20 .30 .50 2 2 0 .750 2–3 2 .818L 1.841 2–4 3.802 2–4 3 .250R 5.80R	36 20 8 8 .20 .40 .40 .40 .2 2 0 1.000 2-3 2 3.333L 2.253 2-4 2 3.000L 3.840 2-4 2 3.000L	40 20 12 8 .10 .20 .70 4 4 0 .875 2-3 3 1.455 R 2.008 2-4 3 1.445 L 3 1.445 L 6.147 2-4	40 20 12 8 .10 .30 .60 4 4 0 .750 2-3 2 2.0001 1.920 2-4 3.667L 3.763 2-4 6.611 2-4	40 20 12 8 .10 .40 .50 2 2 0 1.000 2–3 1.539L 2.327 2–3 2 1.539L 3.926 2–4 3 .111R 5.900 2–4	40 20 12 8 .20 .20 .60 4 4 0 .750 2-3 3 1.600R 1.764 2-4 3 1.250L 3.442 2.4 3 1.250L 5.43L 5.43L	40 20 12 8 .20 .30 .50 .50 2 2 0 .750 2–3 1.818 L 1.841 2–4 3.375 L 3.304 2–4 3.375 L 5.303 2–4	40 20 12 8 .20 .40 .40 .40 .2 2 0 1.000 2–3 1.334L 2.253 2–1 3.736 2–4 2 2.5445 1.4	20 16 8 .10 .20 .70 .70 .875 2-3 3 1.455R 2.008 2-3 3 1.455R 3.364 2-4 2.222L 5.511	44 20 16 8 .10 .30 .60 4 4 0 .750 2-3 2 2.000 L 1.920 2-3 2 2.000 L 3.380 2-4 3 1.334 L 5.440 2-4
W Axx Sp Hi Lo On Ax	h. Base de acing tch ad des 10	E L X X X' C a1 a2 a3 G N B M G N B M G G N B M M G G N B M M M B M M M B M	36 20 8 8 .20 .30 .50 2 2 0 .750 2–3 2 1.818L 1.841 2–4 3 .250R 3.802 2–4 3 .250R 5.802	36 20 8 8 .20 .40 .40 2 2 0 1.000 2-3 2 1.3331 2.253 2-4 2.3.0001 3.840 2-4 2.0001 5.780	40 20 12 8 .10 .20 .70 4 4 0 .875 2–3 3 1.455R 2.008 2–4 3,913 2–4 3,445L 6,147	40 20 12 8 .10 .30 .60 4 4 0 .750 2 2.000L 1.920 2-4 3 .667L 3.763 2-4 8.667L 6.611	40 20 12 8 .10 .40 .50 2 2 0 1.000 2–3 2 1.539L 2.327 2–3 2 1.539L 2.327 2–3 2 1.539L 3.926 2–4 3 1.11R 5.900	40 20 12 8 .20 .20 .60 .60 4 4 0 .750 2-3 3 1.600R 1.764 2-4 3 1.250L 3.442 2 4 3 1.250L 5.431	40 20 12 8 .20 .30 .50 2 2 0 .750 2–3 2 1.818L 1.841 2–4 3 .375L 5.303	40 20 12 8 .20 .40 .40 .40 .2 2 0 1.000 2–3 2 1.334L 2.253 2 1.334L 3.736 2–4 2 3.500L 5.445	20 16 8 .10 .20 .70 .70 .875 2–3 3 1.455R 2.008 2.3 3 1.455R 3.364 2–4 3 2.222L 5.511	44 20 16 8 .10 .30 .60 4 4 0 .750 2-3 2 2.000L 1.920 2-3 2 2.000L 3.380 2-4 3 1.334L 5.440
W Axx Sp Hi Lo On Axx	h. Base de acing tch ad des 10 20 30	ELXXX' C a1 a2 a3 GN B M GN B M GN B M GN B M M GN B M M GN B M M GN B M M GN B M M M GN B M M M M M M M M M M M M M M M M M M	36 20 8 8 .20 .30 .50 2 2 0 .750 2–3 2.818L 1.841 2–4 3.802 2–4 3.250R 3.250R 7.801	36 20 8 8 .20 .40 .40 2 2 0 1.000 2-3 2 1.333L 2.253 2-4 2 3.000L 5.780 1-4 2 4.001L 8.103	40 20 12 8 .10 .20 .70 4 4 0 .875 2–3 3 1.455R 2.008 2–4 3 1.445L 6.147 2–4 3 1.445L 8.387	40 20 12 8 .10 .30 .60 4 4 0 .7550 2-3 2 2.0000L 1.920 2-4 3.667L 3.763 2-4 3 .667L 6.611 2-4 3 667L 8.258	40 20 12 8 .10 .40 .50 2 2 0 1.000 2-3 2.327 2-3 1.539L 3.926 2-4 3 .111R 8.150	40 20 12 8 .20 .20 .60 4 4 0 .750 2-3 3 1.600R 1.764 2-4 3 1.250L 3.442 2 4 3 1.250L 5.431 2-4 3 1.250L 7.425	40 20 12 8 .20 .30 .50 .50 .750 2-3 1.818 L 1.841 2-4 3.375 L 3.375 L 5.303 2-4 3.375 L 7.302	40 20 12 8 .20 .40 .40 .40 .40 .2 2 0 1.000 2–3 2 1.334L 2.253 2–1 3.334L 2 3.500L 5.445 1.4 2 800L 7.713	44 20 16 8 .10 .20 .70 .70 .4 4 0 .875 2–3 3 1.455R 2.008 2–3 3 1.455R 3.2.222L 5.511 2–4 3 2.222L 7.739	44 20 16 8 .10 .30 .60 4 4 0 .750 2-3 2 2.000 L 1.920 2-3 2 2.000 L 3.380 2-4 3 1.334 L 5.440 2-4 3 1.334 L 7.682
Wind Axx Sp Hi Lo On Axx	h. Base le acing tch ad les 10 20 30 40	E L X X X Y C a 1 a 1 a 2 a 3 a 3 B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M M G G N B M M M G G N B M M M G G N B M M M M M M M M M M M M M M M M M M	36 20 8 8 8 .20 .30 .50 2 2 0 .750 2-3 1.818L 1.841 2-4 3.802 2-4 3.802 2-4 3.0250R 5.802 2-4 3.750R 7.802 1.8	36 20 8 8 .20 .40 2 2 0 1.000 2-3 2.1.333L 2.253 2-4 2.353 2-4 2.353 2-4 2.353 2-4 2.353 1.440 1.5780	40 20 12 8 .10 .20 .70 4 4 0 .875 2-3 1.455R 2.008 2-4 3 1.445L 3.913 2-4 3 1.445L 6.147 2-3 1.445L 8.387 1.455R	40 20 12 8 .10 .30 .60 4 4 0 .750 2-3 2.0000L 1.920 3.763 2-4 3.763 2-4 3.667L 6.011 2-4 3.867L 8.258 1-4	40 20 12 8 .10 .40 .50 2 2 0 1.000 2-3 1.5391 2-3 2 1.5391 3.926 2-4 3.111R 5.900 2-4 3.111R 8.150	40 20 12 8 .20 .20 .60 4 4 0 .750 2-3 1.600R 1.764 3 1.250L 3.442 2 4 3 1.250L 5.431 2-4 3 1.250L 5.431 1.250L 7.425 1.425 1.425	40 20 12 8 .20 .30 .50 2 2 0 .750 2-3 2 1.818L 1.841 2-4 3.375L 5.303 2-4 3.375L 5.303 2-1 7.302 1-4	40 20 12 8 .20 .40 2 2 0 1.000 2-3 2 1.334L 2.253 2-3 2-3 2-3 3.736 2-4 2 3.500L 5.445 1.4 2 800L 7.713	20 16 8 .10 .20 .70 4 4 0 .875 2-3 3 1.455R 2.03 2-3 3 3.455R 2-4 3 3.364 2-4 3 2.222L 5.511 2-4 3 2.222L 5.73 3	44 20 16 8 .10 .30 .60 .4 4 0 .750 2-3 2 2.000 L 1.920 2-3 2 2.000 L 3.380 2-4 3 1.334 L 5.440 2-4 3 1.334 L 7.682 1-4
Wind Axx Sp Hi Lo On Axx	h. Base de acing tch ad des 10 20 30	ELXXX C C a1 a2 a3 G N B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M M M G N B B M M M G N B B M M M G N B M M M M M M M M M M M M M M M M M M	36 20 8 8 .20 .30 .50 2 2 0 .750 2-3 1.818L 1.841 2-4 3.250R 3.802 2-50R 5.802 2-7 8 1.818L 1.841 1.84	36 20 8 8 .20 .40 .40 2 2 0 1.000 2-3 1.3331 2.253 2-4 2.3.000L 3.840 2-4 2 3.000L 5.780 1-4 2 4.00L 8.103 1-4 2 4.00L	40 20 12 8 .10 .20 .70 4 4 0 .875 2-3 3 1.455R 2.008 2-4 3 1.445L 6.147 2-4 3 1.445L 8.387 1-4 3 1.445L	40 20 12 8 .10 .30 .60 4 4 0 .750 2-3 2 2.0001 1.920 2-4 3.667L 3.667L 8.258 1-4 3.800R	40 20 12 8 .10 .40 .50 2 2 0 1.000 2-3 2 1.5389L 2.327 2-4 3 .111R 5.900 2-4 3 .111R 5.900 1.111R 5.900 1.111R 5.900 1.111R 5.900 1.111R 5.900	40 20 12 8 .20 .20 .60 4 4 0 .750 2-3 1.600R 1.754 2-4 3 1.250L 5.431 2-4 3 1.250L 5.431 2-4 3 1.250L 5.431 3 1.250L 5.431 3 1.250L 5.431 3 1.250L 5.431 3 1.250L 5.431 3 1.250L	40 20 12 8 .20 .30 .50 2 2 0 .750 2 1.8181 1.841 2-4 3.3751 5.303 2-4 3 .3751 7.302 1-4 3 2.500R	40 20 12 8 .20 .40 2 2 0 1.000 2–3 2 1.334L 2.253 2–3 2 3.736 2–4 2 3.500L 5.445 1 -4 2 .800L 7.713	20 16 8 .10 .20 16 8 .10 .20 16 8 .20 18 14 55 R 2.00 18 2 -4 3 2.222 L 5.511 2 -4 3 2.222 L 7.739 1 -4 3 6.00 L	20 16 8 .10 .30 .60 .60 .750 2-3 2.0000L 1.920 2-3 2.0000L 1.920 2-4 3 1.334L 5.440 2-4 3 1.334L 7.682 1-4 3 2.2000R
Wind Axx Sp Hi Lo On Axx	h. Base le acing tch ad les 10 20 30 40	EL XX X X X X X X X X X X X X X X X X X	36 20 8 8 8 .20 .30 .50 2 2 0 .750 2-3 1.818L 1.841 2-4 3.802 2-4 3.50R 5.802 2-4 3.502 1.443 2.508 2.50	36 20 8 8 .20 .40 2 2 0 1.000 2-3 2 1.333L 2.253 3.000L 5.780 1-4 2 4.001L 8.103 1-4 2 4.00L 10.603	40 20 12 8 .10 .20 .70 4 4 0 .875 2-3 1.455R 2.008 2-4 3 1.445L 3.913 2-4 3 1.445L 8.1451 6.147 2-4 3 1.445L 8.387 1.455R	40 20 12 8 .10 .30 .60 4 4 0 .7550 2-3 2 .0000L 1.920 3.763 2-4 3.667L 6.011 2-4 3.667L 8.258 1-4 3.800R 10.611	40 20 12 8 .10 .40 .50 2 2 0 1.000 2-3 2.5391 2.327 2-3 2.5391 3.926 2-4 3 .111R 5.900 2-4 3 .111R 8.150 1-4 2 2.500L 10.604	40 20 12 8 .20 .20 .20 .60 4 4 0 .750 2-3 1.600R 1.764 3 1.250L 5.431 2-4 3 1.250L 7.425 1-4 3 1.800R 9.654	40 20 12 8 .20 .30 .50 2 2 0 .750 2-3 1.818L 1.841 2-4 3.375L 5.303 2-4 3.7502 1-4 3 2.500R 9.604	40 20 12 8 .20 .40 .40 2 2 0 1.000 2-3 2 1.334L 2.253 2-3 3.736 2-4 2 3.500L 5.445 1.4 2 .800L 7.713 1.40 2.800L 1.714 2.800L 1.40 1	20 16 8	20 16 8
Wind Axx Sp Hi Lo On Axx	h. Base le acing tch ad les 10 20 30 40	ELXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	36 20 8 8 8 .20 .30 .50 2 2 0 .750 2 3 2 1.818L 1.841 2-4 3 .250R 3.802 2-4 3 2.50R 5.802 1-4 3 3.000R 10.150 1-4 3	36 20 8 8 .20 .40 .40 2 2 0 1.000 2-3 2 1.3331L 2.253 2-4 2 3.000L 5.780 1-4 2 4.00L 8.103 1-4 2 4.00L 10.603 1-4 2	40 20 12 8 .10 .20 .70 4 4 0 .875 2-3 3 1.455R 2.008 2-4 3 1.445L 6.147 2-4 3 1.445L 8.387 1-4 3 1.00R 10 10 10 10 10 10 10 10 10 10	40 20 12 8 81030	40 20 12 8 .10 .40 .50 2 2 0 1.000 2-3 2 1.5389L 2.327 2-4 3 .111R 5.900 2-4 3 .111R 5.900 1-4 2 2 2.500L 10.604 1-4 2	40 20 12 8 .20 .20 .60 4 4 0 .750 2-3 1.600R 1.764 3 1.250L 5.431 2-4 3 1.250L 7.425 1-4 3 1.800R 9.654 1-4 3	40 20 12 8 .20 .30 .50 2 2 0 .750 2 1.8181 1.841 2-4 3.3751 5.303 2 4 3 3.751 7.302 1-4 3 2.500R 9.604 1-4 3	40 20 12 8 .20 .40 2 2 0 1.000 2-3 2 1.3384L 2.253 2-3 2 3.530L 5.445 2 8.00L 7.713 1-4 2 8.00L 10.211 1-4 2	20 16 8 .10 .20 16 8 .10 .20 16 8 .20 18 .455 R 2.008 2-3 3 1.455 R 2.008 2-4 3 2.222 L 5.511 2-4 3 6.00 L 10.006 1-4 3	20 16 8 .10 .30 .60 .60 .750 2-3 2.0000L 1.920 2-3 2.0000L 3.380 2-4 3 1.334L 5.440 2-4 3 1.334L 7.682 1-4 3 2000R 10.001 1-4 3
Wind Axx Sp Hi Lo On Axx	h. Basselle acing techniques of the second s	ELXXXX C a1 a2 GN B M	36 20 8 8 .20 .30 .50 2 2 0 .750 2–3 2 1.818L 1.841 2–4 3 .250R 3.802 2–4 3 .250R 7.801 1–4 3 3.000R	36 20 8 8 .20 .40 2 2 0 1.000 2-3 2 1.3331L 2.253 3.0001L 5.780 1-4 2 4.001L 8.103 1-4 2 4.001L 10.603 1-4 2 4.001L	40 20 12 8 .10 .20 .70 4 4 0 .875 2-3 1.455R 2.008 2-4 3.913 2-4 3.913 2-4 3.913 2-4 3.9145L 8.387 1-45L 8.387 1-4 100R 100R	40 20 12 8 8	40 20 12 8 .10 .40 .50 2 2 0 1.000 2-3 2.599L 2.327 2-3 3.926 2-4 3.111R 5.900 2-4 3.111R 8.150 1-4 2 2.500L 1.0.604 1-4 2 2.500L	40 20 12 8 .20 .20 .20 .60 4 4 0 .750 2-3 1.600R 1.764 2-4 3.1.250L 5.431 2-4 3 1.250L 7.425 1-4 3 1.800R 9.654 1-4 3 1.800R	40 20 12 8 .20 .30 .50 2 2 0 .750 2-3 2 1.818L 1.841 2-4 3.375L 5.303 2-4 3.375L 7.302 1-4 3 2.500R 9.604 1-4 3 2.500R	40 20 12 8 .20 .40 .40 .2 2 0 1.000 2-3 2 1.334L 2.253 2 3.334L 3.736 2-4 2 8.00L 7.713 1-4 2 8.00L 10.211 1-4 2 8.00L	20 16 8 10 20 10 20 10 20 10 20 10 .	44 20 16 8 .10 .30 .60 4 4 4 0 .750 2-3 2 2.000L 1.920 2-3 3.380 2-4 3 1.334L 7.682 1.40 1.43 3 2.000R
Wind Axx Sp Hi Lo On Axx	h. Basselle acing techniques of the second s	ELXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	36 20 8 8 8 .20 .30 .50 2 2 0 .750 2 3 2 1.818L 1.841 2-4 3 .250R 3.802 2-4 3 2.50R 5.802 1-4 3 3.000R 10.150 1-4 3	36 20 8 8 .20 .40 .40 2 2 0 1.000 2-3 2 1.3331L 2.253 2-4 2 3.000L 5.780 1-4 2 4.00L 8.103 1-4 2 4.00L 10.603 1-4 2	40 20 12 8 .10 .20 .70 4 4 0 .875 2-3 3 1.455R 2.008 2-4 3 1.445L 6.147 2-4 3 1.445L 8.387 1-4 3 1.00R 10 10 10 10 10 10 10 10 10 10	40 20 12 8 81030	40 20 12 8 .10 .40 .50 2 2 0 1.000 2-3 2 1.5389L 2.327 2-4 3 .111R 5.900 2-4 3 .111R 5.900 1-4 2 2 2.500L 10.604 1-4 2	40 20 12 8 .20 .20 .60 4 4 0 .750 2-3 1.600R 1.764 3 1.250L 5.431 2-4 3 1.250L 7.425 1-4 3 1.800R 9.654 1-4 3	40 20 12 8 .20 .30 .50 2 2 0 .750 2 1.8181 1.841 2-4 3.3751 5.303 2 4 3 3.751 7.302 1-4 3 2.500R 9.604 1-4 3	40 20 12 8 .20 .40 2 2 0 1.000 2-3 2 1.3384L 2.253 2-3 2 3.530L 5.445 2 8.00L 7.713 1-4 2 8.00L 10.211 1-4 2	20 16 8 .10 .20 16 8 .10 .20 16 8 .20 18 .455 R 2.008 2-3 3 1.455 R 2.008 2-4 3 2.222 L 5.511 2-4 3 6.00 L 10.006 1-4 3	20 16 8 .10 .30 .60 .60 .750 2-3 2.0000L 1.920 2-3 2.0000L 3.380 2-4 3 1.334L 5.440 2-4 3 1.334L 7.682 1-4 3 2000R 10.001 1-4 3
Wind Axx Sp Hi Lo On Axx	h. Basselle acing techniques of the second s	ELXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	36 20 8 8 .20 .30 .50 2 2 0 .750 2–3 2 1.818L 1.841 2–4 3 .250R 5.802 2–4 3 .250R 7.802 1–4 3 3.000R 1–14 3.000R 15.113 1–4 3	36 20 8 8 .20 .40 2 2 0 1.000 2-3 2.1,3331 2.253 3.0001 5.780 1-4 2 4.001 8.103 1-4 2 4.001 10.603 1-4 2 4.001 15.602 1-4 2	40 20 12 8 .10 .20 .87 .4 4 0 .875 2-3 1.455R 2.008 2-4 3.913 2-4 3.913 2-4 3.1445L 8.387 1-4 3.100R 10.700 1-4 3.100R 15.700 1-4 3	40 20 12 8 .10 .30 .60 4 4 0 .7550 2-3 2 .0001 1.920 2-4 3.763 2-4 3.6671 8.258 1-4 3.800R 10.611 1-4 3.800R 15.608	40 20 12 8 .10 .40 .50 2 2 0 1.000 2-3 2.539L 2.327 2-3 3.926 2-4 3.111R 5.900 2-4 3.111R 8.150 1-4 2 2.500L 10.604 1-4 2 2.500L 15.578 1 4 2	40 20 12 8 .20 .20 .20 .60 4 4 0 .750 2-3 1.600R 1.764 2-4 3.1.250L 5.431 2-4 3 1.250L 7.425 1-4 3 1.800R 9.654 1-4 3 1.800R 1.641 1-4 3	40 20 12 8 .20 .30 .50 .50 2 2 0 .750 2-3 2 1.818L 1.841 2-4 3 .375L 5.303 2-4 3 .375L 7.302 1-4 8 2.500R 9.604 1-4 3 2.500R 14.578 1-4 3	40 20 12 8 .20 .40 .40 .40 .2 2 0 1.000 2-3 2 1.384L 2.253 2 1.334L 3.736 2-4 2.500L 5.445 1 1-4 2 .800L 10.211 1-4 2 .800L 15.208 1-4 2 15.208	20 16 8	44 20 16 8 .10 .30 .60 .60 .750 2-3 2 2.000L 1.920 2-3 3.380 2-4 3.334L 5.440 2-4 3 1.334L 7.682 1.920 1.920 1.930 1.
Wind Axx Sp Hi Lo On Axx	h. Base le acing tech acing tech acing tech acing tech acing tech acing additional acing a	L X X X Y C A 1 A 1 A 1 A 1 A 1 A 1 A 1 A 1 A 1 A	36 20 8 8 8 .20 .30 .50 2 2 0 .750 2 3 2 1.818L 1.841 2-4 3.250R 3.802 2-4 3 250R 7.801 1-4 3 3.000R 10.150 1-4 3 3.000R 15.113 1-4	36 20 8 8 .20 .40 .40 2 2 0 1.000 2-3 2.31.33840 2-4 2.253 2-4 2.3.0001 5.780 1-4 2.4001 10.603 1-4 2 4.001 15.602 1-4	40 20 12 8 .10 .20 .70 4 4 0 .875 2-3 3 1.455 R 2.008 2-4 3 1.445 L 3 1.445 L 6.147 2-4 3 1.445 L 6.147 2-4 3 1.40 R 3 1.40 R 3 1.50 R	40 20 12 8 .10 .30 .60 4 4 0 .750 2-3 2.0001 1.920 2-4 3.667L 3.763 2-4 3 .667L 8.258 1-4 3 .800R 10.611 1-4 3 .800R 15.608 1-4	40 20 12 8 .10 .40 .50 2 2 0 1.000 2-3 2 1.5389L 2.327 2-3 2.111R 5.900 2-4 3 .111R 5.900 1-4 2 2.500L 1.0.604 1-4 2 2.5508 1.4 1.5578	40 20 12 8 .20 .20 .60 4 4 0 .750 2-3 1.600R 1.764 3 1.250L 5.431 2-4 3 1.250L 7.425 1-4 3 1.800R 9.654 1-4 1.800R 1.800R 1.800R 1.600R	40 20 12 8 .20 .30 .50 2 2 0 .750 2 1.8181L 1.841 2-4 3.375L 5.303 2-4 3 .375L 7.302 1-4 3 2.500R 9.604 1-4 3 2.500R 14.578	40 20 12 8 .20 .40 2 2 0 1.000 2-3 2 1.3384L 2.253 2-3 2.3.500L 5.445 1-4 2 .800L 10.211 1-4 2 .800L 15.208 1-52 8 1-4	20 16 8	44 20 16 8 .10 .30 .60 4 4 0 .750 2-3 2.0000L 1.920 2-3 2.0000L 3.380 2-4 3 1.334L 5.440 2-4 3 1.334L 7.682 1-4 3 2.200R 10.001 1-4

Tr	ick N	O.	111	112	113	114	115	116	117	118	119	120
	ı. Bas		44	44	44	44	48	48	48	48	48	48
Ax	le acing	X X'	20 16	20 16	20 16	20 16	20 20	20 20	20 20	20 20	20 20	20 20
Hit		C	8	8	8	8	8	8	8	8	8	8
Los		a ₁	.10 .40	.20 .20	.20 .30	.20 .40	.10 .20	.10	.10 .40	.20	.20 .30	.20 .40
Ax		a ₂ a ₃	.50	.60	.50	.40	.70	.30 .60	.50	.60	.50	.40
-	10	G N	2 2	4	2 2	2 2	4 4	4	2 2	4 4	2	2 2
1		${f B}$	0	0	0	0	0	0	0	0	0	0
ļ		M G	$\frac{1.000}{2-3}$.750 2–3	.750 2-3	$\frac{1.000}{2-3}$.875 2-3	2-3	1.000 2-3	$\frac{.750}{2-3}$.750 2-3	$\frac{1.000}{2-3}$
ļ	20	Ñ B	1.539L	3 1.600R	$\frac{2}{1.818 \mathbf{L}}$	1.333L	3 1.455R	2 2.000L	2 1.539L	3 1.600R	2 1.818L	$^{2}_{1.333L}$
		M	2.327	1.764	1.841	2.253	2.008	1.920	2.327	1.764	1.841	2.253
[30	G N	2–3 2	2-3 3	2-3	2-3	2–3	$\frac{2-3}{2}$	2-3 2	$^{2-3}_{3}$	2-3 2	$\frac{2-3}{2}$
	00	В	1.539L	1.600R	1.818L	1.333L	1.455R	2.000 L	1.539L	1.600R	1.818L	1.333L
		M G	3.926 2–3	$\frac{2.993}{2-4}$	$\frac{3.186}{2-4}$	3.736 1-3	3.364	3.380 2-4	$\frac{3.926}{2-3}$	2.993	3.186 2-3	3.736
ایر	40	N B	2 1.539L	$^{3}_{2.000\mathrm{L}}$	3 1.000L	2 1.500R	3.000L	3 2.000L	$^2_{1.539L}$	$^{3}_{2.750\mathrm{L}}$	$\frac{2}{1.818L}$	$\frac{2}{1.500 R}$
Span-Feet		M	5.539	4.880	4.820	5.245	4.903	4.890	5.539	4.351	4.546	5.245
ban	50	G N	$^{1-4}_2$	2–4 3	2-4 3	1-4 2	$^{2-4}_{3}$	2-4 3	$^{1-3}_2$	$\frac{2-4}{3}$	$^{1-3}_2$	$^{1-3}_2$
S	00	\mathbf{B}	3.000L	2.000L	1.000L	1.200L	3.000L	2.000L	0	2.750L	1.333R	$1.500\mathbf{R}$
ļ		_ <u>M</u>	7.680	6.864 1-4	$\frac{6.816}{1-4}$	$\frac{7.329}{1-4}$	7.112	$\frac{7.122}{1-4}$	$\frac{7.375}{1-4}$	$\frac{6.321}{1-4}$	$\frac{6.402}{1-4}$	$\frac{7.236}{1-4}$
	60	N B	$\frac{2}{3.000}$ L	3 1.200R	$\substack{2\\2.000\text{L}}$	1.200L	3.000L	$^3_{400}{ m L}$	$\frac{2}{3.500}$ L	3 .600R	$^{2}_{2.500L}$	2 1.600L
		M	10.150	9.024	9.067	9.824	9.335	9,403	9.704	8.406	8.604	9.443
i	80	G N	1-4 2	1–4 3	1-4 2	1-4 2	1-4 3	1-4 3	1-4 2	$^{1-4}_{3}$	$\frac{1-4}{2}$	$^{1-4}_{2}$
	80	В	3.000L	1.200R	2.000L	1.200L	1.300L	.400 L	3.500L	.600R	2.500 L	1.600L
İ		M G	15.113 1-4	14.018	14.050 1–4	14.818	14.321	14.402	14.653	13.405 1-4	13.578	$\frac{14.432}{1-4}$
	100	N	2	3	2	2	3	3 .400 L	2	3	2	2
ļ		B M	3.000L 20.090	1.200R 19.014	2.000L 19.040	1.200L 19.814	1.300L 19.317	19.402	3.500L 19.623	$.600 \mathbf{R}$ 18.404	2.500L 18.563	1.600L 19.426
Tr												
_	ick N		121	122	123	124	125	126	127	128	129	130
Wh	. Bas	e L	40	40	40	40	40	40	44	44	44	44
Wh	. Bas		40 20 8	40 20 8	40 20 8	20 8	40 20 8	40 20 8	20 12	20 12	20 12	
Wh Ax Spa Hit	n. Base le scing sch	e L X X' C	20 8 12	40 20 8 12	40 20 8 12	40 20 8 12	40 20 8 12	40 20 8 12	20 12 12	20 12 12	20 12 12	20 12 12
Wh Ax Spa Hit Loa On	n. Base le acing ach ad	E L X X' C a ₁ a ₂	20 8 12 .10 .20	40 20 8 12 .10 .30	40 20 8 12 .10 .40	40 20 8 12 .20 .20	40 20 8 12 .20 .30	40 20 8 12 .20 .40	12 12 .10 .20	20 12 12 .10 .30	12 12 12 .10 .40	20 12 12 20 .20 .20
Wh Ax Spa Hit Loa	n. Base le acing ach ad	E L X X' C a ₁ a ₂ a ₃	20 8 12 .10 .20 .70	40 20 8 12 .10 .30 .60	40 20 8 12 .10 .40 .50	20 8 12 .20 .20 .60	40 20 8 12 .20 .30 .50	40 20 8 12 .20 .40 .40	12 12 12 .10 .20 .70	20 12 12 .10 .30 .60	12 12 12 .10 .40 .50	20 12 12 12 .20 .20 .60
Wh Ax Spa Hit Loa On	n. Base le acing ach ad	E L X X X C a ₁ a ₂ a ₃ G N	40 20 8 12 .10 .20 .70 4 4	40 20 8 12 .10 .30 .60	40 20 8 12 .10 .40 .50	20 8 12 .20 .20 .60 4	40 20 8 12 .20 .30 .50	20 8 12 .20 .40 .40	20 12 12 12 .10 .20 .70	12 12 12 .10 .30 .60	20 12 12 .10 .40 .50	20 12 12 .20 .20 .60
Wh Ax Spa Hit Loa On	n. Base le acing sch ad	E L X X' C a1 a2 a3 G	20 8 12 .10 .20 .70	40 20 8 12 .10 .30 .60	40 20 8 12 .10 .40 .50	40 20 8 12 .20 .20 .60	40 20 8 12 .20 .30 .50	40 20 8 12 .20 .40 .40	12 12 12 .10 .20 .70	12 12 12 .10 .30 .60	20 12 12 .10 .40 .50	20 12 12 .20 .20 .60
Wh Ax Spa Hit Loa On	a. Base le acing ch ad les	E L X X X' C a1 a2 a2 G N B M G	40 20 8 12 .10 .20 .70 4 4 0 .875	40 20 8 12 .10 .30 .60 4 4 0 .750	40 20 8 12 .10 .40 .50 2 2 0 1.000	40 20 8 12 .20 .20 .60 4 0 .750	40 20 8 12 .20 .30 .50 2 2 0 .750	40 20 8 12 .20 .40 .40 2 2 0 1.000	44 20 12 12 .10 .20 .70 4 4 0 .875	44 20 12 12 .10 .30 .60 4 4 0 .750	20 12 12 .10 .40 .50 2 2 0 1.000	44 20 12 12 .20 .20 .60 4 0 .750
Wh Ax Spa Hit Loa On	n. Base le acing sch ad	E L X X' C a ₁ a ₂ a ₃ G N B M	40 20 8 12 .10 .20 .70 4 4 0 .875 3-4 2.000R	40 20 8 12 .10 .30 .60 4 4 0 .750 3-4 4 2.000R	40 20 8 12 .10 .40 .50 2 2 0 1.000 2	40 20 8 12 .20 .20 .60 4 4 0 .750 3-4 4 2.000R	40 20 8 12 .20 .30 .50 2 2 0 .750 3-4 4 2.000R	40 20 8 12 .20 .40 .40 .2 2 0 1.000	44 20 12 12 .10 .20 .70 4 4 0 .875	44 20 12 12 .10 .30 .60 4 4 0 .750	20 12 12 .10 .40 .50 2 2 0 1.000	44 20 12 12 .20 .20 .60 4 0 .750
Wh Ax Spa Hit Loa On	a. Base le acing ch ad les	E L X X' C a ₁ a ₂ a ₃ G N B M	40 20 8 12 .10 .20 .70 4 4 0 .875 3-4 2.000R 2.240	40 20 8 12 .10 .30 .60 4 4 0 .750 3-4 2.000R 1.920	40 20 8 12 .10 .40 .50 2 2 0 1.000 2 2 0 2.000	40 20 8 12 .20 .60 4 4 0 .750 3-4 2.000R 1.920	40 20 8 12 .20 .30 .50 2 2 0 .750 3-4 2.000R 1.600	20 8 12 .20 .40 .40 2 2 0 1.000 2 2 0	44 20 12 12 .10 .20 .70 4 4 0 .875 4 0 1.750	44 20 12 12 .10 .30 .60 4 4 0 .750 4 0	20 12 12 .10 .40 .50 2 2 0 1.000 2 2 0 2.000	44 20 12 12 .20 .60 .60 .750 4 4 0 1.500
Wh Ax Spa Hit Loa On	a. Base le acing ch ad les	ELXXX'CCa1a2a3GNBBMCGNBBMCGN	40 20 8 12 .10 .20 .70 4 4 0 .875 3-4 2.000R 2.240 2-4 3	40 20 8 12 .30 .60 4 4 0 .750 3-4 4 2.000R 1.920 2-4 3	40 20 8 12 .10 .40 .50 2 2 0 1.000 2 2 0 2 2 2 2 3 0 2 2 2 2 3 0 1.00 2 2 3 1.00 2 2 3 3 3 4 3 4 3 4 3 4 4 4 4 5 5 6 7 8 8 8 8 8 8 8 8 8 8 8 8 8	40 20 8 12 .20 .60 4 0 .750 3-4 4 2.000R 1.920 2-4	40 20 8 12 .20 .30 .50 2 2 0 .750 3-4 4 2.000R 1.600 2-4 3	20 8 12 .20 .40 .40 .2 2 0 1.000 2 2 0 2.000 2.000	44 20 12 12 .10 .20 .70 4 4 0 .875 4 4 0 1.750 2-4 3	44 20 12 12 .10 .30 .60 4 4 0 .750 4 4 0 2-4 3	20 12 12 .10 .40 .50 2 2 0 1.000 2 .000 2-3 2	44 20 12 12 .20 .60 4 4 0 .750 4 4 0 1.500 2–4
Wh Ax Spa Hit Loa On	le acing sch ad les 10	ELXXX'C a1 a2 a3 GN BM GN BM G	40 20 8 12 .10 .20 .70 4 4 0 .875 3-4 4 2.000R 2.240	40 20 8 12 .10 .30 .60 4 4 0 .750 3-4 2.000R 1,920	40 20 8 12 .10 .40 .50 2 2 0 1.000 2 2 0 2.000 2-3	40 20 8 12 .20 .20 .60 4 4 0 .750 3-4 2.000R 1.920 2-4	40 20 8 12 .20 .30 .50 2 2 0 .750 3-4 4 2.000R 1.600	40 20 8 12 .20 .40 .40 2 2 0 1.000 2 2 0 2.000	44 20 12 12 10 .20 .70 4 4 0 .875 4 4 0 1.750 2-4	44 20 12 12 .10 .30 .60 4 4 0 .750 4 4 0	20 12 12 10 .40 .50 2 2 0 1.000 2 2 0 2.000	44 20 12 12 20 20 20 60 4 4 0 .750 4 4 0
Wh Ax Spa Hit Loa On	a. Bass le acing sch ad les 10 20	C A1 A2 A3 G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G M M M M M M M M M M M M M M M M	40 20 8 12 .10 .20 .70 4 4 0 .875 3-4 2.000R 2.240 2-4 4.152 2-4	40 20 8 12 .10 .30 .60 4 4 0 .750 3-4 2.000R 1,920 2-4 3 .667R 3.763	40 20 8 12 .10 .40 .50 2 2 0 1.000 2 2 0 2.000 2-3 2 2.308 L 3.491 2-4	40 20 8 12 .20 .20 .60 4 4 0 .750 3-4 2.000R 1.920 2-4 3 0 3.600	40 20 8 12 .20 .30 .50 2 2 0 .750 3-4 4 2.000R 1.600 2-4 3 1.000R 3.226	40 20 8 12 .20 .40 2 2 0 1.000 2 2 0 2.000 2-3 2 2.000 2.3880 2-4	44 20 12 12 .10 .20 .70 4 4 0 .875 4 0 1.750 2–4 3 1.000L 3.480 2–4	44 20 12 12 .10 .30 .60 .60 .750 4 4 0 0 1.500 2-4 3 0 3.150	20 112 110 .40 .50 2 2 0 1.000 2 2 0 2.000 2-3 2 2.308L 3.491 2-4	44 20 12 12 .20 .60 4 4 0 .750 4 0 1.500 2–4 3 .750L5
Wh Ax Spa Hit Los On Ax	le acing sch ad les 10	e L X X X C a1 a2 a2 a2 B M G N B M G N B M G N B M B M B M B M B M B M B M B M B M B	40 20 8 12 .10 .20 .70 4 4 0 .875 3-4 2.000R 2.24 3 .222L 4.152	40 20 8 12 .10 .30 .60 4 4 0 .750 3-4 2.000R 1.920 2-4 3.667R 3.763	40 20 8 12 .10 .40 .50 2 2 0 1.000 2 2 2 0 2.000 2-3 2 3.08L 3.491	40 20 8 12 .20 .20 .60 4 4 0 .750 3-4 2.000R 1.920 2-4 3 0 3.600	40 20 8 12 .20 .30 .50 2 2 0 .750 3-4 4 2.000R 1.600 2-4 3 1.000R	40 20 8 12 .20 .40 .40 .40 .2 2 0 1.000 2 2 0 2.000 2-3 2.000 2-3 2.000 2-3 2.000 2-3 2.000 2-3 2.0000 2.0000 2.0	44 20 12 12 .10 .20 .70 4 4 0 .875 4 4 0 1.750 2-4 3 1.000L	44 20 12 12 .10 .60 4 4 0 .750 4 4 0 1.500 2-4 3 0 3.150 2-4 3 0	44 20 12 12 .10 .40 .50 2 2 0 1.000 2 2 0 2.000 2-3 2.308L 3.491	44 20 12 12 .20 .20 .60 4 4 0 .750 4 4 0 1.500 2-4 3 .750L 3.015
Wh Ax Spa Hit Los On Ax	a. Bass le acing sch ad les 10 20	E L X X Y C a1 a2 a3 G N B M G N B B M G N B B M M G N B M M M M B M	40 20 8 12 .10 .20 .70 4 4 0 .875 3-4 2.000R 2.240 2-4 3 .222L 4.152 2-4 3 .222L 6.401	40 20 8 12 .10 .30 .60 4 4 0 .750 3-4 2.000R 1.920 2-4 3.763 2-4 3.667R 6.011	40 20 8 12 .10 .40 .50 2 2 0 1.000 2 2 0 2.000 2-3 2 2.308 L 3.491 2-4 3 1.556R 5.655	40 20 8 12 .20 .20 .60 4 4 2.000R 1.920 2-4 3 0 3.600 2-4 3 0 5.600	40 20 8 12 .20 .30 .50 2 2 0 .750 3-4 4 2.000R 1.600 2-4 3 1.000R 3.226 2-4 3 1.000R	40 20 8 12 .20 .40 .40 2 2 0 1.000 2 2 2 2 2.000 2-3 2 2.0000L 3.3880 2-4 2 4.000L 5.120	44 20 12 .10 .20 .70 4 4 0 .875 4 0 1.750 2-4 3 1.000L 3.480 2-4 3 1.000L 5.723	44 20 12 12 .10 .30 .60 4 4 0 .750 4 0 1.500 2-4 3 0 3.150 2-4 3 0 5.400	20 12 110 .40 .50 2 2 0 1.000 2 2 2 2 2 2 2 3.491 2–4 3 1.000R	44 20 12 20 .20 .60 4 4 0 .750 4 0 1.500 2-4 3 .750 2-4 3 .750 2-4 3 .750 1 .500
Wh Ax Spa Hit Los On Ax	a. Bass le acing sch ad les 10 20	E L X X Y C A1 A2 A2 A2 A2 A2 A2 A2 A2 A2 A2 A2 A2 A2	40 20 8 12 .10 .20 .70 4 4 0 .875 3-4 2.000R 2-4 3 .222L 4.152 2-4 3 .222L 6.401 2-4 3	40 20 8 12 .10 .30 .60 4 4 0 .750 3-4 2.000R 1.920 2-4 3.667R 3.763 2-4 3.667R 6.011 2-4 3	40 20 8 12 .10 .40 .50 2 2 0 1.000 2 2 2 2 2 3.491 2-4 3 1.556R 5.655 2-4 3	40 20 8 12 .20 .20 .60 4 4 2.000R 1.920 2-4 3 0 3.600 2-4 3 0 5.600	40 20 8 12 .20 .30 .50 2 2 0 .750 3-4 4 2.000R 1.600 2-4 3.226 2-4 3.226 2-4 3.226 2-4 3.226 2-4 3.226	40 20 8 12 .20 .40 .40 2 2 0 1.000 2 2 2 2 2 2 2 2 3.880 2-4 2 4.000L 5.120 1-4	44 20 12 .10 .20 .70 4 4 0 .875 4 4 0 1.750 2-4 3 1.000L 3.480 2-4 3 1.000L 5.723 2-4 3	44 20 12 12 .10 .60 4 4 0 .750 4 4 0 1.500 2-4 3 0 5.400 2-4 3	20 12 12 12 .10 .50 2 2 0 1.000 2 2 2 2 2 2 2 2 3.3491 2-4 3 3 2-4 3	44 20 12 12 .20 .60 4 4 0 .750 4 0 1.500 2-4 3.015 2-4 3.750L 5.011 2-4 3
Wh Ax Spa Hit Loa On	a. Basic le acing cch ad les 10 20 30	e L X X' C a1 a2 a2 a3 G N B M G G N B M G G N B M G G N B M G G N B M G G N G	40 20 8 12 .10 .20 .70 4 4 0 .875 3-4 4 2.000R 2.240 2-4 4.152 2-4 3 2.221L 6.401 2-4	40 20 8 12 .10 .30 .60 4 4 0 .750 3-4 2.000R 1.920 2-4 3 .667R 3.763 2-4 3 .607R	40 20 8 12 .10 .40 .50 2 2 0 1.000 2 2 0 2.000 2-3 2 2.308L 3.491 2-4 3 1.566R 5.655 2-4	40 20 8 12 .20 .20 .60 4 4 0 .750 3-4 2.000R 1.920 2-4 3 0 3.600 2-4 3 5.600	40 20 8 12 .20 .30 .50 2 2 0 .750 3-4 2.000R 1.600 2-4 3 1.000R 3.226 2-4 3 1.000R 2-4 3 2-4 3 2-4 3 2-4 3 2-4 3 2-4 3 3 3 3 3 3 3 4 4 4 4 4 4 5 6 7 8 8 8 8 8 8 8 8 8 8 8 8 8	40 20 8 12 .20 .40 .40 2 2 0 1.000 2 2 0 2.000 2-3 2 2.000L 3.380 2-4 4.002L 5.120 1-4	44 20 12 12 .10 .20 .70 4 4 0 .875 4 4 0 1.750 2-4 3 1.000L 3.480 2-4 3 1.000L 5.723 2-4	44 20 12 12 10 30 .60 4 4 0 .750 4 4 0 1.500 2-4 3 0 3.150 2-4 3 0 5.400 2-4	20 12 10 .40 .50 2 2 0 1.000 2 2 2 0 2.000 2-3 2 2.308L 3.491 2-4 3 1.000R 5.123	44 20 12 20 20 .60 4 4 0 .750 4 4 0 1.500 2-4 3 .750L 3.015 2-4 3 .750L 3.015
Wh Ax Spa Hit Los On Ax	a. Bassale le acing che acing che acing sold less 10 20 30 40 50	E L X X' C C a1 a2 a2 a2 B M M G N B M M G N B M M G N B M G N B M G N B M G N B M G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M M G G N B M M M G G N B M M M G G N B M M M M M M M M M M M M M M M M M M	40 20 8 12 .10 .20 .70 4 4 0 .875 3-4 2.0000R 2.24 4.152 2-4 3 .222L 6.401 2-4 3 .222L 8.651 2-4 8.651	40 20 8 12 .10 .30 .60 4 4 0 .750 3-4 2.000R 1.920 2-4 3.667R 3.763 2-4 3.667R 6.011 2-4 8.258 8.258	40 20 8 12 .10 .40 .50 2 2 0 1.000 2 2 2 2 3.491 2-4 3 1.556R 5.655 2-4 3 1.556R 7.894 1-4	40 20 8 112 .20 .20 .60 4 4 2.000R 1.920 0 3.600 2-4 3 0 5.600 2-4 3 7.600	40 20 8 12 .20 .50 .50 2 2 0 .750 3-4 4 2.000R 1.600 2-4 3.226 2-4 3.226 2-4 3.1.000R 5.220 2-4 3.1.000R 5.220	40 20 8 12 .20 .40 .40 2 2 0 1.000 2 2 2 0 2.000 2–3 2.000 2–3 2.000 1.3380 2–4 2.000 1.120	44 20 12 12 .10 .20 .70 4 4 0 .875 4 4 0 1.750 2-4 3 1.000L 5.723 2-4 3 1.000L 7.724 7.724 7.725 7.7	44 20 12 12 .10 .60 4 4 0 .7550 4 4 0 1.500 2-4 3 0 5.400 2-4 3 0 7.650	20 12 12 12 .10 .50 2 2 0 1.000 2 2 2 2 0 2.000 2-3 2 2.308L 3.491 2-4 3 1.000R 5.123 2-4 3 1.000R 7.368	44 20 12 12 .20 .60 4 4 0 .750 4 0 1.500 2-4 3.015 2-4 3.750L 5.011 2-4 3.750L 7.700L 7.700L 7.700L
Wh Ax Spa Hit Los On Ax	a. Basic le acing cch ad les 10 20 30	E L X X X C C A A A A A A A A A A A A A A A	40 20 8 12 .10 .20 .70 4 4 0 .875 3-4 2.00040 2.24 3 .222L 4.152 2-4 3 .222L 6.401 2-4 3 .222L 8.651 2-4 3 .222L 8.651 2-4 3 .222L 8.651	40 20 8 12 .10 .30 .60 4 4 0 .750 3-4 2.000R 1.920 2-4 3.667R 3.763 2-4 3.667R 6.011 2-4 3.667R 8.258	40 20 8 11 10 .40 .50 2 2 0 1.000 2 2 0 2.000 2-3 2 2.308L 3.491 2-4 3 1.556R 7.894 1-4 2 3.000L	40 20 8 12 .20 .20 .60 4 4 0 .750 3-4 2.000R 1.920 2-4 3 0 5.600 2-4 3 0 7.600 2-4 3 0 0 7.600	40 20 8 8 12 .20 .30 .50 2 2 0 .750 3-4 2.000R 1.600 2-4 3 1.000R 3.226 2-4 3 1.000R 7.216 1-4 3 4.000R	40 20 8 12 .20 .40 .40 .40 2 2 0 1.000 2 2 2.0000 2-3 2 2.000L 5.120 1-4 2 1.200L 7.329 1-4 2 1.200L	44 20 12 12 .10 .20 .70 .875 4 4 0 1.750 2-4 3 1.000L 5.723 2-4 3 1.000L 7.968 2-4 3 1.000L 3.000L 3.000L 3.000 3.00	44 20 12 12 10 30 .60 4 4 0 .750 4 4 0 1.500 2-4 3 0 5.400 2-4 3 0 7.650 2-4 3 0 0 0 0 0 0 0 0 0 0 0 0 0	20 12 110 .40 .50 2 2 0 1.000 2 2 0 2.000 2-3 2 2.308L 3.491 2-4 3 1.000R 7.368	44 20 12 12 20 20 60 4 4 0 750 4 4 0 1,500 2-4 3 .750L 3.015 2-4 3.750L 5.011 2-4 3.750L 7.009
Wh Ax Spa Hit Los On Ax	a. Bassale le acing che acing che acing sold less 10 20 30 40 50	E L XX XY C A1 A2 A2 A3 BM G N B M G N B M G N B M G N B M G N B M G N B M G N B M B M G N B M G N B M G N B M G N B M G N B M B M G N B M B M G N B M B M G N B M B M G N B M B M G N B M B M G N B M B M G N B M B M G N B M B M B M B M G N B M B M B M B M B M B M B M B M B M B	40 20 8 12 .10 .20 .70 4 4 0 .875 3-4 2.0000R 2.24 4.152 2-4 3 .222L 6.401 2-4 3 .222L 8.651 2-4 3 2.22L 10.901	40 20 8 12 .10 .30 .60 4 4 0 .750 3-4 2.000R 1.920 2-4 3.667R 6.011 2-4 3.667R 8.258 2-4 3.667R 8.258	40 20 8 12 .10 .40 .50 2 2 0 1.000 2 2.000 2.300 2.3491 2-4 3 1.556R 7.894 1-4 2 3.000L 10.150	40 20 8 12 .20 .60 4 4 0 .750 3-4 2.000R 1.920 2-4 3 0 3.600 2-4 3 0 7.600 2-4 3 0 0 7.600 2-4 3 0 0 7.600 2-4 3 0 0 7.600 2-4 3 0 0 7.600 2-4 3 0 0 0 0 0 0 0 0 0 0 0 0 0	40 20 8 12 .20 .30 .50 .50 .50 .750 3-4 4 2.000R 1.600 2-4 3 1.000R 5.220 2-4 3 1.000R 7.216 1-4 3 4.000R 9,267	40 20 8 12 .20 .40 .40 2 2 0 1.000 2 2 2 2 0.000 2-3 2 2.0001 5.120 1-4 2 1.2001 7.329 1.2001 7.329 1.2001 9.824	44 20 12 12 .10 .20 .875 4 4 0 1.750 2-4 3 1.000L 5.723 2-4 3 1.000L 7.968 2-4 3 1.000L 1.7.968	44 20 12 .10 .30 .60 4 4 0 .750 4 4 0 1.500 2-4 3 0 5.400 2-4 3 0 7.650 2-4 3 0 9 9 9 9 9 9 9 9 9 9 9 9 9	20 12 12 .10 .40 .50 2 2 0 1.000 2 2 2 2 0 2.000 2–3 2 2.308L 3.491 2–4 3 1.000R 7.368 1-4 2 3.500L 9.704	44 20 12 12 .20 .60 4 4 0 .750 4 0 1.500 2-4 3.750L 5.011 2-4 3.750L 7.009 2-4 3.750L 7.000 2-4 3.750L 7.000 2-4 3.750L 7.000 2-4 3.750L 7.000 2-4 3.750L 7.0000 7.000 7.000 7.000 7.000 7.000 7.000 7.000 7.000 7.0000 7.000 7.000 7.000 7.000 7.000 7.000 7.000 7.000 7.0000 7.000 7.000 7.000 7.000 7.000 7.000 7.000 7.000 7.0000 7.000 7.000 7.000 7.000 7.000 7.000 7.000 7.000 7.0000 7.0000 7.000 7.000 7.000 7.000 7.000 7.000 7.000 7.000 7.0000 7.0000 7.0000 7.0000 7.0000 7.0000 7.0000 7.0000 7.0000 7.0000 7.0000 7.0000 7.0000 7.0000 7.0000 7.0000 7.0
Wh Ax Spa Hit Los On Ax	a. Bassale le acing che acing che acing sold less 10 20 30 40 50	E L XX XY C A1 A2 A2 A2 BA B M G N B M B M G N B M B M B M B M B M B M B M B M B M B	40 20 8 12 .10 .20 .70 4 4 0 .875 3-4 2.000R 2.24 3 .222L 4.152 2-4 3 .222L 6.401 2-4 3 .222L 8.651 2-4 3 .222L 10.901 11.901 11.901 11.901 11.901	40 20 8 12 .10 .30 .60 4 4 0 .750 3-4 2.000R 1.920 2-4 3.667R 6.011 2-4 3.667R 8.258 2-4 3.667R 1.920	40 20 8 12 .10 .40 .50 2 2 0 1.000 2 2 2 2 0 2.308L 3.491 2-4 3 1.556R 5.655 2-4 3 1.556R 7.894 1-4 2 3.000L 1-4 1-4 1-4 1-4 1-4 1-4 1-4 1-4	40 20 8 12 .20 .20 .60 4 4 0 .750 3-4 2.000R 1.920 2-4 3 0 3.600 2-4 3 0 7.600 2-4 3 0 7.600 2-4 3 0 7.600 2-4 3 0 7.600 2-4 3 0 7.600 2-4 3 0 7.600 2-4 3 0 0 7.600 2-4 3 0 0 0 0 0 0 0 0 0 0 0 0 0	40 20 8 8 12 .20 .30 .50 2 2 0 .750 3-4 2.000R 1.600 2-4 3 1.000R 3.226 2-4 3 1.000R 7.216 1-4 3 4.000R 9.267	40 20 8 12 .20 .40 .40 .2 2 0 1.000 2 2 2 0 2.000 2-3 2 2.0000L 5.120 1-4 2 1.200L 7.329 1-4 2 1.200L 9.824 1-4 2	44 20 12 12 .10 .20 .70 .875 4 4 0 0 .875 4 4 0 1.750 2-4 3 1.000L 5.723 2-4 3 1.000L 5.724 3 1.000L 5.725 5.725 5	44 20 12 12 10 30 60 4 4 0 0 1.500 2-4 3 0 3.150 2-4 3 0 7.650 2-4 3 0 1 1 1 1 1 1 1 1 1 1 1 1 1	20 12 10 .10 .40 .50 2 2 0 1.000 2 2 0 2.000 2-3 3 1.0008 5.123 2-4 3 1.0008 7.368 1-4 2 3.500L 9.704	44 20 12 12 20 20 20 4 4 0 750 4 4 0 1.500 2-4 3 .750L 3.015 2-4 3 .750L 5.011 2-4 3 .750L 9.007 1-4 3
Wh Ax Spa Hit Los On Ax	a. Bassale le le le le le le le le le le le le l	E L XX XY C A1 A2 A2 G N B M G R M	40 20 8 12 .10 .20 .70 4 4 0 .875 3-4 2.000R 2.240 2-4 3 2.22L 4.152 2-4 3 2.22L 8.651 2-4 3 .222L 10.901 1-4	40 20 8 12 .10 .30 .60 4 4 0 .750 3-4 2.000R 1.920 2-4 3 .667R 6.011 2-4 3 .667R 8.258 2-4 3 .667R 1.920 1.920 2.000R	40 20 8 12 .10 .40 .50 2 2 0 1.000 2 2.000 2.3 2.308L 3.491 2-4 3.556R 7.894 1-4 2 3.000L 1-4 2 3.000L	40 20 8 12 .20 .60 4 4 0 .750 3-4 2.000R 1.920 2-4 3 0 5.600 2-4 3 0 7.600 2-4 3 0 9.600 1-4 3 3 3 3 3 4 3 3 5 6 6 7 7 8 8 9 9 9 9 9 9 9 9 9 9 9 9 9	40 20 8 8 12 .20 .30 .50 2 2 0 .750 3-4 4 2.000R 1.600 2-4 3 1.000R 5.220 2-4 3 1.000R 7.216 1-4 3 4.000R 7.216 1-4 3 4.000R 9.287	40 20 8 12 .20 .40 .40 2 2 0 1.000 2 2 2 2 0.000 2-3 2-3 2.0001 5.120 1-4 2 1.2001 7.329 1-4 2 1.2001 1-4 2 1.2001 1-4 2 1.2001 1-4 2 1.2001 1-4 2 1.2001 1-4 2 1.2001 1-4 2 1.2001 1-4 2 1.2001 1-4 2 1.2001 1-4 2 1.2001 1-4 2 1.2001	44 20 12 .10 .20 .20 .70 4 4 0 .875 4 4 0 1.750 2-4 3 1.000L 5.723 2-4 3 1.000L 5.723 2-4 3 1.000L 5.723 2-4 3 1.000L 5.723 2-4 3 1.000L 5.723 2-4 3 1.000L 5.723 2-4 3 1.000L 5.723 2-4 3 1.000L 5.723 2-4 3 1.000L 5.723 2-4 3 1.000L 5.723 2-4 3 1.000L 5.723 2-4 3 1.000L 5.723 2-4 3 1.000L 5.723 2-4 3 1.000L 5.723 2-4 3 1.000L 5.723 2-4 3 1.000L 5.723 2-4 3 1.000L 5.723 1.000L 5.723 5.724 3 1.000L 5.723 5.724 3 1.000L 5.723 5.724 5.725 6.726 6	44 20 12 12 .10 .60 4 4 0 .750 4 4 0 1.500 2-4 3 0 5.400 2-4 3 0 7.650 2-4 3 0 7.650 2-4 3 0 7.650	20 12 10	44 20 12 12 .20 .60 4 4 0 .7550 4 4 0 1.500 2-4 3 .750L 5.011 2-4 3 .750L 7.009 2-4 3 .750L 9.007
Wh Ax Spa Hit Los On Ax	a. Bass. le acting chad less 10 20 30 40 50 60 80	C A1 A2 A2 A2 A3 A3 A3 A3 A4 A4 A4 A4 A4 A4 A4 A4 A4 A4 A4 A4 A4	40 20 8 12 .10 .20 .70 4 4 0 .875 3-4 2.000R 2.24 3 .222L 4.152 2-4 3 .222L 6.401 2-4 3 .222L 10.901 1-4 3 1.400R 15.825 1-4	40 20 8 12 .10 .30 .60 4 4 2.000R 1.920 2-4 3.667R 6.011 2-4 3.667R 8.258 2-4 3.667R 10.507 1-4 3.200R 15.461	40 20 8 12 .10 .40 .50 .50 2 2 0 1.000 2 2 0 2.000 2-3 2 2.308L 3.491 2-4 3 1.556R 7.894 1-4 2 3.000L 10.150 1-4 2 3.000L 15.113	40 20 8 12 .20 .20 .60 4 4 0 .750 3-4 2.000R 1.920 2-4 3 0 5.600 2-4 3 0 7.600 2-4 3 0 9.600 1-4 3 3.200R 1-428 1-4	40 20 8 8 12 .20 .30 .50 .50 2 2 0 .750 3-4 4 2.000R 1.600 2-4 3 1.000R 3.226 2-4 3 1.000R 7.216 1-4 3 4.000R 9.267 1-4 3 4.000R 9.267 1-4 14.200 1-4	40 20 8 12 .20 .40 .40 .40 2 2 0 1.000 2 2 2 0 2.000 2-3 2 2.0001 3.380 2-4 2 4.0001 7.329 1-4 2 1.2001 9.824 1-4 2 1.2001 1-4 1.4 818 1-4	44 20 12 10 20 12 .10 .20 .70 4 4 0 .875 4 4 0 1.750 2-4 3 1.000L 5.723 2-4 3 1.000L 7.968 2-4 3 1.000L 10.215 1-4 3 .700R 15.106 1-4	44 20 12 110 30 60 4 4 4 0 .750 4 4 0 1.500 2-4 3 0 5.400 2-4 3 0 7.650 2-4 3 0 7.650 2-4 3 1.500	20 12 10 .50 .50 2 2 0 1.000 2 2 0 2.000 2-3 2 2.308L 3.491 2-4 3 1.000R 7.368 1-4 2 3.500L 9.704	44 20 12 20 20 20 60 4 4 0 750 4 4 0 1.500 2-4 3 750L 5.011 2-4 3 .750L 7.009 2-4 3 .750L 3.015 1.750L 3.015 1.750L 3.015 1.750L 3.015 1.750L 3.015 3.750L
Wh Ax Spa Hit Los On Ax	a. Bassale le le le le le le le le le le le le l	E L XX XY C A1 A2 G N B M B M G N B M B M G N B M B M G N B M B M B M B M B M B M B M B M B M B	40 20 8 12 .10 .20 .70 4 4 0 .875 3-4 2.000R 2.240 2-4 3 .222L 4.152 2-4 3 .222L 8.651 2-4 3 .222L 10.901 1-4 3 1.400R 15.825	40 20 8 12 .10 .30 .60 4 4 0 .750 3-4 2.000R 1.920 2-4 3 .667R 3.763 2-4 3 .667R 8.258 2-4 3 .667R 8.258 10.507 1-4 2.200R	40 20 8 12 .10 .40 .50 .50 2 0 1.000 2 2 0 2.000 2-3 2 2.308L 3.491 2-4 3 1.556R 7.894 1-4 2 3.000L 1-4 2 3.000L 1-4 1-4 15.113	40 20 8 12 .20 .20 .60 4 4 0 .750 3-4 2.000R 1.920 2-4 3 0 5.600 2-4 3 0 7.600 2-4 3 0 9.600 1-4 3 3.000R 1-4 3.100R 1-4 3.100R	40 20 8 8 12 .20 .30 .50 2 2 0 .750 3-4 4 2.000R 1.600 2-4 3 1.000R 3.226 2-4 3 1.000R 7.216 1-4 3 4.000R 9.267 1-4 3 4.000R 9.267	40 20 8 12 .20 .40 .40 2 2 0 1.000 2 2 2 2 2 0.000 2 3.3880 2 4 4.000L 5.120 1 7.329 1 1.200L 9.824 1 1 1.200L 1.4.818	44 20 12 10 20 12 .10 .20 .70 4 4 0 .875 4 0 1.750 2-4 3 1.000L 5.723 2-4 3 1.000L 7.968 2-4 3 1.000L 7.968 2-4 3 1.000L 7.968 1.000L 7.968 2-4 3 1.000L 7.968 2-1 1.000L 7.968 2-1 1.000L 7.968 2-1 1.000L 7.968 1.000L 7.968	44 20 12 110 .30 .60 4 4 0 .750 4 0 1.500 2-4 3 0 5.400 2-4 3 0 7.650 2-4 3 0 7.650 2-4 3 0 7.650	20 12 10	44 20 12 20 20 60 4 4 0 .750 4 0 1.500 2-4 3 .750L 7.001 2-4 3 .750L 7.009 1-4 3 .750L 7.009 1-4 3 .750L 7.009 1-4 3 .750L 7.009 1-4 3 .750L 7.009 1-4 3 .750L 7.009 1-4 3 .750L 7.009 1-4 3 .750L 7.009 1-4 3 .750L 7.009 1-4 3 .750L 7.009 1-4 3 .750L 7.009 1-4 3 .750L 7.009 1-4 3 .750L 7.009 1-4 3 .750L 7.009 1-4 3 .750L 7.009 1-4 3 .750L 7.009 1-4 3 .750L 7.009 1-4 3 .750L 7.009 1-4 1-4 1-4 1-4 1-4 1-4 1-4 1-4
Wh Ax Spa Hit Loz On Ax	a. Bass. le acting chad less 10 20 30 40 50 60 80	E L XX C A1 A2 A2 A3 A3 A3 A4 A4 A4 A4 A4 A4 A4 A4 A4 A4 A4 A4 A4	40 20 8 12 .10 .20 .70 4 4 0 .875 3-4 2.0000R 2.24 4.152 2-4 3 .222L 6.401 2-4 3 .222L 8.651 2-4 3 .222L 10.901 1-4 3 1.400R 15.825	40 20 8 12 .10 .30 .60 4 4 0 .750 3-4 2.000R 1.920 2-4 3.667R 6.011 2-4 3.667R 8.258 2-4 3.667R 10.507 1-4 3 2.200R 15.461 1-4 3	40 20 8 12 .10 .40 .50 2 2 0 1.000 2 2.000 2.3 2.308L 3.491 2-4 3.556R 7.894 1-4 2 3.000L 10.150 1-4 2 3.000L 15.113 1-4 2	40 20 8 12 .20 .20 .60 4 4 0 .750 3-4 2.000R 1.920 2-4 3 0 5.600 2-4 3 0 7.600 2-4 3 0 9.600 1-4 3 3.200R 14.528 1-4 3	40 20 8 8 12 .20 .30 .50 .50 2 2 0 .750 3-4 4 2.000R 1.600 2-4 3 1.000R 5.220 2-4 3 1.000R 7.216 1-4 3 4.000R 7.216 1-4 3 4.000R 1-4 3 4.000R 1-4 3 4.000R 1-4 3	40 20 8 12 .20 .40 .40 2 2 0 1.000 2 2 2 2 0.000 2-3 2 2.0001 5.120 1-4 2 1.2001 7.329 1-4 9.824 1-4 1.4818 1-4 2	44 20 12 10 21 21 20 20 20 20 20 20 20 20 20 20 20 20 20	44 20 12 12 .10 .30 .60 4 4 0 .750 4 4 0 1.500 2-4 3 0 5.400 2-4 3 0 7.650 2-4 3 0 7.650 2-4 3 0 7.650 1.500 1	20 12 10 .50 .50 2 2 0 1.000 2 2 0 2.000 2-3 2 2.308L 3.491 2-4 3 1.000R 7.368 1-4 2 3.500L 9.704	44 20 12 .20 .60 .60 .750 4 4 0 .750 2-4 3 .750L 5.011 2-4 3 .750L 5.011 2-4 3 .750L 5.011 2-4 3 .750L 5.011 2-4 3 .750L 5.011 2-4 3 .750L 5.011 2-4 3 .750L 5.011 2-4 3 .750L 5.011 2-4 3 .750L 5.011 2-4 3 .750L 5.011 2-4 3 .750L 5.011 2-4 3 .750L 5.011 2-4 3 .750L 5.011 2-4 3 .750L 5.011 2-4 3 .750L 7.00L 7.

	uck N		131 44	132	133	134	135 48	136 48	137 48	138 48	139 52	140 52
Ãx	le	X	20	20	20	20	20	20	20	20	20	20
	acing	X'	12	12	16	16	16	16	16	16	20	20_
Lo	tch	Caı	.20	.20	.10	.10	.10	.20	.20	$\frac{12}{.20}$.10	.10
On		\mathbf{a}_2	.30	.40	.20	.30	.40	.20	.30	.40	.20	.30
Ax	les	$\frac{\mathbf{a_3}}{\mathbf{G}}$.50	$\frac{.40}{2}$	$\frac{.70}{4}$	4	$\frac{.50}{2}$	4	2.50	2	.70 4	$\frac{.60}{4}$
	10	N	2	2	4	4	2	4	2	2	4	4
		B M	$\frac{0}{.750}$	$\begin{smallmatrix} 0 \\ 1.000 \end{smallmatrix}$.875	$\frac{0}{.750}$	0 1.000	$\frac{0}{.750}$	0 .750	$\begin{smallmatrix} 0\\1.000\end{smallmatrix}$	$\frac{0}{.875}$	$0 \\ .750$
		G	2	2	4	4	2	4	2	2	4	4
	20	N	2	2	4	4	2	4	2	2	4	4.
		B M	$\begin{smallmatrix} 0\\1.500\end{smallmatrix}$	$\begin{array}{c} 0 \\ 2.000 \end{array}$	$0 \\ 1.750$	$0 \\ 1.500$	$\frac{0}{2.000}$	$0 \\ 1.500$	$\substack{0 \\ 1.500}$	$\substack{0\\2.000}$	$\frac{0}{1.750}$	0 1.500
		G	2-3	2-3	2-3	2-3	2-3	2-3	2-3	2-3	2-3	2-3
	30	N B	$^{2}_{2.728 m L}$	$^{2}_{2.000L}$	$^3_{2.182 m R}$	2 3.000L	$\frac{2}{2.308 \mathrm{L}}$	3 $^{2.400R}$	$2 \\ 2.728 $ L	$^{2}_{2.000L}$	$^{3}_{2.182\mathrm{R}}$	$\begin{array}{c} 2 \\ 3.000 \mathbf{L} \end{array}$
		M	2.761	3.380	3.012	2.880	3.491	2.646	2.761	3.380	3.012	2.880
	40	G N	$^{2-4}_3$	$\overset{2-3}{\overset{2}{}}$	2-4 3	2-4 3	2-3 2	$^{2-4}_{3}$	$^{2-4}_3$	$^{2-3}_{2}$	2-4 3	$\substack{2-3\\2}$
æt	10	\mathbf{B}	.375R	2.000L	1.778L	.667L	2.308L	1.500L	.250 L	2.000L	2.556L	3.000L
Span-Feet		M	4.703	4.860	5.071	4.811	5.087	4.445	4.202	4.860	4.447	4.335
paı	50	G N	$^{2-4}_3$	1-4 2	$\frac{2-4}{3}$	$\frac{2-4}{3}$	$_{2}^{1-3}$	$^{2-4}_{3}$	2-4	$^{1-3}_2$	$\frac{2-4}{3}$	$^{2-4}_{3}$
ďΩ		\mathbf{B}	.375R	1.600L	1.778L	.667L	,667L	1.500L	.250L	$1.000\mathbf{R}$	2.556L	1.333L
		<u>М</u> G	6.702	$\frac{6.951}{1-4}$	$\frac{7.307}{2-4}$	$\frac{7.058}{2-4}$	6.882 1-4	$\frac{6.436}{2-4}$	6.201	6.816	6.668 2-4	$\frac{6.482}{2-4}$
	60	N	3	2	3	3	2	3	3	2	3	3
		B M	3.500R 8.704	1.600L 9.443	1.778L 9.548	.667L 9.307	$\frac{4.000L}{9.267}$	1.500 L 8.430	$250L \\ 8.201$	2.000L 9.067	2.556L 8.898	1.333L 8.726
		G	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4
	80	N B	$^3_{3.500 m R}$	$^2_{1.600 m L}$	3	3 1.000 R	$\frac{2}{4.000L}$	$^3_{2.000 m R}$	$\begin{array}{c} 2 \\ 3.000 \mathbf{L} \end{array}$	$^2_{2.000 m L}$	$^3_{.700}$ L	$^{3}_{.400 m R}$
		M	13.653	14.432	14.400	14.213	14.200	13.250	13.113	14.050	13.706	13.602
1	100	G	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4
	100	N B	$3 \\ 3.500 \mathbf{R}$	$^2_{1.600 ext{L}}$	3 0	3 1.000R	$\frac{2}{4.000L}$	$^{3}_{2.000 m R}$	$^2_{3.000 extbf{L}}$	$2 \\ 2.000 $ L	$^3_{.700}{ m L}$	3 $.400$ R
		M	18.623	19.426	19.400	19.210	19.160	18.240	18.090	19.040	18.705	18.602
	uck N		141	142	143	144						
W	n. Base	e L	52	52	52	52						
W	n. Base											
Sp: Ax Hit	n. Base acing le tch	e L X' X C	52 20 20 12	52 20 20 12	52 20 20 12	52 20 20 12						
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Sp: Ax Hit	n. Base acing le tch ad	E L X' X C a ₁ a ₂ a ₃	52 20 20 12 .10 .40 .50	52 20 20 12	52 20 20 12 .20 .30 .50	52 20 20 12 .20 .40 .40						
Sp: Ax Hit Los	n. Base acing le tch ad	E L X' X C a ₁ a ₂ a ₃ G	52 20 20 12 .10 .40 .50	52 20 20 12 .20 .20 .60	52 20 20 12 .20 .30 .50	52 20 20 12 .20 .40 .40						
Sp: Ax Hit Los	n. Base acing le tch ad	E L X' X C C a1 a2 a3 G N B	52 20 20 12 .10 .40 .50	52 20 20 12 .20 .20 .60 4 4	52 20 20 12 .20 .30 .50	52 20 20 12 .20 .40 .40 .2 2						
Sp: Ax Hit Los	n. Base acing le tch ad	E L X' X C a1 a2 a3 G N B M	52 20 20 12 .10 .40 .50 2 2 0	52 20 20 12 .20 .20 .60 4 4 0 .750	52 20 20 12 .20 .30 .50 2 2 0	52 20 20 12 .20 .40 .40 2 2 0 1.000						
Sp: Ax Hit Los	n. Base acing le tch ad	C A1 A2 A3 G N B M G N	52 20 20 12 .10 .40 .50 2 2 0 1.000	52 20 20 12 .20 .20 .60 4 4 0 .750	52 20 20 12 .20 .30 .50 2 2 0 .750	52 20 20 12 .20 .40 .40 .2 2 0 1.000						
Sp: Ax Hit Los	n. Base acing le tch ad les	E L X' X C a ₁ a ₂ a ₃ G N B M G N B	52 20 20 12 .10 .40 .50 2 2 0 1.000	52 20 20 12 .20 .20 .60 4 4 0 .750 4 4	52 20 20 12 .20 .30 .50 2 2 0 .750	52 20 20 12 .20 .40 .40 .2 2 0 1,000						
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Sp: Ax Hit Los	n. Bassacing le teh ad les 10	E L X' X C a1 a2 a3 G N B M G R M R M	52 20 20 11 12 .10 .40 .50 2 2 0 1.000 2.000 2.000 2.308L 3.491 2-3	52 20 20 12 .20 .20 .60 4 4 0 .750 4 4 0 1.500 2-3 3 2.400L 2.646	52 20 20 112 .20 .30 .50 2 2 0 .750 2 2 0 1.500 2-3 2 2.728L 2.761	52 20 20 112 .20 .40 .40 .40 2 2 0 1.000 2 2 0 2.000 2-3 2 2.0000 2-3						
Spi AxA	n. Bassacing le tech ad les 10	e L X' X C a1 a2 a3 G N B M G N B B M G N B B M B M G N B B M B M B M B M B M B M B M B M B M	52 20 20 12 .10 .40 .50 2 2 0 1.000 2 2 0 2.000 2-3 2.308L 3.491	52 20 20 12 .20 .20 .60 4 4 0 .750 4 4 0 1.500 2-3 3 2.400L 2.646	52 20 20 12 .20 .30 .50 .750 2 2 0 1.500 2-3 2.728L 2.728L 2.728L	52 20 20 12 .20 .40 .40 .40 2 2 0 1.000 2 2 0 2.000 2-3 2.000L 3.380						
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Spa Axx Axx Hir Loo On Ax	n. Bassacing le tech ad les 10 20 30 40	E L X' X X C C A1 A2 A2 A3 G N B M G N B B M G N B B M G N B B M G N B B M B M G N B B M B M B B B M B B B M B B B M B B B M B B B M B B B M B B B M B B B M B B B B M B B B B M B	52 20 20 12 .10 .40 .50 2 2 0 1.000 2-3 2.308L 3.491 2-3 2.308L 5.087 1-3 6.682 1-4 4.500L	52 20 20 12 .20 .20 .60 4 4 0 .750 4 4 0 1.500 2-3 3 2.400L 2.646 2-4 3 2.250L 3.902 2-4 3 2.250L 3.902 2-4 3 2.250L 3.902 2-4 3 2.250L 3.902 2-4 3 2.250L 3.902 2-4 3 3.902 2-4 3.902 2-4 3.902	52 20 20 12 .20 .30 .50 2 2 0 .750 2 2 0 1.500 2–3 2.728L 2.728L 4.102 1–3 2.667R 5.882 1–3 2.667R	52 20 20 12 .20 .40 .40 2 2 0 1.000 2 2 2 0 2.000 2-3 2.000L 4.860 1-3 2 1.000R 6.816 1-3 2 1.000R						
Spa Axx Axx Hir Loo On Ax	a. Basing le trich ad les 10 20 20 50 60	E L X' X C C A A A A A A A A A A A A A A A A A	52 20 20 20 12 .10 .40 .50 2 2 0 1.000 2.000 2.3 2 2.308 L 3.491 2-3 2.308 L 5.087 1-3 4.667 L 6.882 1-4 2.838 1-4 2.838 1-4 8.838 1-4	52 20 20 20 20 20 20 20 20 4 4 0 0.750 4 4 0 1.500 2-3 3 2.400L 2.646 2-4 3 2.250L 5.881 2-4 3 2.250L 7.867	52 20 20 20 12 .20 .30 .50 2 2 0 .750 2 2 0 1.500 2-3 2 2.728L 4.102 1-3 2.667R 5.882 1-3 2 .667R 7.756	52 20 20 20 20 40 .40 .40 2 2 0 1.000 2-3 2 2.000 2-3 2 2.000L 4.860 1-3 2 1.000R 6.816						
Spa Axx Axx Hir Loo On Ax	n. Bassacing le tech ad les 10 20 30 40	e L X' X C C C C C C C C C C C C C C C C C	52 20 20 12 .10 .40 .50 2 2 0 0 1.000 2-3 2.308L 3.491 2-3 2.308L 5.087 1-3 6.682 1-4 2.500L 8.838 1-4 2.500L	52 20 20 12 .20 .20 .60 4 4 0 .750 4 4 0 1.500 2-3 3 2.400L 2.646 2-4 3 2.250L 3.902 2-4 3 2.250L 3.881 2-4 3 2.250L 3.881 2-4 3.881 2-4 3.881 2-4 3.881 2-4 3.881 2-4 3.881 2-4 3.881 2-4 3.881	52 20 20 12 .20 .30 .50 2 2 0 .750 2 2 2 0 1.500 2–3 2.728L 2.728L 4.102 1–3 2.667R 5.882 1–3 2.667R 7.756 1–4 2	52 20 20 20 12 .20 .40 .40 2 2 0 1.000 2 2 2 0 2.000 2-3 2.000L 4.860 1-3 2 1.000R 8.814 1-4 2						
Spa Axx Axx Hir Loo On Ax	a. Basing le trich ad les 10 20 20 50 60	E L X' X C C A A A A A A A A A A A A A A A A A	52 20 20 20 12 .10 .40 .50 2 2 0 1.000 2.000 2.3 2 2.308 L 3.491 2-3 2.308 L 5.087 1-3 2.667 L 6.882 1-4 2.838 1-4 2.838 1-4 8.838 1-4	52 20 20 20 20 20 20 20 20 4 4 0 0.750 4 4 0 1.500 2-3 3 2.400L 2.646 2-4 3 2.250L 5.881 2-4 3 2.250L 7.867	52 20 20 20 12 .20 .30 .50 2 2 0 .750 2 2 0 1.500 2-3 2 2.728L 4.102 1-3 2.667R 5.882 1-3 2 .667R 7.756	52 20 20 20 20 40 .40 .40 2 2 0 1.000 2-3 2 2.000 2-3 2 2.000L 4.860 1-3 2 1.000R 6.816						
Spa Axx Axx Hir Loo On Ax	a. Bassacing le tech ad les 10 20 30 40 50 60	e L X' X C C C C C C C C C C C C C C C C C	52 20 20 12 .10 .40 .50 2 2 0 0 1.000 2-3 2.308L 3.491 2-3 2.308L 5.087 1-3 2 .667L 6.882 1-4 2 4.500L 8.3753 1-4 2	52 20 20 12 .20 .20 .60 4 4 0 .750 4 4 0 1.500 2-3 3 2.400L 2.646 2-4 3 2.250L 3.902 2-4 3 2.250L 7.867 1-4 3 1.400R	52 20 20 12 .20 .30 .50 2 2 0 .750 2 2 2 0 1.500 2–3 2 2.728L 2.728L 4.102 1–3 2 .667R 7.756 1–4 2 3.500 2–3 2 2.758L 4.102 1–3 2 3.667R 7.756 1–4 1.2653 1–4	52 20 20 20 12 .20 .40 .40 2 2 0 1.000 2 2 2 0 2.000 2-3 2.000L 4.860 1-3 2 1.000R 8.814 1-4 2.4000R 8.814 1-4 2.4000R						
Spa Axx Axx Hir Loo On Ax	a. Basing le trich ad les 10 20 20 50 60	e L X' X' X C a1 a2 G N B M G M B M G M B M B M G M B M B M B M	52 20 20 20 12 .10 .40 .50 2 2 0 1.000 2.000 2.3 2.308L 3.491 2-3 2.308L 5.087 1-3 2 4.500L 8.882 1-4 2 4.500L 13.753 1-4 2 4.500L 13.753	52 20 20 20 20 60 4 4 0 .750 4 0 1.500 2-3 3 2.400L 2.646 2-4 3 2.250L 5.881 2-4 3 2.250L 7.867 1-4 3 1.400R	52 20 20 20 20 30 50 2 2 2 0 .750 2 2 0 1.500 2–3 2 2.728L 4.102 1–3 2.667R 7.756 1–4 2 3.667R 7.756 1–4 2 3.663 1–4 2 3.500L 1.600L	52 20 20 20 12 .20 .40 .40 2 2 0 1.000 2-3 2 2.000 2-3 2 2.000L 4.860 1-3 2 1.000R 6.816 1-3 2 1.000R 8.814 1-4 2.400L 13.672						
Spa Axx Axx Hir Loo On Ax	a. Bassacing le tech ad les 10 20 30 40 50 60	e L X' X' X C a1 a2 GN BM GN B	52 20 20 12 .10 .40 .50 2 2 0 1.000 2 2 2 0 2.000 2-3 2.308L 5.087 1-3 2.308L 5.087 1-4 2.4.500L 8.838 1-4 2.4.500L 13.753	52 20 20 12 .20 .20 .60 4 4 0 .750 4 0 1.500 2-3 3 2.400L 2.646 2-4 3 2.250L 5.881 2-4 3 2.250L 7.867 1-4 3 1.400R 12.625	52 20 20 20 12 .20 .30 .50 2 2 0 .750 2 2 0 1.500 2-3 2.728L 2.728L 4.102 1-3 2.667R 5.882 1-3 2.667R 7.756 1-4 2.653 1-4 2	52 20 20 20 12 .20 .40 .40 2 2 0 1.000 2 .000 2-3 2 2.0000L 4.860 1-3 2 1.000R 6.816 1-3 2 1.000R 8.814 1-4 2 2.400L 13.672						

Table 7.10

CONTROLLING CONDITIONS AND MAXIMUM MOMENTS IN SIMPLE SPANS PRODUCED BY THE TYPE 2-3 TRUCKS WEIGHING ONE KIP EACH



Ninety variations in the Type 2-3 truck are given in this Table. Each truck number, from 1 to 90, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

$\overline{\mathbf{Tr}}$	uck No	· ·	1	2	3	4	5	6	7	8	9	10
W	a. Base	L	32	32	32	32	32	36	36	36	36	36
Ax		X	12	12	12	12	12	12	12	12	12	12
	acing	X'	8	8	88	8	8	12	12	12	12	12
-	tch	C	88	8	8	8	88	8	8	88	8	8
Lo		aı	.10	.10	.10	.20	.20	.10	.10	.10	.20	.20
On	l :les	\mathbf{a}_2	.20 .70	.30 .60	.40 .50	.20 .60	.30 .50	.20 .70	.30 .60	.40 .50	.20	.30 .50
AX	168	$\frac{\mathbf{a}_3}{\mathbf{G}}$		2							4-5	
	10	N	4-5 4	2	2 2	$^{4-5}_{5}$	2 2	4-5 4	2 2	2 2	4-5 5	2 2
	1 10	В	.998L	0	0	1.000R	õ	.998L	õ	ő	1.000R	ő
	[M	.748	.750	1,000	.640	.750	.748	.750	1,000	.640	.750
		G	3-5	3-5	2-3	3-5	2-3	4-5	2-3	2-3	4-5	2–3
	20	N	4	4	2	4	2	4	2	2	5	2
	l	В	.666R	.667R	1.178L	.667R	1.431L	.998L	1.600L	1.178L	1.000R	1.431L
		M	2.118	1.814	2.206	1.814	1,715	1.892	1.764	2.206	1.620	1.715
	30	G N	2 -5	2-5 3	1-3 2	2-5	1-3	35	$^{1-3}$	1-3	3-5	1-3
	30	B	$^{4}_{2.296\mathrm{R}}$.889L	$^{2}_{.102L}$	4 2.500R	.798R	$^{4}_{1.332 m R}$	$^2_{.334L}$	$^{2}_{.102L}$	4 1.333R	$^2_{.798 m R}$
	}	M	3.910	3.573	3.734	3.366	3.149	3.428	3.102	3.734	2.936	3.149
		G	2-5	2-5	1-5	2-5	1-5	2-5	2-5	1-4	2-5	1-4
	40	Ň	4	3	2	4	2	4	วี 3	2	4	2
8		В	2.296R	.889L	3.066L	2.500R	2.466L	3.258R	1.778L	2.075L	3.500R	1.354L
Span-Feet		M	6.120	5.818	5.969	5.325	5,286	5.374	5.071	5.491	4.645	4.840
an		G	1-5	1-5	15	1-5	1-5	2-5	1-5	1-5	1–5	1–5
Sp	50	N	3	3	2	3	2	4	3	2	3	2
01	ļ .	B M	.534L 8.372	$0.200 \mathbf{R}$ 0.301	8.422	0.800 m R	2.466L 7.756	3.258R	.600L	3.732L	0	3.132L
								7.577	7.507	7.847	6.900	7.164
	60	G N	1-5 3	15 3	$\frac{1-5}{2}$	$^{1\!-\!5}_3$	1-5 2	1–5 3	1-5 3	1-5	$^{1-5}_{3}$	1-5
	1 60	В	.534 L	.200R	3.066L	.800R	2.466L	3 1.468L	.600L	$^{2}_{3.732 \rm L}$	ა 0	$^{2}_{3.132L}$
		M	10.871	10.801	10.891	10.211	10.235	9.968	10.006	10.300	9,400	9.631
		G	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5
	80	Ñ	้อ	3	2	3	2	3	3	2	3	2
		\mathbf{B}	.534L	.200R	3.066L	.800R	2.466L	1.468L	.600 L	3.732L	0	3.132L
	l	M	15.870	15.801	15.852	15.208	15.210	14.959	15.005	15,242	14.400	14.591
		G	1-5	1-5	1-5	1-5	1-5	1–5	1–5	1-5	1-5	1-5
	100	N	3	3	2	3	2	3	3	2	3	2
		B M	.534L 20.869	.200R 20.800	3.066L	.800R	2.466L	1.468L	.600L	3.732L	0	3.132L
	<u>' </u>	IVI	20.869	20.800	20.828	20.206	20.195	19.954	20.004	20.207	19,400	19.566

a1, a2, and a3-Represent the ratio of gross vehicle weight on axles.

G-Axle group causing maximum moment, thus, 1-3 means axles 1, 2, and 3.

N-Number of critical axle under which maximum moment occurs.

B-Distance to right or left of mid-span to point of maximum moment.

M-Maximum moment.

337 1	uck N		11	12	13	14	15	16	17	18	19	20
W Ł	h. Base	e L	40 12	12	12	12	12	36 12	36 12	36	36 12	36 12
	acing	x'	16	16	16	16	16	8	8	8	8	8
Hit	tch	С	8	8	8	8	8	12	12	12	12	12
Lo		aı	.10	.10	.10	.20	.20	.10	.10	.10	.20	.20
On Ax	les	\mathbf{a}_2 \mathbf{a}_3	.20 .70	.30 .60	.40 .50	.20 $.60$.30 .50	.20 .70	.30 .60	.40 .50	.20 .60	.30 .50
1		G	4-5	2	2	4-5	2	4-5		2	4-5	2
	10	N	4	2	2	4	2	4	2	2	5	2
		B M	.998L .748	$\frac{0}{.750}$	$0 \\ 1.000$	1.000L .640	$\frac{0}{.750}$.998L .748	0 .750	$0 \\ 1.000$	1.000R .640	0 .75
		G	4-5	2-3	2-3	4-5	2-3	3-5	3-5	2	3-5	3-5
ļ	20	N	4	2	2	4	2	4	4	2	4	4
1		B M	.998L 1.892	1.600L 1.764	$\frac{1.178L}{2.206}$	1.000L 1.620	1.431L 1.715	0.666R 2.118	0.667R 1.814	$\frac{0}{2.000}$	0.667R 1.814	.668) 1.50
		G	4-5	1-3	1-3	4-5	1-3	3-5	3-5	1-3	3-5	1-3
	30	N	4	2	2	4	2	4	4	2	4	2
ı		B M	0.998L 0.052	334L 3.102	.102L 3.734	$\frac{1.000 L}{2.613}$	3.149	3.862	$^{.667 m R}_{3.309}$	3.409	3.309	$\frac{.297}{2.80}$
-		G	3-5	1-3	1-3	3-5	1–3	2-5	2-5	1-4	2-5	2-5
اد	40	N B	$^{4}_{1.997R}$.333L	$^2_{.102 m L}$	4 0.000 D	$^2_{.798\mathrm{R}}$	4 0.740D	3	2	4 0.000D	3
ppall-r.cc		M	4.740	4,601	5.402	2.000R 4.060	4.812	2.740R 5.771	5.22L	2.476L 5.196	$3.000 \mathrm{R} \\ 4.980$	$\frac{.168}{4.53}$
		G	2–5	1-5	1-5	1-5	1-4	2-5	1-5	1-5	15	1-5
2	50	N B	$^{4}_{4.220\mathrm{R}}$	$^{3}_{1.400}$ L	$^{2}_{4.398L}$	3	2	9.74019	3 1 000TP	2 4 0661	3 1 600P	2 4661
		M	6.840	6.739	4.398L 7.289	6.113	1.753L 6.604	2.740R 7.987	$\frac{1.000 \mathrm{R}}{7.520}$	4.066L 7.565	1.600R 6.951	3,466) 6.87
		G	1–5	1–5	1-5	1-5	1–5	1–5	1-5	1-5	1-5	1–5
ł	60	N B	$^{3}_{2.402L}$	$^{3}_{1.400L}$	$^{2}_{4.398\mathrm{L}}$	$^3_{.800L}$	$^{2}_{3.798 \rm L}$	3	$^{3}_{1.000 m R}$	2 1 066T	3 1 600TP	$\frac{2}{3.4661}$
		M	9.094	9.233	4.398L 9.724	.800L 8.611	9.042	066R 10.266	1.000R 10.017	$rac{4.066 \mathbf{L}}{10.010}$	1.600R 9.443	9.33
ļ		G	1-5	1–5	1-5	1-5	1–5	1–5	1–5	1-5	1–5	1-5
- {	80	N B	$^{3}_{2.402L}$	$^3_{1.400 m L}$	$^{2}_{4.398L}$	3 800T	2 7001	3	3	2 4 000T	3 1 COOP	$\frac{2}{3.466}$
1		M	14.070	14.225	14.644	13.608	3.798L 13.982	066R 15.266	1.000R 15.013	$\frac{4.066L}{14.941}$	1.600R 14.432	14.28
1		G	1-5	1-5	1-5	1–5	1-5	1–5	1-5	1-5	1-5	1-5
	100	N B	$^{3}_{2.402L}$	$^{3}_{1.400 m L}$	$^{2}_{4.398L}$	$^3_{.800 extbf{L}}$	$^{2}_{3.798 L}$	3 000 P	$^3_{1,000\mathrm{R}}$	2 4.0ccT	$^{3}_{1.600 m R}$	$\frac{2}{3.466}$
-		M	19.056	19.220	19.595	18.606	18.946	066R 20.266	20.010	$rac{4.066 ext{L}}{19.899}$	19.426	19.25
'n	uck No	0.	21	22	23	24	25	26	27	28	29	30
N	n. Base	e L	40	40	40	40	40	44	44	44	44	44
x		X,	12	12	12	12	12	12	12	12	12	12
_	acing tch	$\frac{\mathbf{X'}}{\mathbf{C}}$	12	12	12	$\frac{12}{12}$	$\frac{12}{12}$	16	16	16	$-\frac{16}{12}$	16
			10	10								
			12	12	.10			12	12	${10}^{12}$ -		
)n	ad	a ₁ a ₂	.10 .20	.10 .30	.10	.20 .20	.20 .30	.10	.10	.10	.20	.20 .30
n	ad	a ₁ a ₂ a ₃	.10 .20 .70	.10 .30 .60	.10 .40 .50	.20 .20 .60	.20 .30 .50	.10 .20 .70	.10 .30 .60	.10 .40 .50	.20 .20 .60	.20 .30 .50
)n	ad	a ₁ a ₂	.10 .20	.10 .30	.10	.20 .20	.20 .30	.10	.10	.10 .40 .50	.20	.20 .30 .50
n	ad les	a ₁ a ₂ a ₃ G N B	.10 .20 .70 4–5 4 .998L	.10 .30 .60 2 2	.10 .40 .50 2 2	.20 .20 .60 4-5 5 1.000R	.20 .30 .50 2 2	.10 .20 .70 4-5 4 .998L	.10 .30 .60 2 2 0	.10 .40 .50 2 2 0	.20 .20 .60 4-5 4 1.000L	.20 .30 .50 2 2 0
)n	ad les	a ₁ a ₂ a ₃ G N B M	.10 .20 .70 4-5 4 .998L .748	.10 .30 .60 2 2 0 .750	.10 .40 .50 2 2 0 1.000	.20 .20 .60 4-5 5 1.000R .640	.20 .30 .50 2 2 0 .750	.10 .20 .70 4-5 4 .998L .748	.10 .30 .60 2 2 2 0 .750	.10 .40 .50 2 2 0 1.000	.20 .20 .60 4–5 4 1.000L .640	.20 .30 .50 2 2 0 .75
)n	ad les	a ₁ a ₂ a ₃ G N B M	.10 .20 .70 4-5 4 .998L .748	.10 .30 .60 2 2 0 .750 4-5	.10 .40 .50 2 2 0 1.000	.20 .20 .60 4-5 5 1.000R .640 4-5 5	.20 .30 .50 2 2 0 .750	.10 .20 .70 4-5 4 .998L .748 4-5 4	.10 .30 .60 2 2 0 .750 4-5 4	.10 .40 .50 2 2 0 1.000	.20 .20 .60 4-5 4 1.000L .640 4-5 4	.20 .30 .50 2 2 0 .75 2
)n	ad les 10	a ₁ a ₂ a ₃ G N B M G N	.10 .20 .70 4-5 4 .998L .748 4-5 4 .998L	.10 .30 .60 2 2 0 .750 4-5 5 1.000R	.10 .40 .50 2 2 0 1.000 2 2	.20 .20 .60 4-5 5 1.000R .640 4-5 5 1.000R	.20 .30 .50 2 2 0 .750 2 2	.10 .20 .70 4-5 4 .998L .748 4-5 4	.10 .30 .60 2 2 0 .750 4–5 4	.10 .40 .50 2 2 0 1.000	.20 .20 .60 4-5 4 1.000L .640 4-5 4 1.000L	.20 .30 .50 2 2 0 .75
)n	ad les 10	a ₁ a ₂ a ₃ G N B M G N	.10 .20 .70 4-5 4 .998L .748 4-5 4 .998L 1.892	.10 .30 .60 2 2 0 .750 4-5 5 1.000R 1.620	.10 .40 .50 2 2 0 1.000 2 2 0 2.000	.20 .20 .60 4-5 5 1.000R .640 4-5 5 1.000R 1.620	.20 .30 .50 2 2 0 .750 2 0 1.500	.10 .20 .70 4-5 4 .998L .748 4-5 4 .998L 1.892	.10 .30 .60 2 2 0 .750 4–5 4 1.000L 1.620	.10 .40 .50 2 2 0 1.000 2 0 2.000	.20 .20 .60 4-5 4 1.000L .640 4-5 4 1.000L 1.620	.20 .30 .50 2 2 0 .75 2 2 0 1.50
)n	ad les 10	a ₁ a ₂ a ₃ G N B M G N B N B N B N B N B N B N B N B N B N	.10 .20 .70 4-5 4 .998L .748 4-5 4 .998L 1.892 3-5	.10 .30 .60 2 2 0 .750 4-5 5 1.000R 1.620 3-5	.10 .40 .50 2 2 0 1.000 2 2 0 2.000 1-3 2	.20 .20 .60 4-5 5 1.000R .640 4-5 1.000R 1.620 3-5	.20 .30 .50 2 2 0 .750 2 2 0 1.500	.10 .20 .70 4-5 4 .998L .748 4-5 4 .998L 1.892 4-5	.10 .30 .60 2 2 0 .750 4–5 4 1.000L 1.620	.10 .40 .50 2 2 0 1.000 2 2 0 2.000 1-3 2	.20 .20 .60 4-5 4 1.000L .640 4-5 4 1.000L 1.620	.20 .30 .50 2 2 0 .75 2 2 0 1.50
)n	ad les 10 20	a ₁ a ₂ a ₃ G N B M G N B M G N B M B M G N B M G N B M	.10 .20 .70 4-5 4 .998L .748 4-5 4 .998L 1.892 3-5 4 1.332R	.10 .30 .60 2 2 0 .750 4-5 5 1.000R 1.620 3-5 4 1.334R	.10 .40 .50 2 2 0 1.000 2 2 0 2.000 1–3 2 .603L	.20 .20 .60 4-5 5 1.000R .640 4-5 5 1.000R 1.620 3-5 4	.20 .30 .50 2 2 0 .750 2 2 0 1.500 1-3 2 .297R	.10 .20 .70 4-5 4 .998L .748 4-5 4 .998L 1.892 4-5 4	.10 .30 .60 2 2 0 .750 4–5 4 1.000L 1.620 1-3 2 1.000L	.10 .40 .50 2 2 0 1.000 2 2 0 2.000 1-3 2 .603L	.20 .20 .60 4-5 4 1.000L .640 4-5 4 1.000L 1.620 4-5 4	.20 .30 .50 2 2 0 .75 2 2 0 1.50
)n	ad les 10 20	a ₁ a ₂ a ₃ G N B M G N B M G N B M	.10 .20 .70 4-5 4 .998L .748 4-5 4 .998L 1.892 3-5 4 1.332R 3.428	.10 .30 .60 2 2 0 .750 4-5 5 1.000R 1.620 3-5 4 1.334R 2.936	.10 .40 .50 2 2 0 1.000 2 2 0 2.000 1-3 2.603L 3.409	.20 .20 .60 4-5 5 1.000R .640 4-5 5 1.000R 1.620 3-5 4 1.333R 2.936	.20 .30 .50 2 0 .750 2 2 0 1.500 1-3 2 .297R 2.802	.10 .20 .70 4-5 4 .998L .748 4-5 4 .998L 1.892 4-5 4 .998L 3.052	.10 .30 .60 2 2 0 .750 4–5 4 1.000L 1.620 1-3 2 1.000L 2.720	.10 .40 .50 2 2 0 1.000 2 2 0 2.000 1-3 2 .603L 3.409	.20 .20 .60 4-5 4 1.000L .640 4-5 4 1.000L 1.620 4-5 4 1.000L 2.613	.20 .30 .50 2 2 0 .75 2 2 0 1.50
On Ax	ad les 10 20	a ₁ a ₂ a ₃ G N B M G N B M G N B M G N B N B M O N	.10 .20 .70 .4-5 .4 .998L .748 .998L 1.892 3-5 4 1.332R 3.428 3-5 4	.10 .30 .60 2 2 0 .750 4-5 5 1.000R 1.620 3-5 4 1.334R 2.936 2-5 8	.10 .40 .50 2 2 0 1.000 2 2 0 2.000 1-3 2 .603L 3.409	.20 .20 .60 4-5 5 1.000R .640 4-5 5 1.000R 1.620 3-5 4 1.333R 2.936	.20 .30 .50 .50 .2 2 0 .750 2 2 0 1.500 1-3 2 .297 R 2.802	.10 .20 .70 4-5 4 .998L 1.892 4-5 4 .998L 3.052 3-5 4	.10 .30 .60 .2 2 0 .750 4-5 4 1.000L 1-3 2 1.000L 2.720	.10 .40 .50 .50 2 2 0 1.000 2 2 0 2.000 1-3 2 .603L 3.409 1-3 2	20 .20 .60 4-5 4 1.000L .640 4-5 4 1.000L 4-5 4 1.000L 2.613 3-5 4	.20 .30 .50 2 2 0 .75 2 2 0 1.50 1-3 2.2971 2.80 1-3 2
On X	ad les 10 20 30	a ₁ a ₂ a ₃ G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M B M G N B M B M G N B M B M G N B M B M B M B M B M B M B M B M B M B	.10 .20 .70 .70 .4-5 .4 .998L .748 .998L 1.892 .3-5 .4 .332R 3.428 .3-5 .4 .332R	.10 .30 .60 2 2 0 .750 4-5 5 1.000R 1.620 3-5 4 1.334R 2.936 2-5 3	.10 .40 .50 2 2 0 1.000 2 2 0 2.000 1-3 2.603L 3.409 1-3 2.603L	.20 .20 .60 4-5 5 1.000R .640 4-5 5 1.000R 1.620 3-5 4 1.333R 2.936 3-5 4	.20 .30 .50 2 2 0 .750 2 2 0 1.500 1–3 2.297 R 2.802 1–3 2.297 R	.10 .20 .70 .4-5 .4 .998L .748 .998L 1.892 .998L 3.052 .998L 3.052 .998L 3.052	.10 .30 .60 2 2 0 .750 4–5 4 1.000L 1-3 2 1.000L 2.720 1-3 2 1.000L	.10 .40 .50 .50 2 2 2 0 1.000 2 2 0 2.000 1-3 2 .603L 3.409 1-3 2	.20 .20 .60 4-5 4 1.000L .640 4-5 4 1.000L 2.613 3-5 4 2.000R	.20 .30 .50 2 2 0 .75 2 2 0 1.50 1-3 2 .2971 2.80 1-3 2 .2971
On Ax	ad les 10 20 30	a1 a2 a3 G N B M G N B M G N B M G N B M G N B M G N B M G N B M	.10 .20 .70 4-5 4.998L .748 4-5 4.998L 1.892 3-5 4.1.332R 3.428 3-5 4.1.332R 5.167	.10 .30 .60 2 2 0 .750 4-5 5 1.000R 1.620 3-5 4 2.936 2-5 3 1.111L 4.428	.10 .40 .50 2 2 0 1.000 2 2 0 2.000 1-3 2.603L 3.409 1-3 2.603L 5.074	.20 .20 .20 .60 4-5 5 1.000R .640 4-5 5 1.000R 1.620 3-5 4 1.3338 R 2.936 4 1.3338 R 4.427	.20 .30 .50 .50 2 2 0 .750 2 2 0 1.500 1-3 2.297 R 2.802 1-3 2.297 R 4.469	.10 .20 .70 4-5 4.998L .748 4-5 4.998L 1.892 4-5 4.998L 3.052 3-5 4.1.997R 4.740	.10 .30 .60 2 2 0 .750 4-5 4 1.000L 1.620 1-3 2 1.000L 2.720 1-3 2 1.000L 4.215	.10 .40 .50 2 2 0 1.000 2 2 0 2.000 1-3 2 .603L 3.409 1-3 2 .603L 5.074	.20 .20 .60 4-5 4 1.000L 1.620 4-5 4 1.000L 2.613 3-5 4 2.000R 4.060	.20 .30 .50 2 0 .75 2 2 0 1.50 1-3 2 .2971 2.80 1-3 2 .2971 4.46
On Ax	ad les 10 20 30	a1 a2 a3 G N B M B M G N B M B M B M B M B M B M B M B M B M B	.10 .20 .70 4-5 4.998L .748 4-5 4.998L 1.892 3-5 4.332R 3-5 4.332R 5.167 2-5	.10 .30 .60 2 2 0 .750 4-5 5 1.000R 1.620 3-5 4 1.334R 2.936 2-5 3 1.111L 4.428	.10 .40 .50 2 2 0 1.000 2 2 0 2.000 1-3 2.603L 3.409 1-3 2.603L 5.074	.20 .20 .20 .60 4-5 5 1.000R 1.620 3-5 4 1.333R 2.936 3-5 4 4.427 2.5 4	.20 .30 .50 2 2 0 .750 2 2 0 1.500 1-3 2 .2.97R 2.802 1-3 2 2.997R 4.469	.10 .20 .20 .4-5 .4-5 .998L .748 4-5 .998L 1.892 4-5 .998L 3.052 3-5 4.740 2-5 4	.10 .30 .60 2 2 0 .750 4-5 4.000L 1.620 1-3 2 1.000L 2.720 1-3 2 1.000L 4.215 2-5 3	.10 .40 .50 2 2 0 1.000 2 2 0 2.000 1-3 2 .603L 3.409 1-3 2 .603L 5.074	20 20 .60 4-5 4 1.000L 1.640 4-5 4 1.000L 2.613 3-5 4 2.000R 4.060 2-5 4	.20 .30 .50 .50 .75 .75 .75 .2 .0 .1.50 .1.3 .2 .2.297] .2.80 .1.3 .2 .2.297] .4.46 .1.3 .2 .2.297]
On X	ad les 10 20 30 40	a1 a2 a3 G N B M G N B M G N B M G N B M G N B M B M B B M B B B B B B B B B B B B	.10 .20 .70 4-5 4.998L .748 4-5 4.998L 1.892 3-5 4.1.332R 3.428 3-5 4 1.332R 5.167 2-5 4 3.702R	.10 .30 .60 2 2 0 .750 4-5 1.000R 1.620 3-5 4 1.334R 2.936 2-5 3 1.111L 4.428 1-5 3	.10 .40 .50 2 2 0 1.000 2.000 1-3 2 .603L 3.409 1-3 2 .603L 5.074 1-5 2 4.732L	.20 .20 .20 .60 4-5 5 1.000R .640 4-5 5 1.000R 1.620 3-5 4 1.3338R 2.936 4 4.427 2.5 4	.20 .30 .50 2 2 0 .750 2 2 0 1.500 1-3 2 .297R 2.802 .297R 4.469 1-5 2 4.132L	.10 .20 .4-5 .4-5 .998L .748 .998L 1.892 .4-5 .4 .998L 3.052 3-5 4 .1.997R 4.740 2-5 4 4.665R	.10 .30 .60 2 2 2 0 .750 4-5 4 1.000L 1.620 1-3 2 1.000L 2.720 1-3 2 1.000L 4.215 2-5 3 2.000L	.10 .40 .50 2 2 2 0 1.000 2 2 0 2.000 1-3 2 .603L 5.074 1-3 2 .603L	.20 .20 .60 4-5 4 1.000L 1.620 4-5 4 1.000L 2.613 3-5 4 2.000R 4.060 2-5 4 5.000R	.20 .30 .50 2 0 .75 2 2 0 1.50 1-3 2 .2971 2.80 1-3 2 .2971 4.46
On Ax	ad les 10 20 30 40	a1 a2 a3 G N B M G N B M G N B M G N B M	.10 .20 .70 .70 .4–5 .4 .998L .748 .998L 1.892 .3–5 .4 1.332R 3.428 .3–5 .4 1.332R 3.428 .3–5 .4 1.332R 3.702R 7.233	.10 .30 .60 2 2 0 .750 4-5 5 1.000R 1.620 3-5 4 1.334R 2.936 2-5 3 1.111L 4.428 1-5 3 2.00R 6.701	.10 .40 .50 2 2 0 1.000 2 2 0 2.000 1-3 2 .603L 3.409 1-3 2 .603L 5.074 1-5 2 4.732L 7.016	.20 .20 .20 .60 4-5 5 1.000R 4-5 5 1.000R 1.620 3-5 4 1.333R 2.936 4 1.3338R 4.427 2.5 4	.20 .30 .50 2 2 0 .750 2 2 0 1.500 1-3 2 .297R 2.802 1-3 2 .297R 4.469 1-5 2 4.182L 6.309	.10 .20 .20 .4-5 .4 .998L .748 .4-5 .4 .998L .3.052 .4-5 .4 .998L .3.052 .4 .999R .4.740 .2-5 .4 .4.665R .6.512	.10 .30 .60 2 2 2 0 .750 4-5 4 1.000L 1.620 1-3 2 1.000L 2.720 1-3 2 1.000L 2.720 1-3 2 1.000L 2.750	.10 .40 .50 2 2 0 1.000 2 2 0 2.000 1-3 2 .603L 3.409 1-3 2 .603L 5.074 1-3 2 .603L 5.074	.20 .20 .20 .60 4-5 4 1.000L 1.620 4-5 4 1.000L 2.613 3-5 4 2.000R 4.060 2-5 4 5.600	.20 .30 .50 2 2 2 0 .75 2 2 0 1.50 1-3 2.297; 2.80 1-3 2.297; 4.46 1-3 2.297; 6.13
On X	ad les 10 20 30 40	a1 a2 a3 G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M B M G N B M B M B M B M B M B B M B B B B B B	.10 .20 .70 4-5 4.998L 1.892 3-5 4 1.332R 3-5 4 1.332R 3-5 4 1.332R 7.2-5 4 3.702R 7.233	.10 .30 .60 2 2 0 .750 4-5 1.000R 1.620 3-5 4 1.334R 2.936 2-5 3 1.111L 4.428 1-5 3 2.000R 6.701	.10 .40 .50 2 2 0 1.000 2.000 1-3 2 .603L 3.409 1-3 2 4.732L 7.016	.20 .20 .20 .60 4-5 5 1.000R 1.620 3-5 4 1.3338 2.936 3-5 4 4.427 2.5 4 4.000R 6.256 15 3	.20 .30 .50 2 2 0 .750 2 2 0 1.500 1-3 2 .297R 2.802 1-3 2 2.97R 4.469 1-5 2 4.132L 6.309 1-5 2	.10 .20 .4-5 .4-998L .748 4-5 4.998L 1.892 4-5 4.998L 3.052 3-5 4.740 2-5 4.665R 6.512 2-5 4	.10 .30 .60 2 2 2 0 .750 4-5 4 1.000L 1.620 1-3 2 1.000L 4.215 2-5 3 2.000L 5.922 1.5	.10 .40 .50 2 2 2 0 1.000 2 2 0 2.000 1-3 2 .603L 5.074 1-3 2 .603L 6.741 1-5 2	20 20 .60 4-5 4 1.000L 1.620 4-5 4 1.000L 2.613 3-5 4 2.000R 4.060 2-5 4 5.600 1-5 3	.20 .30 .50 .50 .2 2 2 0 .75 2 2 0 1.50 1-3 2.2971 2.80 1-3 2 2.2971 4.46 1-3 2.2971 6.13
On Ax	ad les 10 20 30 40 50	a1 a2 a3 G N B M G G N B M G N B M G N B M G N B M G N B M G N B M B M G G S D N B M B M B M B M B M B M B M B M B M B	.10 .20 .70 .70 .70 .74 .998L .748 .998L 1.892 .3-5 .4 .332R .3-2 .4 1.332R 5.167 .2-5 .4 3.702R	.10 .30 .60 .2 2 0 .750 4-5 5 1.000R 1.620 3-5 4 2.936 2-5 3 1.111L 4.428 1-5 3 2.200R 6.701 1-5 3 2.200R	.10 .40 .50 2 2 0 1.000 2 2 0 2.000 1-3 2 6.03L 3.409 1-3 2 .603L 5.074 1-5 2 4.732L 7.016	.20 .20 .20 .60 4-5 5 1.000R 4-5 5 1.000R 1.620 3-5 4 1.333R 2.936 4 1.333R 4.427 2-5 4 4.000R 6.256 1-5 3.800R	.20 .30 .50 2 2 0 .750 2 2 0 1.500 1-3 2.297R 2.802 1-3 2 2.97R 4.469 1-5 2 4.132L 6.309 1-5 2.4132L	.10 .20 .20 .4-5 .4 .998L .748 .4-5 .998L .1.892 .4-5 .4 .998L .3.052 .3-5 .4 .1.997R .4.740 .2-5 .4 .4.665R .6.512 .2-5 .4 .4.665R	.10 .30 .60 2 2 0 .750 4 1.000L 1.620 1-3 2 1.000L 4.215 2-5 3 2.000L 5.922 1.5	.10 .40 .50 2 2 0 1.000 2 2 0 2.000 1-3 2.603L 3.409 1-3 2 .603L 5.074 1-3 2 .603L 5.074 1-5 2 5.388L	20 20 20 60 4-5 4 1.000L .640 4-5 4 1.000L 2.613 3-5 4 2.000R 4.060 2-5 4 5.000R 5.600	.20 .30 .50 2 2 2 0 .75 2 2 0 1.50 1-3 2 .2977 2.2977 2.446 1-3 2.2977 6.13 1-5 4.798
n X	ad les 10 20 30 40 50	a1 a2 a3 G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G G N B M G G S M B M G G S M B M B M B M B M B M B M B M B M B M	.10 .20 .70 4-5 4.998L .748 4-5 4.998L 1.892 3-5 4.332R 3-5 4.332R 5.167 2-5 4.3702R 7.233 2-5 4 3.702R 7.234	.10 .30 .60 2 2 0 .750 4-5 5 1.000R 1.620 3-5 4 1.334R 2.936 2-5 3 1.111L 4.428 1-5 3.200R 6.701 1-5 3.200R	.10 .40 .50 2 2 0 1.000 2 2 0 2.000 1-3 2.603L 3.409 1-3 2 4.732L 7.016 1-5 2 4.732L 7.016 2 4.732L 7.019	.20 .20 .20 .60 .60 .640 4-5 5 1.000R 1.620 3-5 4 1.333R 2.936 3-5 4 4.000R 6.256 6.256 1.5 3.800R	.20 .30 .50 .50 .50 .50 .50 .750 .2 .2 .0 .1.500 .1-3 .2 .2.97R .2.802 .1-3 .2 .297R 4.469 .1-5 .2 .4.321 .6.309 .1-5 .2 .4.1321 .8.753	.10 .20 .70 4-5 4.998L .748 4-998L 1.892 4-5 4.998L 3.052 3-5 4 1.997R 4.740 2-5 4.665R 6.512 2-5 4	.10 .30 .60 2 2 0 .750 4-5 4.000L 1.620 1-3 2.720 1-3 2.720 1-3 2.000L 4.215 2-5 3 2.000L 5.922 1.5 3 8.600L 5.822 1.592	.10 .40 .50 2 2 0 1.000 2 2 0 2.000 1-3 2 .603L 3.409 1-3 2 .603L 5.074 1-3 2 .603L 5.074 1-5 2 .603L 8.888	20 20 20 20 20 20 20 20 20 20 20 20 20 2	20 300 .500 2 2 2 0 0 .755 2 2 2 0 0 .755 1-3 2 2 2.997; 4.46 1-8 2 2.997; 4.46 1-8 2 2.997; 4.46 8.18 8.18 8.18
On Ax	ad les 10 20 30 40 50	a1 a2 a3 a3 GNB MGNB MGNB MGNB MGNB MGNB MGNB MGNB	.10 .20 .70 .70 .70 .74 .998L .748 .998L .1.892 .3-5 .4 .332R .3.428 .3-5 .4 .332R .5.167 .2-5 .4 .3.702R .9.441 .7.233	.10 .30 .60 .2 2 0 .750 4-5 5 1.000R 1.620 3-5 4 2.936 2-5 3 1.111L 4.428 1-5 3 .200R 6.701 1-5 3 2.00R 9.201 1-5	.10 .40 .50 .2 .2 .0 .1.000 .2 .2 .0 .0 .1.000 .2 .2 .0 .0 .1.3 .2 .3.409 .1.3 .2 .4.732 .1 .7.016 .1.5 .2 .4.732 .1 .7.016 .1.5 .2 .4.732 .1 .7.016 .1.5 .2 .4.732 .1 .7.016 .1.5 .2 .4.732 .1 .7.016 .1.5 .2 .7.016 .1.5 .2 .7.016 .1.5 .2 .7.016 .1.5 .2 .7.016 .1.5 .2 .7.016 .1.5 .2 .7.016 .1.5 .2 .7.016 .1.5 .2 .7.016 .1.5 .2 .7.016 .1.5 .2 .7.016 .1.5 .2 .7.016 .1.5 .2 .7.016 .1.5 .2 .7.016 .1.5 .2 .7.016 .1.5 .2 .7.016 .1.5 .2 .7.016 .1.5 .2 .7.016 .1.5 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2	.20 .20 .20 .60 4-5 5 1.000R 1.620 3-5 4 1.333R 4.427 2.5 4 4.000R 1.620 3-5 4 1.333R 4.427 2.5 3.5 4 8.621 1.5 8.620 8.621 1.5 8.620 8.621 8.622 8.621 8.622 8.621 8.622 8.621 8.622 8.62	.20 .30 .50 .50 .50 .2 2 0 .750 .2 2 0 1.500 .1-3 2.297R 2.802 .297R 4.469 .297R 4.469 .1-5 2 4.132L 6.309 .1-5 2.1532 .1-5 2.	.10 .20 .20 .4-5 .4 .998L .748 .4-5 .998L .1.892 .4-5 .4 .998L .3.052 .3-5 .4 .1.997R .4.740 .2-5 .4 .6.65R .6.65R .6.66R	.10 .30 .60 2 2 0 .750 4 1.000L 1.620 1-3 2 1.000L 4.215 2-5 3 2.000L 4.215 5.922 1.5 3.600L 8.406 1-5 3	.10 .40 .50 2 2 0 1.000 2 2 0 2.000 1-3 2.603L 3.409 1-3 2 .603L 5.074 1-5 2 .8888 1-5 2	20 20 20 60 4-5 4 1.000L 1.620 4-5 4 1.000L 2.613 3-5 4 2.000R 4.060 2-5 4 5.000R 5.600 1-5 3 0 7.800	.20 .30 .50 .50 .2 2 0 .75 2 2 0 1.50 1-3 2.2977 4.46 1-3 2 .2971 4.46 1-3 2 .2971 4.7981 8.18 1-5 2
On Ax	10 20 30 40 50 60	a1 a2 a3 a3 G N B M G N B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M C G N B M C G N B B M C G N B B M C G N B B M C G N B	.10 .20 .70 4-5 4.998L .748 4-998L 1.892 3-5 4 1.332R 3.428 3-5 4 3.702R 7.233 2-5 4 3.702R 7.234 3.702R 7.234 3.702R 7.235 8.702R 8.702R	.10 .30 .60 2 2 0 .750 4-5 5 1.000R 1.620 3-5 4 1.334R 2-936 2-5 3 1.111L 4.428 1-5 3 .200R 6.701 1-5 3 .200R 9.201 1-5 3 .200R 1.750	.10 .40 .50 2 2 0 1.000 2 2 0 2.000 1-3 2.603L 5.074 1-5 2 4.732L 7.016 1-5 2 4.732L 1-5 2 4.732L 1-5 2 4.732L 2.7	.20 .20 .20 .60 4-5 5 1.000R 1.620 3-5 4 1.333R 2.936 3-5 4 4.000R 6.256 1.5 3.800R 8.611 1-5 3.800R	.20 .30 .50 2 2 0 .750 2 2 0 1.500 1-3 2 .297R 2.802 1-3 2 .297R 4.469 1-5 2 4.182L 8.753 1-5 2 4.182L 8.753	.10 .20 .70 4-5 4.998L .748 4-998L 1.892 4-5 4.998L 3.052 3-5 4.740 2-5 4.665R 6.512 2-5 4 4.665R 8.696 1-5 3.802L	.10 .30 .60 2 2 0 .750 4-5 4.000L 1.620 1-3 2 1.000L 2.720 1-3 2 2.000L 4.215 2-5 3 2.000L 5.922 1.5 8.406 1-5 3 6.600L 8.406 1-5	.10 .40 .50 .2 2 2 0 1.000 2 2 2 0 0 2.000 1-3 2 .603L 5.074 1-3 2 .603L 6.741 1-5 2 5.398L 5.388 1-5 2 5.398L	20 20 20 20 20 20 20 20 20 20 20 20 20 2	.20 .30 .50 .50 2 2 0 .75 2 2 0 1.50 1-3 2 2.2971 4.46 1-3 2.2971 4.46 1-3 2.2971 4.48 1-5 2.4.7981
On Ax	10 20 30 40 50 60	a1 a2 a3 G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M M M M M M M M M M M M M M M M M	.10 .20 .70 .70 .70 .74 .998L .748 .998L .1.892 .3-5 .4 .1.332R .5.167 .2-5 .4 .3.702R .7.233 .2-5 .4 .3.702R .7.233 .7.24 .7.233 .7.24 .7.24 .7.25 .7.25 .7.26 .7.26 .7.27 .7.233 .7.27 .7.28	.10 .30 .60 2 2 0 .750 4-5 5 1.000R 1.620 3-5 4 1.3346 2-5 8 1.111L 4.428 1-5 3 .200R 6.701 1-5 3 .200R 9.201 1-5 3	.10 .40 .50 2 2 0 1.000 2.000 1-3 2.603L 3.409 1-3 2.603L 5.074 1-5 2 4.732L 7.016 1-5 2 4.732L 9.441 1-5 2 4.732L 1-5 2	.20 .20 .20 .60 4-5 5 1.000R 1.620 3-5 4 1.333R 2.936 3-5 4 4.000R 6.256 1-5 3 8.601 8.611 1-5 3 8.001 8.618	.20 .30 .50 2 2 0 .750 2 2 0 1.500 1-3 2 .297R 2.802 1-3 2 297R 4.469 1-5 2 4.132L 6.309 1-5 2 4.132L 8.753 1-5 2 4.132L 1.575 2 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	.10 .20 .20 .4-5 .4-998L .748 4-998L 1.892 4-5 4.998L 3.052 3-5 4.740 2-5 4.665R 6.512 2-5 4.665R 8.696 1-5 3.802L 13,439	.10 .30 .60 2 2 2 0 .750 4-5 4 1.000L 1.620 1-3 2 1.000L 2.720 1-3 2 1.000L 4.215 2-5 3 2.000L 5.922 1.5 8.406 1-5 3 .600L 13.405	.10 .40 .50 2 2 2 0 1.000 2 2 0 2.000 1-3 2 .603L 5.074 1-3 2 .603L 6.741 1-5 2 2 5.398L 1.8888 1-5 2 2 3.398L 1.3766	20 .20 .20 .20 .20 .20 .20 .20 .20 .20 .	.20 .30 .50 .50 .2 .2 .0 .75 .2 .2 .2 .2971 .80 .1 -3 .2 .2971 .6.13 .1 -5 .2 .4.7981 .1 -5 .2 .4.7981 .1 -5
)n	10 20 30 40 50 60	a1 a2 a3 G N B M G N B	.10 .20 .70 4-5 4.998L .748 4-998L 1.892 3-5 4 1.332R 3.428 3-5 4 3.702R 7.233 2-5 4 3.702R 7.234 3.702R 7.234 3.702R 7.235 8.702R 8.702R	.10 .30 .60 2 2 0 .750 4-5 5 1.000R 1.620 3-5 4 1.334R 2-936 2-5 3 1.111L 4.428 1-5 3 .200R 6.701 1-5 3 .200R 1.5000 1.500 1.500 1.500 1.500 1.5000 1.5000 1.500 1.5000 1.5000 1.500 1.500 1.500	.10 .40 .50 2 2 0 1.000 2 2 0 2.000 1-3 2.603L 5.074 1-5 2 4.732L 7.016 1-5 2 4.732L 1-5 2 4.732L 1-5 2	.20 .20 .20 .60 4-5 5 1.000R 1.620 3-5 4 1.333R 2.936 3-5 4 4.000R 6.256 1.5 3.800R 8.611 1-5 3.800R	.20 .30 .50 2 2 0 .750 2 2 0 1.500 1-3 2 .297R 2.802 1-3 2 .297R 4.469 1-5 2 4.182L 8.753 1-5 2 4.182L 8.753	.10 .20 .70 4-5 4.998L .748 4-998L 1.892 4-5 4.998L 3.052 3-5 4.740 2-5 4.665R 6.512 2-5 4 4.665R 8.696 1-5 3.802L	.10 .30 .60 2 2 0 .750 4-5 4.000L 1.620 1-3 2 1.000L 2.720 1-3 2 2.000L 4.215 2-5 3 2.000L 5.922 1.5 8.406 1-5 3 6.600L 8.406 1-5	.10 .40 .50 .2 2 2 0 1.000 2 2 2 0 0 2.000 1-3 2 .603L 5.074 1-3 2 .603L 6.741 1-5 2 5.398L 5.388 1-5 2 5.398L	20 20 20 20 20 20 20 20 20 20 20 20 20 2	.20 .30 .50 .50 2 2 0 .75i 2 2 0 1.50i 1-3 2 .297I 4.46i 1-3 2.297I 4.498I 8.18i 1-5 2 4.798I 8.18i 1-5 2
On Ax	10 20 30 40 50 60 80	a1 a2 a3 G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G M G M G M G M G M G M G M G M G M	.10 .20 .70 .70 .70 .74 .998L .748 .998L .1.892 .3-5 .4 .332R .3-167 .2-5 .4 .3.702R .7.233 .7.233 .7.234	.10 .30 .60 .2 2 0 .750 4-5 5 1.000R 1.620 3-5 4 2.936 2-5 3 1.111L 4.428 1-5 3 2.00R 6.701 1-5 3 2.200R 9.201 1-5 3 2.200R 14.201 1-5	.10 .40 .50 .2 .2 .0 .1.000 .2 .2 .2 .0 .0 .1.000 .2 .2 .2 .0 .0 .1 .3 .2 .2 .2 .603L .5.074 .1-5 .2 .4.732L .7.016 .1-5 .2 .4.732L .9.441 .1-5 .2 .4.732L .1.4.348 .1-5	.20 .20 .20 .60 4-5 5 1.000R 1.620 3-5 4 1.333R 2.936 3.5 4 4.027 2.5 4 4.000R 6.256 1-5 3.800R 8.611 1-5 3.800R 13.600R	.20 .30 .50 .50 .50 .2 2 0 .750 .2 2 0 1.500 .1-3 2.297R 2.802 .297R 4.469 .1-5 2 4.132L 6.309 .1-5 2 4.132L 8.753 .2 1.53 .2	.10 .20 .20 .4-5 .4 .998L .748 .4-5 .998L .1.892 .4-5 .4 .998L .3.052 .3-5 .4 .1.997R .4.740 .2-5 .4 .6.65R .6.65R .6.66R .8.696 .1-5 .3 .1.8439 .1-5 .1.8439 .1-5 .1.8439	.10 .30 .60 2 2 0 .750 4 1.000L 1.620 1-3 2 1.000L 4.215 2-5 3 2.000L 5.922 1.5 3.600L 8.406 1-5 3.600L 8.406 1-5	.10 .40 .50 2 2 0 1.000 2 2 0 2.000 1-3 2.603L 3.409 1-3 2.603L 5.074 1-5 2.603L 5.888 1-5 2.388L 8.888 1-5 2.3866 1-5 2.5666 1-5 2.5666 1-5 2.5666 1-5 2.5666 1-5 2.5666 1-5 2.	20 20 20 60 4-5 4 1.000L 1.620 4-5 4 1.000L 2.613 3-5 4 2.000R 4.060 2-5 4 5.000R 5.600 1-5 3 0 12.800 1-5	.20 .30 .50 .50 .2 .2 .0 .75 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2

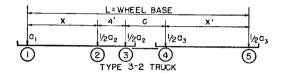
ruck N		31	32	33	34	35	36	37	38	39	40
Vh. Bas		36	36	36	36	36	40	40	40	40	40
lxle pacing	X X'	16 8	16 8	16 8	16 8	16 8	16 12	$\frac{16}{12}$	$\frac{16}{12}$	$\frac{16}{12}$	16 12
Litch	C	8	8	8	8	8	8	8	8	8	8
load In	a1 a2	.10 .20	.10 .30	.10 .40	.20 .20	.20 .30	.10 .20	.10 .30	.10 .40	.20 .20	.20
xles	a ₃	.70	.60	.50	.60	.50	.70	.60	.50	.60	.50
10	G N	4-5 4	2 2	2 2	4–5 5	2 2	$^{4-5}_{4}$	2 2	2 2	4–5 5	2 2
10	\mathbf{B}	.998L	0	0	1.000R	0	.998L	0	0	1.000R	0
	M	.748	.750	1.000	.640	.750	.748	.750	1.000	.640	.75
20	G N	3-5 4	3–5 4	2–3 2	35 4	$\overset{2-3}{{\scriptstyle 2}}$	$^{4-5}_{4}$	2-3 2	$\overset{2-3}{2}$	4–5 5	2-3 2
	В	0.666R 2.118	$.667\mathbf{R}$	1.178L 2.206	.667R	1.431L	.998L	1.600L	1.178L 2.206	1.000R	1.431
	$\frac{M}{G}$	2-116	1.814 2-5	2-4	1.814 2-5	$\frac{1.715}{2-5}$	1.892 3-5	2-3	2-3	1.620 3-5	$\frac{1.73}{2-3}$
30	N	4	3	2	4	3	4	2	2	4	2
1	B M	$2.296\mathbf{R} \\ 3.910$.88 9L 3.573	2.723L 3.683	$2.500\mathbf{R} \\ 3.366$	3.143	1.332R 3.428	1.600L 2.993	1.178L 3.611	1.333R 2.936	1.431 2.8
	G	2-5	2-5	1-5	2-5	2–5	2-5	2-5	1-4	2-5	2-5
40	N B	$^{4}_{2.296R}$	3 .889L	2 2.866L	$^{4}_{2.500\mathrm{R}}$	3 .583L	$\frac{4}{3.258R}$	3 1.778 L	$^{2}_{1.835L}$	4 3.500R	3 1.415
50	M	6.120	5.818	5.739	5.325	5.141	5.374	5.071	5.272	4.645	4.5
	G	2–5	1-5	1-5	1-5	1–5	2-5	2-5	1-5	2-5	1–5
50	N B	$^{4}_{2.296\mathrm{R}}$	3 $400R$	$^{2}_{2.866L}$	$^3_{1.200 m R}$	$2 \\ 2.066 $ L	$\frac{4}{3.258\mathbf{R}}$	3 $1.778L$	$\begin{array}{c} 2 \\ 3.532 \mathrm{L} \end{array}$	$^4_{3.500 m R}$	2 2.732
	M	8.347	8.103	8.198	7.329	7.319	7.577	7.307	7.618	6.596	6.7
60	G N	1–5 3	1–5 3	$^{1-5}_2$	$^{1-5}_3$	1–5 2	$^{2-5}_{4}$	$^{1-5}_{3}$	$\overset{1-5}{2}$	1–5 3	1–5 2
60	В	.334L	$.400\mathbf{R}$	2.866L	1.200R	2.066L	3.258R	.400L	3.532 L	.400R	2.732
	M	10.668	10.603	10.671	9.824	9.805	9.795	9.803	10.076	9.003	9.1
80	G N	$^{1-5}_3$	$^{1-5}_3$	$\frac{1-5}{2}$	$^{1-5}_3$	1-5	$^{1-5}_{3}$	$^{1-5}_3$	$^{1-5}_2$	$^{1-5}$	1-5 2
	\mathbf{B}	.334L	.400R	2.866L 15.637	1.200R	2.066L	1.268L	.400L 14.802	3.532L	.400R	2.732
\ <u></u> -	M	15,667	15.602 1-5	1-5	14.818 1-5	14.787 1–5	$\frac{14.752}{1-5}$	1-5	15.024 1-5	14.002 1-5	$\frac{14.1}{1-5}$
	C	7-5									
100	G N	1–5 3	3	2	3	2	3	3	2	3	2
100							3 1.268L 19.748	3 .400L 19.802	2 3,532L 19.793	$^3_{.400 m R}$ 19.002	2.73
	N B M	3 .334 L	$^{3}_{.400 m R}$	$^{2}_{2.866}$ L	$^3_{1.200 m R}$	$\overset{2}{2.066} \mathbf{L}$	1.268L	.400L	3.532L	$.400\mathbf{R}$	2.732 19.1
Fruck N Wh. Bas	N B M o.	3 .334L 20.667 41 44	3 .400R 20.602 42 44	2 2.866L 20.616 43 44	3 1.200R 19.814 44 44	2 2.066L 19.777 45 44	1.268L 19.748 46 40	.400L 19.802 47 40	3,532L 19.793 48 40	.400R 19.002 49 40	2.73 19.1 50
Truck N Wh. Bas	N B M o.	3 .334L 20.667 41 44 16	3 .400R 20.602 42 44 16	2 2.866L 20.616 43 44 16	3 1.200R 19.814 44 44 16	2 2.066L 19.777 45 44 16	1.268L 19.748 46 40 16	.400L 19.802 47 40 16	3.532L 19.793 48 40 16	.400R 19.002 49 40 16	2.73 19.1 50 40
Fruck N Wh. Bas Axle Spacing Hitch	N B M o.	3 .334L 20.667 41 44	3 .400R 20.602 42 44	2 2.866L 20.616 43 44	3 1.200R 19.814 44 44	2 2.066L 19.777 45 44	1.268L 19.748 46 40	.400L 19.802 47 40	3,532L 19.793 48 40	.400R 19.002 49 40	2.73: 19.1 50 40
Fruck N Wh. Bas Axle Spacing Litch Load	N B M Oo. Se L X X' C	3 .334L 20.667 41 44 16 16 8 .10	3 .400R 20.602 42 44 16 16 8	2 2.866L 20.616 43 44 16 16 8	3 1.200R 19.814 44 44 16 16 8	2 2.066L 19.777 45 44 16 16 8 .20	1.268L 19.748 46 40 16 8 12	.400L 19.802 47 40 16 8 12	3,532L 19.793 48 40 16 8 12	.400R 19.002 49 40 16 8 12 .20	2.73: 19.1 50 40 16 15 .20
Fruck N Wh. Bas Axle Spacing Litch Load	N B M Se L X X' C a1 a2	3 .334L 20.667 41 44 16 16 8 .10 .20	3 .400R 20.602 42 44 16 16 8 .10 .30	2 2.866L 20.616 43 44 16 16 8 .10	3 1.200R 19.814 44 44 16 16 20 .20	2 2.066L 19.777 45 44 16 16 8 .20 .30	1.268L 19.748 46 40 16 8 12 .10 .20	.400L 19.802 47 40 16 8 12 .10	3.532L 19.793 48 40 16 8 12 .10 .40	.400R 19.002 49 40 16 8 12 .20 .20	2.73 19.1 50 40 10 1.20 .30
Fruck N Wh. Bas Axle Spacing Litch Load	N B M Oo. Se L X X' C	3 .334L 20.667 41 44 16 16 8 .10	3 .400R 20.602 42 44 16 16 .8 .10 .30 .60	2 2.866L 20.616 43 44 16 16 8 .10 .40 .50	3 1.200R 19.814 44 44 16 16 8 .20 .20 .60 4-5	2 2.06614 19.777 45 44 16 16 8 .20 .30 .50	1.268L 19.748 46 40 16 8 12	.400L 19.802 47 40 16 8 12 .10 .30 .60	3.532L 19.793 48 40 16 8 12 .10 .40 .50	.400R 19.002 49 40 16 8 12 .20 .60 4-5	2.73: 19.1 50 40 16 15 .20 .30 .50
Cruck N Wh. Bas Axle Spacing Litch Load	N B M O. Se L X X' C a1 a2 a3 G N	3 .334L 20.667 41 44 16 16 8 .10 .20 .70 4-5	3.400R 20.602 42 44 16 16 8 .10 .30 .60	2 2.866L 20.616 43 44 16 16 8 .10 .40 .50	3 1.200R 19.814 44 44 16 16 8 .20 .20 .60 4-5	2 2.066L 19.777 45 44 16 16 8 .20 .30 .50	1.268L 19.748 46 40 16 8 12 .10 .20 .70 4–5	.400L 19.802 47 40 16 8 12 .10 .30 .60	3.532L 19.793 48 40 16 8 12 .10 .40 .50	.400R 19.002 49 40 16 8 12 .20 .20 .60 4–5 5	2.73: 19.1 50 40 16 15 .20 .30 .50
Truck N Wh. Bas Exle Spacing Litch Load On Exles	N B M [o. se L X X' C a1 a2 a3 G	3 .334L 20.667 41 44 16 16 8 .10 .20 .70 4-5	3 .400R 20.602 42 44 16 16 .8 .10 .30 .60	2 2.866L 20.616 43 44 16 16 8 .10 .40 .50	3 1.200R 19.814 44 44 16 16 8 .20 .20 .60 4-5	2 2.06614 19.777 45 44 16 16 8 .20 .30 .50	1.268L 19.748 46 40 16 8 12 .10 .20 .70	.400L 19.802 47 40 16 8 12 .10 .30 .60	3.532L 19.793 48 40 16 8 12 .10 .40 .50	.400R 19.002 49 40 16 8 12 .20 .60 4-5	2.73 19.1 50 40 10 15 .20 .30 .50 2 2 0
Truck N Wh. Bas Axle Epacing Hitch Load Dn Axles	N B M [o. See L X X' C a1 a2 a3 G N B M G	3 .334L 20.667 41 44 16 16 .10 .20 .70 4-5 4 .998L .748 4-5	3.400R 20.602 42 44 16 16 8 .10 .30 .60 2 2 0 .750 2-3	2.866LL 20.616 43 44 16 16 8 .10 .40 .50 2 2 0 1.000 2-3	3 1.200R 19.814 44 44 16 16 8 .20 .20 .60 4-5 4 1.000R .640	2 2.066L 19.777 45 44 16 16 8 .20 .30 .50 2 2 0 .750 2-8	1.268L 19.748 46 40 16 8 12 .10 .20 .70 4-5 4 .98L .748 3-5	.400L 19.802 47 40 16 8 12 .10 .30 .60 2 2 0 .750	3.532L 19.793 48 40 16 8 12 .10 .40 .50 2 2 0 1.000	.400R 19.002 49 40 16 8 12 .20 .20 .60 4–5 5 1.000R .640	2.73: 19.1 50 40 10 15 2.20 .50 2 2 0 .77 3–5
Truck N Wh. Bas Exle Spacing Litch Load On Exles	N B M G N	3 334L 20.667 41 44 16 16 8 .10 .20 .70 4-5 4-98L .748 4-5	3 .400R 20.602 42 44 16 16 8 .30 .60 2 2 0 .750	2.866L 20.616 43 44 16 16 8 .10 .40 .50 2 0 1.000 2-3 2	3 1.200R 19.814 44 44 16 16 8 .20 .20 .60 4-5 4 1.000R .640	2 2.066L 19.777 45 44 16 16 8 .20 .30 .50 2 2 0 .750	1.268L 19.748 46 40 16 8 12 .10 .20 .70 4-5 4 .998L .748	.400L 19.802 47 40 16 8 12 .10 .30 .60 2 2 0 .750	3.532L 19.793 48 40 16 8 12 .10 .40 .50 2 2 0 1.000	.400R 19.002 49 40 16 8 12 .20 .20 .60 4-5 5 1.000R .640 3-5 4	2.73 19.1 56 46 11 2.26 .56 2 2 0 .7
Yruck N Vh. Bas Axle Spacing Hitch Load On Axles	N B M Co. See L X X' C a1 a2 a3 G N B M G N B M M	3 334L 20.667 41 44 16 16 8 .10 .20 .70 4–5 4 .998L .748 4–5 4 .998L 1.892	3 .400R 20.602 42 44 16 16 8 .10 .30 .60 2 2 0 .750 2-3 2 1.600L 1.764	2 2.866L 20.616 43 44 16 16 8 .10 .40 .50 2 2 0 1.000 2–3 2 1.178L 2.206	3 1.200R 19.814 44 44 16 16 8 .20 .20 .60 4-5 4 1.000R 4-5 4 1.000L 1.620	2 2.066L 19.777 45 44 16 16 8 .20 .30 .50 2 2 0 .750 2–3 2 1.431L 1.715	1.268L 19.748 46 40 16 8 12 .10 .20 .70 4-5 4 .98L .748 3-5 4 .666R 2.118	.400L 19.802 47 40 16 8 12 .10 .30 .60 2 0 .750 3-5 4 .667R 1.814	3.532L 19.793 48 40 16 8 12 .10 .40 .50 2 2 0 1.000 2 2 2 0 2.000	.400R 19.002 49 40 16 8 12 .20 .60 4-5 5 1.000R .640 3-5 4 .667R 1.814	2.733 19.1 50 40 16 3 3 .30 .50 2 2 2 0 .7 3 4 .66 1.5
Fruck N Wh. Bas Wh. Bas Wh. Bas Wh. Bas Itch Load On Axles 10 20	N B M fo. Se L X C a1 a2 a3 G N B M G N G G G G G G G G G G G	334L 20.667 41 44 16 16 8 .10 .20 .70 4–5 4 .998L .748 4–5 4 .998L 1.892 4–5	3 400R 20.602 42 44 16 8 .10 .30 .60 2 2 0 .750 2 1.600L 1.764 2-3	2 2.866L 20.616 43 44 16 16 8 .10 .40 .50 2 2 0 1.000 2-3 2 1.178L 2.206 2-3	3 1.200R 19.814 44 44 16 16 8 .20 .20 .60 4-5 4 1.000R .640 4-1.000L 1.620 4-5	2 2.066L 19.777 45 44 16 16 8 .20 .50 2 2 0 .750 2-3 2 1.431L 1.715 2-3	1.268L 19.748 46 40 16 8 12 .10 .20 .70 4-5 4 .998L .748 3-5 4 .666R 2.118	.400L 19.802 47 40 16 8 12 .10 .30 .60 2 2 0 .750 3–5 4 .667R 1.814 3–5	3.532L 19.793 48 40 16 8 12 .10 .40 .50 2 2 0 1.000 2 2 0 2.000 2-3	.400R 19.002 49 40 16 8 12 .20 .60 4–5 5 1.000R .640 3–5 4 .667R 1.814	2.733 19.1 50 40 10 13 2.20 .50 2 2 2 0 .7 3–5 4 .666 1.5
Yruck N Vh. Bas Axle Spacing Hitch Load On Axles	N B M C C a1 a2 a3 G N B M G N B M B M B M B M B M	3 334L 20.667 41 44 16 8 1.0 20 .70 4-5 4 .998L .748 4-5 4 .998L	3 400R 20.602 42 44 16 8 .10 .30 .60 2 2 0 750 2-3 1.600L 1.764 2-3 2.1.600L	2 2.866L 20.616 43 44 16 16 8 .10 .40 .50 2 2 0 1.000 2-3 2 1.178L 2.206 2-3 2	3 1.200R 19.814 44 44 16 8 .20 .20 .60 4-5 4 1.000R .640 4-5 4.1000L 1.620 4-5 4.1000L	2 2.066L 19.777 45 44 16 8 .20 .30 .50 2 2 0 .750 2-3 2 1.431L 1.715 2-3 2 1.431L	1.268L 19.748 46 40 16 8 12 .10 .20 .70 4-5 4 .998L .748 3-5 4 .666R 2.118 3-5 4 .666R	.400L 19.802 47 40 16 8 12 .30 .60 2 2 0 .750 3–5 4 .667R 1.814 3–5 4	3.532L 19.793 48 40 16 8 12 .10 .40 .50 2 2 0 1.000 2 2 2 0 2.000 2-3 2 1.767L	.400R 19.002 49 40 16 8 12 .20 .60 4-5 5 1.000R .640 3-5 4 .667R 1.814 3-5 4	2.73 19.1.1 56 44 11 2.2 3.3 .55 2 2 0 .7.3 8-E 4 6.66
Fruck N Wh. Bas Wh. Bas Axle Spacing Hitch Load On Axles 10	N B M Co.	334L 20.667 41 44 16 16 8 .10 .20 .70 4–5 4 .998L .748 4–5 4 .998L 1.892 4–5 4 .998L 3.052	3 400R 20.602 42 44 16 8 .10 .30 .60 2 2 0 .750 2 1.600L 1.764 2–3 2 1.600L 2.993	2 2.866L 20.616 43 44 16 16 8 .10 .40 .50 2 2 0 1.000 2-3 2 1.178L 2.206 2-3 2 1.178L 3.611	3 1.200R 19.814 44 44 16 16 16 8 .20 .20 .60 4-5 4 1.000R .640 4-5 4 1.000L 1.620 4-5 4 1.000L 2.613	2 2.066L 19.777 45 44 16 16 8 .20 .50 2 2 0 .750 2-3 2 1.431L 1.715 2-3 2 1.431L 2.866	1.268L 19.748 46 40 16 8 12 .10 .20 .70 4-5 4 .998L .748 3-5 4 .666R 2.118 3-5 4 .666R 3.862	.400L 19.802 47 40 16 8 12 .10 .30 .60 2 2 0 .750 3–5 4 .667R 1.814 3–5 4.667R 3.309	3.532L 19.793 48 40 16 8 12 .10 .40 .50 2 2 0 1.000 2-3 2 1.767L 3.310	.400R 19.002 49 40 16 8 12 .20 .60 4-5 5 1.000R .640 3-5 4 .667R 1.814 3-5 4 667R 3.309	2.733 19.1.1 500 400 110 12.2.2.3 3.55 2.2.2.0 7.7 3-55 4.666 1.5.666 2.7,666
Truck N. Bas Axle Spacing Hitch Load On Axles	N B M C C a1 a2 a3 G N B M G N B M B M B M B M B M	3 334L 20.667 41 44 16 8 1.0 20 .70 4-5 4 .998L .748 4-5 4 .998L	3 400R 20.602 42 44 16 8 .10 .30 .60 2 2 0 750 2-3 1.600L 1.764 2-3 2.1.600L	2 2.866L 20.616 43 44 16 16 8 .10 .40 .50 2 2 0 1.000 2-3 2 1.178L 2.206 2-3 2	3 1.200R 19.814 44 44 16 8 .20 .20 .60 4-5 4 1.000R .640 4-5 4.1000L 1.620 4-5 4.1000L	2 2.066L 19.777 45 44 16 8 .20 .30 .50 2 2 0 .750 2-3 2 1.431L 1.715 2-3 2 1.431L	1.268L 19.748 46 40 16 8 12 .10 .20 .70 4-5 4 .998L .748 3-5 4 .666R 2.118 3-5 4 .666R	.400L 19.802 47 40 16 8 12 .30 .60 2 2 0 .750 3–5 4 .667R 1.814 3–5 4	3.532L 19.793 48 40 16 8 12 .10 .40 .50 2 2 0 1.000 2 2 2 0 2.000 2-3 2 1.767L	.400R 19.002 49 40 16 8 12 .20 .60 4-5 5 1.000R .640 3-5 4 .667R 1.814 3-5 4	2.733 19.1.1 56 44 11 12 2.22 3.3 5.50 2 2 2 0 0 .7.7 4 6.6 6 2.7 1.8 4 4 4 6 2.7 1.8 1.8 1.8 1.8 1.8 1.8 1.8 1.8 1.8 1.8
Pruck N. Bas Axle spacing Hitch soad on Axles	N B M C C a1 a2 a2 a3 B M G N B B M G N B B M G N B B M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M M B M M M B M M M B M M M B M M M B M M M B M M M B M M M B M M M B M M M B M M M B M	334L 20.667 41 44 16 16 8 .10 .20 .70 4–5 4 .998L .748 4–5 4 .998L 1.892 4–5 4 .998L 3.052 3–5 4 1.997R	3 400R 20.602 42 44 16 8 .10 .30 .60 2 2 0 .750 2-3 2 1.600L 2-993 1-3 2	2.866L 20.616 43 44 16 16 8 .10 .40 .50 2 2 0 1.000 2-3 2 1.178L 2.206 2-3 2 1.178L 3.611 1-3 2	3 1.200R 19.814 44 44 16 16 16 8 .20 .20 .60 4-5 4 1.000R 540 4-5 4 1.000L 2.613 3-5 4 2.000R	2 2.066L 19.777 45 44 16 16 8 .20 .30 .50 2 2 0 .750 2-3 2 1.431L 2.866 1-3 2 1.431S	1.268L 19.748 46 40 16 8 12 .10 .20 .70 4-5 4 .998L .748 3-5 4 .666R 2.118 3-5 4 .666R 2.25 4 .666R 2.10 2.20	.400L 19.802 47 40 16 8 12 .10 .30 .60 2 2 0 .750 3-5 4 .667R 1.814 3-5 4 .667R 3.309 2-5 3.222L	3.532L 19.793 48 40 16 8 12 .10 .40 .50 2 2 0 1.000 2 2 2 0 2.000 2-3 2 1.767L 3.310 1-4 2 2.236L	.400R 19.002 49 40 16 8 12 .20 .20 .60 4-5 5 1.000R .640 3-5 4 .667R 1.814 3-5 4 .667R 3.309 2-5 4	2.733 19.11 56 44 10 8 11: .22 2 2 0 .7.7 3–55 4 4.666 1.5.66 2.7.2 2 2 2 2 2 2 2 2 2 2 2 2 2 3 3 3 4 5 6 6 6 6 7 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7
Pruck N. Bas Axle spacing Hitch soad on Axles	N B M C C C C N B B M C G N B B M C G N B B M B B M B B M B B M	334L 20.667 41 44 16 16 8 .10 .20 .70 4–5 4.998L .748 4–5 4.998L 1.892 4–5 4.998L 2.998L 1.997R 4.748	3 .400R 20.602 42 44 16 8 .10 .30 .60 2 2 0 .750 2-3 2 1.600L 1.764 2-993 1-3 2 0 4.400	2.866L 20.616 43 44 16 16 8 .10 .40 .50 2 2 0 1.000 2-3 2 1.178L 2.206 2-3 1.178L 2.206 2-3 1.178L 2.206 2-3 1.178L 2.206	3 1.200R 1.200R 19.814 44 44 44 1.6 16 16 8 .20 .20 .60 4-5 4 1.000R 4-5 4 1.000L 1.620 4-5 4 2.0013 3-5 4 2.000R 4.060	2 2.066L 19.777 45 44 16 16 8 .20 .30 .50 2 2 0 .750 2–8 2 1.431L 1.715 2–3 1.431L 2.866 1–3 2	1.268L 19.748 46 40 16 8 12 .10 .20 .70 4-5 4 .998L .748 3-5 4 .666R 2.118 3-5 4 .666R 3.862 2-5 4 2.740R 5.771	.400L 19.802 47 40 16 8 12 .10 .30 .60 2 2 0 .750 3–5 4 .667R 1.814 3–5 4 .667R 3.309 2–5 3.222L 5.201	3.532L 19.793 48 40 16 8 12 .10 .40 .50 2 2 0 1.000 2-2 1.767L 3.310 1-4 2 2.236L 4.972	.400R 19.002 49 40 16 8 12 .20 .20 .60 .60 .640 3-5 4 .667R 1.814 3-5 4 .667R 3.309 2-5 4 3.000R 4.980	2.733 19.1 566 440 110 2.2 2.3 2.2 2.2 0.7.7 3.5 5.6 4.6 6.6 1.5 4.6 6.6 4.6 6.7 7.7 2.7 4.6 6.1 5.1 4.6 6.1 6.1 6.1 6.1 6.1 6.1 6.1 6.1 6.1 6
Pruck N. Bas Axle spacing Hitch soad on Axles	N B M C C a1 a2 a3 a2 a3 B M G N B B M G N B B M G N B B M G N B B M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M M G N B B M M G N B M M G N B M M G N B M M M G N B M M M M M M M M M M M M M M M M M M	334L 20.667 41 44 16 16 8 .10 .20 .70 4–5 4 .998L .748 4–5 4 .998L 1.892 4–5 4 .998L 1.998 4-5 4 .998L 2.052 3–5 4 4.740 2.052 4.740	3 400R 20.602 42 44 16 8 .10 .30 .60 2 2 0 .750 2 1.600L 2.993 1-3 2 0 4.400 2-5 3	2.866L 20.616 43 44 16 16 8 .10 .40 .50 2 2 0 1.000 2–3 2 1.178L 2.206 2–3 2 1.178L 3.611 1–3 2 1.98R 5.203 1–5 2	3 1.200R 19.814 44 44 16 16 16 8 .20 .20 .60 4-5 4 1.000R .640 4-5 4 1.000L 2.613 3-5 4 2.000R 4.060 2-5 4.060	2 2.066L 19.777 45 44 16 16 16 8 .20 .30 .50 2 2 0 .750 2 -3 2 1.431L 1.715 2 -3 2 1.431L 2.866 1 -3 2 1.398R 4.434 1 -4 2	$\begin{array}{c} 1.268L\\ 19.748\\ \hline 46\\ 40\\ 16\\ 8\\ 12\\ .10\\ .20\\ .70\\ 4-5\\ 4\\ .998L\\ .748\\ \hline 3-5\\ 4\\ .666R\\ 2.118\\ \hline 3-5\\ 4\\ .666R\\ 2.118\\ \hline 3-5\\ 4\\ .666R\\ 2.174\\ \hline 8\\ .5771\\ \hline 2-5\\ 4\\ \end{array}$.400L 19.802 47 40 16 8 12 .10 .30 .60 2 2 0 .750 3-5 4 .667R 1.814 3-5 4 .667R 3.309 2-5 3.222L 5.201	3.532L 19.793 48 40 16 8 12 .10 .40 .50 2 2 0 1.000 2 2 2 2 1.767L 3.310 1-4 2 2.236L 4.972	.400R 19.002 49 40 16 8 12 .20 .20 .60 4-5 5 1.000R .640 3-5 4 .667R 1.814 3-5 4 .667R 3.309 2-5 4 3.000R 4.980	2.733 19.11 566 40 11: 12: 2.33 5.56 2.2 2.3 3.55 4.666 1.5.1 2.666 2.7.7 2.666 4.666 4.1.5 2.3 3.3 3.3 3.3 3.3 4.3 4.3 4.3 4.3 4.3 4
Pruck N. Bas Axle spacing Hitch soad on Axles	N B M G N B B M G G N B B M G G N B B M G G N B B M G G N B B M G G N B B M G G N B B M G G N B B M G G N B B M B M G G N B B M G G N B B M G G N B B M B M B M B M B M B M B M B M B M	3 334L 20.667 41 44 16 8 1.0 20 .70 4-5 4 .998L 1.892 4-5 4 .998L 3.052 3-5 4 1.997R 4.7997R 4.7997R	3 400R 20.602 42 44 16 16 8 .10 .30 .60 2 2 0 .750 2-3 2 1.600L 1.764 2-3 2.1600L 2.993 1-3 2 0 4.400 2-5 3 2.6667L	2.866L 20.616 43 44 16 16 8 .10 .40 .50 2 2 0 1.000 2-3 2 1.178L 2.206 2-3 2 1.178L 3.611 1-3 2 1.98R 5.203 1-5 2	3 1.200R 19.814 44 44 16 8 .20 .20 .60 4-5 4 1.000R .640 4-5 4 1.000L 2.613 3-5 4 2.000R 4-5 4	2 2.066L 19.777 45 44 16 8 .20 .30 .50 2 2 0 0.750 2 1.431L 1.715 2-3 2 1.431L 2.866 1-3 2 1.398R 4.438 4 1-4	1.268L 19.748 46 40 16 8 12 .10 .20 .70 4-5 4 .998L .748 3-5 4.666R 2.118 3-5 4.666R 2.218 2-7 4.749 2.740R 5.771 2-5	.400L 19.802 47 40 16 8 12 .30 .60 2 2 0 .750 3–5 4 .667R 1.814 3–5 4 .667R 3.309 2–5 3 .222L 5.201	3.532L 19.793 48 40 16 8 12 1.10 .40 .50 2 2 0 1.000 2-3 2 1.767L 3.310 1-4 2 2.2.2364 4.972	.400R 19.002 49 40 16 8 12 .20 .60 4-5 5 1.000R .640 3-5 4 .667R 1.814 3-5 4 .667R 3.309 2-5 4 3.000R	2.733 19.11 566 400 161 18 12 2.22 2.33 3.55 2.22 0.7.7 3.55 4.666 1.5.5 4.666 1.5 4
Truck N. Bas Axle Spacing Litch Load Dn Axles 20 30 40 50	N B M C G N B B M G N B B M G N B B M G N B B M G G N B M G M G M G M G M G M G M G M G M G M	334L 20.667 41 44 16 16 8 .10 .70 4–5 4 .998L .748 4–5 4 .998L 3.052 3–5 4 1.997R 4.740 2–5 4 4.220R 6.840 2–5	3 400R 20.602 42 44 16 8 .10 .30 .60 2 2 0 .750 2 -3 2 1.600L 1.764 2-993 1-3 2 0 4.400 2-5 3 2.667L 6.578 1-5	2.866L 20.616 43 44 16 16 8 .10 .40 .50 2 2 0 1.000 2-3 2 1.178L 2.206 2-3 2 1.178L 3.611 1-3 2 4.198R 5.203 1-5 2 4.198L 7.054 1-5	3 1.200R 19.814 44 44 16 16 8 .20 .60 4-5 4 1.000R .640 4-5 4 1.000L 1.620 4-5 4 1.000L 2.613 3-5 4 2.000R 4.060 2-5 4 4.060 2-5 4 1.000E	2 2.066L 19.777 45 44 16 16 16 8 20 .50 .50 2 2 0 .750 2 -3 2 1.431L 1.715 2 -3 2 1.431L 2.866 1-3 2 1.278L 6.180 1-5	1.268L 19.748 46 40 16 8 12 .10 .20 .70 4-5 4 .998L .748 3-5 4 .666R 2.118 3-5 4 .666R 2.740R 5.771 2-5 4 2.740R 7.940R 7.940R	.400L 19.802 47 40 16 8 12 .10 .30 .60 2 2 0 .750 3-5 4 .667R 1.814 3-5 4 .667R 3.309 2.5 3 3.222L 5.201 2.7451 1.7451	3.532L 19.793 48 40 16 8 12 .10 .40 .50 2 2 0 1.000 2 2 2 0 2.000 2-3 2 1.767L 3.310 1-4 2.236L 4.972 1-5 2 3.866L 7.333 1-5	.400R 19.002 49 40 16 8 12 .20 .20 .60 4-5 5 1.000R .640 3-5 4 .667R 1.814 3-5 4 .667R 3.309 2-5 4 3.000R 4.980 2-5 4 3.000R 6.940 1	2.733 19.11 500 444 166 12 2.22 3.30 5.55 2.2 2 0 0 7.7 3.55 4.66 4.66 4.5.2 2.7 2.7 2.7 4.66 4.66 4.66 4.66 4.66 4.66 4.66 4.
Pruck N. Bas Axle spacing Hitch soad on Axles	N B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M B B M G N B B M B B M B M B B M B M B B M B M B	334L 20.667 41 44 16 16 8 .10 .20 .70 4–5 4.998L .748 4–5 4.998L 3.652 3–5 4 4.740 2–5 4 4.220R 6.840 2–5 4	3 400R 20.602 42 44 16 16 8 .10 .30 .60 2 2 0 .750 2-3 2 1.600L 1.764 2-3 2 1.600L 2.993 1-3 2 0 4.400 2-5 3 2.6667L 6.578	2.866L 20.616 43 44 16 16 8 .10 .40 .50 2 2 0 1.000 2-3 2 1.178L 2.206 2-3 2 1.178L 2.206 2-3 1.178L 2.206 2-3 2 1.178L 2.206 2-1.198R 5.203 1-5 2 4.198R 7.054 1-5 2 4.198L 7.054 1-5 2 4.198L 7.054 1.054 1.05	3 1.200R 19.814 44 44 16 16 16 8 .20 .20 .60 4-5 4 1.000R 1.620 4-5 4 1.000L 1.620 4-5 4 2.000R 4.060 2-5 4 4.500R 5.924 1.524	2 2.066L 19.777 45 44 16 16 16 8 .20 .30 .50 .50 .2 2 0 .750 2-8 2 1.431L 1.715 2-3 2 1.431L 2.866 1-3 2 1.398R 4.434 1-4 2 1.273L 6.180 1-5 2	1.268L 19.748 46 40 16 8 12 .10 .20 .70 4-5 4 .998L .748 3-5 4 .666R 2.118 3-5 4 6.66R 3.862 2-5 4 2.740R 7.987 2-5 4 2.749R 7.987	.400L 19.802 47 40 16 8 12 .10 .30 .60 2 2 0 .750 3-5 4 .667R 1.814 3-5 4.667R 3.309 2-5 3 .222L 5.201 2-5 3 .222L 7.451 1-5 3	3.532L 19.793 48 40 16 8 12 10 .40 .50 2 2 0 0 1.000 2-3 2 1.767L 3.310 1-4 2 2.236L 4.972 1-5 2 3.866L 7.333	.400R 19.002 49 40 16 8 12 .20 .20 .40 .60 .60 .640 3-5 4 .667R 1.814 3-5 4 .667R 3.309 2-5 4 3.000R 4.980 2-5 4 3.000R 6.944 1-5 3.000R 6.944	2.73319.1 500 44 10 11 12 2.2 2 2 2 2 2 3.3 5.5 4 6.6 1.5 1.5 1.6 2 2 2 2 2 4 6 6 6 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Truck N. Bas Axle Spacing Litch Load Dn Axles 20 30 40 50	N B M C G N B B M G N B B M G N B B M G N B B M G G N B M G M G M G M G M G M G M G M G M G M	334L 20.667 41 44 16 16 8 .10 .70 4–5 4 .998L .748 4–5 4 .998L 3.052 3–5 4 1.997R 4.740 2–5 4 4.220R 6.840 2–5	3 400R 20.602 42 44 16 8 .10 .30 .60 2 2 0 .750 2 -3 2 1.600L 1.764 2-993 1-3 2 0 4.400 2-5 3 2.667L 6.578 1-5	2.866L 20.616 43 44 16 16 8 .10 .40 .50 2 2 0 1.000 2-3 2 1.178L 2.206 2-3 2 1.178L 3.611 1-3 2 4.198R 5.203 1-5 2 4.198L 7.054 1-5	3 1.200R 19.814 44 44 16 16 8 .20 .60 4-5 4 1.000R .640 4-5 4 1.000L 1.620 4-5 4 1.000L 2.613 3-5 4 2.000R 4.060 2-5 4 4.060 2-5 4 1.000E	2 2.066L 19.777 45 44 16 16 16 8 20 .50 .50 2 2 0 .750 2 -3 2 1.431L 1.715 2 -3 2 1.431L 2.866 1-3 2 1.278L 6.180 1-5	1.268L 19.748 46 40 16 8 12 .10 .20 .70 4-5 4 .998L .748 3-5 4 .666R 2.118 3-5 4 .666R 2.740R 5.771 2-5 4 2.740R 7.940R 7.940R	.400L 19.802 47 40 16 8 12 .10 .30 .60 2 2 0 .750 3-5 4 .667R 1.814 3-5 4 .667R 3.309 2.5 3 3.222L 5.201 2.7451 1.7451	3.532L 19.793 48 40 16 8 12 .10 .40 .50 2 2 0 1.000 2 2 2 0 2.000 2-3 2 1.767L 3.310 1-4 2.236L 4.972 1-5 2 3.866L 7.333 1-5	.400R 19.002 49 40 16 8 12 .20 .20 .60 4-5 5 1.000R .640 3-5 4 .667R 1.814 3-5 4 .667R 3.309 2-5 4 3.000R 4.980 2-5 4 3.000R 6.940 1	2.73:19.1 50:44 10:1 12:2:4 12:2:4 13:4 14:4 15:4 16:4 17:4 18:4 18:4 18:4 18:4 18:4 18:4 18:4 18
Truck N. Bas Axle spacing Hitch Load On Axles 20 30 40 60	N B M C G N B B M G N B B M G G N B M G M G M G M G M G M G M G M G M G M	334L 20.667 41 44 16 16 8 .10 .20 .70 4–5 4.998L .748 4–5 4.998L 1.895 4–5 4.998L 2.5 4.997R 4.740 2-5 4.220R 6.840 2.5 4.220R 9.037 1–5	3 400R 20.602 42 44 16 8 .10 .30 .60 .2 2 0 .750 2-3 1.600L 1.764 2-3 2 1.600L 2.993 1-3 2 0 4.400 2-5 3 2.6667L 6.578 1-5 3 1.20024 1.5	2.866L 20.616 43 44 16 16 8 .10 .40 .50 2 2 0 1.000 2-3 2 1.178L 2.206 2-3 2 1.178L 2.203 1-5 2 4.198L 7.054 1-5 2 4.198L 7.054 1-5 2 4.198L 7.054 1-5 2 4.198L 7.054 1-5 2 4.198L 7.054 1-5 2 4.198L 7.054 1.054 1.05	3 1.200R 19.814 44 44 16 16 16 8 .20 .60 4-5 4 1.000R 4-5 4 1.000L 2.613 3-5 4 4.000B 4.000C 2.000R 4.000C 2.000R 4.000C 3.000C 4.000C 3.000C 4.000C 3.000C 4.000C 3.000C 4.000C 3.000C 4.000C 3.000C 4.000C 3.000C 3.000C 4.000C 3.000C	2 2.066L 19.777 45 44 16 16 16 8 .20 .30 .50 .50 .50 .750 2 2 1.431L 1.715 2 -3 2 1.431L 2.866 1-3 2 1.273L 6.180 1-5 2 3.398R 4.434 1-4 2 1.273L 8.594 1-5	1.268L 19.748 46 40 16 8 12 .10 .20 .70 4-5 4 .998L .748 3-5 4.666R 2.118 3-5 4.666R 3.862 2-5 4 2.740R 7.987 2-5 4 2.740R 7.987 4 2.740R 10.215 1-5	.400L 19.802 47 40 16 8 12 .10 .30 .60 2 2 0 .750 3-5 4 .667R 1.814 3-5 4 .667R 3.309 2-5 3 .222L 7.451 1-5 3 1.200R 9.824 1-5	3.532L 19.793 48 40 16 8 12 10 .40 .50 2 2 0 1.000 2 2 1.767L 3.310 1-4 2 2.236L 4.972 1-5 2 3.866L 7.333 1-5 2 3.866L 9.783 1-5	.400R 19.002 49 40 16 8 12 .20 .20 .60 .60 .640 3-5 1.000R .647 1.814 3-5 4 .667R 3.309 2-5 4 3.000R 4.980 2-5 4 3.000R 9.067 9.000R	2.733319.1 600 404 101 122 202 203 3.55 403 404 666 1.5.3 3.666 4.5.3 3.666 6.5.5 1.6.5 1.
Truck N Wh. Bas Axle pacing Hitch load On Axles 20 30 40 50	N B M C C a1 a2 a3 a3 G N B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M B M G N B B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M M M M M M M M M M M M M M M M M	334L 20.667 41 44 16 8 .10 .20 .70 4-5 4 .998L .748 4-5 4 .998L 3.052 3-5 4 1.997R 4.208 2.5 4 4.208 9.037	3 400R 20.602 42 44 16 8 .10 .30 .60 2 0 .750 2-3 2 1.600L 2.993 1-3 2 0 4.400 2-5 3 2.667L 6.578 1-5 3 1.200L 9.024 1-5 3	2.866L 20.616 43 44 16 8 .10 .40 .50 2 0 1.000 2-3 2 1.178L 2.206 2-3 2.178L 3.611 1-3 2 4.198L 7.054 1-5 2 4.198L 9.496	3 1.200R 19.814 44 44 16 16 8 .20 .20 .60 4-5 4 1.000R .640 4-5 4 1.000L 2.613 3-5 4 2.000R 4.000 2-5 3 4.5 4.5 4.5 4.5 4.5 4.5 4.5 4.5 4.5 4.5	2 2.066L 19.777 45 44 16 16 18 20 30 .50 2 2 0 .750 2 3 2 1.431L 2.866 1-3 2 1.2866 1-3 2 1.278L 6.180 1-5 2 3.398L 8.594 1-5 2	1.268L 19.748 46 40 16 8 12 .10 .20 .70 4-5 4 .998L .748 3-5 4 .666R 2.118 3-5 4 .666R 2.740R 5.771 2-5 4 2.740R 7.987 2-5 4 2.740R 10.215 1-5 3	.400L 19.802 47 40 16 8 12 .10 .30 .60 2 2 0 .750 3–5 4 .667R 1.814 3–5 4 .667R 3.309 2–5 3 .222L 5.201 1–5 3 1.200R 9.824 1–5 3	3.532L 19.793 48 40 16 8 12 1.00 .40 .50 2 0 1.000 2 2 0 2.000 2-3 2 1.767L 3.310 1-4 2 2.2366L 4.972 1-5 2 3.866L 9.783 1-5 2 3.866L 9.783	.400R 19.002 49 40 16 8 12 .20 .60 4-5 5 1.000R .640 3-5 4 .667R 1.814 3-5 4 .667R 3.309 2-5 4 3.000R 4.980 2-5 4 3.000R 9.000R 9.000R 9.000R	2.733219.1 600 440 160 122 222 22 22 24 40.666.1.5.5 3.566 2.7.7 2.55 4.666.2.7.7 2.55 3.566 4.5666.2.7 3.566
Truck N. Bas Axle pacing Hitch oad On Axles 20 30 40 60	N B M C N B B M G N B B M G N B B M G N B B M B M B M B M B M B M B M B M B M	334L 20.667 41 44 16 16 8 .10 .20 .70 4–5 4.998L .748 4–5 4.998L 1.892 4–5 4 .998L 2.5 4 .997R 4.740 2–5 4 4.220R 9.037 1–5 3 2.202L 1.3859	3,400R 20.602 42 44 16 8 .10 .30 .60 .60 .750 2 1,600L 1,764 2-3 2 1,600L 2,993 1-3 2 0 4,400 2-5 3 2,6671L 6,578 1-5 3 1,200L 1,-5 3 1,200L 1,4018	2.866L 20.616 43 44 16 16 8 .10 .40 .50 2 2 0 1.000 2-3 2 1.178L 2.206 2-3 2 1.178L 2.203 1-5 2 4.198L 7.054 1-5 2 4.198L 7.954 1-5 2 4.198L 1-5 4.198L	3 1.200R 19.814 44 44 16 16 16 8 .20 .20 .60 4-5 4 1.000R 1.000L 1.620 4-5 4 1.000L 2.613 3-5 4 4.000 2-5 4 4.500R 5.924 1-5 3 4.000L 8.203 1-5 3 4.001L 8.203	2 2.066L 19.777 45 44 16 16 16 8 .20 .30 .50 .50 .2 2 0 .750 2-3 2 1.431L 1.715 2-3 2 1.431L 2.866 1-3 2 1.398R 4.434 1-4 2 1.273L 6.180 1-5 2 3.398L 1.5546	1.268L 19.748 46 40 16 8 12 .10 .20 .70 4-5 4 .998L .748 3-5 4 .666R 2.118 3-5 4 2.740R 7.987 2-5 4 2.740R 7.987 1-5 3 2.666R 10.215 3 1-5 3 2.666R 15.067	.400L 19.802 47 40 16 8 12 .10 .30 .60 2 2 0 .750 3-5 4 .667R 1.814 3-5 5 2-5 3 2.22L 7.451 1-5 3 1.200R 9.824 1-5 3 1.200R 9.824 1-5 3 1.200R	3.532L 19.793 48 40 16 8 12 .10 .40 .50 2 2 0 1.000 2 2 1.767L 3.310 1-4 2 2.236L 4.972 1-5 2 3.866L 9.783 1-5 2 3.866L 1.9783	.400R 19.002 49 40 16 8 12 .20 .20 .60 .60 .60 .640 3-5 4 .667R 1.814 3-5 4 3.667R 3.309 2-5 4 3.000R 6.944 1-5 3 2.000R 9.067 1.5 3 2.000R 1.5 3 2.000R 1.5 3 2.000R 1.5 3 3.000R 1.5 4.5 4.5 5 4.5 5 4.5 6.67R 1.814 3.000R 1.814	2.733319.1 600 404 101 112 112 113 113 113 113 113 11
Truck N. Bas Axle spacing Hitch Load On Axles 20 30 40 50 60 80	NBM Oo. a1 a2 a3 GNBBM GNBBM GNBBM GNBBM GNBBM GNBBM GNBBM GNBBM GNBBM GNBBM GNBBM GNBBM GNBBM GNBBM GNBBM	3 334L 20.667 41 44 16 8 10 20 70 4-5 4 998L 748 4-5 4 998L 3.052 3-5 4 4 998L 2-5 4 4 20R 6.840 2 5 4 4 20R 9.087 1-5 3 2.202L 13.859 1-5	3 400R 20.602 42 44 16 8 .10 .30 .60 2 0 .750 2-3 2 1.600L 2.993 1-3 2 0 4.400 2-5 3 2.667L 6.578 1-5 3 1.200L 9.024 1-5 3 1.200L 14.018	2 2.866L 20.616 43 44 16 8 .10 .40 .50 2 0 1.000 2-3 2 1.178L 3.611 1-3 2 1.178R 5.203 1-5 2 4.198L 7.054 1-5 2 4.198L 1.4422 4.198L 14.422 1-5	3 1,200R 1,9.814 44 44 44 16 8 .20 .20 .60 4-5 4 1.000R .640 4-5 4 1.000L 2.613 3-5 4 4.500R 4.060 2-5 3 4.000R 3.400L 8.203 1-5 3 .400L 8.203 1-5 3 .400L 13.202 1-5	2 2.066L 19.777 45 44 16 8 20 3.30 .50 2 2 0 750 2 3 2 1.431L 2.866 1-3 2 1.2866 1-5 2 3.398L 8.594 1-5 2 3.398L 1.3546 1-5 2 3.398L 1.3546 1-5 5 2 3.398L 1.3546 1-5	1.268L 19.748 46 40 16 8 12 .10 .20 .70 4-5 4 .998L .748 3-5 4 .666R 2.118 3-5 4 .666R 3.862 2-5 4 2.740R 7.987 2-5 4 2.740R 10.215 1-5 3 .266R 15.067	.400L 19.802 47 40 16 8 12 .10 .30 .60 2 2 0 .750 3-5 4 .667R 1.814 3-5 4 .667R 2.25 3 .222L 7.451 1-5 3 1.200R 9.824 1-5 3 1.200R 14.818 1-5	3.532L 19.793 48 40 16 8 12 1.10 .40 .50 2 2 0 1.000 2 2 2 0 2.000 2-3 2 1.767L 3.310 1-4 2 2.2366L 9.783 1-5 2 3.866L 14.721 1-5	.400R 19.002 49 40 16 8 12 .20 .20 .60 4-5 5 1.000R .640 3-5 4 .667R 1.814 3-5 4 .667R 3.309 2-5 4 3.000R 4.980 2-5 4 3.000R 9.067 1-5 3 2.000R 9.067 1-5 3 2.000R 9.067 1-5 3 2.000R 9.067 1.000R 9.000R	2.73321 506 401 164 164 164 164 164 164 164 16
Truck N. Bas axle pacing fitch oad on axles 20 30 40 60 60	NBM Oo. a1 a2 a3 GNBBM GNBBM GNBBM GNBBM GNBBM GNBBM GNBBM GNBBM GNBBM GNBBM GNBBM GNBBM GNBBM GNBBM GNBBM	334L 20.667 41 44 16 16 8 .10 .20 .70 4–5 4.998L .748 4–5 4.998L 1.892 4–5 4 .998L 2.5 4 .997R 4.740 2–5 4 4.220R 9.037 1–5 3 2.202L 1.3859	3,400R 20.602 42 44 16 8 .10 .30 .60 .60 .750 2 1,600L 1,764 2-3 2 1,600L 2,993 1-3 2 0 4,400 2-5 3 2,6671L 6,578 1-5 3 1,200L 1,-5 3 1,200L 1,4018	2.866L 20.616 43 44 16 16 8 .10 .40 .50 2 2 0 1.000 2-3 2 1.178L 2.206 2-3 2 1.178L 2.203 1-5 2 4.198L 7.054 1-5 2 4.198L 7.954 1-5 2 4.198L 1-5 4.198L 1-5 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	3 1.200R 19.814 44 44 16 16 16 8 .20 .20 .60 4-5 4 1.000R 1.000L 1.620 4-5 4 1.000L 2.613 3-5 4 4.000 2-5 4 4.500R 5.924 1-5 3 4.000L 8.203 1-5 3 4.001L 8.203	2 2.066L 19.777 45 44 16 16 16 8 .20 .30 .50 .50 .2 2 0 .750 2-3 2 1.431L 1.715 2-3 2 1.431L 2.866 1-3 2 1.398R 4.434 1-4 2 1.273L 6.180 1-5 2 3.398L 1.5546	1.268L 19.748 46 40 16 8 12 .10 .20 .70 4-5 4 .998L .748 3-5 4 .666R 2.118 3-5 4 2.740R 7.987 2-5 4 2.740R 7.987 1-5 3 2.666R 10.215 3 1-5 3 2.666R 15.067	.400L 19.802 47 40 16 8 12 .10 .30 .60 2 2 0 .750 3-5 4 .667R 1.814 3-5 5 2-5 3 2.22L 7.451 1-5 3 1.200R 9.824 1-5 3 1.200R 9.824 1-5 3 1.200R	3.532L 19.793 48 40 16 8 12 .10 .40 .50 2 2 0 1.000 2 2 1.767L 3.310 1-4 2 2.236L 4.972 1-5 2 3.866L 9.783 1-5 2 3.866L 1.9783	.400R 19.002 49 40 16 8 12 .20 .20 .60 .60 .60 .640 3-5 4 .667R 1.814 3-5 4 3.667R 3.309 2-5 4 3.000R 6.944 1-5 3 2.000R 9.067 1.5 3 2.000R 1.5 3 2.000R 1.5 3 2.000R 1.5 3 3.000R 1.5 4.5 4.5 5 4.5 5 4.5 6.67R 1.814 3.000R 1.814	2.733319.1 600 404 101 112 112 113 113 113 113 113 11

Tr	uck N	0.	51	52	53	54	55	56	57	58	59	60
W	h. Bas	e L	44	44	44	44	44	48	48	48	48	48
	cle acing	X X'	16 12	16 12	16 12	16 12	16 12	16 16	16 16	16 16	16 16	16 16
BUT ONLY	itch ad	C	.10	$-\frac{12}{.10}$	12	$\frac{12}{.20}$	12	.10	.10	.10	.20	.20
Or		a 1 a 2 a 3	.20 .70	.30 .60	.10 .40 .50	.20 .60	.30 .50	.20 .70	.30 .60	.40 .50	.20 .60	.30 .50
	10	G N B	4-5 4 .998L	2 2 0	2 2 0	4-5 5 1,000R	2 2 0	4-5 4 .998L	2 2 0	2 2 0	4-5 4 1.000L	2 2 0
		M	.748	.750	1.000	.640	<u>.750</u>	.748	.750	1.000	.640	.750
	20	G N B M	4-5 4 .998L 1.892	4-5 5 1.000R 1.620	$\begin{array}{c} 2 \\ 2 \\ 0 \\ 2.000 \end{array}$	4-5 5 1.000R 1.620	2 0 1.500	4-5 4 .998L 1.892	4-5 4 1.000L 1.620	$\begin{array}{c} 2 \\ 2 \\ 0 \\ 2.000 \end{array}$	4-5 4 1.000L 1.620	2 2 0 1.500
	30	G N B	3–5 4 1.332R	3-5 4 1.333R	2-3 2 1,767L	3–5 4 1.333R	2-3 2 2.146L	4-5 4 .998L	2-3 2 2.400L	2-3 2 1.267L	4-5 5 1.000R	2-3 2 2.146 L
		M G	$\frac{3.428}{3-5}$	$\frac{2.936}{2-5}$	$\frac{3.310}{1-3}$	2.936 3-5	$\frac{2.572}{1-3}$	$\frac{3.052}{3-5}$	$\frac{2.646}{3-5}$	$\frac{3.310}{1-3}$	$\frac{2.613}{3-5}$	2.572 1-3
Span-Feet	40	N B M	4 1.332R 5.167	3 1.111L 4.428	.303L 4.869	4 1.333R 4.427	.897R 4.082	4 1.997R 4.740	4 2.000R 4.060	2 .303L 4.869	4 2.000R 4.060	2 .897R 4.082
an-1		G	2-5	2-5	1-5	2-5	2-5	2-5	2-5	1–3	2-5	1-3
Sp	50	N B M	$^{4}_{3.702R}$ $^{7.233}$	3 1.111L 6.673	2 4.532L 6.779	4.000R 6.256	3 .665L 5.875	4 4.665R 6.512	$\begin{array}{c} 3 \\ 2.000 L \\ 5.922 \end{array}$	2 .303L 6.537	5.000R 5.600	.897R 5.747
	60	G N	$^{2-5}_{4}$	1-5 3	$^{1-5}_2$	$^{1-5}_{3}$	$^{1-5}_{2}$	2–5 4	1-5 3	$^{1-5}_2$	2–5 4	1-5 2
		M M	3.702R 9.441	.400R 9.003	4.532L 9.210	1.200R 8.224	3.732L 8.300	4.665R 8.696	.400L 8.203	5.198 L 8.652	5.000R 7.534	4.398L 7.724 1-5
	80	G N	1-5 3	1-5 3	1-5 2	1-5 3	1-5 2	1-5 3	1-5 3	$^{1-5}_{2}$	1–5 3	2
		B M	.668L 14.138	.400R 14.002	4.532L 14.125	1.200R 13.218	3.732L 13.242	1.602L 13.230	.400L 13.202	5.198L 13.540	.400R 12.402	4.398L 12.644
	100	G N	1–5 3	$^{1-5}_{3}$	1–5 2	1-5 3	1-5 2	1–5 3	1-5 3	15 2	1-5 3	$\frac{1-5}{2}$
				.400R	4.532L	$1.200\mathbf{R}$	3.732L	1.602L	.400L	5.198L	.400R	4.398L
	ĺ	B M	.668L 19.136	19.002	19.073	18.214	18.207	18.224	18.202	18.472	17.402	17.595
	uck No	M o.	19.136	19.002 62		18.214	18.207 65	18.224 66				
W	h. Base	M o. e L	19.136 61 40	19.002 62 40	19.073 63 40	18.214 64 40	18.207 65 40	18.224 66 44	18.202 67 44	18.472 68 44	17.402 69 44	70 44
Wi Ax Sp	h. Base le acing	M o. e L X X'	19.136 61 40 20 8	19.002 62 40 20 8	19.073 63 40 20 8	18.214 64 40 20 8	18.207 65 40 20 8	18.224 66 44 20 12	18.202 67 44 20 12	18.472 68 44 20 12	17.402 69 44 20 12	70 44 20 12
MI Ax Sp Hi	h. Base le acing tch	M o. e L X X' C	19.136 61 40 20 8	19.002 62 40 20 8	19.073 63 40 20 8	18.214 64 40 20 8	18.207 65 40 20 8	18.224 66 44 20 12 8	18.202 67 44 20 12 8	18.472 68 44 20 12 8	17.402 69 44 20 12 8	70 44 20 12 8
Wi Ax Sp Hi Lo On	h. Base le acing tch ad	M o. e L X X' C a ₁ a ₂	19.136 61 40 20 8 8 .10 .20	19.002 62 40 20 8 8 .10 .30	19.073 63 40 20 8 8 .10 .40	18.214 64 40 20 8 8 .20 .20	18.207 65 40 20 8 8 .20 .30	18.224 66 44 20 12 8 .10 .20	18.202 67 44 20 12 8 .10 .30	18.472 68 44 20 12 8 .10 .40	17.402 69 44 20 12 8 .20 .20	70 44 20 12 8 .20 .30
Wi Ax Sp Hi Lo On	h. Base le acing tch ad	M o. e L X X' C a ₁ a ₂ a ₃	19.136 61 40 20 8 8	19.002 62 40 20 8 8	19.073 63 40 20 8 8 .10 .40 .50	18.214 64 40 20 8 8 .20 .20 .60	18.207 65 40 20 8 8 .20 .30 .50	8 .10 .20 .70	8 .10 .30 .60	18.472 68 44 20 12 8 .10 .40 .50	17.402 69 44 20 12 8 .20 .20 .60	17.595 70 44 20 12 8 .20 .30 .50
Wi Ax Sp Hi Lo On	h. Base le acing tch ad	M o. e L X X' C a ₁ a ₂	19.136 61 40 20 8 8 .10 .20 .70	19.002 62 40 20 8 8 .10 .30 .60	19.073 63 40 20 8 8 .10 .40	18.214 64 40 20 8 8 .20 .20	18.207 65 40 20 8 8 .20 .30	18.224 66 44 20 12 8 .10 .20	18.202 67 44 20 12 8 .10 .30	18.472 68 44 20 12 8 .10 .40	17.402 69 44 20 12 8 .20 .20	70 44 20 12 8 .20 .30
Wi Ax Sp Hi Lo On	h. Base le acing tch ad les	M o. e L X X' C a1 a2 a3 G N B M G	19.136 61 40 20 8 8 .10 .20 .70 4-5 4 .998L .748 3-5	19.002 62 40 20 8 8 .10 .30 .60 2 2 0 .750	19.073 63 40 20 8 8 .10 .40 .50 2 2 0 1.000 2-3	18.214 64 40 20 8 8 .20 .60 4–5 5 1.000R .640 3–5	18.207 65 40 20 8 8 .20 .30 .50 2 2 0 .750 2-3	18.224 66 44 20 12 8 .10 .20 .70 4-5 4 .998L .748	18.202 67 44 20 12 8 .10 .30 .60 2 2 0 .750 2–3	18.472 68 44 20 12 8 .10 .40 .50 2 2 0 1.000 2-3	17.402 69 44 20 12 8 .20 .60 4-5 5 1.000R .640 4-5	17.595 70 44 20 12 8 .20 .30 .50 2 2 0 .750 2–3
Wi Ax Sp Hi Lo On	h. Base le acing tch ad les	M o. e L X X' C a1 a2 a3 G N B M G N B M M	19.136 61 40 20 8 8 .10 .20 .70 .70 4–5 4 .998L .748 3–5 4 .666R 2.118	19.002 62 40 20 8 8 .10 .30 .60 2 2 0 .750 3-5 4 .667R 1.814	19.073 63 40 20 8 8 .10 .40 .50 2 2 0 1.000 2–3 2 1.178L 2.206	18.214 64 40 20 8 8 .20 .20 .60 4-5 5 1.000R .640 3-5 4 .667R 1.814	18.207 65 40 20 8 8 .20 .30 .50 2 2 0 .750 2-3 1.431L 1.715	18.224 66 44 20 12 8 .10 .20 .70 4–5 4 .998L .748 4–5 4 .998L 1.892	18.202 67 44 20 12 8 .10 .30 .60 2 2 0 .750 2-3 1.600L 1.764	18.472 68 44 20 12 8 .10 .40 .50 2 2 0 1.000 2-3 1.178L 2.206	17.402 69 44 20 12 8 .20 .20 .60 4-5 5 1.000R 1.620	17.595 70 44 20 12 8 .20 .30 .50 2 2 0 .750 2-3 1.431L 1.715
Wi Ax Sp Hi Lo On	h. Base le acing tch ad les	M o. e L X X C a1 a2 a3 G N B M G N B M G N B M G N B M	19.136 61 40 20 8 8 .10 .20 .70 4-5 4 .9981 .748 3-5 4 666 2.118 2-5 4 2.296R	19.002 62 40 20 8 8 .10 .30 .60 2 0 .750 3-5 4 .667R 1.814 2-5 3 .889L	19.073 63 40 20 8 8 .10 .40 .50 2 1.000 2 -3 2 1.178L 2.206 2 -4 2 2.723L	18.214 64 40 20 8 8 .20 .60 4-5 1.000R .640 3-5 4 .667R 1.814 2-5 4 2.500R	18.207 65 40 20 8 8 .20 .30 .50 2 2 0 .750 2-3 2 1.431L 1.715 2-5 3 583L	18.224 66 44 20 12 8 .10 .20 .70 4–5 4 .998L .748 4–5 4 .998L 1.892 3–5 4	18.202 67 44 20 8 .10 .30 .60 2 2 0 .750 2-3 2 1.600L 1.764 2-3 1.600L	18.472 68 44 20 12 8 .10 .50 2 0 1.000 2-3 2 1.178L 2.206 2-3 2 1.178L	17.402 69 44 20 12 8 .20 .60 4–5 5 1.000R .640 4–5 1.000R 1.620 3–5 1.333R	17.595 70 44 20 8 .20 .30 .50 2 0 .750 2 1.431L 1.715 2-3 1.431L
Wi Ax Sp Hi Lo On	h. Base ele acing tch ad eles	M Oo. e L X X X' C a1 a2 a3 G N B M G N B M G N B M M M M M M M M M M M M M M M M M M	19.136 61 40 20 8 8 .10 .20 .70 4-5 .998L .748 3-5 4 .666R 2.118 2-5 4 2.296R 3.910	19.002 62 40 20 8 8 .10 .30 .60 2 2 0 .750 3-5 4 .667R 1.814 2-5 3 8.89L 3.573	19.073 63 40 20 8 8 .10 .40 .50 2 2 0 1.000 2 -3 2 1.178L 2.206 2 -4 2 2 -4 2 3.683	18.214 64 40 20 8 8 .20 .20 .60 4-5 1.000R .640 3-5 4 .667R 1.814 2-5 4 3.366	18.207 65 40 20 8 8 .20 .30 .50 2 2 2 1.431L 1.715 2-5 3 583L 3.143	18.224 66 44 20 12 8 .10 .20 .70 4-5 4 .998L .748 4-5 4 .998L 1.892 3-5 1 332R 3.428	18.202 67 44 20 8 .10 .30 .60 2 2 2 0 .750 2 -3 2 1.600L 1.764 2 -3 2 1.600L 2.993	18.472 68 44 20 12 8 .10 .40 .50 2 2 0 1.000 2-3 2 1.178L 2.206 2-3 1.178L 3.611	17.402 69 44 20 12 8 .20 .60 4–5 5 1.000R .640 4–5 5 1.000R 1.620 3–5 4.000R 1.620 3–5 1.000R 2.0	17.595 70 44 20 12 8 .20 .30 .50 2 2 0 .750 2-3 2 1.431L 1.715 2-3 2 1.431L 2.866
Wil Axx Sp Hi Loo On Axx	h. Base ele acing tch ad eles	M Oo. P L X X C A1 A2 A3 G N B M G N B M G N B M B M B M B M B M B M B M B B	19.136 61 40 20 8 8 .10 .20 .70 4-5 4 .998L .748 3-5 4 .666R 2.118 2-5 4 2.296R	19.002 62 40 20 8 8 .10 .30 .60 2 2 0 .750 3-5 4 .667R 1.814 2-5 3 8.89L 3.573 2-5 3 8.89L	19.073 63 40 20 8 8 .10 .40 .50 2 2 0 1.000 2 -3 2 1.178L 2.206 2 -4 2 2.723L 3.683 2 -5 3 0.74L	18.214 64 40 20 8 8 .20 .20 .60 4-5 1.000R .640 3-5 4 .667R 1.814 2-5 4 2.500R 2-5 4 2.500R	18.207 65 40 20 8 8 .20 .30 .50 2 2 2 1.4311L 1.715 2-5 3 583L 3.143 2-5 3 583L	18.224 66 44 20 12 8 .10 .20 .70 4–5 4 .998L .748 4–5 4 .998L 1.892 3–5 4 3.32R 3.428 2–5 4 3.258R	18.202 67 44 20 8 .10 .30 .60 2 2 0 .750 2 -3 1.600L 1.764 2 -3 2 1.600L 2.993 2 -5 3 1.778L	18.472 68 44 20 12 8 .10 .40 .50 2 2 0 1.000 2-3 2 1.178L 2.206 2-3 1.178L 2.3.611 2-4 2 3.176L	17.402 69 44 20 12 8 .20 .60 4-5 5 1.000R .640 4-5 5 1.000R 1.620 3-5 4 1.333R 2.936 2-5 4 3.500R	17.595 70 44 20 12 8 .20 .30 .50 2 2 0 .750 2-3 2 1.431L 1.715 2-3 2 1.431L 2.866 2-5 3 1.415L
Wil Axx Sp Hi Loo On Axx	h. Base le acing teh ad les 10 20 30	M	19.136 61 40 20 8 8 10 20 70 4-5 4 9981 748 2-5 4 2.296R 3.910 2-5 4 2.296R 6.120 2-5	19.002 62 40 20 8 8 .10 .30 .60 2 2 0 .750 3-5 4 .667R 1.814 2-5 3 .889L 3.573 2-5 5 8.889L 5.818	19.073 63 40 20 8 8 .10 .40 .50 2 1.000 2-3 2 1.178L 2.206 2-4 2 2.723L 3.683 2-5 3 .074L 5.734	18.214 64 40 20 8 8 8 .20 .20 .60 4-5 5 1.0000 .64 .667R 1.814 2-5 4 2.500R 3.366 2-5 4 5.325 4 5.325 2-5	18.207 65 40 20 8 8 .20 .30 .50 2 2 0 .750 2-3 2 1.431L 1.715 2-5 3 583L 3.143 2-5 3 .583L 5.141 2-5	18.224 66 44 20 12 8 .10 .20 .70 4-5 4 .998L .1.892 3-5 4 1.332R 3.428 2-5 4 3.258R 5.374 2-5	18.202 67 44 20 8 .10 .30 .60 2 2 0 .750 2-3 2 1.764 2-3 1.600L 2.993 2-5 3 1.778L 5.071	18.472 68 44 20 12 8 .10 .40 .50 2 0 1.000 2-3 2 1.178L 2.206 2-3 2 1.178L 2.506 2-3 1.178L 2.178L 2.1761 2.178L 3.178L 3.17	17.402 69 44 20 12 8 .20 .60 4-5 1.000R .640 4-5 1.000R 1.620 3-5 4.333R 2.936 2-5 4	17.595 70 44 20 8 .20 .30 .50 2 0 .750 2-3 2 1.431L 2.866 2-5 3 1.415L 4.508
Wi Ax Sp Hi Lo On	h. Base ele acing tch ad eles 10 20	M	19.136 61 40 20 8 8 .10 .20 70 4-5 4 .998L .748 3-5 4 .666R 2.118 2.296R 3.910 2-5 4 2.296R 6.120	19.002 62 40 20 8 8 .10 .30 .60 .750 3-5 4.667R 1.814 2-5 3.889L 3.573 2-5 3.889L 5.818	19.073 63 40 20 8 8 .10 .40 .50 2 2 1,000 2 -3 2,1781 2.286 2 -4 2 2.7231 3.683 2 -5 3 0741 5.734	18.214 64 40 20 8 8 .20 .20 .60 4-5 1.000R .640 3-5 4 .667R 1.814 2-5 4 2.500R 2-5 4 2.500R 5.325	18.207 65 40 20 8 8 .20 .30 .50 2 2 1.431L 1.715 2-5 3 5.583L 3.143 2-5 3 588L 5.141	18.224 66 44 20 12 8 .10 .20 .70 4-5 4 .998L .748 4-5 4 .998L 1.892 3-5 4 1.332R 3.428 2-5 4 5.374	18.202 67 44 20 8 .10 .30 .60 2 2 0 .750 2-3 1.600L 1.764 2-3 2 1.600L 2.993 2-5 3 1.778L 5.071	18.472 68 44 20 12 8 .10 .40 .50 2 2 0 1.000 2-3 2.1.178L 2.206 2-3 2.1.78L 2.4 3.611 2-4 5.187	17.402 69 44 20 12 8 .20 .60 4-5 1.000R 1.640 4-5 1.000R 1.620 2-5 4 1.333R 2.936 2-5 4	17.595 70 44 20 12 8 .20 .30 .50 2 2 0 .750 2-3 1.431L 1.715 2-3 2.866 2-5 3 1.415L 4.508
Will Axx Sp Hi Lo On Ax	h. Base le acing teh ad les 10 20 30	M oo. e L XX C a1 a2 a3 G N B M B M G N B M B M G N B M B M G N B M B M G N B M B M G N B M B M G N B M B M B M G N B M B M B M B M B M B M B M B M B M B	19.136 61 40 20 8 8 10 20 70 4-5 4 998L 748 2-5 4 2.296R 3.910 2-5 4 2.296R 8.347 2-5 4 2.296R 8.347	19.002 62 40 20 8 8 .10 .30 .60 2 2 0 .750 3-5 4 .667R 1.814 2-5 3 8.891 2.55 3 8.891 8.894 1.818 2-5 3 8.891 8.894 1-5 3 8.891 8.894 1-5 3 8.891 8.894 8.895	19.073 63 40 20 8 8 10 20 1.000 2-3 2.1.178L 2.206 2-4 2.2.23L 3.683 2-5 3.074L 5.734 2-5 3.074L 7.984 1-5 2	18.214 64 40 20 8 8 8 .20 .20 .60 4-5 5 1.0000R .640 3-5 4 2.500R 3.366 2-5 4 2.500R 7.300 1-5 3	18.207 65 40 20 8 8 .20 .30 .50 2 2 0 .750 2-3 2 1.431L 1.715 2-5 3 .583L 3.143 2-5 3 .583L 7.139 1-5 3	18.224 66 44 20 12 8 .10 .20 .70 4-5 4 .998L 1.892 3-5 4 1.332R 3.428 2-5 4 3.258R 7.577 2-5 4	$\begin{array}{c} 18.202 \\ \hline 67 \\ 44 \\ 20 \\ 12 \\ 8 \\ .10 \\ .30 \\ .60 \\ 2 \\ 2 \\ 0 \\ .750 \\ 2-3 \\ 2 \\ 1.600L \\ 1.764 \\ 2-3 \\ 2 \\ 1.600L \\ 2.993 \\ 3 \\ 1.778L \\ 7.807 \\ 1-5 \\ 3 \\ \end{array}$	18.472 68 44 20 12 8 .10 .40 .50 2 0 1.000 2-3 2 1.178L 2.206 2-3 2.1.78L 3.611 2-4 2 3.176L 5.187 1-5 2 3.382L 7.390 1-5 2	17.402 69 44 20 12 8 .20 .60 4-5 1.000R 1.620 3-5 4 1.333R 2.936 4 1.333R 2.956 4 3.500R 4.645 2-5 4 3.500R 6.596 1.596	17.595 70 44 20 12 8 .20 .30 .50 2 2 0 .750 2-3 2 1.431L 2.866 2-5 3 1.415L 4.508 2-5 3 1.415L 6.500 1-5 2
Will Axx Sp Hi Lo On Ax	h. Base le acing teh acing teh ad les les acing to had ad les les les les les les les les les les	M oo. e L XX' C a1 a2 a3 G N B M G N B M G N B M G N B M G N B M G G R G R G R G R G R G R G R G R G R	19.136 61 40 20 8 8 .10 .20 .70 4-5 4 .998L .748 3-5 4 .666R 2.118 2-5 4 2.296R 6.120 2-5 4 2.296R 8.347 2-56	19.002 62 40 20 8 8 .10 .30 .60 2 0 .750 3-5 4 .667R 1.814 2-5 3.889L 5.818 2-5 3 .889L 5.818 2-5 8 8.89L 5.818	19.073 63 40 20 8 8 .10 .40 .50 2 2 0 1.000 2 -3 2 1.178L 2.206 2 -4 2 2.723L 3.683 2 -5 3 .074L 5.734 2 -5 3 .074L 7.984	18.214 64 40 20 8 8 8 .20 .60 4-5 5 1.000R .640 3-5 4 .667R 1.814 2-5 4 2.500R 5.325 2-5 4 2.500R 7.300 1-5	18.207 65 40 20 8 8 .20 .30 .50 2 2 0 .750 2-3 1.431L 1.715 2-5 3.583L 3.143 2-5 3 .583L 5.141 2-5 3 .583SL 5.141 1-5	18.224 66 44 20 12 8 .10 .20 .70 4-5 4 .998L .748 4-5 4 .998L 1.892 3-5 4 3.258R 5.374 2-5 4 3.258R 7.577 2-5	18.202 67 44 20 8 .10 .30 .60 2 2 0 .750 2 -3 2 1.600L 2.993 2-5 3 1.778L 5.071 2-5 3 1.778L 7.307	18.472 68 44 20 12 8 .10 .40 .50 2 0 1.000 2-3 2 1.178L 2.206 2-3 1.178L 5.187 1-5 2 3.332L 7.390 1-5	17.402 69 44 20 12 8 .20 .60 4-5 5 1.000R .640 4-5 5 1.000R 1.620 3-5 4 3.500R 4.645 2-5 4 3.500R 6.6506 6.596 1.500R	17.595 70 44 20 44 20 .30 .50 2 2 0 .750 2-3 2 1.431L 2.866 2-5 3 1.415L 4.508 2-5 3 1.415L 6.500 1-5
Wil Axx Sp Hi Loo On Axx	h. Base le acing teh add les 10 20 30 40 50	M o. c. L X X X C a ₁ a ₂ a ₃ G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G O N B M	19.136 61 40 20 8 8 .10 .20 .70 4-5 4 .998L .748 3-5 4 666R 2.118 2-5 4 2.296R 3.910 2-5 4 2.296R 8.347 2-5 4 2.296R 10.581	19.002 62 40 20 8 8 .10 .30 .60 2 2 0 .750 3-5 4 .667R 1.814 2-5 3 8.891L 3.573 2-5 3 8.891L 5.818 2-5 3 8.894 1-5 3 600R 10.406	19.073 63 40 20 8 8 .10 .40 .50 2 2 0 1.000 2-3 2 1.178L 2.206 2-4 2 2.723L 3.683 2-5 3 .074L 5.734 2-5 3 .074L 7.984 1-5 2 2.6664 1-5	18.214 64 40 20 8 8 8 .20 .20 .60 4-5 5 1.0000R .640 2-5 4 2.500R 3.365 2-5 4 2.500R 7.300 1-5 3 1.600R 9.443 1-5	18.207 65 40 20 8 8 .20 .30 .50 2 2 0 .750 2-3 1.431L 1.715 2-5 3 .583L 5.141 2-5 3 .583L 7.139 1-5 3 2.334R 9.425	18.224 66 44 20 12 8 .10 .20 .70 4-5 4 .998L 1.892 3-5 4 1.3322R 3.428 2-5 4 3.258R 7.577 2-5 4 3.258R 9.795 1-5	$\begin{array}{c} 18.202 \\ \hline 67 \\ 44 \\ 20 \\ 12 \\ 8 \\ .10 \\ .30 \\ .60 \\ 2 \\ 2 \\ 0 \\ .750 \\ 2 \\ 2 \\ .750 \\ 2 \\ 2 \\ .1.764 \\ 2 \\ -3 \\ 2 \\ 1.600L \\ 1.764 \\ 2 \\ -3 \\ 2 \\ 1.600L \\ 2.993 \\ 3 \\ 1.778L \\ 7.807 \\ 1 \\ -5 \\ 3 \\ .200L \\ 9.601 \\ 1 \\ -5 \\ \end{array}$	18.472 68 44 20 12 8 .10 .40 .50 2 0 1.000 2-3 2 1.178L 2.206 2-3 2.1.78L 3.611 2-4 2 3.176L 5.187 1-5 2 3.332L 7.390 1-5 2 3.332L 9.853 1-5	17.402 69 44 20 .20 .60 4-5 1.000R 1.620 3-5 4 1.333R 2.936 4 1.333R 2.936 4 3.500R 4.5 1.620 3.5 4 3.5 4 3.600R 6.596 1.58 8.611 1.58 8.611 1.58 8.611 1.58 8.611 1.58 8.611 1.58 8.611 1.58 8.611 1.58 8.611	17.595 70 44 20 12 8 .20 .30 .50 2 2 0 .750 2-3 2 1.431L 1.715 2-8 1.415L 4.508 2-5 3 1.415L 6.500 1-5 2 2.332L 8.759
Will Axx Sp Hi Lo On Ax	h. Base le acing teh acing teh ad les les acing to had ad les les les les les les les les les les	M o. e L XX C a1 a2 a3 G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M B M G N B M G N B M B M G N B M B M G N B M B M G N B M B M B M B M B M B M B M B M B M B	19.136 61 40 20 8 8 10 20 70 4-5 4 998L 748 3-5 4 6668 2.118 2-5 4 2.296R 6.120 2-5 4 2.296R 8.347 2-5 4 2.296R 8.347 1.55 3 1.32L	19.002 62 40 20 8 8 .10 .30 .60 2 2 0 .750 3-5 4 .667R 1.814 2-5 3.889L 3.573 2-5 3 .889L 5.818 2-5 3 .889L 5.818 1-5 3 0.604 1-5 3 600R 10.406 1-5 3 600R	19.073 63 40 20 8 8 .10 .40 .50 2 2 0 1.000 2-3 2 1.178L 2.206 2-4 2 2.723L 3.683 2-5 3 .074L 5.734 2-5 3 .074L 1-5 2 2 2.666L 1.0452 1-5 2 2.666L	18.214 64 40 20 8 8 .20 .60 4-5 5 1.000R .640 3-5 4 .667R 1.814 2-5 4 2.500R 5.325 2-5 4 2.500R 7.300 1-5 3 1.600R 9.443 1-5 3 1.600R	18.207 65 40 20 8 8 .20 .30 .50 2 2 0 .750 2 -3 1.431L 1.715 2-5 3 5.83L 5.141 2-5 3 .583L 5.141 2-5 3 2.334R 9.425 1-5 3 2.334R	18.224 66 44 20 12 8 .10 .20 .70 4-5 4 .998L .748 4-5 4 .998L 1.892 3-5 4 3.258R 5.374 2-5 4 3.258R 7.577 4 3.258R 7.577 3 1.068L	18.202 67 44 20 8 .10 .30 .60 2 2 0 .750 2 -3 2 1.600L 2.993 2.758 3 1.778L 5.071 2.5 3 1.778L 7.807 1-5 3 2.200L 9.601 1-5 3 2.200L	18.472 68 44 20 12 8 .10 .40 .50 2 2 0 1.000 2-3 2 1.178L 2.206 2-3 2.178L 5.187 1-5 2 3.332L 7.390 1-5 2 3.332L 9.853 1-5 2 3.332L 9.853	17.402 69 44 20 12 8 .20 .60 4-5 5 1.000R .640 4-5 5 1.000R 1.620 3-5 4 3.500R 4.645 2-5 4 3.500R 6.596 1-5 3 8.600R 8.611 1-5 3 8.600R	17.595 70 44 20 44 20 .30 .50 2 2 0 .750 2-3 2 1.431L 1.715 2-8 2 1.431L 2.866 2-5 3 1.415L 6.500 1-5 2 2.332L 8.759 1-5 2 2.332L
Will Axx Sp Hi Lo On Ax	h. Base le acing teh add les 10 20 30 40 50	M oo. e L XX C G a1 a2 a3 G N B M B M G N B M B M B M G N B M B M B M B M B M B M B M B M B M B	19.136 61 40 20 8 8 .10 .20 .70 4-5 4 .9981L .748 3-5 4 666R 2.118 2-5 4 2.296R 3.910 2-5 4 2.296R 6.120 2-5 4 2.296R 6.120 1.581 1-5 3	19.002 62 40 20 8 8 .10 .30 .60 2 2 0 .750 3-5 4 .667R 1.814 2-5 3 8.891L 5.818 2-5 3 8.894 1-5 3 8.891L 5.008 1-5 3 0.008 1-5 3 0.406 1-5 3	$\begin{array}{c} 19.073 \\ \hline 63 \\ 40 \\ 20 \\ 8 \\ 8 \\ .10 \\ .40 \\ .50 \\ 2 \\ 2 \\ 0 \\ 1.000 \\ 2-3 \\ 2 \\ 1.178L \\ 2.206 \\ 2-4 \\ 2 \\ 2.723L \\ 3.683 \\ 2-5 \\ 3 \\ .074L \\ 5.734 \\ 2-5 \\ 3 \\ .074L \\ 5.7984 \\ 1-5 \\ 2 \\ 2.6666L \\ 10.452 \\ 1-5 \\ 2 \end{array}$	18.214 64 40 20 8 8 8 .20 .60 4-5 1.000R .640 3-5 4 .667R 1.814 2-5 4 2.500R 3.366 2-5 4 2.500R 5.325 4 2.500R 5.325 3 1.600R 9.443 1-5 3	$\begin{array}{c} 18.207 \\ 65 \\ 40 \\ 20 \\ 8 \\ 8 \\ .20 \\ .30 \\ .50 \\ 2 \\ 2 \\ 0 \\ .750 \\ 2-3 \\ 2 \\ 1.431L \\ 1.715 \\ 2-5 \\ 3 \\ .583L \\ 3.143 \\ 2-5 \\ 3 \\ .583L \\ 5.141 \\ 2-5 \\ 3 \\ .583L \\ 5.141 \\ 2-5 \\ 3 \\ .583L \\ 5.141 \\ 2-5 \\ 3 \\ .583L \\ 5.141 \\ 2-5 \\ 3 \\ .583L \\ 5.141 \\ 2-5 \\ 3 \\ .583L \\ 5.141 \\ 2-5 \\ 3 \\ .583L \\ 5.141 \\ 2-5 \\ 3 \\ .583L \\ 5.141 \\ 2-5 \\ 3 \\ .583L \\ 5.141 \\ 2-5 \\ 3 \\ .583L \\ 5.141 \\ 1-5 \\ 3 \\ .583L \\ 1-5 \\ .583L \\ 1-5 \\ .583L \\ 1-5 \\ .583L$	18.224 66 44 20 12 8 .10 .20 .70 4-5 4 .998L .1.892 3-5 4 3.258R 5.374 2-5 4 3.258R 5.374 3.258R 5.375 4 3.258R 5.374 3.258R 5.374 3.258R 5.374 3.258R 5.374 3.258R 5.374 3.258R 5.374	$\begin{array}{c} 18.202 \\ \hline 67 \\ 44 \\ 20 \\ 20 \\ 12 \\ 8 \\ .10 \\ .30 \\ .60 \\ 2 \\ 2 \\ 0 \\ .750 \\ 2-3 \\ 2 \\ 1.600L \\ 1.764 \\ 2-3 \\ 2 \\ 1.600L \\ 2.993 \\ 2-5 \\ 3 \\ 1.778L \\ 5.071 \\ 2-5 \\ 3 \\ 1.778L \\ 7.307 \\ 1-5 \\ 3 \\ .200L \\ 9.601 \\ 1-5 \\ 3 \end{array}$	$\begin{array}{c} 18.472\\ \hline 68\\ \hline 44\\ \hline 20\\ \hline 20\\ \hline 12\\ \hline 8\\ \hline .10\\ \hline .50\\ \hline 2\\ \hline 0\\ \hline .000\\ \hline .2-3\\ \hline 2\\ \hline 1.178L\\ \hline 2.206\\ \hline 2-3\\ \hline 2.178L\\ \hline 3.611\\ \hline 2-4\\ \hline 2\\ \hline 3.332L\\ \hline 7.390\\ \hline 1-5\\ \hline 2\\ \hline 3.332L\\ \hline 9.853\\ \hline 1-5\\ \hline 2\\ \hline \end{array}$	17.402 69 44 20 12 8 .20 .60 4-5 1.000R .640 4-5 1.000R 1.620 3-5 4 1.333R 2.936 2-5 4 3.500R 4.645 2-5 4 3.500R 8.611 1-5 3	17.595 70 44 20 8 .20 .30 .50 2 0 .750 2-3 2 1.431L 2.866 2-5 3 1.415L 4.508 2-5 3 1.415L 4.508 2-5 3 1.415L 8.759 1-5 2
Will Axx Sp Hi Lo On Ax	h. Base le acing teh add les 10 20 30 40 50	M o. e L X X C a ₁ a ₂ a ₃ G N B M B M G N B M B M B M G N B M B M B M G N B M B M B M B M B M B M B M B M B M B	19.136 61 40 20 8 8 10 20 70 4-5 4 998L 748 2-5 4 2.296R 3.910 2-5 4 2.296R 8.347 2-5 4 2.296R 10.581 1-5 3 132L 15.468	19.002 62 40 20 8 8 .10 .30 .60 2 2 0 .750 3-5 4 .667R 1.814 2-5 3 8.891 3.573 2-5 3 8.891 8.604 1-5 3 .600R 10.406 1-5 3 600R 15.405	19.073 63 40 20 8 8 .10 .40 .50 2 2 0 1.000 2-3 2 1.178L 2.206 2-4 2.723L 3.683 2-5 3.074L 5.734 2-5 3.074L 10.452 1-5 2 2.666L 1-5 2 2.666L 15.423	18.214 64 40 20 8 8 8 .20 .20 .60 4-5 5 1.0000R .640 3-5 4 2.500R 3.365 2 4 2.500R 7.300 1-5 3 1.600R 9.443 1-5 3 1.600R 1.4432	18.207 65 40 20 8 8 .20 .30 .50 2 2 0 .750 2-3 2 1.431L .715 2-5 3 .583L 5.141 2-5 3 .583L 7.139 1-5 3 2.334R 9.425 1-5 3 1-5 3 1-5 3 2.334R 14.402	18.224 66 44 20 12 8 .10 .20 .70 4-5 4 .998L 1.892 3-5 4 1.332R 3.428 2-5 4 3.258R 7.577 2-5 4 3.258R 9.795 1-5 3 1.068L 14.546	18.202 67 44 20 12 8 .10 .30 .60 2 0 .750 2-3 2 1.600L 2.93 1.778L 2.95 3 1.778L 7.307 1-5 3 2.200L 9.601 1-5 3 2.200L 9.601 1-5 3 2.00L	18.472 68 44 20 12 8 .10 .40 .50 2 0 1.000 2-3 2 1.178L 3.611 2-4 3.6176L 5.187 1-5 2 3.332L 7.390 1-5 2 3.332L 9.853 1-5 2 3.332L 9.853	17.402 69 44 20 12 8 .20 .60 4-5 5 1.000R .64-5 1.000R 1.620 3-5 4 1.333R 2.936 2-5 4 3.500R 4.645 2-5 3.800R 8.611 1-5 3 8.00R 1.620	17.595 70 44 20 12 8 .20 12 8 .20 .30 .50 2 2 0 .750 2-3 2 1.431L 1.715 2-3 1.431L 2.866 2-5 3 1.415L 6.500 1-5 2 2.332L 8.759 1-5 2 2.332L 1.750

	ick No		71 48	72 48	73 48	74 48	75 48	76 44	77 44	78 44	79	80 44
Ax.		X	20	20	20	20	20	20	20	20	20	20
Spa	cing	X'	16	16	16	16	16	- 8	8	8	8	8
Hit Loa		C aı	.10	.10	.10	.20	.20	.10	.10	.10	.20	.20
On Ax		a ₂ a ₃	.20 .70	.30 .60	.40	.20	.30	.20 .70	.30	.40	.60	.30 .50
		G	4-5	2	2	4-5	2	4–5	2	2	4-5	2
Ì	10	N B	$^4_{.998L}$	2 0	2	$^{4}_{1.000L}$	$\frac{2}{0}$	$^{4}_{.998L}$	$\frac{2}{0}$	$\frac{2}{0}$	$_{1.000\mathrm{R}}^{5}$	$\frac{2}{0}$
}		M	.748	.750	1,000	.640	.750	.748	.750	1.000	.640	.73
	20	G N	$^{4-5}_{4}$	$^{2 ext{}3}_2$	$^{2-3}_{2}$	4-5 4	$^{2-3}_{2}$	$\frac{3-5}{4}$	$^{3-5}_4$	$\frac{2}{2}$	3–5 4	35 4
		B M	.998L 1.892	1.600L 1.764	1.178L 2.206	$1.000L \\ 1.620$	1.431L 1.715	0.666R 0.118	.667R 1.814	$\frac{0}{2.000}$.667R 1.814	.668 1.5
ļ	30	G N	$^{4-5}$	$_{2}^{-3}$	$^{2-3}_2$	$^{4-5}_4$	$^{2-3}_2$	$^{3-5}_{4}$	$_{4}^{3-5}$	$^{2-3}_2$	$^{\mathbf{3-5}}_{4}$	3-5 4
		В	.998L	1.600 L	1.178L	1.000L	1.431L	.666R	$.667\mathbf{R}$	1.767L	.667R	.668
- {		M G	3.052	$\frac{2.993}{2-5}$	$\frac{3.611}{2-3}$	$\frac{2.613}{3-5}$	$\frac{2.866}{1-3}$	3.862 2-5	$\frac{3.309}{2-5}$	$\frac{3.310}{2-5}$	$\frac{3.309}{2-5}$	$\frac{2.7}{2-5}$
١	40	N	$^{4}_{1.997R}$	$^3_{2.667 \mathbf{L}}$	2	4 2.000R	2	4	3	3	4	3
9		B M	4.740	4.360	1.178L 5.022	4.060	1.997R 4.069	2.740R 5.771	5.22L	0.816R $0.816R$	3.000R 4.980	.168 4.5
Span-reer	50	G N	2-5 4	$^{2-5}_{3}$	1-5 2	2-5 4	2-5 3	2-5 4	$\frac{2-5}{3}$	2 -5	2–5 4	25 3
מ	50	В	4.220R	$2.667 \mathbf{L}$	3.998L	4.500R	2.248L	2.740R	.222L	.816R	3.000R	.168
Ì		M G	6.840	6.578 1-5	$\frac{6.822}{1-5}$	$\frac{5.924}{2-5}$	$\frac{5.883}{1-5}$	$\frac{7.987}{2.5}$	7.451	$\frac{7.196}{1-5}$	6.944 2-5	$\frac{6.5}{2-5}$
1	60	N	4	3	2	4	2	4	3	2	4	3
		B M	$^{4.220 m R}_{9.037}$	1.000L 8.817	9.268	4.500R 7.870	$\frac{2.998L}{8.152}$	2.740R 10.215	0.222L 0.701	3.666L 9.558	3.000R 8.920	.168 8.5
1		G	1–5	1-5	1-5	1–5	1-5	1-5	1-5	1-5	15	1-5
	80	N B	$^{3}_{2.002L}$	$^{3}_{1.000 m L}$	$\frac{2}{3.998}$ L	$\frac{3}{0}$	$\frac{2}{2.998L}$	3 .466 $ m R$	3 1.400R	$^{2}_{3.666L}$	$^{3}_{2,400R}$	3.334
ļ		<u>M</u> _	13.648	13.813	14.202	12.800	13.114	14.869	14.625	14.502	13.672	13.4
	100	G N	1–5 3	$^{1-5}_3$	$^{1-5}_{2}$	$^{1-5}_3$	$^{1-5}_2$	15 3	$^{1-5}_3$	$^{1-5}_2$	$^{1-5}_3$	1-5 3
}		В	2.002L	1.000L	3.998L	0	2.998L	.466R	1.400R	3.666L	2.400R	3,334
			18.658	18.810	19.162	17.800	18.092	19.868	19.620	19.468	18.658	18.4
[r	ick No	 o.	18.638	18.810 82	19.162 83	17.800 84	18.092 85	19.868	19.620 87	19.468	18.658	
W}	ı. Bası	o. e L	81 48	82 48	83 48	84 48	85 48	86 52	87 52	88 52	89 52	90 52
Wł Ax	ı. Bası le	e L X	81 48 20	82 48 20	83 48 20	84 48 20	85 48 20	86 52 20	87 52 20	88 52 20	89 52 20	90 52 20
Wł Ax Spa	ı. Bası	o. e L	81 48	82 48	83 48	84 48	85 48	86 52	87 52	88 52	89 52	90 52 20
Wh Ax Spa Hit	n. Base le acing ch ad	o. e L X X' C a ₁	81 48 20 12 12 12	82 48 20 12 12 .10	83 48 20 12 12 12	84 48 20 12 12 12 .20	85 48 20 12 12 	86 52 20 16 12 .10	87 52 20 16 12 .10	88 52 20 16 12 .10	89 52 20 16 12 .20	90 52 20 10 12
Wh Spa Hit Loa On	n. Base le acing ch ad	o. e L X X' C	81 48 20 12 12	82 48 20 12 12	83 48 20 12 12	84 48 20 12 12	85 48 20 12 12	86 52 20 16 12	87 52 20 16 12	88 52 20 16 12	89 52 20 16 12	90 55 20 10 15 .20 .30
Wh Spa Hit Loa On	n. Base le acing cch ad les	e L X X' C a ₁ a ₂ a ₃ G	81 48 20 12 12 .10 .20 .70	82 48 20 12 12 .10 .30 .60	83 48 20 12 12 .10 .40 .50	84 48 20 12 12 .20 .20 .60 4-5	85 48 20 12 12 .20 .30 .50	86 52 20 16 12 .10 .20 .70 4-5	87 52 20 16 12 .10 .30 .60	88 52 20 16 12 .10 .40 .50	89 52 20 16 12 .20 .20 .60 4-5	90 55 20 10 11 20 .30 .50
Wh Spa Hit Loa On	n. Base le acing cch ad	o. e L X X' C a ₁ a ₂ a ₃ G N B	81 48 20 12 12 .10 .20 .70 4-5 4 .998L	82 48 20 12 12 .10 .30 .60 2 2 0	83 48 20 12 12 .10 .40 .50 2 2	84 48 20 12 12 .20 .20 .60 4–5 5 1.000R	85 48 20 12 12 .20 .30 .50	86 52 20 16 12 .10 .20 .70 4-5 4 .998L	87 52 20 16 12 .10 .30 .60	88 52 20 16 12 .10 .40 .50 2 0	89 52 20 16 12 .20 .60 4-5 4 1.000L	90 55 20 10 15 .20 .30 .50 2
Ax Spa Hit Loa On	n. Base le acing cch ad les	o. e L X X X' C a1 a2 a3 G N B M	81 48 20 12 12 10 20 .70 4-5 4 .998L .748	82 48 20 12 12 .10 .30 .60 2 2 0	83 48 20 12 12 .10 .40 .50 2 0 1.000	84 48 20 12 12 .20 .60 4-5 5 1.000R .640	85 48 20 12 12 .20 .30 .50 2 2 0 .750	86 52 20 16 12 .10 .20 .70 4-5 4 .998L .748	87 52 20 16 12 .10 .30 .60 2 2 0 .750	88 52 20 16 12 .10 .40 .50 2 2 0 1.000	89 52 20 16 12 .20 .20 .60 4–5 4 1.000L .640	90 55 20 10 12 .20 .30 .50 2 2 0
Ax Spa Hit Loa On	n. Base le acing cch ad les	e L X X X C a ₁ a ₂ a ₃ G N B M G N	81 48 20 12 12 10 20 .70 4-5 4 .998L .748 4-5 4	82 48 20 12 12 .10 .30 .60 2 2 0 .750 4-5	83 48 20 12 12 .10 .40 .50 2 2 0 1.000	84 48 20 12 12 .20 .60 4-5 5 1.000R .640 4-5 5	85 48 20 12 12 .20 .30 .50 2 2 0 .750	86 52 20 16 12 .10 .20 .70 4–5 4 .998L .748 4–5 4	87 52 20 16 12 .10 .30 .60 2 2 0 .750 4	88 52 20 16 12 .10 .40 .50 2 2 0 1.000	89 52 20 16 12 .20 .20 .60 4–5 4 1.000L .640 4–5	90 55 20 10 15 .30 .50 2 2 2 0 .77 2 2
Ax Spa Hit Loa On	n. Base le acing ich ad les	o. e L X X X' C a1 a2 a3 G N B M G	81 48 20 12 12 10 20 .70 4-5 4 .998L .748 4-5	82 48 20 12 12 .10 .30 .60 2 2 0 .750 4–5	83 48 20 12 12 .10 .40 .50 2 2 0 1,000	84 48 20 12 12 .20 .60 4-5 1.000R .640 4-5	85 48 20 12 12 .20 .30 .50 2 2 0 .750	86 52 20 16 12 .10 .20 .70 4-5 4 .998L .748	87 52 20 16 12 .10 .30 .60 2 2 0 .750 4–5	88 52 20 16 12 .10 .40 .50 2 2 0 1.000	89 52 20 16 12 .20 .20 .60 4–5 4 1.000L .640	90 55 20 10 15 .30 .50 2 2 2 0 .7 2 2
Ax Spa Hit Loa On	n. Basselle le le le le le le le le le le le le	e L X X C a ₁ a ₂ a ₃ G N B M G N B M G G N	81 48 20 12 12 10 .20 .70 4–5 4 .998L .748 4–5 4 .998L 1.892 3–5	82 48 20 12 12 10 .30 .60 2 2 0 .750 4-5 5 1.000R 1.620 3-5	83 48 20 12 12 .10 .40 .50 2 0 1.000 2 2 0 2.000 2-3	84 48 20 12 12 .20 .60 4-5 5 1.000R .640 4-5 5 1.000R .640 3-5	85 48 20 12 12 .20 .30 .50 2 2 0 7,50 2 2 0 1,500 2-3	86 52 20 16 12 .10 .20 .70 4-5 4 .998L .748 4-5 4 .998L 1.892 4-5	87 52 20 16 12 .10 .30 .60 2 2 0 .750 4 1.000L 1.620 2-3	88 52 20 16 12 .10 .40 .50 2 2 0 1.000 2 2 2 0 0 2.000 2-3	89 52 20 16 12 20 .20 .60 4-5 4 1.000L .640 4-5 4 1.0620 4-5	90 52 20 10 20 .30 .50 2 2 0 .7 2 2 0 1.5 2 2 2 0 1.5 2 2 2 2 0 1.5 2 0 0 1.5 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Whax Spa Hit Loa On	n. Base le acing ich ad les	e L X X C a ₁ a ₂ a ₃ G N B M G N B M	81 48 20 12 12 10 20 .70 4-5 4 .998L .748 4-5 4 .998L 1.892	82 48 20 12 12 10 .30 .60 2 2 0 .750 4-5 1.000R 1.620	83 48 20 12 12 10 .40 .50 2 2 0 1.000 2 2	84 48 20 12 12 .20 .60 4-5 5 1.000R 1.620	85 48 20 12 12 .20 .30 .50 2 2 0 .750 2 2	86 52 20 16 12 .10 .20 .70 4-5 4 .998L .998L 1.892	87 52 20 16 12 .30 .60 2 2 0 .750 4–5 4 1.000L 1.620	88 52 20 16 12 .10 .40 .50 2 2 0 1.000 2 2 0 2.000	89 52 20 16 12 20 .60 4-5 4 1.000L 1.640 4-1.000L 1.620	96 5: 20 11: 12: .36: .56: 2 2 0 .77: 2 0 1.5: 2 0 2.7: 2 0 2.7: 2.7: 2.7: 2.7: 2.7: 2.7: 2.7: 2.7:
Ax Spa Hit Loa On	n. Basselle le le le le le le le le le le le le	o. e L X X C a1 a2 a3 G N B M G N B M G N B M G N B M G N B M	81 48 20 12 12 .10 .20 .70 .70 4–5 4 .998L .748 4–5 4 .998L 1.892 3–5 4 1.332R 3.428	82 48 20 12 12 10 .60 2 2 0 .750 4–5 5 1.000R 1.620 3–5 4 1.333R 2.936	83 48 20 12 12 .10 .40 .50 2 2 0 1.000 2 2 2 0 2 1.000 2 2 3 1.000 2 3 1.000 2 3 3 3 3 3 3 3 3 3 3 3 3 3	84 48 20 12 12 .20 .60 4-5 1.000R .640 4-5 5 1.000R 1.620 3-5 4 1.334R 2.936	85 48 20 12 12 12 .50 .50 2 2 0 .750 2 2 0 .20 .30 .50 2 2 2 2 2 2 2 2 3 3 2 2 3 3 4 5 5 5 6 7 8 9 9 9 9 9 9 9 9 9 9 9 9 9	86 52 20 16 12 .10 .20 .70 4-5 4 .998L .748 4 .998L 1.892 4-5 4 .998L 3.892 4-5 4 .998L 3.892 3.893 4.5 4.998L 3.893 4.5 4.998L 3.893 4.998L 3.893 4.998L 3.893 4.998L 3.893 4.998L 3.893 4.998L 3.893 4.998L 3.893 4.998L 3.893 4.998L 3.893 4.998L 3.893 4.998L 3.893 4.998L 3.893 4.998L 3.893 4.998L 3.893 4.998L 3.998R 3.998R	87 52 20 16 12 .10 .30 .60 2 2 0 .750 4 1.000L 1.620 2-3 2.400L 2.646	88 52 20 16 12 .10 .50 2 2 0 1.000 2 2 2 0 2.000 2-3 2 1.767L 3.310	89 52 20 16 12 .20 .60 4-5 4 1.000L 1.000L 1.000L 1.000L 1.000L 1.000L 1.000L 1.000L	90 55 20 30 .50 2 2 0 .7 2 2 0 1.5 2 2 2 0 1.5 2 2 2 2 0 1.5 2 2 2 2 1.5 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
Whan Spare	n. Basselle le le le le le le le le le le le le	e L X X C a1 a2 a3 G N B M G N B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M B M G N B B M G N B B M G N B B M G N B B M B M G N B B M G N B B M G N B B M G N B B M B M G R B B M B M G R B B M B M G R B B M B B M G R B B M B B M B B M B B B M B B B B M B	81 48 20 12 12 10 .20 .70 4-5 4 .998L 1.892 3-5 4 1.332R	82 48 20 12 12 10 .30 .60 2 2 0 .750 4–5 5 1.000R 1.620 3–5 4 1.333R	83 48 20 12 12 10 .40 .50 2 2 0 1.000 2 2 0 2.000 2-3 2.1.767L	84 48 20 12 .20 .20 .60 4-5 1.000R 4-5 5 1.000R 1.620 3-5 4 1.334R	85 48 20 12 12 .20 .30 .50 2 2 0 .750 2 2 0 1.500 2 2 2 2 2 2 2 2 2 2 2 2 2	86 52 20 16 12 .10 .20 .70 4–5 4 .998L 1.892 4–5 4 .998L	87 52 20 16 12 .10 .30 .60 2 2 0 .750 4-5 4 1.000L 1.620 2 -3 2 2.400L	88 52 20 16 12 10 .40 .50 2 2 0 1.000 2 2 0 2.000 2-3 2.1.767L	89 52 20 16 12 20 .20 .60 4–5 4 1.000L 1.620 4–5 4 1.000L	90 55 21 12 .20 .33 .56 2 2 2 2 0 .77 2 2 2 2 2 2 2 2 2 2 2 2 2
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Whax Spa Hit Loa Ax	10. Basic le le le le le le le le le le le le le	o. e L X X C a1 a2 a3 G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M M G N B M M M G N B M M M M M M M M M M M M M M M M M M	81 48 20 12 10 20 .70 4–5 4 .998L 1.892 3–5 4 1.332R 3–1 4 1.332R 3–2 4 1.332R 3–3 4 3–3 4 3–4 3–7 4 3–7 4 3–7 4 4 3–7 4 4 4 3–7 4 4 4 4 4 4 4 4 4 4 4 4 4	82 48 20 12 12 .10 .30 .60 2 2 0 .750 4-5 1.000R 1.620 3-5 4 1.333R 2.936 2-5 3 1.111L 6.673	83 48 20 12 110 .40 .50 2 2 0 1.000 2 2 0 2.000 2-3 2.7671 3.310 2-3 2.7671 4.712 1-5 2 4.3321 6.543	84 48 20 12 .20 .20 .60 4-5 5 1.000R 1.620 3-5 4 1.334R 2.936 4 1.3338R 4.427 2.5 4.000R	85 48 20 12 .20 .30 .50 2 2 0 .750 2 2 0 1.500 2–3 2 2.146L 2.575 3 .665L 3.877 2–5 3 665L 5.875	86 52 20 16 12 .10 .20 .70 4–5 4.998L 1.892 4–5 4.998L 1.892 4–5 4.998L 2.998L 1.892 4–5 4.998L 4.998R 4.998R 4.998R 4.998R 4.998R 4.998R 4.998R 4.998R 4.998R 4.998R 4.998R 4.998R 4.998R 4.998R 4.998R 4.998R 4.998R 4.998R 4.998R 4.	87 52 20 16 12 .10 .30 .60 2 2 0 .750 4-5 4 1.000L 1.620 2.400L 2.640 3-5 4 2.000R 4.060 2-5 3 2.000L 5.922	88 52 20 16 12 .10 .40 .50 2 2 0 1.000 2 2 0 2.000 2-3 2 1.767L 3.310 2-3 2 1.767L 4.712 4.712 4.712 6.335	89 52 20 16 12 .20 .20 .20 .4 1.000L .640 4-5 4 1.000L 1.620 4-5 4 1.000L 2.613 3-5 4 2.000R 4.000R 4.000R 4.000R 4.000R 4.000R 4.000R 4.000R 4.000R 4.000R 5.000R 5.000R 5.000R 5.000R 5.000R	99 55; 20 11: 22: 3.36; 55 0 .7. 7. 2 2 2 0 0 1.5; 2 2. 2 2. 2 2. 2 2. 2 2. 2 2. 2 2. 3.36; 5. 5. 5. 5. 5. 7. 7. 7. 7. 8. 8. 8. 8. 8. 8. 8. 8. 8. 8. 8. 8. 8.
What is the state of the state	10. Basic le acing che le acing che le acing che le acing che les les les les les les les les les le	e L X X C A1 A2 A3 G N B M G N B M G N B M G N B M G N B M G N B M G G N B M G G N B M G G N B M G G G G G G G G G G G G G G G G G G	81 48 20 12 10 20 20 70 4-5 4 998L 748 4-5 4 998L 1.892 3-5 4 1.332R 3.428 3-5 4 3.352R 3.167 2-5 43.702R 7.02R 7.032 7.0	82 48 20 12 12 10 .30 .60 2 2 0 .750 4–5 5 1.000R 1.620 3–5 4 1.333R 2.936 2-5 3 1.111L 4.428 2-5 3.1111L 6.673 2-5	83 48 20 12 12 12 .10 .40 .50 2 2 0 1.000 2 2.000 2-3 2.1.767L 4.712 1-5 2 4.33243 1-5	84 48 20 12 12 .20 .60 4-5 5 1.000R .640 4-5 5 1.000R 1.620 3-5 4 1.334R 2.936 3-5 4 1.333R 4.427 2.5 4.000R 6.026 6	85 48 20 12 12 .20 .30 .50 2 2 0 .750 2 2 2 0 1.500 2-3 2.146L 2.572 2-5 3.665L 3.877 2-5 8.755 2-5 8.755 2-5 8.75	86 52 20 16 12 .10 .20 .70 4-5 4 .998L .748 4-5 4 .998L 1.892 4-5 4 .998L 1.997R 4.740 2-5 4 4.665R 6.6512 2-5	87 52 20 16 12 .10 .30 .60 2 2 0 .750 4 1.000L 1.602 2-3 2.400L 2.646 3-5 4 2.000R 4.060 2-5 3 2.000R 5.992 2-5	88 52 20 16 12 .10 .40 .50 2 2 0 1.000 2 2 2 0 2.000 2-3 2 1.767L 4.712 1-3 2.003L 1.767L 4.712 1.763L 1.763	89 52 20 16 12 20 20 20 60 4-5 4 1.000L 1.640 4-5 4 1.000L 2.613 3-5 4 2.000R 4.060 2-5 4 5.0060 2-5	99 552 22 114 2.5.5 56 22 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
Whax Spa Hit Loa Ax	10. Basic le le le le le le le le le le le le le	e L XX XY C a1 a2 a3 G N B M G N B M G N B M G N B M G N B M G N B M G N B M B M G N B M B M B M B M B M B M B M B M B M B	81 48 20 12 12 12 .10 .20 .70 4–5 .998L .748 4–.998L 1.892 3–5 4 1.332R 3.428 3–6 4 1.332R 5.167 2–5 4 3.702R	82 48 20 12 12 10 .30 .60 -750 4-5 5 1.000R 1.620 3-5 4 .333R 2.936 2-5 3 1.111L 6.673 2-5 3 1.111L	83 48 20 12 12 .10 .40 .50 2 2 0 1.000 2 2 2 0 2.000 2-3 2.1.767L 4.712 1-5 2 4.332L 6.543 1-5 2 4.332L	84 48 20 12 12 .20 .20 .60 4-5 1.000R .640 4-5 5 1.000R 1.620 3-5 4 1.333R 4.427 2.5 4 4.000R 6.256 4 4.000R	85 48 20 12 12 .20 .30 .50 2 2 0 .750 2 2 0 .1.500 2–3 2 .1.46L 2.572 2–5 3 .665L 3.875 2–5 3 .665L 5.875 2–5 3 .665L	86 52 20 16 12 .10 .20 .70 4-5 4 .998L .748 4-5 4 .998L 1.892 4-5 4 998L 3.052 3-5 4 1.997R 4.766 6.512 2-5 4 4.665R	87 52 20 16 12 .10 .30 .60 2 2 2 0 .750 4-5 4 1.000L 2.646 3-5 4 2.000R 4.060 2-5 3 2.000L 5.922 2-5 3 2.000L	88 52 20 16 12 .10 .40 .50 2 2 0 1.000 2-3 2 1.767L 4.712 1-3 2 .003L 6.335 1-5 2 4.998L	89 52 20 16 12 20 20 20 60 4-5 4 1.000L .640 4-5 4 1.000L 2.613 3-5 4 2.000R 4.060 2-5 4 5.000R	99 552 22 11.1 2.2 2.3 3.5 2.2 2.3 4.4 2.5 5.3 2.2 2.1 4.4 9.5 3.3 2.2 1.4 9.5 3.3 1.5 5.3 3.9 9.9 9.9 9.9 5.3 3.9 9.9 9.9 5.3 5.5 5.5 5.5 5.5 5.5 5.5 5.5 5.5 5.5
Whax Spa Hit Loa Ax	10. Basic le acing che le acing che le acing che le acing che les les les les les les les les les le	e L XX X C a1 a2 a3 N B M G N B M G N B M G N B M G N B M B M G N B M B M B M B M B M B M B M B M B M B	81 48 20 12 10 20 20 17 4-5 4 998L 1.892 3-5 4 1.332R 3.428 3-5 4 1.332R 3.428 3.702R 7.233 2-5 4	82 48 20 12 12 10 .30 .60 2 2 0 .750 4–5 5 1.000R 1.620 3–5 4 2.936 2-5 3 1.111L 4.428 2-5 3 1.111L 4.673 2-5 3 1.111L 8.919	83 48 20 12 12 10 40 .50 2 0 1,000 2 2 0 2,000 2-8 2 1,767L 4,712 1-5 2 4,332L 6,545 2 4,332L 8,981	84 48 20 12 12 .20 .60 4-5 5 1.000R 1.620 3-5 4 1.334R 2.936 3-5 4 4.000R 6.256 6.256 4.000R 6.256 8.214	85 48 20 12 12 .20 .30 .50 2 2 0 .750 2 2 2 0 1.560 2-3 2 2.146L 2.572 2-5 3.665L 3.877 2-5 3.665L 7.874	86 52 20 16 12 .10 .20 .70 4-5 4 .998L .748 4-5 4 .998L 1.892 4-5 4 .998L 3.052 3-5 4 1.997R 4.740 2-5 4 4.665R 8.696	87 52 20 16 12 .10 .30 .60 2 2 0 .750 4 1.000L 1.620 2-3 2.400L 2.646 3-5 4 2.000R 4.060 2-5 3 2.000R 5.992 2-5 3 2.000L 8.160	88 52 20 16 12 .10 .40 .50 2 2 0 1.000 2 2 2 0 2.000 2-3 2 1.767L 3.310 2-3 2 1.767L 4.712 1-3 2 0.003L 6.335 1-5 2 4.998L 8.418	89 52 20 16 12 20 20 20 60 4-5 4 1.000L 1.620 4-5 4 1.000L 2.613 3-5 4 2.000R 4.060 2-5 4 5.000R 5.000R 7.534	99 55 22 11 22 23 33 55 20 0 15 22 22 22 21 42 25 27 27 27 27 27 27 27 27 27 27
Whax Spa Hit Loa Ax	10. Basic le acing che le acing che le acing che le acing che les les les les les les les les les le	O. e L XX X C a1 a2 a3 G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M O N D N D N D N D N D N D N D N D N D N	81 48 20 12 12 12 .10 .20 .70 4–5 .4 .998L 1.892 3–5 4 1.332R 3.428 3–5 4 1.332R 5.167 2–5 4 3.702R 9.441 1–5 3.702R 9.441	82 48 20 12 12 10 30 .60 2 2 0 .750 4-5 5 1.000R 1.620 3-5 4.333R 2.936 2-5 3 1.111L 4.428 2-5 3 1.111L 8.6673 2-5 3 1.111L 8.919 1.111L 8.919 1.111L 8.919	83 48 20 12 12 .10 .40 .50 2 2 0 1.000 2 2 2 0 2.000 2-3 2.1.767L 4.712 1-5 2 4.332L 8.981 1-5 2	84 48 20 12 12 .20 .20 .60 4-5 5 1.000R .640 4-5 5 1.000R 1.620 3-5 4 1.334R 2.936 3-5 4 4.000R 6.256 2-5 4 4.000R 8.214	85 48 20 12 12 .20 .30 .50 2 2 0 .750 2 2 0 .1.500 2-3 2 .1.46L 2.572 2-5 3.665L 3.877 2-5 3.665L 7.874 1-5 2	86 52 20 16 12 .10 .20 .70 4-5 4 .998L .748 4-5 4 .998L 1.892 4-5 4 .998L 3.052 3-5 4 1.997R 4.7665R 6.512 2-5 4 4.665R 8.696 2-5 4	87 52 20 16 12 .10 .30 .60 2 2 0 .750 4 1.000L 1.620 2-3 2.400L 2.646 3-5 4 2.000R 4.060 2-5 3 2.000L 5.922 2-5 3 8.160 1-5 3	88 52 20 16 12 .10 .40 .50 2 2 0 1.000 2-3 2 1.767L 4.712 1-3 2 .003L 6.335 1-5 2 8.418 1-5 2	89 52 20 16 12 20 20 20 60 4-5 4 1.000L .640 4-5 4 1.000L 1.620 4-5 4 2.000R 4.000 2-5 4 5.000R 7.534 1 5	99 55 22 11 11: 22 33 55 20 77 22 20 0 1.5 2-3 22 2.14 3.7 1-3 2 1.49 5.3 1-5 2 3.99 7.2 1-5 2 3.99 7.2 1-5 2 3.99 7.2 1-5 2 3.99 7.2 1-5 2 3.99
Whax Spa Hit Los On Ax	10. Bassele le le le le le le le le le le le le	C a1 a2 G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G M G M G M G M G M G M G M G M G M	81 48 20 12 10 20 20 17 4-5 4 998L 1.892 3-5 4 1.332R 3.428 3-5 4 3.702R 7.233 2-5 4 3.702R 7.233 2-5 4 3.702R 7.02R	82 48 20 12 12 10 .30 .60 2 2 0 .750 4-5 1.000R 1.620 3-5 4 1.333R 2-5 3 1.111L 6.673 2-5 3 1.111L 6.673 1.111L 8.111 8.111L	83 48 20 12 11 10 .40 .50 2 2 0 1.000 2 2.000 2-3 2 1.767L 3.310 2-3 2 1.767L 4.712 1-5 2 4.332L 6.543 1-5 2 4.332L 8.981	84 48 20 12 20 12 .20 .20 .60 4-5 5 1.000R 1.620 3-5 4 1.334R 2.936 3-5 4 4.000R 6.256 2-5 4 4.000R 8.214	85 48 20 12 12 .20 .30 .50 2 2 0 .756 2 0 1.500 2-3 2 2.146L 2.572 2-5 3.665L 5.875 2-5 3.665L 7.874 1-5	86 52 20 16 12 .10 .20 .70 4-5 4 .998L .748 4-5 4 .998L 1.892 4-5 4 .998L 3.052 3-5 4 1.927R 4.740 2-5 4 4.665R 6.512 2-5 4 4.665R 8.696 2.5	87 52 20 16 12 .10 .30 .60 2 2 0 .750 4-5 4 1.000L 1.620 2 2.400L 2.646 3-5 4 2.000R 4.060 2-5 3 2.000L 5.922 2.5 3 2.000L 5.922 1.01 5.922 1.01 5.922	88 52 20 16 12 .10 .40 .50 2 2 0 1.000 2 2 0 2.000 2-3 2 1.767L 4.712 1-3 2 0.03L 6.335 1-5 2 4.988L 8.418	89 52 20 16 12 20 20 20 60 4-5 4 1.000L 1.620 4-5 4 2.000R 4.060 2-5 4 5.000R 7.534 1.5	900 552 202 203 303 555 20 0 1.55 2-3 2 2 2.1.449 5.3 2.1.499 5.3 2.3 2.3 2.3 2.3 2.3 2.3 2.3 3.3 3
Whax Spa Hit Loa Ax	n. Basile acing cch ad less 10 20 40 50 60 80	O. e L XX C a1 a2 a3 G N B M G R G N B M G R G N B M G R G R G R G R G R G R G R G R G R G	81 48 20 12 12 12 12 .10 .20 .70 4-5 4 .998L .748 4998L 1.892 3-5 4 1.332R 3.428 3-5 4 1.332R 5.167 2-5 4 3.702R 9.441 1-5 3 4.68L 13.935 1-5	82 48 20 12 12 10 30 .60 2 2 0 .750 4-5 5 1.000R 1.620 3-5 4 33 1.111L 4.428 2-5 3 1.111L 8.919 1-5 3.00 1.111L 8.919 1-5 3.00 1.111L 8.919 1.111L 8.919 1.111L 8.919 1.111L 8.919 1.111L 8.919 1.111L 8.919 1.111L 8.919 1.111L 8.919 1.111L 8.919 1.111L 8.919 1.111L 8.919 1.111L 8.919 1.111L 8.919 1.111L 8.919 1.111L 8.919 1.111L 8.919 1.111L 8.919 1.111L 8.919 1.111L 8.919 1.1111L 8.919 1.111L	83 48 20 12 12 .10 .40 .50 2 2 0 1.000 2 2 2 0.000 2 -3 2 1.767L 4.712 1-5 2 4.332L 8.981 1-5 2 4.332L 1.3903 1-5	84 48 20 12 .20 .20 .60 4-5 5 1.000R .640 4-5 5 1.000R 1.620 3-5 4 1.334R 2.936 3-5 4 4.000R 6.256 2-5 4 4.000R 8.214 1.5 3 1.600R 12.832	85 48 20 12 12 .20 .30 .50 2 2 0 .750 2 2 0 .1.500 2-3 2 .1.46L 2.572 2-5 3.665L 3.875 2-5 3.665L 7.874 1-5 2 3.332L 12.807	86 52 20 16 12 .10 .20 .70 4-5 4 .998L .748 4-5 4 .998L 1.892 4-5 4 .998L 3.052 3-5 4 1.997R 4.740 2-5 4 4.665R 8.696 2-5 4 4.666R 8.114 1-5	87 52 20 16 12 .10 .30 .60 2 2 0 .750 4 1.000L 1.620 2-3 2.400L 2.646 3-5 4 2.000R 4.060 2-5 3 2.000L 8.160 1-5 3 2.200L 13.001 13.001 1-5	88 52 20 16 12 .10 .40 .50 2 2 0 1.000 2 2 0 2.000 2-3 2 1.767L 4.712 1-3 2 0.003L 6.335 1-5 2 988L 8.418 1-5 2 4.998L 13.314 1-5	89 52 20 16 12 20 20 20 60 4-5 4 1.000L .640 4-5 4 1.000L 2.613 3-5 4 2.000R 4.060 2-5 4 5.000R 7.534 1 5 800R 12.008 1.55	2 0
Wh Spa Hit Loa On	10. Bassele le le le le le le le le le le le le	C a1 a2 G N B M G N B M G N B M G N B M G N B M G N B M M G N B M M G N B M M G N B M M M B M	81 48 20 12 10 20 20 17 4-5 4 998L 748 4-5 4 998L 1.892 3-5 4 1.332R 3.428 3-5 4 3.702R 7.233 2-5 4 3.702R 7.233 2-5 4 3.7041 3.7041 3.7041 3.7041 3.7041 3.7041 3.7041 3.7041 3.7041 3.7048 3	82 48 20 12 12 10 .30 .60 2 2 0 .750 4-5 5 1.000R 1.620 3-5 4 1.333R 2-5 3 1.111L 6.673 1.675 1.675 1.675 1.675 1.675 1.675 1.675 1.77	83 48 20 12 10 .10 .40 .50 2 2 0 1.000 2 2 1.767L 3.310 2-3 2.1.767L 4.712 1-5 2 4.332L 6.543 1-5 2 4.332L 1.52 1.53 2 1.55 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	84 48 20 12 12 .20 .20 .60 4-5 5 1.000R 1.620 3-5 4 1.334R 2.936 3-5 4 4.000R 6.256 2-5 4 4.000R 8.214	85 48 20 12 12 .20 .30 .50 2 2 0 .750 2 2 0 .756 2 2 0.1500 2-3 2 2.146L 2.572 2-5 3.665L 5.875 2-5 3.665L 7.874 1-5 2 3.332L 12.807	86 52 20 16 12 .10 .20 .70 4-5 4 .998L .748 4 .998L 1.892 4 5 4 .998L 3.052 3-5 4 9.998L 4.665R 6.512 2-5 4 4.665R 8.696 2 5 4 6.66R 13.114	87 52 20 16 12 .10 .30 .60 2 2 0 .750 4-5 4 1.000L 1.620 2-3 2 2.400L 2.6446 3-5 4 2.000R 4.060 2-5 3 2.000L 5.992 2-5 3 2.000L 5.91 8.160 1-5 3 2.001 1.51	88 52 20 16 12 .10 .40 .50 2 2 0 1.000 2 2 0 2.000 2-3 2 1.767L 4.712 1-3 2 .003L 6.335 1-5 2 4.998L 1.3314	89 52 20 16 12 20 20 20 60 4-5 4 1.000L 1.620 4-5 4 2.000L 2.613 3-5 4 2.000R 5.600 2-5 4 5.000R 5.000R 7.050R 7.050R 1.5 8 800R 12.008	90 52 20 21 21 22 23 36 36 36 36 36 36 36 36 36 3

Table 7.11

CONTROLLING CONDITIONS AND MAXIMUM MOMENTS IN SIMPLE SPANS PRODUCED BY THE TYPE 3-2 TRUCKS WEIGHING ONE KIP EACH



Ninety variations in the Type 3-2 truck are given in this Table. Each truck number, from 1 to 90, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

Tru	ick No	٠.	1	2	3	4	5	6	7	8	9	10
Wh	, Base	L	36	36	36	36	36	40	40	40	40	40
Axl		X	12	12	12	12	12	12	12	12	12	12
-	eing	X'	12	12	12	12	12	16	16	16	16	16
Hit	ch	C	8	8	S	8	8	8	8	8	8	8
Los	ıd	aı	.10	.10	.10	.20	.20	.10	.10	.10	.20	.20
On	7	\mathbf{a}_2	.40	.50	.60	.40	.50	.40	.50	.60	.40 .40	.50 .30
Ax	ies	_a ₃	50	.40	30	.40	.30	.50	.40	30		2-3
	10	G N	$^{2-3}_{2}$	$_{2}^{-3}$	2-3 2	$_{2}^{-3}$	2-3 2	$^{2-3}_{2}$	$^{2-3}_2$	$^{2-3}_2$	$_{2}^{-3}$	2-3
	10	B	1.000L	1.000L	1.000L	1.000L	1.000L	1.000L	1.000L	1.000L	1.000L	1.000L
		M	.640	.800	.960	.640	.800	.640	.800	.960	.640	.800
		G	2-4	2-4	24	2-4	2-4	2-4	2-4	2-4	2-4	2-4
ĺ	20	N	3	3	3	3	3	3	3	3	3	3
		B M	.923L	.429L	0	.667L	.154L	.923L	.429L	0	.667L	154L 2.151
ļ			1.878	2.207	2.550	1.814	2.151	1.878	2.207	2.550	1.814	
- 1	30	G N	$^{2-4}_{3}$	$\frac{2-4}{3}$	$^{2-4}_{3}$	$\frac{2-4}{3}$	$\frac{2-4}{3}$	$^{2-4}_{3}$	$\frac{2-4}{3}$	$\frac{2-4}{3}$	2-4 3	$^{2-4}_{3}$
	30	В	.923L	.429L	0	.667L	.154L	.923L	.429L	0	.667L	.154 L
		M	3,493	3.955	4.425	3.309	3.776	3.493	3.955	4.425	3.309	3.776
		G	2-5	1-5	1-4	1-4	1-4	1-4	14	1-4	1-4	1-4
دد	40	N	4	3	3	3	2	3	3	3	3	2
8		В	.556R	1.500L	.941R	1.500R	.236L	.267R	.625R	.941R	1.500R	.236L
Span-Feet		M	5.507	5.956	6.519	5.245	5.901	5.301	5.908	6.519	5.245	5.901
an	50	G N	1.–5 3	1-5 3	1-5 3	$^{1-5}_{3}$	$^{1-5}_{3}$	$^{1-5}_{3}$	$^{1-5}_3$	1–5 3	$^{1-5}_{3}$	$_{2}^{1-4}$
S	90	B	2.300L	1.500L	.700L	.800L	0	2.800L	1.900L	1.000L	1.200L	.236L
- 1		M	7.906	8.445	9.010	7.713	8.300	7.457	8.072	8.720	7.329	8.026
1		- G	1-5	1-5	1-5	1-5	1-5	15	1-5	15	1-5	1-5
	60	N	3	3	3	3	3	3	3	3	3	3
		\mathbf{B}	2.300L	1.500L	.700L	.800L	0	2.800L	1.900L	1.000L	1.200L	.300L
		M	10.388	10.938	11,508	10.211	10.800	9.931	10.560	11.217	9.824	10.502
1		G	1-5	1-5	1–5	1-5	1-5	1-5	15	1-5	1-5	1-5
	80	N	$^{3}_{2.300L}$	$\frac{3}{1.500L}$	$^3_{.700}\mathbf{L}$	$^{3}_{.800}$ L	3	$^{3}_{2.800 L}$	3 1.900L	$^{3}_{1.000L}$	$^3_{1.200 \mathbf{L}}$	$^3_{.300 m L}$
j		B M	15.366	15.928	16.506	15.208	$0 \\ 15.800$	14.898	15.545	16.213	14.818	15.501
i		G	1-5	1-5	1-5	1-5	1-5	1-5	1–5	1-5	15	1–5
	100	Ñ	ี ้ 3	3	3	3	3	์ร	3	3	3	3
		В	2.300L	1.500L	.700L	.8001.	0	2.800L	1.900L	1.000L	1.200L	.300L
		M	20.353	20.923	21.505	20.206	20.800	19.878	20.536	21.210	19.814	20.501

a1, a2, and a3-Represent the ratio of gross vehicle weight on axles.

G-Axle group causing maximum moment, thus, 1-3 means axles 1, 2, and 3.

N-Number of critical axle under which maximum moment occurs.

B-Distance to right or left of mid-span to point of maximum moment.

M-Maximum moment.

	uck No		11	12	13	14	15	16	17	18	19	20
$\frac{\mathbf{W}}{\mathbf{A}\mathbf{x}}$	ı. Base	L X	12	12	44 12	$\frac{44}{12}$	$\frac{44}{12}$	$\frac{40}{12}$	$\frac{40}{12}$	$\frac{40}{12}$	$\frac{40}{12}$	$\frac{40}{12}$
	acing	χ΄	20	20	20	20	20	12	12	12	12	12_
Hi		C	8	8	8	8	8	12	12	12	12	12
Lo		a_1 a_2	.10 .40	.10 .50	.10 .60	.20 .40	.20 .50	.10 .40	.10 .50	.10 .60	.20 .40	.20 .50
Ax		a 3	.50	.40	.30	.40	.30	.50	.40	.30	.40	.30
	10	G N	2-3 2	$\substack{2-3\\2}$	2–3 2	2-3 2	$^{2-3}_2$	$^{2-3}_2$	$\overset{2-3}{\overset{2}{\overset{2}{\overset{2}{\overset{2}{\overset{2}{\overset{2}{\overset{2}{$	$^{2-3}_2$	$\frac{2-3}{2}$	2-3
		B M	1.000L .640	1.000L $.800$	1.000L $.960$	1.000L .640	1.000L .800	1.000L $.640$	1.000L .800	1.000L .960	1.000L $.640$	1.000L .800
		G	2-4	2-4	2-4	$\frac{.040}{2-4}$	2-4	2-3	2–3	2–3	2-3	2-3
	20	N B	$^{3}_{.923}$ L	3 .429 L	3	$^3_{.667L}$	3 $^{.154}$ L	1.000L	1.000L	$^{2}_{1.000L}$	$\frac{2}{1.000}$ L	$^{2}_{1,000}$ L
		M	1.878	2.207	2.550	1.814	2.151	1.620	2.025	2.430	1.620	2.025
	30	G N	2-4 3	2-4 3	2-4	$^{2-4}_{3}$	$^{2-4}_{3}$	2-4	2-4 3	$^{2-4}_{3}$	$\frac{2-4}{3}$	1-3 2
	30	В	.923L	.429L	0	.667L	.154L	1.693L	1.000L	.400L	1.333L	$1.000\mathbf{R}$
		M. G	$\frac{3.493}{1-4}$	$\frac{3.955}{1-4}$	4.425 1-4	$\frac{3.309}{1-4}$	3.776 1–4	$\frac{3.037}{1-4}$	$\frac{3.573}{1-4}$	$\frac{4.129}{1-4}$	$\frac{2.936}{1-4}$	$\frac{3.573}{1-4}$
4	40	N	3	3	3	3	2	3	3	3	2	2
F.		B M	0.267 m R 0.301	625R 5.908	0.941R	1.500R 5.245	5.901	4.803	0.125R 0.500	6.208	1.000L 4.820	.588 L 5.608
Span-Feet		G	1-4	1-4	14	1-4	1-4	1-5	1-5	1–5	1-5	1-4
Sp	50	N B	$^3_{.267 m R}$	$^3_{.625 m R}$	3 .941R	3 1.500R	2 .236L	$3 \\ 3.300 L$	$^{3}_{2.300L}$	$^{3}_{1.300L}$	3 1.600 L	.588 L
		M	7.176	7.906	8.640	7.236	8.026	7.018	7.706	8.434	6.951	7.731
	60	G N	$^{1-5}_{3}$	$^{1-5}_{3}$	$^{1-5}_3$	1~5 3	$\frac{1-5}{3}$	$^{1-5}_{3}$	$^{1-5}_{3}$	$^{1-5}_{3}$	$^{1-5}_3$	$_{3}^{1-5}$
		В	3.300L	2.300L	1.300L	1.600L	.600L	3.300L	2.300L	1.300L	1.600L	.600L
		- M - G	9.482 1-5	10.188	10.928	9.443 1-5	10.206	9.482 1-5	$\frac{10.188}{1-5}$	10.928	$\frac{9.443}{1-5}$	$\frac{10.206}{1-5}$
	80	N	3	3	3	3	3	3	3	3	3	3
		$_{ m M}^{ m B}$	3.300L 14.436	2.300L 15.166	1.300L 15.921	1.600L 14.432	.600L 15.205	3.300L 14.436	2.300L 15.166	1.300L 15.921	1.600L 14.432	.600 L 15.205
	100	G	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1–5	1-5	1-5
	100	N B	3 3.300L	3 2.300L	$^{3}_{1.300 \rm L}$	3 1.600L	3 $.600L$	$3 \\ 3.300 $ L	$\begin{array}{c} 3 \\ 2.300 \mathbf{L} \end{array}$	$3 \\ 1.300 $ L	$^{3}_{1.600L}$	$^3_{.600L}$
			10 100	00 150	00 017	10 /00	00 00 /	10 400	00 150	00 017	10 400	00 004
=		M	19,409	20.153	20.917	19.426	20,204	19.409	20.153	20.917	19.426	20.204
	uck No	٠.	21	22	23	24	25	26	27	28	29	30
	ı. Base). ? L								28 48	***	
Ax Sp	n. Base le acing	D. P. L. X. X'	21 44 12 16	22 44 12 16	23 44 12 16	24 44 12 16	25 44 12 16	26 48 12 20	27 48 12 20	28 48 12 20	29 48 12 20	30 48 12 20
MI Ax Sp Hi	n. Base le acing teh	o. Y X' C	21 44 12 16 12	22 44 12 16 12	23 44 12 16 12	24 44 12 16 12	25 44 12 16 12	26 48 12 20 12	27 48 12 20 12	28 48 12 20 12	29 48 12 20 12	30 48 12 20 12
MI Ax Sp Hi Lo On	n. Base le acing tch ad	C a ₁ a ₂	21 44 12 16 12 .10 .40	22 44 12 16 12 .10 .50	23 44 12 16 12 .10 .60	24 44 12 16 12 .20 .40	25 44 12 16 12 .20 .50	26 48 12 20 12 .10 .40	27 48 12 20 12 .10 .50	28 48 12 20 12 .10 .60	29 48 12 20 12 .20 .40	30 48 12 20 12 .20 .50
MI Ax Sp Hi Lo On	n. Base le acing tch ad	C a ₁ a ₂ a ₃	21 44 12 16 12 .10 .40 .50	22 44 12 16 12 .10 .50 .40	23 44 12 16 12 .10 .60 .30	24 44 12 16 12 .20 .40 .40	25 44 12 16 12 .20 .50	26 48 12 20 12 .10 .40 .50	27 48 12 20 12 .10 .50 .40	28 48 12 20 12 .10 .60 .30	29 48 12 20 12 .20 .40 .40	30 48 12 20 12 .20 .50 .30
MI Ax Sp Hi Lo On	n. Base le acing tch ad	C a ₁ a ₂ a ₃ G N	21 44 12 16 12 .10 .40 .50 2-3 2	22 44 12 16 12 .10 .50 .40 2–3 2	23 44 12 16 12 .10 .60 .30 2-3 2	24 44 12 16 12 .20 .40 .40 2-3 2	25 44 12 16 12 .20 .50 .30 2–3 2	26 48 12 20 12 .10 .40 .50	27 48 12 20 12 .10 .50 .40 2-3 2	28 48 12 20 12 .10 .60 .30 2-3 2	29 48 12 20 12 .20 .40 .40 2-3 2	30 48 12 20 12 .20 .50 .30 2–3 2
MI Ax Sp Hi Lo On	n. Base le acing tch ad les	C a ₁ a ₂ a ₃ G	21 44 12 16 12 .10 .40 .50 2-3	22 44 12 16 12 .10 .50 .40 2–3	23 44 12 16 12 .10 .60 .30 2-3	24 44 12 16 12 .20 .40 .40 2-3	25 44 12 16 12 .20 .50 .30 2–3	26 48 12 20 12 .10 .40 .50 2-3	27 48 12 20 12 .10 .50 .40 2-3	28 48 12 20 12 .10 .60 .30	29 48 12 20 12 .20 .40 .40 .2-3	30 48 12 20 12 .20 .50 .30
MI Ax Sp Hi Lo On	n. Base le acing tch ad les	C a1 a2 a3 G N B M G	21 44 12 16 12 .10 .40 .50 2-3 2 1.000L .640 2-3	22 44 12 16 12 .10 .50 .40 2–3 2 1.000L .800 2–3	23 44 12 16 12 .10 .60 .30 2-3 2 1.000L .960 2-3	24 44 12 16 12 .20 .40 .40 2-3 2 1.000L .640 2-3	25 44 12 16 12 .20 .50 .30 2-3 2 1.000L .800 2-3	26 48 12 20 12 .10 .40 .50 2-3 2 1.000L .640 2-3	27 48 12 20 12 .10 .50 .40 2-3 2 1.000L .800 2-3	28 48 12 20 12 .10 .60 .30 2-3 2 1.000L .960 2-3	29 48 12 20 12 .20 .40 .40 2-3 2 1.000L .640 2-3	30 48 12 20 12 .20 .50 .30 2-3 2 1.000L .800 2-3
MI Ax Sp Hi Lo On	n. Base le acing tch ad les	D. X X X' C a1 a2 a3 G N B M	21 44 12 16 12 .10 .40 .50 2-3 2 1.000L .640	22 44 12 16 12 .10 .50 .40 2–3 2 1.000 L .800	23 44 12 16 12 .10 .60 .30 2–3 2 1.000L .960	24 44 12 16 12 .20 .40 .40 2-3 2 1.000 L .640	25 44 12 16 12 .20 .50 .30 2–3 2 1.000L .800	26 48 12 20 12 .10 .40 .50 2-3 2 1.000L .640	27 48 12 20 12 .10 .50 .40 2-3 2 1.000L .800	28 48 12 20 12 .10 .60 .30 2-3 2 1.000L .960	29 48 12 20 12 .20 .40 .40 .23 2 1.000L .640	30 48 12 20 12 .20 .50 .30 2-3 2 1.000L .800
MI Ax Sp Hi Lo On	n. Base le acing tch ad les	C a ₁ a ₂ a ₃ G N B M G N B M	21 44 12 16 12 .10 .40 .50 2-3 2 1.000L .640 2-3 2 1.000L .640	22 44 12 16 12 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025	23 44 12 16 12 .10 .60 .30 2-3 2 1.000L .960 2-3 2 1.000L 2.430	24 44 12 16 12 .20 .40 .40 2-3 2 1.000L .640 2-3 2 1.000L 1.620	25 44 12 16 12 .20 .50 .30 2–3 2 1.000L .800 2–3 2 1.000L .2025	26 48 12 20 12 10 .40 .50 2-3 2 1.000L 2-3 2 1.000L 1.620	27 48 12 20 12 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025	28 48 12 20 12 10 .60 .30 2-3 2 1.000L .960 2-3 2 1.000L 2.430	29 48 12 20 12 20 40 .40 .40 2-3 2 1.000L .640 2-3 2 1.000L 1.620	30 48 12 20 12 20 .50 .30 2-3 2 1.000L .800 2-3 2 1.000L 2.025
MI Ax Sp Hi Lo On	n. Base le acing tch ad les	C a ₁ a ₂ a ₃ G N B M G N B	21 44 12 16 12 .10 .40 .50 2-3 2 1.000L .640 2-3 2.000L 1.620 2-4	22 44 12 16 12 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025 2-4	23 44 12 16 12 .10 .60 .30 2-3 2 1.000L 2-3 2 1.000L 2.430 2-4 3	24 44 12 16 12 .20 .40 .40 .40 2-3 2 1.000L .640 2-3 2 1.000L 1.620 2-4	25 44 12 16 12 .20 .50 .30 2-3 2 1.000L .800 2-3 2 1.000L 2.025 1.025 1.025	26 48 12 20 12 .10 .40 .50 2-3 2 1.000L .640 2-3 2 1.000L	27 48 12 20 12 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L	28 48 12 20 12 .10 .60 .30 2-3 2 1.000L .960 2-3 2 1.000L	29 48 12 20 12 .20 .40 .40 .40 2-3 2 1.000L .640 2-3 2 1.000L	30 48 12 20 50 50 30 2-3 2 1.000L 800 2-3 2 1.000L 2.025 1-3 2
MI Ax Sp Hi Lo On	n. Base le acing tch ad les 10	C a1 a2 a3 G N B M G N B M G N B	21 44 12 16 12 10 .40 .50 2-3 2 1.000L 1.620 2-4 3 1.693L	22 44 12 16 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025 2-4 3 1.000L	23 44 12 16 12 .10 .60 .30 2-3 2 1.000L 2-3 2 1.000L 2.430 2-4 3 400L	24 44 12 16 12 20 .40 .40 2-3 2 1.000L .640 2-3 2 1.000L 1.620 2-4 3 1.333I	25 44 12 16 12 12 .20 .50 .30 2-3 2 1.000L .800 2-3 2 1.000L 2.025 1-3 2 1.000L	26 48 12 20 12 10 .40 .50 2-3 2 1.000L .640 2-3 2 1.000L 3 1.620 2-4 3 1.693L	27 48 12 20 12 10 .50 .40 2-3 2 1.000L 2.025 2-4 3 1.000L	28 48 12 20 12 10 .60 .30 2-3 2 1.000L .960 2.430 2 4 3 .400L	29 48 12 20 12 .20 .40 .40 .40 2-3 2 1.000L .640 2-3 2 1.000L .620 2-4 3 1.333L	30 48 12 20 12 .20 .50 .30 2-3 1.000L .800 2-3 1.000L 2.025 1-3 2
MI Ax Sp Hi Lo On	n. Base le acing tch ad les 10	C a1 a2 a3 G N B M G N B M G N	21 44 12 16 12 .10 .40 .50 2-3 2 1.000L .640 2-3 2.000L 1.620 2-4	22 44 12 16 12 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025 2-4	23 44 12 16 12 .10 .60 .30 2-3 2 1.000L 2-3 2 1.000L 2.430 2-4 3	24 44 12 16 12 .20 .40 2-3 2 1.000L .640 2-3 2 1.000L 1.620 2-4 3 1.3333L 2.936	25 44 12 16 12 .20 .50 .30 2-3 2 1.000L .800 2-3 2 1.000L 2.025 1.025 1.025	26 48 12 20 12 .10 .40 .50 2 2 1.000L .640 2 2 1.000L 1.620 2-4	27 48 12 20 11 10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025 2-4	28 48 12 20 12 10 60 30 2-3 2 1.000L .960 2-3 2 1.000L 2.430 2 4 3	29 48 12 20 12 .20 .40 .40 .40 2-3 2 1.000L .640 2-3 2 1.000L 1.620 2-4	30 48 12 20 .50 .50 .30 2-3 2 1.000L .800 2-3 2 1.000L 2.025 1-3 2 1.000R 3.57
WI Axx Sp Hi Lo On Ax	n. Base le acing tch ad les 10	C R1 a2 a3 G N B M G N B M G N B B M G N B B M	21 44 12 16 12 10 .40 .50 2-3 2 1.000L 1.620 2-4 3.037 1-4 3	22 44 12 16 12 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025 2-4 3 1.000L 3.573 1-4	23 44 12 16 12 .10 .60 .30 2-3 2 1.000L 2-3 2 2.430 2-4 3 .400L 4.129 1-4 3	24 44 12 16 12 20 40 40 2-3 2 1.000L 1.620 2-4 3 1.333L 2.936 1-4	25 44 12 16 12 20 .50 .30 2-3 2 1.000L .800 2-3 2 1.000L 2.025 1-3 2 1.000R 3.573	26 48 12 20 12 10 .40 .50 2-3 2 1.000L .640 2-3 2 1.000L 3 1.693L 3.037 1-4	27 48 12 20 12 10 .50 .40 2-3 2 1.000L 2.025 2-4 3 1.000L 3.573 1-4 3	28 48 12 20 12 10 -60 -30 2-3 2 1.000L -960 2.430 2.430 4.129 1-4 3	29 48 12 20 12 .20 .40 .40 2-3 2 1.000L .640 2-3 2 1.000L 1.620 2-4 3 3 1.333L 2.936 1-4 2	30 48 12 20 .20 .50 .30 2-3 2.000L .800 2-3 2.000L 2.025 1-3 2 1.000L 3.573 1-4
WI Axx Sp Hi Lo On Ax	n. Base le acing teh ad les 10 20	C X X X Y C a1 a2 a3 G N B B M G N B B M G G N B B M G G N B B M G G N B G G N B B M G G N B B M G G N B B M G G N B B M G G N B B M G G N B B M G G N B B M G G N B B M M G G N B B M M G G N B B M M G G N B B M M G G N B B M M G G N B B M M G G N B B M M G G N B B M M G G N B B M M G G N B B M M G G N B B M M G G N B B M M G G N B B M M G G N B B M M G G N B B M M G G N B B M M M G G N B B M M G G N B B M M G G N B B M M G G N B B M M G G N B B M M G G N B B M M G G N B B M M G G N B B M M G G N B B M M M G G N B B M M M G G N B B M M M G G N B B M M M G G N B B M M M G G N B M M M M G G N B M M M M M M M M M M M M M M M M M M	21 44 12 16 10 .50 2-3 2 1.000L .640 2-3 2 1.090L 1.620 2-4 3 1.693T 1-4 3 4.003L	22 44 12 16 12 .10 .50 .40 2–3 2 1.000L .800 2–3 2 1.000L 2.025 2 1.000L 2.025	23 44 12 16 12 .10 .60 .30 2-3 2 1.000L 2-3 2 1.060L 2.430 2-1 3 .400L 4.129	24 44 12 16 12 .20 .40 2-3 2 1.000L .640 2-3 2 1.000L 1.620 2-4 3 1.3333L 2.936	25 44 12 16 12 .20 .30 2-3 2 1.000L .800 2-3 2 1.000L 2.025 1-3 2 1.000R 3.57 3.573 1-4	26 48 12 20 11 .10 .40 .50 2-3 2 1.000L 1.620 2-4 3 1.6931, 3.037	27 48 12 20 11 10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025 2-4 3 1.005L 3.55 3	28 48 12 20 12 .10 .60 .30 2-3 2 1.000L .960 2-3 2 1.000L 2.430 2 4 .4012 4.1129	29 48 12 20 .40 .40 2-3 2 1.000L 1.620 2-4 3 1.3331L 2.936 1-4	30 48 12 20 .50 .50 .30 2-3 2 1.000L .800 2-3 2 1.000L 2.025 1-3 2 1.000R 3.57
WI Axx Sp Hi Lo On Ax	n. Base le acing teh ad les 10 20 30 40	C A A A A A A A A A A A A A A A A A A A	21 44 12 16 10 .10 .40 .50 2-3 2 1.000L .640 2-3 2.000L 1.620 2-4 3.037 1-4 4.803 1-4	22 44 12 16 50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025 2-4 3 1.000L 3.573 1-4 3 1.25 R 5.500	23 44 12 16 10 .60 .30 2-3 2 1.000L .960 2-3 2 1.000L 2.430 2-4 3 .400L 4.129 1-4 3 .588R 6.208 1-4	24 44 12 16 12 20 40 .40 .40 2-3 2 1.000L .640 2-3 2 1.000L 1.620 2-4 3 1.333L 2.936 1-4 1.002L 4.082L	25 44 12 16 12 .20 .50 .30 2-3 2 1.000L .800 2-3 2 1.000L 2.025 1-3 2 1.000R 3.573 1-4 2 .588L 5.608 1-4	26 48 12 20 12 10 .40 .50 2-3 2 1.000L .640 2-3 2 1.000L 1.620 2-4 3 1.693L 3.037 1-4 4.803 1-4	27 48 12 20 11 10 .50 .40 2-3 2 1.000L 2.025 2-4 3 1.000L 3.573 1-4 3 .125R 5.500 1-4	28 48 12 20 12 10 60 30 2-3 2 1.000L .960 2-3 2 1.000L 2.430 2 4 3 .400L 4.129 1-4 3 .588R 6.208 1-4	29 48 12 20 12 20 40 2-3 2 1.000L 1.620 2-4 3 1.333L 2.936 1-4 4.820 1-4	30 48 12 20 .50 .50 .30 2-3 2 1.000L 2.025 1-3 2 1.000R 3.573 1-4 2 .588L 5.608 1-4
MI Ax Sp Hi Lo On	n. Base le acing teh ad les 10 20	C L X X X C C B1 a2 a2 a3 G N B M G G N B M G G N B M G G N B B M G G N B B M M G G N B B M M M B M M M B M M B M M B M M B M M B M M B M M B M M M B M M M B M M M B M M M B M M M B M M M B M M M B M M M M B M	21 44 12 16 10 .10 .40 .50 2-3 2 1.000L .640 2-3 2 1.090L 1.620 2-4 3 1.693T 1-4 3 .400L 4.803	22 44 12 16 12 .10 .50 .40 2–3 2 1.000L .800 2–3 2 1.000L 2.025 2–4 3 1.000L 3.573 1–4 3.573 1–4 3.125R	23 44 12 16 12 .10 .60 .30 2-3 2 1.000L 2-3 2 1.060L 2.430 2-1 3 .400L 4.129 1-4 3 .588R 6.208 1-4 3 .588R	24 44 12 16 12 .20 .40 2-3 2 1.000L .640 2-3 2 1.000L 1.620 2-4 3 1.3331 1.3331 1-4 2 1.000L 4.820 1-4 2 1.000L	25 44 12 16 12 .20 .50 .30 2-3 2 1.000L .800 2-3 2 1.000L 2.025 1-3 2 1.000R 3.573 1-4 2 588L 5608 1-4 2 588L	26 48 12 20 12 .10 .40 .50 2-3 2 1.000L .640 2-3 2 1.000L 1.620 2-4 3 1.693T 1-4 3 .400L 4.803 1-4 3 .400L	27 48 12 20 112 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 3.573 1-4 3 1.25R 5.500 1-4 3 1.25R	28 48 48 12 20 12 .10 .60 .30 2-3 2 1.000L .960 2-3 2 1.000L 2.430 2 4.012 4.129 1-4 3 .588R 6.208 1-4 3 .588R	29 48 12 20 .40 .40 2-3 2 1.000L .640 2-3 2 1.000L 1.620 2-4 3 1.3331L 2.936 1-4 2 1.000L 4.820 1-4 2 1.000L	30 48 12 20 .50 .50 .30 2-3 2 1.000L .800 2-3 2 1.000L 2.025 1-3 2 1.000R 3.578 3.578 1-4 2 .5608 1-4 1-4 2 .5608 1-4 1-4 1-4 1-4 1-4 1-4 1-4 1-4
WI Axx Sp Hi Lo On Ax	n. Base le acing teh ad les 10 20 30 40	C. A. C. C. C. C. C. C. C. C. C. C. C. C. C.	21 44 12 16 10 .40 .50 2-3 2 1.000L .640 2-3 2.000L 1.620 2-4 3 1.693L 3.037 1-4 3 4.001 6.667	22 44 12 16 50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025 2-4 3 1.000L 3.57 1-4 3 .125R 7.500	23 44 12 16 10 .10 .30 2-3 2 1.000L .960 2-3 2 1.000L 2.430 2-4 3 .400L 4.129 1-4 3 .588R 6.208 1-4 3 .588R 8.331	24 44 12 16 12 .20 .40 .40 .40 2-3 2 1.000L .640 2-3 2 1.000L 1.620 2-4 3 1.333L 2.936 1-4 2 1.000L 4.820 1-4 2 1.000L 6.816	25 44 12 16 12 .20 .50 .30 2-3 2 1.000L .800 2-3 2 1.000L 2.025 1-3 2 1.000R 3.573 1-4 2 .588L 5.608 1-4 2 .7.731	26 48 12 20 12 10 .40 .50 2-3 2 1.000L .640 2-3 2 1.000L 1.620 2-4 3 1.693L 3.037 1-4 4.803 1-4 3 400L 6.677	27 48 12 20 11 10 .50 .40 2-3 2 1.000L 2.025 2-4 3 1.000L 3.573 1-4 3 .125R 7.500	28 48 12 20 10 .10 .60 .30 2-3 2 1.000L .960 2-3 2 1.000L 2.430 2 4 .3 .400L 4.129 1-4 3 .588R 6.208 1-4 3 .588R 8.331	29 48 12 20 .40 .40 2-3 2 1.000L .640 2-3 2 1.000L 1.620 2-4 3 1.3331L 2.936 1-4 2 1.000L 4.820 1-4 2 1.000L 6.816	30 48 12 20 .50 .50 .30 2-3 2 1.000L .800 2-3 2 1.000L 2.025 1-3 2 1.000R 3.573 1-4 2 .588L 5.588L 5.588L 5.588L 5.588L 5.588L 5.588L 5.588L 5.588L 5.588L 5.588L 5.588L 5.588L 5.588L 5.588L 5.588L 5.588L 5.588L 5.588L 5.588L
WI Axx Sp Hi Lo On Ax	n. Base le acing teh ad les 10 20 30 40	C L X X X C C a1 a2 a3 G N B B M G G N B B M M G G N B B M G G N B G G	21 44 12 16 16 12 .10 .40 .50 2-3 2 1.0001 .640 2-3 2 1.0901 1.620 2-4 3 1.6931 3.037 1-4 3 4.001 4.803 1-4 3 4.001 6.677 1-5 3	22 44 12 16 12 .10 .50 .40 2–3 2 1.000L .800 2–3 2 1.000L 2.025 2–4 3.573 1–4 3.125R 5.500 1–4 3.125R 7.500 1–5 3	23 44 12 16 12 .10 .60 .30 2-3 2 1.000L 2.430 2-1 3 .400L 4.129 1-4 3 588R 6.208 1-4 3 588R 8.331 1-5 3	24 44 12 16 12 .20 .40 .40 2-3 2 1.000L .640 2-3 2 1.000L 1.620 2-4 3 1.3331L 2.936 1-4 2 1.000L 6.816 1.5 3	25 44 12 16 12 .20 .50 .30 2-3 2 1.000L .800 2-3 2 1.000L 2.025 1-3 2 1.000R 3.573 1-4 2 5588L 7.731 1-5 3	26 48 12 20 12 .10 .40 .50 2-3 2 1.0001 .640 2-3 2 1.0001 1.620 2-4 3 1.6931 3.037 1-4 3 4001 4.803 1-4 3 4001 6.677 1-5 3	27 48 12 20 112 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025 2-4 3 1.000L 3.573 1-4 3.125R 7.500 1-4 3 1.125R 7.500	28 48 48 12 20 10 .10 .60 .60 .30 2-3 2 1.000L .960 2-3 2 1.000L 2.430 2 4 .10 4.129 1-4 3 .588R 6.208 1-4 3 .588R 8.331 1-4	29 48 12 20 .40 .40 2-3 2 1.000L 1.620 2-4 3 1.3331 1.3336 1-4 2 1.000L 4.820 1-4 2 1.000L 6.816 1-4 2	30 48 12 20 50 12 20 50 12 20 50 12 1.000L 800 2-3 2 1.000L 2.025 1-3 2 1.000R 3.578 3.578 1-4 2 5.588L 7.7731 1-4 2
WI Axx Sp Hi Lo On Ax	n. Base le accing teh ad les 10 20 30 40	C L X X X C C a1 a2 a2 a3 G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M M G G N B M M M G G N B M M M G G N B M M M M M M M M M M M M M M M M M M	21 44 12 16 16 12 .10 .40 .50 2-3 2 1.000L .640 2-3 2 1.000L 1.620 2-4 3.037 1-4 3.037 1-4 6.677 1-5 3.800L	22 44 12 16 12 .10 .50 .40 2-3 2 1.000L .800 2-3 1.000L 3.573 1-4 3 .125R 5.500 1-4 3 .125R 7.500 1-5 3 .125R	23 44 12 16 12 .10 .60 .30 2-3 2 1.000L .960 2-3 2 1.000L 2.430 2-4 3 .400L 4.129 1-4 3 .588R 6.208 1.588R 8.331 1-5 3 1.600L	24 44 12 16 12 .20 .40 .40 2-3 2 1.0001 .640 2-3 2 1.0001 1.620 2-4 3 1.3331 2.936 1-4 2 1.0001 6.816 1.5 3 2.0001	25 44 12 16 12 .20 .50 .30 2-3 2 1.000L .800 2-3 2 1.000L 2.025 1-3 2 1.000R 3.573 1-4 2 .588L 5.608 1-4 2 .588L 7.731 1-5 3 900L	26 48 12 20 12 .10 .40 .50 2-3 2 1.000L .640 2-3 1.000L 1.620 3 .693L 3 .400L 4.803 1-4 3 .400L 6.677 1-5	27 48 12 20 12 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025 2-4 3 .125R 5.500 1-4 3 .125R 7.500 1-4 3 .125R	28 48 12 20 12 .10 .60 .30 2-3 2 1.000L .960 2-3 2 1.000L 2.43 2 4.129 1-4 3 .588R 6.208 1-4 3 .588R 8.331 1-4 3 .588R	29 48 12 20 12 20 .40 .40 2-3 2 1.000L .640 2-3 2 1.000L 1.620 2-4 3 1.333L 2.936 1-4 2 1.000L 4.820 14 2 1.000L 6.816 1-4 2 1.000L	30 48 12 20 .50 .50 .30 2-3 2 1.000L .800 2-3 2 1.000L 2.0025 1-3 2 1.000R 3.573 1-4 2 .588L 5.698 1-4 2 .588L 5.698 1-4 2 .588L 5.698 1-4 2 .588L 5.698
WI Axx Sp Hi Lo On Ax	n. Base le accing teh ad les 10 20 30 40 60	C C a1 a2 a3 G N B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M M G N M B M M M M M M M M M M M M M M M M M	21 44 12 16 16 12 .10 .40 .50 2-3 2 1.0001 .640 2-3 2.1.0001 1.620 2-4 3 1.693 1-4 3 4001 4.803 1-4 3 .4001 6.677 1-5 3 3.8001 9.041 1-5	22 44 12 16 12 .10 .50 .40 2–3 2 1.000L 2.025 2-4 3 1.000L 3.573 1–4 3.573 1–4 3 .125 R 7.500 1–5 3 2.7000 1–5	23 44 12 16 12 .10 .60 .30 2-3 2 1.000L 2-3 2 1.000L 2.430 2-4 3 .400L 4.129 1-4 3 .588R 6.208 1-4 3 .588R 8.331 1-5 3 1.600L 10.643 1-5	24 44 12 16 12 .20 .40 .40 2-3 2 1.000L .640 2-3 2 1.000L 1.620 2-4 3 1.333L 2.936 1-4 2 1.000L 4.820 1-4 2 1.000L 6.816 1.5 3 2.000L 1-5	25 44 12 16 12 .20 .50 .30 2-3 2 1.000L .800 2-3 2 1.000L 2.025 1-3 2 1.000R 3.573 1-4 2 5588L 7.731 1-5 3 .900L	26 48 12 20 12 .10 .40 .50 2-3 2 1.0001L .640 2-3 2 1.0006L 1.620 2-4 3 1.6931L 3.037 1-4 3 4.803 1-4 8 4.803 1-4 8 4.803 1-5	27 48 12 20 12 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025 2-4 3 1.000L 3.573 1-4 3.125R 7.500 1-4 3 .125R 7.500 1-5	28 48 48 12 20 10 .60 .60 .60 .80 2-3 2 1.000L 2.430 2 4.102 1-4 3 588R 6.208 1-4 3 .588R 8.331 1-4 3 .588R 10.455	29 48 12 20 40 12 21 .20 .40 2-3 2 1.000L 1.620 2-4 3 1.333L 2.936 1-4 2 1.000L 6.816 1-4 2 1.000L 6.816 1-4 2 1.000L 6.816	30 48 12 20 50 12 20 .30 2-3 2 1.000L 2.025 1-3 2 1.000L 2.025 1-3 2 1.000R 3.573 1-4 2.588L 7.731 1-4 2 .588L 7.731 1-4 9.855 1-5
WI Axx Sp Hi Lo On Ax	n. Base le accing teh ad les 10 20 30 40	E L X X X X X X X X X X X X X X X X X X	21 44 12 16 12 .10 .40 .50 2-3 2.000L .640 2-3 2.000L 1.620 2-4 3.037 1-4 3.037 1-5 3.800L 9.041 1-5 3	22 44 12 16 12 .10 .50 .40 2-3 2 1.000L .800 2-3 1.000L 3.578 1-4 3 .125R 5.500 1-4 3 .125R 5.500 1-5 3 2.700 1-5 3 3 .125R 5.500 1-5 3 3 .125R 5.500 1-5 3 3 .125R 5.500 1-5 3 3 .125R 5.500 1-5 3 3 .125R 5 3 3 .125R 5 3 3 .125R 5 3 3 3 3 .125R 5 3 3 3 3 3 3 3 3 3 3 3 3 3	23 44 12 16 12 .10 .60 .30 2-3 2 1.000L .960 2-3 2 1.000L 2.430 2-4 3 .400L 4.129 1-4 3 .588R 6.208 1.588R 8.331 1-5 3 1.600L 3 3 3 1.600L 3 3 3 3 3 3 3 3 3 3 3 3 3	24 44 12 16 12 .20 .40 .40 2-3 1.0001 .640 2-3 1.0001 1.620 2-4 3 1.0001 2.936 1-4 2 1.0001 4.820 1-4 5.816 1-5 3 2.0001 9.067	25 44 12 16 12 .20 .50 .30 2-3 2 1.000L .800 2-3 2 1.000L 2.025 1-3 2 1.000R 3.573 1-4 2 .588L 5.608 1-4 2 .588L 7.731 1-5 3 9.00L 9.914	26 48 12 20 12 10 .40 .50 2-3 2 1.000L .640 2-3 2 1.000L 1.620 2-4 3 .037 1-4 3 .400L 4.803 1-4 3 .400L 8.608 1-5 3	27 48 12 20 12 .10 .50 .40 2-3 2 1.0000L .800 2-3 2 1.0000L 2.025 2-4 3 .573 1-4 3 .125R 5.500 1-4 3 .125R 9.500 1-5 3	28 48 12 20 12 .10 .60 .30 2-3 2 1.000L .960 2-3 2 1.000L 2.43 3 .400L 4.129 1-4 3 .588R 6.208 1-4 3 .588R	29 48 12 20 12 20 40 40 2-3 1.000L .640 2-3 2 1.000L 1.620 2-4 3 1.333L 2.936 1-4 2 1.000L 4.820 1-4 2 1.000L 6.816 1-4 1.000L 8.814 1-5 3	30 48 12 20 12 20 .50 .30 2-3 2 1.000L .800 2-3 2 1.000L 2.025 1-3 2 1.000R 3.573 1-4 2 .588L 5.688L 7.731 1-4 2 9.855 1-5 3
WI Axx Sp Hi Lo On Ax	n. Base le accing teh ad les 10 20 30 40 60	ELXXY CC a1 a2 GN B B M GN B B M GN B B M GN B B M GN B B M GN B B M GN B B M GN B B M GN B B M B M B M B M B M B M B M B M B M	21 44 12 16 16 12 .10 .40 .50 2-3 2 1.0001 .640 2-3 2 1.0001 1.620 2-4 3 1.693 1-4 3 4.001 4.803 1-4 3 .4001 6.677 1-5 3 3.8001 9.041 1-5 3 3.8001 1.981	22 44 12 16 12 .10 .50 .40 2–3 2 1.000L 2.025 2-4 3 1.000L 3.573 1–4 3.573 1–4 3 .125R 7.500 1–5 3 2.700L 9.822 1–5 3,700L 1–5 1–5 1–5 1–5 1–5 1–5 1–5 1–5	23 44 12 16 12 .10 .60 .30 2-3 2 1.000L 2-3 2 1.000L 2.430 2-4 3 .400L 4.129 1-4 3 .588R 6.208 1-4 3 .588R 8.331 1-5 3 1.600L 10.643 1-5 3 1.600L 15.632	24 44 12 16 12 .20 .40 .40 2-3 2 1.000L .640 2-3 2 1.000L 1.620 2-4 3 1.333L 2.936 1-4 2 1.000L 4.820 1-4 2 1.000L 6.816 1-5 3 2.000L 1-5 3 2.000L 1-5 3 2.000L 1-5 3 2.000L 1-5 3 3.000L 1-5 3.000L 1-5 3.000L 1-5 3.000L 1-5 3.000L 1-5 3.000L	25 44 12 16 12 .20 .50 .30 2-3 2 1.000L .800 2-3 2 1.000L 2.025 1-3 2 1.000R 3.573 1-4 2 5.588L 7.731 1-5 3 .900L 1-5 3 .900L 1-5 3 9.914	26 48 12 20 12 .10 .40 .50 2-3 2 1.000L .640 2-3 2 1.000L 1.620 2-4 3 1.693L 3.037 1-4 3.400L 6.677 1-5 3 4.300L 8.608 1-5 3 4.300L 1.53	27 48 12 20 11 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025 2-4 3 1.000L 3.573 1-4 3.125R 7.500 1-4 3 1.25R 7.500 1-5 3 1.25R 9.500 1-5 3 3.100L 1.4420	28 48 48 12 20 10 .60 .60 .80 2-3 2 1.000L 2.430 2 4.129 1-4 3 .588R 6.208 1-4 3 .588R 8.331 1-4 3 .588R 8.331 1-5 3 .588R	29 48 12 20 40 12 21 20 40 2-3 2 1.000L 1.620 2-4 3 1.333L 2.936 1-4 2 1.000L 6.816 1-4 2 1.000L 6.816 1-5 3 2.400L 1.657	30 48 12 20 .50 12 .20 .50 2-3 2 1.000L 2.025 1-3 2 1.000R 3.573 1-4 2 5588L 7.731 1-4 2 .588L 7.731 1-4 2 .588L 1-4 2 1.588L 7.731 1-4 1.4 2 1.588L 1.4 1.4 1.4 1.5 1.4 1.4 1.5 1.4 1.4 1.5 1.5 1.5 1.5 1.1 1.4 1.4 1.4 1.4 1.4 1.4 1.4 1.4 1.4
WI Axx Sp Hi Lo On Ax	n. Base le acing teh ad less 10 20 30 40 50 80	C A A A A A A A A A A A A A A A A A A A	21 44 12 16 12 .10 .40 .50 2-3 2 1.000L .640 2-3 2 1.000L 1.620 2-4 3 .693L 3.037 1-4 3 4.001L 4.803 1-5 3 .800L 9.041 1-5 3 3.800L 13.981 1-5	22 44 12 16 12 .10 .50 .40 2-3 2 1.000L .800 2-3 1.000L 3.573 1-4 3 .125R 5.500 1-4 3 .125R 5.500 1-5 3 .125R 2 2 1.000L	23 44 12 16 12 .10 .60 .30 2-3 2 1.000L .960 2-3 2 1.000L 2.430 2-4 3 .400L 4.129 1-4 3 .588R 6.208 1-5 3 1.600L 1.06043 1-5 1.600L 1.643 1.600L 1.600D 1.600D 1.600D 1.600D 1.600D	24 44 12 16 12 .20 .40 .40 2-3 1.0001 .640 2-3 1.0001 1.620 2-4 3 1.3331 2.936 1-4 2 1.0001 4.820 1-4 5.816 1-5 3 2.0001 9.067 1-5 3 2.00001 1.4050 1.53	25 44 12 16 12 .20 .50 .30 2-3 2 1.000L .800 2-3 2 1.000L 2.025 1-3 2 1.000R 3.573 1-4 2 .588L 5.608 1-4 2 .588L 7.731 1-5 3 .900L 9.914 1-5 3 .900L 14.910	26 48 12 20 12 10 .40 .50 2-3 2 1.000L .640 2-3 1.000L 1.620 2-4 3 .037 1-4 3 .400L 4.803 1-4 3 .400L 8.608 1-5 3 4.300L 8.608 1-5 3 1.3037	27 48 12 20 12 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 3.573 1-4 3 .125R 5.500 1-4 3 .125R 9.500 1-5 3 3.100L 14420 1-5	28 48 12 20 12 .10 .60 .30 2-3 2 1.000L .960 2-3 1.000L 2.43 2 4.129 1-4 3 .588R 6.208 1-4 3 .588R 10.455 1-5 3 1.900L 15.345	29 48 12 20 12 20 40 40 2-3 1.000L .640 2-3 2 1.000L 1.620 2-4 3 1.333L 2.936 1-4 2 1.000L 4.820 1-4 2 1.000L 6.816 1-4 2 1.000L 8.814 1-5 3 2.400L 13.672 1-5	30 48 12 20 .50 .50 .30 2-3 1.000L .800 2-3 2 1.000L 2.025 1-3 2 1.000R 3.573 1-4 2 .588L 5.698 1-4 2 .588L 5.698 1-4 2 .588L
WI Axx Sp Hi Lo On Ax	n. Base le accing teh ad les 10 20 30 40 60	ELXXY CC a1 a2 GN B B M GN B B M GN B B M GN B B M GN B B M GN B B M GN B B M GN B B M GN B B M B M B M B M B M B M B M B M B M	21 44 12 16 16 12 .10 .40 .50 2-3 2 1.0001 .640 2-3 2 1.0001 1.620 2-4 3 1.693 1-4 3 4.001 4.803 1-4 3 .4001 6.677 1-5 3 3.8001 9.041 1-5 3 3.8001 1.981	22 44 12 16 12 .10 .50 .40 2–3 2 1.000L 2.025 2-4 3 1.000L 3.573 1–4 3.573 1–4 3 .125R 7.500 1–5 3 2.700L 9.822 1–5 3,700L 1–5 1–5 1–5 1–5 1–5 1–5 1–5 1–5	23 44 12 16 12 .10 .60 .30 2-3 2 1.000L 2-3 2 1.000L 2.430 2-4 3 .400L 4.129 1-4 3 .588R 6.208 1-4 3 .588R 8.331 1-5 3 1.600L 10.643 1-5 3 1.600L 15.632	24 44 12 16 12 .20 .40 .40 2-3 2 1.000L .640 2-3 2 1.000L 1.620 2-4 3 1.333L 2.936 1-4 2 1.000L 4.820 1-4 2 1.000L 6.816 1-5 3 2.000L 1-5 3 2.000L 1-5 3 2.000L 1-5 3 2.000L 1-5 3 3.000L 1-5 3.000L 1-5 3.000L 1-5 3.000L 1-5 3.000L 1-5 3.000L	25 44 12 16 12 .20 .50 .30 2-3 2 1.000L .800 2-3 2 1.000L 2.025 1-3 2 1.000R 3.573 1-4 2 5.588L 7.731 1-5 3 .900L 1-5 3 .900L 1-5 3 9.914	26 48 12 20 12 .10 .40 .50 2-3 2 1.000L .640 2-3 2 1.000L 1.620 2-4 3 1.693L 3.037 1-4 3.400L 6.677 1-5 3 4.300L 8.608 1-5 3 4.300L 1.53	27 48 12 20 11 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025 2-4 3 1.000L 3.573 1-4 3.125R 7.500 1-4 3 1.25R 7.500 1-5 3 1.25R 9.500 1-5 3 3.100L 1.4420	28 48 48 12 20 10 .60 .60 .80 2-3 2 1.000L 2.430 2 4.129 1-4 3 .588R 6.208 1-4 3 .588R 8.331 1-4 3 .588R 8.331 1-5 3 .588R	29 48 12 20 40 12 21 20 40 2-3 2 1.000L 1.620 2-4 3 1.333L 2.936 1-4 2 1.000L 6.816 1-4 2 1.000L 6.816 1-5 3 2.400L 1.55	30 48 12 20 .50 12 .20 .50 2-3 2 1.000L 2.025 1-3 2 1.000R 3.573 1-4 2 5588L 7.731 1-4 2 .588L 7.731 1-4 2 .588L 1-4 2 1.588L 7.731 1-4 1.4 2 1.588L 1.4 1.4 1.4 1.5 1.4 1.4 1.5 1.4 1.4 1.5 1.5 1.5 1.5 1.1 1.4 1.4 1.4 1.4 1.4 1.4 1.4 1.4 1.4

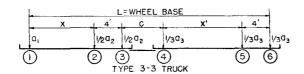
	ck No		31	32	33	34	35	36	37	38	39	40
	Base		40	40	16	40	40	44	44	44	44	44
	cing	X X'	16 12	16 12	12	16 12	16 12	16 16	16 16	16 16	16 16	16 16
Hite		C	8	8	.10	.20	.20	.10	.10	8	8	8_
Loa On		a_1 a_2	.10 .40	.10 .50	.60	.40	.50	.40	.50	.10 .60	.20 .40	.20 .50
Axl	es	G G	2-3	.40 2-3	$\frac{.30}{2-3}$	2-3	$\frac{.30}{2-3}$	$\frac{.50}{2-3}$	$\frac{.40}{2-3}$	$\frac{.30}{2-3}$	$\frac{.40}{2-3}$	$\frac{.30}{2-3}$
	10	N	2	2	2	2	2	2	2	2	2	2
-		B M	1.000L .640	1.000L .800	1.000L $.960$	1.000L .640	1.000L .800	1.000L .640	1.000L .800	1.000L .960	1.000L $.640$	1.000L
-		G	2-4	2-4	2-4	2-4	2-4	2-4	2-4	2-4	24	2-4
	20	N B	$^3_{.923}$ L	3 .429L	$\frac{3}{0}$	$^3_{.667 m L}$	$^3_{.154L}$	$^3_{.923L}$	3 .429 L	3 0	$^3_{.667L}$	3 .154L
-		M	1.878	2.207	2.550	1.814	2.151	1.878	2.207	2.550	1.814	2.151
- [30	G N	$\substack{2-4\\3}$	$_{3}^{2-4}$	$\frac{2-4}{3}$	$\frac{2-4}{3}$	$\frac{2-4}{3}$	$^{2-4}_3$	$\frac{2-4}{3}$	2-4 3	$_{3}^{2-4}$	$\frac{2-4}{3}$
		B M	.923L 3.493	3.955	$^{0}_{4.425}$	667L 3.309	3.776	.923L 3.493	3.955	$^{0}_{4.425}$.667L 3.309	.154L 3,776
-		G	2-5	2–5	2-5	2-5	1-4	2-4	1-4	1-4	1-4	1-4
ايد	40	N B	$^4_{.556 m R}$	$^{3}_{2.556L}$	$^{3}_{1.667\mathrm{L}}$	3 3.000L	$^2_{.236 m R}$	$^3_{.923}$ L	$^{3}_{.875 m R}$	3 1.177R	$^{3}_{2.000\mathrm{R}}$	2 .236R
Ē.		M	5.507	5.847	6.363	4.980	5.501	5.114	5.715	6.329	4.880	5.501
Span-Feet	50	G N	2-5 4	1-5 3	1-5 3	1-5 3	1-5 3	2-5 4	1-5 3	1-5 3	1-5 3	1-4 2
ν.	00	В	.556R	1.300L	.500L	.400 L	$.400\mathbf{R}$	0	1.700 L	.800L	.800L	.236R
-			7.756 1–5	$\frac{8.234}{1-5}$	8.805 1–5	7.303	7.903 1-5	$\frac{7.250}{1-5}$	7.858 1-5	8.513 1–5	6.913 1-5	7.626
	60	N	3	3	3	3	3	3	3	3	3	3
		B M	2.100 L 10.174	1.300L 10.728	.500L 11.304	9.803	$0.400 \mathrm{R}$ 10.403	2.600L 9.713	1.700L 10.348	.800 L 11.011	0.800L 0.411	.100E
-		G	1–5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5
- 1	80	N B	$^3_{2.100 m L}$	$^3_{1.300 \mathbf{L}}$	3 .500L	3 .400I.	$^3_{.400 m R}$	3 2.600L	3 1.700 L	.800L	.800 L	3 .100F
-		M	15.155	15,721	16.303	14.802	15.402	14.685	15.336	16.008	14.408	15.100
	100	G N	$^{1-5}$	$^{1-5}_3$	$^{1\!-\!5}_3$	$^{1-5}_{3}$	$^{1-5}_{3}$	$^{1-5}_{3}$	$^{1-5}_{3}$	$^{1-5}_{3}$	15 3	1–5 3
		B M	2.100L 20.144	1.300L 20.717	.500L 21.303	.400L 19.802	.400R 20.402	2.600L 19.668	1.700L 20.329	.800L 21.006	.800L 19.406	.100F 20.100
Tru	ick N	0.	41	42	43	44	45	46	47	48	49	50
	. Base		48	48	48	48	48	44	44	44	44	44
Axl	le .cing	X X'	$\frac{16}{20}$	$\frac{16}{20}$	16 20	$\begin{array}{c} 16 \\ 20 \end{array}$	$\frac{16}{20}$	$\frac{16}{12}$	$\frac{16}{12}$	16 12	$\frac{16}{12}$	16 12
Hit		C	- 8	8	8	8	8	12	12	12	12	12
Loa	ıd	a ₁ a ₂	.10 .40	.10 .50	.10 .60	.20	.20 .50	.10	.10 .50	.10 .60	.20	.20 .50
Axl	es	a3	.50	.40	.30	.40	.30	.50	.40	.30	.40	.30
	10	G N	$\substack{2-3\\2}$	2-3	$^{2-3}_{2}$	$^{2-3}_2$	2-3 2	$\substack{2-3\\2}$	$^{2-3}_2$	$\substack{2-3\\2}$	2-3	2-3 2
		B M	1.000L .640	1.000L .800	1.000L .960	1.000L	1.000L .800	1.000L .640	1.000L	1.000L	1.000L	1.000I
- 1-		G	2-4	2-4	2-4	$\frac{.640}{2-4}$	2-4	2-3	.800 2-3	$\frac{.960}{2-3}$	$\frac{.640}{2-3}$.80 2-3
	20	N B	.923L	3 .429L	3 0	$^3_{.667}\mathbf{L}$	3 .154 $f L$	$^2_{1.000}{ m L}$	$\frac{2}{1.000}$ L	2 1.000L	$\frac{2}{1.000L}$	1.0001
		M	1.878	2.207	2.550	1.814	2.151	1.620	2.025	2.430	1.620	2.02
- [30	G N	$_{3}^{2-4}$	24 3	$\frac{2-4}{3}$	$\frac{2-4}{3}$	2-4 3	$^{2-4}_{3}$	2-4 3	$\frac{2-4}{3}$	$_{3}^{2-4}$	2-4 3
		\mathbf{B}	.923L	.429 L	0	.667L	.154L	1.693L	1.000L	.400 L	1.333L	.6161
Į.		M G	$\frac{3.493}{2-4}$	3.955 1-4	4.425 1-4	$\frac{3.309}{1-4}$	$\frac{3.776}{1-4}$	$\frac{3.037}{2-5}$	$\frac{3.573}{2-4}$	$\frac{4.129}{1-4}$	2.936	3.48 2-4
J	40	N	3	3	3	3	2	4	3	3	3	3
±		M	.923L 5.114	$.875\mathbf{R} \\ 5.715$	1.177R 6.329	2.000R 4.880	0.236 R 0.501	1.445R 4.747	1.000L 5.318	6.014	1.500R 4.445	.616] 5.10
Feet		G	1-4	1-4	11	1-4	1 -4	2-5	1-5	1-5	1-5	1-5
an-Feet			3	3	3 $^{1.177}$ R	$^3_{2.000\mathrm{R}}$	$^2_{.236 m R}$	$^4_{1.445 m R}$	3 2.000L	$^3_{1.100L}$	$^3_{1.200 m L}$	3 .2001
Span-Feet	50	N B	.534R	.875R	1.11110		7.626	6.987	7.488	8.224	6.529	7.30
Span-Feet	50	N B M	6.979	7.712	8.448	6.864	, ,				1 "	
Span-Feet	50	N B M G N	$\frac{-6.979}{1-5}$	$-\frac{7.712}{1-5}$	8.448 1-5 3	1-5 3	1-5 3	$^{1-5}_{3}$	$^{1-5}_{3}$	15 3	1-5 3	1-5 3
Span-Feet		N B M G N B	6.979 1-5 3 3.100L	-7.712 -5 3 $2.100L$	8.448 1-5 3 1.100L	1-5 3 1.200L	$^{3}_{.200L}$	3 3.100L	$^3_{2.100 L}$	$^{3}_{1.100\mathrm{L}}$	3 1.200L	3 .2001
Span-Feet	60	M G N B M	6.979 1-5 3 3.100L 9.260 1-5	7.712 1-5 3 2.100L 9.974 1-5	8.448 1-5 3 1.100L 10.720 1-5	1-5 3 1.200L 9.024 1-5	3 .200L 9.801 1-5	3.100L 9.260 1-5	$ \begin{array}{r} 3 \\ 2.100 L \\ 9.974 \\ \hline 1-5 \end{array} $	3 1.100L 10.720 1-5	3 1.200L 9.024 1–5	3 .2001 9.80 1–5
Span-Feet		M G N B M G	6.979 1-5 3 3.100L 9.260 1-5 3	7.712 1-5 3 2.100L 9.974 1-5 3	8.448 1-5 3 1.100L 10.720 1-5 3	1-5 3 1.200L 9.024 1-5 3	3 .200L 9.801 1-5 3	3.100L 9.260 1-5 3	$\begin{array}{c} 3\\2.100L\\9.974\\\hline 1-5\\3\end{array}$	3 1.100L 10.720 1-5 3	1.200L 9.024 1–5 3	3 .2001 9.80 1–5 3
Span-Feet	60	M G N B M G N B M	6.979 1-5 3 3.100L 9.260 1-5 3 3.100L 14.220	7.712 1-5 3 2.100L 9.974 1-5 3 2.100L 14.955	8.448 1-5 3 1.100L 10.720 1-5 3 1.100L 15.715	1-5 3 1.200L 9.024 1-5 3 1.200L 14.018	3 .200L 9.801 1-5 3 .200L 14.801	3.100L 9.260 1-5 3 3.100L 14.220	$\begin{matrix} 3\\ 2.100L\\ 9.974\\ \hline 1-5\\ 3\\ 2.100L\\ 14.955\\ \end{matrix}$	3 1.100L 10.720 1-5 3 1.100L 15.715	3 1.200L 9.024 1-5 3 1.200L 14.018	3 .2001 9.80 1-5 3 .2001 14.80
Span-Feet	80	M G N B M G N B M	6.979 1-5 3 3.100L 9.260 1-5 3 3.100L 14.220 1-5	7.712 1-5 3 2.100L 9.974 1-5 3 2.100L 14.955 1-5	8.448 1-5 3 1.100L 10.720 1-5 3 1.100L 15.715 1-5	1-5 3 1.200L 9.024 1-5 3 1.200L 14.018	3 .200L 9.801 1-5 3 .200L 14.801	3 3.100L 9.260 1-5 3 3.100L 14.220	3 2.100L 9.974 1-5 3 2.100L 14.955	3 1.100L 10.720 1-5 3 1.100L 15.715	3 1,200L 9,024 1-5 3 1,200L 14,018 1-5	3 .2001 9.80 1-5 3 .2001 14.80
Span-Feet	60	M G N B M G N B M	6.979 1-5 3 3.100L 9.260 1-5 3 3.100L 14.220	7.712 1-5 3 2.100L 9.974 1-5 3 2.100L 14.955 1-5 3	8.448 1-5 3 1.100L 10.720 1-5 3 1.100L 15.715 1-5 3	1-5 3 1.200L 9.024 1-5 3 1.200L 14.018	3 .200L 9.801 1-5 3 .200L 14.801	3.100L 9.260 1-5 3 3.100L 14.220	$\begin{matrix} 3\\ 2.100L\\ 9.974\\ \hline 1-5\\ 3\\ 2.100L\\ 14.955\\ \end{matrix}$	3 1.100L 10.720 1-5 3 1.100L 15.715	3 1.200L 9.024 1-5 3 1.200L 14.018	3 .200 9.80 1-5 3 .200 14.80

	ick No		51 48	52 48	53 48	54 48	55 48	56 52	57 52	58 52	59 52	60_ 52
Ax	le	X	16	16	16	16	16	16	16	16	16	16
Spa	acing	X'	16	16 12	$-\frac{16}{12}$	$-\frac{16}{12}$	$\frac{16}{12}$	20 12	$\frac{20}{12}$	$\frac{20}{12}$	$\frac{20}{12}$	20
Los		a ₁	.10	.10	.10	.20	.20	.10	.10	.10	.20	.20
On Ax		\mathbf{a}_2 \mathbf{a}_3	.40 .50	.50 .40	.60 .30	.40 .40	.50 .30	.40 .50	$.50 \\ .40$.60 .30	.40 .40	.50 .30
	103	G	2–3	2-3	2-3	2-3	2-3	2-3	2-3	2-3	2-3	2-3
1	10	N B	$^2_{1.000 ext{L}}$	$^{2}_{1.000L}$	$\frac{2}{1.000L}$	$^{2}_{1.000L}$	$^2_{1.000 m L}$	1.000L	$^{2}_{1.000L}$	$^{2}_{1.000L}$	1.000L	$^{2}_{1.000L}$
j		M	.640	.800	.960	.640	.800	.640	.800	.960	.640	.800
	20	G N	2-3 2	$^{2-3}_2$	$^{2-3}_2$	$^{2-3}_2$	$^{2-3}_{2}$	$^{2-3}_{2}$	$\substack{2-3\\2}$	$_{2}^{-3}$	2-3 2	$_{2}^{2-3}$
		В	1.000L	1.000L	1.000L	1.000L	1.000L	1.000L	1.000L	1.000L	1.000L	1.000L
		<u>M</u> G	$\frac{1.620}{2-4}$	$\frac{2.025}{2-4}$	$\frac{2.430}{2-4}$	$\frac{1.620}{2-4}$	$\frac{2.025}{2-4}$	$\frac{1.620}{2-4}$	$\frac{2.025}{2-4}$	$\frac{2.430}{2-4}$	$\frac{1.620}{2-4}$	$\frac{2.025}{2-4}$
	30	N B	3 1.693L	$^{3}_{1.000\mathrm{L}}$	$^3_{ ext{.400L}}$	$^{3}_{1.333L}$	$^3_{.616 m L}$	$^{3}_{1.693L}$	$^{3}_{1.000\text{L}}$	$^3_{ ext{.400L}}$	$^{3}_{1.333\mathbf{L}}$	$^3_{.616 m L}$
		M	3.037	3.573	4.129	2.936	3.483	3.037	3.573	4.129	2.936	3.483
	40	G N	$^{2-4}_{3}$	$^{2-4}_{3}$	1-4 3	1-4 3	2-4	2-4 3	$^{2-4}_{3}$	1-4 3	$^{1-4}_{3}$	$\frac{2-4}{3}$
et	40	В	1.693L	1.000L	.824R	1.500R	.616L	1.693L	1.000 L	.824R	1.500R	.616L
Span-Feet		M G	$\frac{4.646}{1-4}$	5.318 1-4	$-^{6.014}_{1-4}$	$\frac{4.445}{1-4}$	$-\frac{5.106}{1-4}$	$\frac{4.646}{1-4}$	$-\frac{5.318}{1-4}$	$\frac{-6.014}{1-4}$	$-\frac{4.445}{1-4}$	$\frac{5.106}{1-4}$
Spa	50	N	3	3	3	3	2	3	3	3	3	2
-		B M	$^{.134}_{6.475}$	$375\mathbf{R} \\ 7.302$	$.824\mathrm{R} \\ 8.137$	$^{1,500 m R}_{6.436}$	7.126	6.475	375R 7.302	.824R 8.137	1.500R 6.436	7.18L
		G	1-5	1-5	1-5	1-5	1–5	1-5	1-4	1-4	1–4	1-4
	60	N B	$3.600 \mathbf{L}$	$^3_{2.500 extbf{L}}$	$^3_{1.400 m L}$	$^3_{1.600 m L}$	$^3_{.500 \mathbf{L}}$	$^{3}_{4.100\mathrm{L}}$	3 .375R	$^3_{.824 m R}$	$^3_{1.500 m R}$	$^2_{.118 m L}$
1		_M	8.816	9.604	$\frac{10.433}{1-5}$	8.643	9.504	8.380	$\frac{9.302}{1-5}$	10.260	8.430	$-\frac{9.251}{1-5}$
	80	G N	$^{1-5}_3$	1–5 3	3	$^{1-5}_3$	$^{1-5}_{3}$	$^{1-5}_{3}$	3	$\frac{1-5}{3}$	$^{1-5}_3$	3
		B M	3.600L 13.762	2.500L 14.578	1.400L 15.425	1.600L 13.632	0.500L 14.503	4.100L 13.310	2.900L 14.205	1.700L 15.136	2.000L 13.250	.800L 14.208
		G	1-5	1-5	1-5	1-5	1-5	1–5	1-5	1-5	1-5	1-5
	100	$_{ m B}^{ m N}$	$3 \\ 3.600 $ L	$^{3}_{2.500L}$	$^{3}_{1.400 L}$	3 1.600L	$^3_{.500 m L}$	3 $4.100L$	$^{3}_{2.900L}$	3 1.700L	$^{3}_{2.000L}$	$^3_{.800 \mathbf{L}}$
1		M	18.730	19.563	20.420	18,626	19.503	18.268	19.184	20.129	18,240	19.206
		A7A					201000	1000				
	uck N	0,	61	62	63	64	65	66	67	68	69	70_
W	ı. Base	o. e L							67 48			70 48 20
Ax Spa	n. Base le acing	o, e L X X'	61 44 20 12	62 44 20 12	63 44 20 12	64 44 20 12	65 44 20 12	66 48 20 16	67 48 20 16	68 48 20 16	69 48 20 16	20 16
Ax Spa Hit	n. Base le acing tch	o, e L X X' C	61 44 20 12 8	62 44 20 12 8	63 44 20 12 8	64 44 20 12 8	65 44 20 12 8	66 48 20 16 8	67 48 20 16 8	68 48 20 16 8	69 48 20 16 8	20 16 8
Mi Ax Spa Hit Loa	n. Base le acing tch ad	o, e L X X' C a ₁ a ₂	61 44 20 12 8 .10 .40	62 44 20 12 8 .10	63 44 20 12 8 .10	64 44 20 12 8 .20 .40	65 44 20 12 8 .20 .50	66 48 20 16 8 .10 .40	67 48 20 16 8 .10 .50	68 48 20 16 8 .10 .60	69 48 20 16 8 .20 .40	48 20 16 8 .20 .50
Ax Spa Hit	n. Base le acing tch ad	o. e L X X' C a ₁ a ₂ a ₃	61 44 20 12 8 .10 .40 .50	62 44 20 12 8 .10 .50	63 44 20 12 8 .10 .60	64 44 20 12 8	65 44 20 12 8 .20 .50	66 48 20 16 8	67 48 20 16 8 .10 .50 .40	68 48 20 16 8 .10 .60 .30	69 48 20 16 8 .20 .40 .40	48 20 16 8 .20 .50
Mi Ax Spa Hit Loa	n. Base le acing tch ad	o. e L X X' C a ₁ a ₂ a ₃ G N	61 44 20 12 8 .10 .40 .50 2–3 2	62 44 20 12 8 .10 .50 .40 2–3 2	63 44 20 12 8 .10 .60 .30 2–3 2	64 44 20 12 8 .20 .40 .40 2-3 2	65 44 20 12 8 .20 .50 .30 2-3 2	8 .10 .40 .50 2-3 2	67 48 20 16 8 .10 .50 .40 2-3 2	68 48 20 16 8 .10 .60 .30 2-3 2	69 48 20 16 8 .20 .40 .40 2-3 2	48 20 16 8 .20 .50 .30 2-3 2
Mi Ax Spa Hit Loa	n. Base le acing tch ad	o, e L X X' C a ₁ a ₂ a ₃	61 44 20 12 8 .10 .40 .50	62 44 20 12 8 .10 .50 .40 2–3	63 44 20 12 8 .10 .60 .30 2-3	64 44 20 12 8 .20 .40 .40 2-3	65 44 20 12 8 .20 .50 .30 2-3	66 48 20 16 8 .10 .40 .50 2–3	67 48 20 16 8 .10 .50 .40	68 48 20 16 8 .10 .60 .30 2-3	69 48 20 16 8 .20 .40 .40 2-3	48 20 16 8 .20 .50 .30 2-3
Mi Ax Spa Hit Loa	n. Base le acing tch ad les	o. e L X X' C a1 a2 a3 G N B M	61 44 20 12 8 .10 .40 .50 2-3 2 1.000L .640 2-4	62 44 20 12 8 .10 .50 .40 2–3 2 1.000L .800	63 44 20 12 8 .10 .60 .30 2-3 2 1.000L .960 2-4	64 44 20 12 8 .20 .40 .40 2-3 2 1.000L .640 2-4	65 44 20 12 8 .20 .50 .30 2-3 2 1.000L .800	66 48 20 16 8 .10 .40 .50 2-3 2 1.000L .640	67 48 20 16 8 .10 .50 .40 2-3 2 1.000L .800 2-4	68 48 20 16 8 .10 .60 .30 2-3 2 1.000L .960	69 48 20 16 8 .20 .40 .40 2-3 1.000L .640 2-4	48 20 16 8 .20 .50 .30 2-3 2 1.000L .800
Mi Ax Spa Hit Loa	n. Base le acing tch ad	o. e L X X X C a ₁ a ₂ a ₃ G N B M G N B	61 44 20 12 8 .10 .40 .50 2-3 2 1.000L .640 2-4 3 .923L	62 44 20 12 8 .10 .50 .40 2–3 2 1.000L .800 2–4 3	63 44 20 12 8 .10 .60 .30 2-3 2 1.000L .960 2-4 3	64 44 20 12 8 .20 .40 .40 2-3 2 1.000 L .640 2-4 3 .667 L	65 44 20 12 8 .20 .50 .30 2-3 2 1.000L .800 2-4 3 .154L	66 48 20 16 8 .10 .40 .50 2-3 2 1.000L .640 2-4 3 .923L	67 48 20 16 8 .10 .50 .40 2–3 2 1.000L .800 2–4 3	68 48 20 16 8 .10 .60 .30 2-3 1.000L .960 2-4 3	69 48 20 16 8 .20 .40 .40 2-3 1.000L .640 2-4 3.667L	48 20 16 8 .20 .50 .30 2-3 2 1.000L .800 2-4 3 .154L
Mi Ax Spa Hit Loa	n. Base le acing tch ad les	o. e L	61 44 20 12 8 .10 .40 .50 2-3 2 1.000L .640 2-4 3 .923L 1.878	62 44 20 12 8 .10 .50 .40 2-3 2 1.000L .800 2-4 3 .429L 2.207	63 44 20 12 8 .10 .60 .30 2-3 2 .000L .960 2-4 3 0 2.550	64 44 20 12 8 .20 .40 .40 .40 .2-3 2 1.0001 .640 2-4 3 .6671 1.814	65 44 20 12 8 .20 .50 .30 2-3 2 1.000L .800 2-4 3 1.54L 2.151	66 48 20 16 8 .10 .40 .50 2-3 2 1.000L .640 2-4 3 .923L 1.878	67 48 20 16 8 .10 .50 .40 2-3 1.000L .800 2-4 3 429L 2.207	68 48 20 16 8 .10 .60 .30 2-3 2 1.000L .960 2-4 3 0 2.550	69 48 20 16 8 20 .40 .40 .40 2-3 2 1.000L .640 2-4 3 .667L 1.814	48 20 16 8 .20 .50 .30 2-3 2 1.000L .800 2-4 3 .154L 2.151
Mi Ax Spa Hit Loa	n. Base le acing tch ad les	o. e L X X C a ₁ a ₂ a ₃ G N B M G N B M G N B M	61 44 20 12 8 .10 .40 .50 2-3 2 1.000L .640 2-4 3 .923L 1.878 2-4 3	62 44 20 12 8 .10 .50 .40 2–3 2.000L .800 2–4 3.429L 2.207 2–4 3	63 44 20 12 8 .10 .60 .30 2–3 2 1.000L .960 2-4 3 0 2.550	64 44 20 12 8 .20 .40 .40 .2 1.000L .640 2 2 1.000L .814 2 .814 2 .840	65 44 20 12 8 .20 .50 .30 2-3 2 1.000L .800 2-4 3 .154L 2.151 2-4 3	66 48 20 16 8 .10 .40 .50 2-3 2 1.000L .640 2-4 3 .923L 1.878 2-4 3	67 48 20 16 8 .10 .50 .40 2-3 2 1.000L .800 2-4 3 .429L 2.207 2-4 3	68 48 20 16 8 .10 .60 .30 2-3 2 1.000L .960 2.550 2-4 3	69 48 20 16 8 .20 .40 .40 .2-3 2 1.000L .640 2-4 3 .667L 1.814 2-4 3	48 20 16 8 .20 .50 .30 2–3 2 1.000L .800 2–4 3 .154L 2.151 2–4 3
Mi Ax Spa Hit Loa	n. Base le acing tch ad les 10	o. e L X X' C a1 a2 a3 G N B M G N B M G G N B M G G G G G G G G G G G G G G G G G G	61 44 20 12 8 .10 .40 .50 2-3 2.000L .640 2-4 3 .923L 1.878 2-4	62 44 20 12 8 8 .10 .50 .40 2-3 2 1.000L .800 2-4 3 .429L 2.207 2-4	63 44 20 12 8 8 .10 .60 .30 2 1.000L .960 2-4 3 0 2.550	64 44 20 12 8 .20 .40 .40 2-3 2 1.000L .640 2-4 3 .667L 1.814	65 44 20 12 8 8 .20 .50 .30 2 1.000L .800 2-4 3 .154L 2.151	66 48 20 16 8 .10 .40 .50 2 1.000L .640 2–4 3 .923L 1.878	67 48 20 16 8 .10 .50 .40 2-3 2 1.000L .800 2-4 3 .429L 2.207 2-4	68 48 20 16 8 8 .10 .60 .30 2-3 2 1.000L .960 2-4 3 0 2.550 2-4	69 48 20 16 8 8 .20 .40 .40 .2-3 2 1.000L .640 2-4 3 .667L 1.814	48 20 16 8 20 .50 .50 .30 2-3 2 1.000L .800 2-4 3 .154L 2.151 2-4
Mi Ax Spa Hit Loa	n. Base le acing tch ad les 10 20	o. e L X X Y C a1 a2 a3 G N B M G N B M G N B M G O O O O O O O O O O O O O O O O O O	61 44 20 12 8 .10 .40 .50 2-3 2 .640 2-4 3 .923L .1.878 2-4 3 .923L .3493 .923L .3493 .923L .3493 .923L	62 44 20 12 8 .10 .50 .40 2–3 2.000L .800 2–4 3 .429L 2.207 2–4 3 .429L 3.955 2–5	63 44 20 12 8 .10 .60 .30 2-3 2 1.000L .960 2-4 3 0 2.550 2-4 3 0 4.425	64 44 20 12 8 .20 .40 2-3 2 1.000L .640 2-4 3 .667L 1.814 2-4 3 .667L 3.309 2-5	65 44 20 12 8 .20 .50 .30 2-3 2 1.000L .800 2-4 3 .154L 2.151 2-4 3 .1574L 3.176	66 48 20 16 8 .10 .40 .50 2-3 2 1.000L .640 2-4 3 .923L 1.878 2-4 3 .923L 3.493 .923L	67 48 20 16 8 .10 .50 .40 2-3 2 1.000L .800 2-4 3 4.29L 2.207 2-4 3 4.29L 3.955 2-4	68 48 20 16 8 .10 .60 .30 2-3 2 1.000L .960 2.4 3 0 2.550 2-4 3 0 4.425	69 48 20 16 8 .20 .40 .40 2-3 2 1.000L .640 2-4 3 .667L 1.814 2-4 3 .663.3309 2-4	48 20 16 8 .20 .30 2-3 2 1.000L .800 2-4 3 .154L 2.151 2-4 3 .154L 2.764
Ax Spo Hit Loo On Ax	n. Base le acing tch ad les 10	o. e L X X X C a1 a2 a3 G N B M G N B M G N B M G N B M G N B M	61 44 20 12 8 .10 .40 .50 2-3 2.000L .640 2-4 3 .923L 1.878 2-4 3 .923L 3.493	62 44 20 12 8 .10 .50 .40 2-3 2 1.000L .800 2-4 3 .429L 2.207 2-4 3 .429L 3.955	63 44 20 12 8 .10 .60 .30 2-3 2 1.000L .960 2-4 3 0 2.550 2-4 3 0 4.425	64 44 20 12 8 .20 .40 .40 2-3 1.000L .640 2-4 3 .667L 1.814 3.309	65 44 20 12 8 .20 .50 .30 2-3 1.000L .800 2-4 3 .154L 2.151 3.776	66 48 20 16 8 .10 .40 .50 2-3 1.000L .640 2-4 3 .923L 1.878 2-4 3 .923L 3.493	67 48 20 16 8 .10 .50 .40 2-3 2.000L .800 2-4 3 .429L 2.207 2-4 3 4.29L 3.955	68 48 20 16 8 .10 .60 .30 2-3 2 1.000L .960 24 3 0 2.550 2-4 3 4.425	69 48 20 16 8 .20 .40 2-3 1.000L .640 2-4 3 .667L 1.814 3 .667L 3.309	48 20 16 8 .20 .50 .30 2-3 2 1.000L .800 2-4 3 .154L 2.151 2-4 3 .154L 3.776
Ax Spo Hit Loo On Ax	n. Base le acing tch ad les 10 20	o. e L X X X C a1 a2 a3 G N B M G N B M G N B M G N B M M G N B M M M M M M M M M M M M M M M M M M	61 44 20 12 8 .10 .40 .50 2-3 2 1.000L .640 2-4 3 .923L 1.878 2-4 3 .923L 5.56 646 556 646 556 646 656 656 6	62 44 20 12 8 .10 .50 .40 2–3 1.000L .800 2–4 3 .429L 2.207 2–4 3 .429L 3.955 2–5 3 2.556L 5.847	63 44 20 12 8 .10 .60 .30 2-3 1.000L .960 2-4 3 0 2.550 2-4 3 0 4.425 2-5 3 1.667L 6.363	64 44 20 12 8 .20 .40 .40 2-3 2 1.000I .640 2-4 3 .667I 3.309 2-5 3 3.000I 4.980	65 44 20 12 8 .20 .50 .30 2-3 2 1.0001L .800 2-4 3 .154L 2.151 2-4 3 .1576 2-5 3 2.000L 5.480	666 48 20 16 8 .10 .40 .50 2-3 2 1.0001L .640 2-4 3 .923L 1.878 2-4 3 .923L 3.493 2-4 3 .923L 5.114	67 48 20 16 8 .10 .50 .40 2-3 2 1.000L .800 2-4 3 .429L 2.207 2-4 3 .429L 3.955 2-4 3 4.29L 5.703	68 48 20 16 8 .10 .60 .30 2-3 2 1.000L .960 2-4 3 0 2.550 2-4 3 0 4.425 2-4 3 0 6.300	69 48 20 16 8 .20 .40 2-3 2 1.000L .640 2-4 3 .667L 1.814 2-4 3 .667L 4.807	48 20 16 8 .20 .30 2-3 2 1.000L .800 2-4 3 .154L 2.151 2-4 3 .154L 3.776 2-4 3 .154L 5.401
Ax Spo Hit Loo On Ax	n. Base le acing tch ad les 10 20	O. e L X X X' C a1 a2 a3 G N B M G N B M G N B M G N B M M G N B M M G N B M M G N B M M B M M M B M M M B M M M B M M M B M M M B M M M M B M	61 44 20 12 8 .10 .40 .50 .50 2-3 2.000L .640 2-4 3.923L 1.878 3.923L 2-5 4 5.556R 5.507 2-5 4	62 44 20 12 8 .10 .50 .40 2-3 2 .000L .800 2-4 3 .429L 2.207 2-4 3.955 2-5 3.556L 5.847 2-5 3	63 44 20 12 8 .10 .60 .30 2-3 2.000L .960 2-4 3 0 2.550 2-4 3 0 4.425 2-5 3 1.667L 6.363	64 44 20 12 8 .20 .40 .40 2-3 1.0001 .640 2-4 3 .6671 1.814 2-4 3.309 2-5 3 3.0001 4.980 2-5 3	65 44 20 12 8 .20 .50 .30 2-3 2 1.0001 .800 2-4 3 .1541 2-4 3 .1541 2-5 3 2.0001 5.480 1-5 3	66 48 20 16 8 .10 .40 .50 2-3 2 1.000L .640 2-4 3 .923L 3.493 2-4 3 .923L 5.114 2-5 4	67 48 20 16 8 .10 .50 .40 2-3 2 1.000L .800 2-4 3 .429L 2.207 2-4 3.955 2-4 3.429L 5.703 2-5 3	68 48 20 16 8 .10 .60 .30 2-3 2 1.0001 .960 2.550 2-4 3 0 4.425 2-4 3 0 6.300 2-5 3	69 48 20 16 8 .20 .40 2-3 2 1.000L .640 2-4 3 .667L 1.814 3 .667L 4.807 2-5 3	48 20 16 8 .20 .30 2-3 2 1.000L .800 2-4 3 .154L 2.151 2-4 3 .154L 5.401 1-4 2
Ax Spo Hit Loo On Ax	n. Base le acing tech ad les 10 20 30	o. e L X X Y C a1 a2 a3 G N B M G N B M G N B M G N B M G N B M G N B M G N B M B M G N B B M B M B M B M B M B M B M B M B M	61 44 20 12 8 .10 .40 .50 2-3 1.000L .640 2-4 3 .923L 1.878 2-4 3 .923L 1.878 2-5 4 556R 5.507 2-5 4	62 44 20 12 8 .10 .50 .40 2-3 1.000IL .800 2-4 3 .429L 2.207 2-4 3.955 2-5 3 2.556L 2-5 3 2.556L	63 44 20 12 8 .10 .60 .30 2-3 1.000L .960 2-4 3 0 2.550 2-4 3 0.4425 2-5 3 1.667L 6.363 1-5 3.300L	64 44 20 12 8 .20 .40 2-3 2 1.000IL .640 2-4 3 .667L 1.814 2-4 3 .667S 3 .3309 2-5 3 3.000IL 4.980 2-5 3 3.000IL 4.980 3.000IL 4.980 3.000IL 3.	65 44 20 12 8 .20 .50 .30 2-3 2 1.000IL .800 2-4 3 .154L 2.151 2-4 3 .154L 3.776 2-5 3 2.000IL 5.480 1-5 3 8.800R	666 48 20 16 8 .10 .40 .50 2-3 2 1.0001L .640 2-4 3 .923L 1.878 2-4 3 .923L 3.493 2-4 3 .923L 5.114 2-5 4 0	67 48 20 16 8 .10 .50 .40 2-3 2 1.000L .800 2-4 3 .429L 2.207 2-4 3 .429L 5.703 2-5 3 3.000L	68 48 20 16 8 .10 .60 .30 2-3 2 1.000L .960 2.550 2-4 3 0 4.425 2-4 3 0 6.300 2-5 3 2.000L	69 48 20 16 8 .20 .40 2-3 2 1.000L .640 2-4 3 .667L 1.814 2-4 3 .667L 3.309 2-4 3 .667L 3.309 3.500L	48 20 16 8 .20 .30 2-3 2 1.000L .800 2-4 3 .154L 2.151 2-4 3 .154L 3.776 2-4 3 .154L 2.706R
Ax Spo Hit Loo On Ax	n. Bass le acing tich ad les 10 20 30 40	o. e L X X C C a1 a2 a2 a3 G N B M G N B M G N B M G N B M G N B M G O N B M B M G O N B M B M B M B M B M B M B M B M B M B	61 44 20 12 8 .10 .40 .50 .50 2-3 2 1.000L .640 2-4 3 .923L 1.878 2-4 3 .923L 556R 5.507 2-5 4 .5567 2-5	62 44 20 12 8 .10 .50 .40 2-3 1.000L .800 2-4 3 4.291L 2.207 2-4 3 4.291L 5.556L 5.847 2-5 3 2.556L 8.068 1-5	63 44 20 12 8 .10 .60 .30 2-3 2.0001 .960 2-4 3 0 2.550 2-4 3 1.6671 6.363 1-5 3 3.3001 8.662 1-5	64 44 20 12 8 .20 .40 .40 2-3 1.0001, .640 2-4 3.6671, .814 2-4 3.3.09 2-5 3.30901, .6904 1-5	65 44 20 12 8 .20 .50 .30 2-3 2 1.0001 .800 2-4 3 .1541 2-4 3 .1541 2-5 3 2.0001 5.480 1-5 3 8.800R 7.513	66 48 20 16 8 .10 .40 .50 2-3 1.000L .640 2-4 3 .923L 1.878 2-4 3 .923L 5.114 2-5 4 0 7.250 2-5	67 48 20 16 8 .10 .50 .40 2-3 2 1.000L .800 2-4 3 .429L 2.207 2-4 3.955 2-4 3.955 2-4 3.000L 7.712 1-5	68 48 20 16 8 .10 .60 .30 2-3 2 1.000L .960 2.550 2-4 3 0 4.425 2-4 3 0 6.300 2-5 3 2.000L .8.322 1-5	69 48 20 16 8 .20 .40 2-3 1.000L .640 2-4 3 .667L 1.814 3 .667L 4.807 2-5 3 3.500L 6.596 1-5	48 20 16 8 .20 .50 .30 2-3 1.000L .800 2-4 3 .154L 2.151 2-4 3 .154L 5.401 1-4 2.706 7.233 1-53
Ax Spo Hit Loo On Ax	n. Base le acing tech ad les 10 20 30	o. e L XX C C C C C C C C C C C C C C C C C C	61 44 20 12 8 .10 .40 .50 2-3 2.000L .640 2-4 3 .923L 1.878 2-4 3 .923L 2-5 4 556R 5.507 2-5 4 556R 7.756 2-5 4	62 44 20 12 8 .10 .50 .40 2-3 1.000L .800 2-4 3 .429L 2.207 2-4 3.955 2-5 3 2.556L 8.068 1-5 3	63 44 20 12 8 .10 .60 .30 2-3 1.000L .960 2-4 3 0 2.550 2-4 3 0.4425 2-5 3 1.667L 6.363 1-5 3.300L 8.662 1-5 3	64 44 20 12 8 .20 .40 2-3 2 1.000I .640 2-4 3 .667I 1.814 2-4 3 .667I 3.309 2-5 3 3.000I 6.944 1-5 3	65 44 20 12 8 .20 .50 .30 2-3 2 1.0001L .800 2-4 3 .154L 2.151 2-4 3 .154L 3.776 2-5 3 2.000L 5.480 1-5 3.800R 7.513	666 48 20 16 8 .10 .40 .50 2-3 2 1.0001L .640 2-4 3 .923L 1.878 2-4 3 .923L 5.114 2-5 4 0 7.250 2-5 4	67 48 20 16 8 .10 .50 .40 2-3 2 1.000L .800 2-4 3 .429L 2.207 2-4 3 .429L 3.955 2-4 3 3.000L 7.712 1-5 3	68 48 20 16 8 .10 .60 .30 2-3 2 1.000L .960 2.550 2-4 3 0 4.425 2-4 3 0 6.300 2-5 3 2.000L 8.322 1-5 3	69 48 20 16 8 .20 .40 2-3 2 1.000L .640 2-4 3 .667L 1.814 2-4 3 .667L 3.309 2-4 3 .667L 3.309 2-4 3 .657L 1.5567L 3.500L 6.596 1-5 3	48 20 16 8 .20 .50 .30 2-3 2 1.000L .800 2-4 3 .154L 2.151 2-4 3 .154L 2.706 2-4 3 .154L 2.706 7.706 7.233 1-5 3
Ax Spo Hit Loo On Ax	n. Bass le acing tich ad les 10 20 30 40	o. e L XX X' C a1 a2 a3 G N B M G N B M G N B M G N B M G N B M G N B M B M G N B M B M G N B M B M B M B M B M B M B M B M B M B	61 44 20 12 8 .10 .40 .50 .50 2-3 2.000L .640 2-4 3.923L 1.878 3.923L 2-5 4 5.556R 7.756 2-5 4 5.556R 7.756 1.556R 7.756 1.556R 1.0005	62 44 20 12 8 .10 .50 .40 2-3 1.000L .800 2-4 3 4.291L 2.207 2-4 3 4.291L 3.955 2-5 3 2.556L 8.068 1-5 3 1.1001L 10.520	63 44 20 12 8 .10 .60 .30 2-3 2.0001 .960 2-4 3 0 2.550 2-4 3 0 4.425 2-5 3 1.6671 6.363 1-5 3.3001 1-5 3.3001 1.102	64 44 20 12 8 .20 .40 .40 2-3 1.0001, .640 2-4 3.6671, .814 2-4 3.3.09 2-5 3.30901, .6944 1-5 3 0 9.400	65 44 20 12 8 .20 .50 .30 2-3 2 1.0001 .800 2-4 3.1541 2-4 3.17541 2-5 3 2.0001 5.480 1-5 3 8.800R 7.513 1-5 3 8.00R 10.011	66 48 20 16 8 .10 .40 .50 2-3 2 .000L .640 2-4 3 .923L 1.878 2-4 3 .923L 5.114 2-5 4 0 7.250 2-5 4 0 9.500	67 48 20 16 8 .10 .50 .40 2-3 2 1.000L .800 2-4 3 .429L 2.207 2-4 3.955 2-4 3.955 3.000L 7.712 1-5 3 1.500L 10.138	68 48 20 16 8 .10 .60 .30 2-3 2 1.000L .960 2-4 3 0 2.550 2-4 3 0 6.300 2-5 3 2.000L .8.322 1-5 3 600L 10.806	69 48 20 16 8 .20 .40 2-3 1.000L .640 2-4 3 .667L 1.814 3 .667L 4.807 2-5 3 3.500L 6.596 1-5 3 .400L 9.003	48 20 16 8 .20 .50 .30 2-3 1.000L .800 2-4 3 .154L 2.151 2-4 3 .154L 5.401 1-4 2.706R 7.233 1-5 3 .500R 9.704
Ax Spo Hit Loo On Ax	n. Bass le accing the hand less and les	O. e L X X C a1 a2 G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G G N B M G G N B M G G N B M G G N B M G G G N B M G G G G G G G G G G G G	61 44 20 12 8 .10 .40 .50 2-3 2 .0001 .640 2-4 3 .923L 1.878 2-4 3 .923L 556R 5.507 2-5 4 .556R 7.756 2-5 4 .556R 10.005 1-5	62 44 20 12 8 .10 .50 .40 2-3 1.000L .800 2-4 3 .429L 2.207 2-4 3.955 2-5 3 2.556L 8.068 1-5 31.100L 10.520 1-5	63 44 20 12 8 .10 .60 .30 2-3 2 1.000L .960 2-4 3 0 2.550 2-4 3 0 4.425 2-5 3 1.667L 6.363 1-5 3.300L 8.602 1-5 3 3.301L 11.102 1-5	64 44 20 12 8 .20 .40 .40 2-3 2 1.000IL .640 2-4 3 .6667L 3.309 2-5 3 3.000IL 6.944 1-5 3 0 9.400 1-5	65 44 20 12 8 .20 .50 .30 2-3 2 1.0001L .800 2-4 3 .154L 2.151 2-4 3 .154L 3.776 2-5 3 2.0001L 5.480 1-5 3 .800R 7.513 1-5 3 .800R 10.011 1-5	66 48 20 16 8 .10 .40 .50 2-3 2 1.0001L .640 2-4 3 .923L 1.878 2-4 3 .923L 5.114 2-5 4 0 7.250 2-5 4 0 9.500 1-5	67 48 20 16 8 .10 .50 .40 2-3 2 1.000L .800 2-4 3 .429L 2.207 2-4 3.955 2-4 3.429L 5.703 2-5 3 3.000L 7.712 1-5 3 1.500L 10.188 1-5	68 48 20 16 8 .10 .60 .30 2-3 2 1.000L .960 2-4 3 0 2.550 2-4 3 0 6.300 2-5 3 2.000L 8.322 1-5 3 6.600L 1.00.806	69 48 20 16 8 20 40 2-3 2 1.000L .640 2-4 3 .667L 1.814 2-4 3 .667L 4.807 2-5 3 3.500L 6.596 1-5 3 .400L 1-5	48 20 16 8 .20 .50 .30 2-3 2 1.000L .800 2-4 3 .154L 2.151 2-4 3 .154L 2.706R 7.233 1-5 3 .500R 9.7004
Ax Spo Hit Loo On Ax	n. Bass le acing tich ad les 10 20 30 40	O. e L XX C A1 A2 A2 A3 A3 A3 A4 A4 A4 A4 A4 A4 A4 A4 A4 A4 A4 A4 A4	61 44 20 12 8 .10 .40 .50 2-3 2.000L .640 2-4 3.923L 1.878 2-4 3.923L 3.493 2-5 4 .556R 7.756 2-5 4 .556R 10.005 1-5 4 2.100R	62 44 20 12 8 .10 .50 .40 2-3 2.000L .800 2-4 3 .429L 2.207 2-4 3.955 2-5 3 2.556L 8.068 1-5 3 1.100L 10.520 1-5 3 1.100L	63 44 20 12 8 .10 .60 .30 2-3 1.000L .960 2-4 3 0 2.550 2-4 3 0 4.425 2-5 3 1.667L 6.363 1-5 3 3.300L 1.1102 1-5 3 3.300L	64 44 20 12 8 .20 .40 .40 2-3 1.000IL .640 2-4 3 .667IL 1.814 2-4 3.309 2-5 3.000IL 4.980 2-5 3 0.001L 6.944 1-5 3 0 9.400 1-5 3 0	65 44 20 12 8 .20 .50 .30 2-3 2 1.000L .800 2-4 3.154L 2.151 2-4 3.776 2-5 3 2.000L 5.480 1-5 3 8.00R 7.513 1-5 3 8.00R 10.011 1-5 3 8.00R	66 48 20 16 8 .10 .40 .50 2-3 2 1.000L .640 2-4 3 .923L 1.878 2-4 3 .923L 5.114 2-5 4 0 7.250 2-5 4 0 9.500 1-5 3 2.400L	67 48 20 16 8 .10 .50 .40 2-3 2 1.000L .800 2-4 3 .429L 2.207 2-4 3.955 2-4 3.055 2-4 3.000L 7.712 1-5 3 1.500L 10.138 1-5 3 1.500L	68 48 20 16 8 .10 .60 .30 2-3 2 1.000L .960 2.550 2-4 3 0 6.300 2-5 3 2.000L .8.322 1-5 3 .600L 10.806	69 48 20 16 8 .20 .40 2-3 2 1.000L .640 2-4 3 .667L 1.814 2-4 3 .667L 4.807 2-5 3 3.500L 6.596 1-5 3 .400L 9.003 1-5 3 400L	48 20 16 8 .20 .30 2-3 1.000L .800 2-4 3 .154L 2.153 .154L 5.401 1-4 2.706R 7.233 1.554 1.55 9.704 1.55 3 .500 1.554 1.554 1.554 1.555
Ax Spo Hit Loo On Ax	n. Bass le accing the hand less than the hand less 10 20 40 50 60	O. E L XX C A1 A2 A3 G N B M B M G N B M B M G N B M B B	61 44 20 12 8 .10 .40 .50 2-3 2.000L .640 2-4 3.923L 1.878 2-4 3.923L 2-5 4.556R 5.507 2-5 4 .556R 7.756 2-5 4 .556R 10.005 1-5 4 2.100R	62 44 20 12 8 .10 .50 .40 2-3 1.000L .800 2-4 3 .429L 2.207 2-4 3.955 2-5 3 2.556L 5.847 2-5 3 1.100L 10.520 1-5 3 1.100L 15.515	63 44 20 12 8 .10 .60 .30 2-3 2 1.000L .960 2-4 3 0 2.550 2-4 3 0 4.425 2-5 3 1.667L 8.602 1-5 3 3.00L 11.102 1-5 3 3.00L 1-15 11.102 16.101	64 44 20 12 8 .20 .40 .40 2-3 2 1.000IL .640 2-4 3 .6667L 1.814 2-4 3 .667L 3.309 2-5 3 0.000IL 6.944 1-5 3 0 9.400 1-5 3 0 14.400	65 44 20 12 8 .20 .50 .30 2-3 2 1.0001L .800 2-4 3 .154L 2.151 2-4 3.776 2-5 3 .154L 5.480 1-5 3 .800R 7.513 1-5 3 .800R 10.011 1-5 3 .800R 15.008	66 48 20 16 8 .10 .40 .50 2-3 2 1.000L .640 2-4 3 .923L 1.878 2-4 3 .923L 5.114 2-5 4 0 7.250 2-5 4 0 9.500 1-5 3 2.400L 14.472	67 48 20 16 8 .10 .50 .40 2-3 2 1.000L .800 2-4 3 .429L 2.207 2-4 3 .429L 5.703 2-5 3 3.000L 7.712 1-5 3 1.500L 10.188 1-5 3 1.500L 15.128	68 48 20 16 8 .10 .60 .30 2-3 2 1.000L .960 2-4 3 0 2.550 2-4 3 0 6.300 2-5 3 2.000L 8.322 1-5 3 6.600L 15.805	69 48 20 16 8 20 40 2-3 1.000L .640 2-4 3 .667L 1.814 2-4 3 .667L 4.807 2-5 3 3.500L 6.596 1-5 3 .400L 1-5 3 400L 14.002	48 20 16 8 .20 .50 .30 2-3 2 1.000L .800 2-4 3 .154L 2.151 2-4 3 .154L 5.401 1-4 2 .706R 7.233 1-5 3 .500R 9.7004 1-5 3 .500R 9.700R
Ax Spo Hit Loo On Ax	n. Bass le accing the hand less than the hand less 10 20 40 50 60	O. E L XX C A1 A2 A2 G N B M B M G N B M B M G N B M B M G N B M B M G N B M B M B M B M G N B M B B	61 44 20 12 8 .10 .40 .50 .50 2-3 2.000L .640 2-4 3.923L 1.878 2-4 3.923L 3.493 2-5 4 .556R 7.756 4 .556R 10.005 1-5 4 2.100R 14.955 1-5 4	62 44 20 12 8 .10 .50 .40 2-3 2.000L .800 2-4 3 .429L 2.207 2-4 3.955 2-5 3 2.5566L 8.068 1-5 3 1.100L 10.520 1-5 3 1.100L 15.515 1-5 3	63 44 20 12 8 .10 .60 .30 2-3 1.000L .960 2-4 3 0 2.550 2-4 3 0 4.425 2-5 3 1.667L 6.363 1-5 3.300L 11.102 1-5 3.300L 11.102 1-5 3.300L 11.102 1-5 3.300L 11.102	64 44 20 12 8 .20 .40 .40 2-3 1.0001 .640 2-4 3 .6671 1.814 2-4 3.309 2-5 3.0001 4.980 2-5 3 3.0001 1-5 3 0 14.400 1-5 3 0 14.400	65 44 20 12 8 .20 .50 .50 .30 2-3 2 1.0001 .800 2-4 3.1541 2.151 2-4 3.776 2-5 3 2.0001 5.480 1-5 3 8.00R 7.513 1-5 3 8.00R 10.011 1-5 3 8.00R 15.008 1-5 3	66 48 20 16 8 .10 .40 .50 2-3 2 1.000L .640 2-4 3 .922L 1.878 2-4 3 .923L 5.114 2-5 4 0 7.250 2-5 4 0 9.500 1-5 3 2.400L 14.472 1-5 3	67 48 20 16 8 .10 .50 .40 2-3 2 1.000L .800 2-4 3 .429L 2.207 2-4 3.955 2-4 3.955 2-4 3.000L 7.712 1-5 3 1.500L 10.138 1-5 3 1.500L 15.128 1-5 3	68 48 20 16 8 .10 .60 .30 2-3 2 1.000L .960 2.550 2-4 3 0 6.300 2-5 3 2.000L .8.322 1-5 3 .600L 15.805 1-5 3	69 48 20 16 8 .20 .40 .40 2-3 1.000L .640 2-4 3 .667L 1.814 3 .667L 4.807 2-5 3 3.500L 6.596 1-5 3 .400L 9.003 1-5 3 400L 14.002 1-5 3	48 20 16 8 .20 .30 2-3 1.000L .800 2-4 3 .154L 2-14 3.776 2-4 3.154L 5.401 1-4 2.706R 7.233 1.55 1.
Ax Spo Hit Loo On Ax	n. Base le accing teh and less 10 20 30 40 50 60	O. E L XX C A1 A2 A3 G G N B M	61 44 20 12 8 .10 .40 .50 2-3 1.000L .640 2-4 3 .923L 1.878 3 .923L 3.493 2-5 4 .556R 5.507 2-5 4 .556R 10.005 1-5 4 2.100R 14.955 1-5	62 44 20 12 8 .10 .50 .40 2-3 2.000L .800 2-4 3 .429L 2.207 2-4 3.955 2-5 3 2.556L 5.847 2-5 3 1.100L 10.520 1-5 3 1.100L 15.515 1-5	63 44 20 8 .10 .60 .30 2-3 2.0 1.000L .960 2-4 3 0 2.550 2-4 3 1.667L 6.363 1-5 3 3.300L 1.102 1-5 3 3.300L 1.102 1-5 3 1.6101 1-5	64 44 20 12 8 .20 .40 .40 2-3 2 1.000L .640 2-4 3 .667L 3.309 2-5 3 3.000L 4.980 2-5 3 3.000L 6.944 1-5 3 0 9.400 1-5	65 44 20 12 8 .20 .50 .50 .30 .2 -3 2 1.000L .800 2 -4 3 .154L 2.151 2 -4 3 .154L 3.776 2 -5 3 .800R 1 -5 3 .800R 1 -5	66 48 20 16 8 .10 .40 .50 2-3 1.000L .640 2-4 3 .923L 1.878 2-4 3 .923L 5.114 2-5 4 0 9.500 1-5 3 2.400L 1.4.472 1-5	67 48 20 16 8 .10 .50 .40 2-3 2 1.000L .800 2-4 3 .429L 3.955 2-4 3 .429L 5.703 2-573 3 3.000L 7.712 1-5 3 1.500L 10.188 1-5 3 1.502L	68 48 20 16 8 .10 .60 .30 2-3 2 1.000L .960 2-4 3 0 2.5560 2-4 3 0 4.425 2-4 3 0 6.300 2-5 3 2.000L 8.322 1-5 3.600L 10.806 1-5 3.600L 15.805	69 48 20 16 8 20 40 2-3 2 1.000L .640 2-4 3 .667L 1.814 2-4 3.667L 4.807 2-5 3 3.500L 6.596 1-5 3.400L 9.003 1-5 14.002 1-5	48 20 16 8 .20 .50 .30 2-3 2 1.000L .800 2-4 3 .154L 2.151 2-4 3 .154L 3.776 2-4 2 2-4 3 .154L 3.776 3 .154L 5.401 1-5 3 .500R 9.704 1-5 1-70

Tr	uck No) .	71	72	73	74	75	76	77	78	79	80
Wł	ı. Base		52	52	52	52	52	48	48	48	48	48
Ax	le acing	X X'	20 20	20 20	20 20	20 20	20 20	$\frac{20}{12}$	20 12	20 12	20 12	20 12
Hit		C	- 20	8	8	8	8	12	12	12	12	12
Los		a ₁	.10	.10	.10	.20	.20	.10	.10	.10	.20	.20
On		a2	.40	.50	.60	.40	.50	.40	.50	.60	.40	.50
Ax	.res	_a ₃	$\frac{.50}{2-3}$	$-\frac{40}{2-3}$	$-\frac{.30}{2-3}$	$\frac{.40}{2-3}$	30 	50 	$-\frac{.40}{2-3}$	$_{2-3}^{.30}$	$\frac{.40}{2-3}$ —	2-3
	10	N	2	2	2	2	2	2	2	2	2	2
		B M	1.000L $.640$	1.600L .800	1.000L $.960$	1.000L .640	1.000L .800	1.000L .640	1.000L .800	1.000L .960	1.000L $.640$	1.000L .800
		G	2-4	$\frac{-2-4}{2}$	2-4	2-4	2-4	2-3	2-3	2-3	2-3	2-3
Ì	20	N	3	3	3	3	3	2	2	2	2	2
		B M	0.923L 1.878	2.29L	$0 \\ 2.550$.667L 1.814	$^{.154} m L \\ 2.151$	1.000L 1.620	1.000L 2.025	1.000L 2.430	1.000L 1.620	1.000L 2.025
		G	24	2-4	2-4	2-4	2-4	2-4	24	2-4	2-4	2-4
	30	N B	$^{3}_{.923L}$	$^{3}_{.429L}$	3 0	$^3_{.667L}$	3 .154L	3 $1.693L$	$^{3}_{1.000L}$	$^{3}_{.400}$ L	$^3_{1.333 m L}$	$^3_{.616L}$
		M	3.493	3.955	4.425	3.309	3.776	3.037	3.573	4.129	2.936	3.483
		G	2-4	2-4	24	2-4	2-4	2-5	2-4	2-4	2-4	24
4	40	$_{ m B}^{ m N}$	3 .923L	$^{3}_{.429}$ L	3	$^3_{.667L}$	3 .154 L	4 1.445 $ m R$	3 1.000L	3 .400L	$^{3}_{1.333L}$	$^3_{.616\mathbf{L}}$
F-		M	5.114	5.703	6.300	4.807	5.401	4.747	5.318	6.003	4.427	5.106
Span-Feet	50	G	$^{1-4}_{3}$	$^{1-4}_{3}$	$^{1-4}_3$	1-4	1-4	2-5	2-5	2-5	2-5	1-4
S	50	N B	.800R	1.125R	1.412R	$^3_{2.500\mathrm{R}}$	$^2_{.706 m R}$	$^{4}_{1.445R}$	$^3_{3.445}$ L	$^{3}_{2.333\mathrm{L}}$	$^3_{4.000L}$	$^2_{.353\mathrm{R}}$
ĺ		M	6.785	7.520	8.259	6.500	7.233	6.987	7.364	8.048	6.256	6.927
	60	G N	15 3	$^{1-5}_{3}$	$^{1-5}_{3}$	$^{1-5}_{3}$	$^{1-5}_{3}$	$\begin{array}{c} 2-5 \\ 4 \end{array}$	$_3^{1-5}$	$^{1-5}_3$	1–5 3	$^{1-5}_{3}$
		В	2.900L	1.900L	.900L	.800L	.200R	1.445R	1.900L	.900L	.800L	.200R
		_M	9.040	-9.760	$\frac{10.514}{1}$	-8.611	9.401	9.231	9.760	10.514	8.611	9.401
	80	G N	$^{1-5}_3$	1–5 3	15 3	$^{1-5}_{3}$	$^{1-5}_{3}$	$^{1-5}_4$	$^{1-5}_3$	$^{1-5}$	$^{1-5}$	$\frac{1-5}{3}$
		В	2.900L	1.900L	.900L	.800L	.200R	3.100R	1.900L	.900L	.800L	.200R
		M G	14.005	$\frac{14.745}{1-5}$	15.510	13.608	14.401	14.020 1-5	14.745 1-5	15.510	13.608	14.401
	100	N	3	3	3	3	3	4	3	3	3	3
		B M	2.900L 18.984	1.900L 19.736	.900L 20.508	.800L 18.606	.200R 19.400	3.100R 18.996	1.900L 19.736	.900L 20.508	.800L 18.606	.200R
		137	10.004	19.190	40.000	10.000	19.400	10.990	19.100	20.000	10.000	19.400
T	al. NI.		01	00	0.9	0.4	07	0.0	0.7	00	20	
_	uck No		81 52	82 52	83	84 52	85 52	86	87 56	88	89 56	90
_	n. Base		81 52 20	82 52 20	52	84 52 20	52	56	56	56	56	56
WI Ax Sp	n. Base le acing	X X	52 20 16	52 20 16	52 20 16	52 20 16	52 20 16	56 20 20	56 20 20	56 20 20	56 20 20	56 20 20
MI Ax Sp Hi	n. Base le acing tch	X X' C	52 20 16 12	52 20 16 12	52 20 16 12	52 20 16 12	52 20 16 12	56 20 20 12	56 20 20 12	56 20 20 12	56 20 20 12	56 20 20 12
WI Ax Sp	n. Base le acing tch ad	X X	52 20 16	52 20 16 12 .10	52 20 16	52 20 16	52 20 16	56 20 20	56 20 20 12 .10	56 20 20	56 20 20 12 .20	56 20 20 12 .20
Ax Sp Hi Lo	n. Base le acing tch ad	E L X X' C a ₁ a ₂ a ₃	52 20 16 12 .10 .40 .50	52 20 16 12 .10 .50 .40	52 20 16 12 .10 .60 .30	52 20 16 12 .20 .40 .40	52 20 16 12 .20 .50 .30	56 20 20 12 .10 .40 .50	56 20 20 12 .10 .50 .40	56 20 20 12 .10 .60 .30	56 20 20 12 .20 .40 .40	56 20 20 12 .20 .50 .30
Ax Sp Hi Lo	n. Base le acing tch ad iles	E L X X' C a ₁ a ₂ a ₃ G	52 20 16 12 .10 .40 .50	52 20 16 12 .10 .50 .40 2-3	52 20 16 12 .10 .60 .30 2-3	52 20 16 12 .20 .40 .40	52 20 16 12 .20 .50 .30 2–3	56 20 20 12 .10 .40 .50	56 20 20 12 .10 .50 .40 2-3	56 20 20 12 .10 .60 .30 2-3	56 20 20 12 .20 .40 .40	56 20 20 12 .20 .50 .30 2-3
Ax Sp Hi Lo	n. Base le acing tch ad	E L X X X' C a1 a2 a3 G N B	52 20 16 12 .10 .40 .50 2–3 2 1.000L	52 20 16 12 .10 .50 .40 2-3 2 1.000L	52 20 16 12 .10 .60 .30 2-3 2 1.000L	52 20 16 12 .20 .40 .40 2-3 2 1.000L	52 20 16 12 .20 .50 .30 2–3 2 1.000L	56 20 20 12 .10 .40 .50 2-3 2 1.000L	56 20 20 12 .10 .50 .40 2-3 2 1.000L	56 20 20 12 .10 .60 .30 2-3 2	56 20 20 12 .20 .40 .40 2-3 2 1.000L	56 20 20 12 .20 .50 .30 2–3 2 1.000L
Ax Sp Hi Lo	n. Base le acing tch ad iles	E L X X' C a ₁ a ₂ a ₃ G N B M	52 20 16 12 .10 .40 .50 2-3 2 1.000L .640	52 20 16 12 .10 .50 .40 2-3 2 1.000 L .800	52 20 16 12 .10 .60 .30 2-3 2 1.000L .960	52 20 16 12 .20 .40 .40 2-3 2 1.000L .640	52 20 16 12 .20 .50 .30 2-3 2 1.000L .800	56 20 20 12 .10 .40 .50 2-3 2 1.000L .640	56 20 20 12 .10 .50 .40 2-3 2 1.000L .800	56 20 20 12 .10 .60 .30 2-3 2 1.000L .960	56 20 20 12 .20 .40 .40 2-3 2 1.000L .640	56 20 20 12 .20 .50 .30 2-3 2 1.000L .800
Ax Sp Hi Lo	n. Base le acing tch ad iles	E L X X X' C a1 a2 a3 G N B M G	52 20 16 12 .10 .40 .50 2-3 2 1.000L .640 2-3	52 20 16 12 .10 .50 .40 2–3 1.000L .800 2–3	52 20 16 12 .10 .60 .30 2-3 2 1.000L .960 2-3	52 20 16 12 .20 .40 .40 2-3 2 1.000L .640 2-3	52 20 16 12 .20 .50 .30 2–3 2 1.0001, .800	56 20 20 12 .10 .40 .50 2-3 2 1.000L .640	56 20 20 12 .10 .50 .40 2-3 2 1.000L .800 2-3	56 20 20 12 .10 .60 .30 2-3 1.000L .960 2-3	56 20 20 12 .20 .40 .40 2-3 2 1.000L .640 2-3	56 20 20 12 .20 .50 .30 2–3 2 1.000L .800 2–3
Ax Sp Hi Lo	n. Base le acing tch ad cles	E L X X X C a1 a2 a3 G N B M G N B	52 20 16 12 .10 .40 .50 2-3 2 1.000L .640 2-3 2 1.000I	52 20 16 12 .10 .50 .40 2-3 2 1.000L .800 2-3 2	52 20 16 12 .10 .60 .30 2-3 2 1.000L .960 2-3 2 1.000L	52 20 16 12 .20 .40 .40 2-3 2 1.000L .640 2-3 2 1.000L	52 20 16 12 .20 .50 .30 2–3 2 1.000L .800 2–3 2	20 20 12 .10 .40 .50 2-3 2 1.000L .640 2-3 2	56 20 20 12 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L	56 20 20 12 .10 .60 .30 2–3 2 1.000L .960 2–3 2	56 20 20 12 .20 .40 .40 2-3 2 1.000L .640 2-3 2	56 20 20 12 .20 .50 .30 2-3 2 1.000L .800 2-3 2
Ax Sp Hi Lo	n. Base le acing tch ad cles	E L X X' C a1 a2 a3 G N B M	52 20 16 12 .10 .40 .50 2-3 2 1.000L .640 2-3 2 1.000IL 1.620	52 20 16 12 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025	52 20 16 12 .10 .60 .30 2-3 2 1.000L .960 2-3 2 1.000L .2430	52 20 16 12 .20 .40 .40 2-3 1.000L .640 2-3 2 1.000L 1.620	52 20 16 12 .20 .50 .30 2-3 2 1.000L .800 2-3 2 1.000L 2.025	20 20 12 .10 .40 .50 2-3 2 1.000L .640 2-3 2 1.000L 1.620	56 20 20 12 .10 .50 .40 2-3 1.000L .800 2-3 2 1.000L 2.025	56 20 20 12 .10 .60 .30 2-3 1.000L .960 2-3 2 1.000L 2.430	56 20 20 12 .40 .40 .40 2-3 2 1.000L .640 2-3 2 1.000L 1.620	56 20 20 12 .50 .30 2-3 2 1.000L .800 2-3 2 1.000L 2.025
Ax Sp Hi Lo	n. Base le acing tch ad cles	C A1 A2 A3 G N B M G N B M G N	52 20 16 12 .10 .40 .50 2-3 2 1.000L .640 2-3 2 1.000L 1.620	52 20 16 12 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025 2-4 3	52 20 16 12 .10 .60 .30 2 1.000L .960 2 2 1.000L 2.430 2 4.30	52 20 16 12 .20 .40 .40 .40 2-3 2 1.000L .640 2-3 2 1.000L 1.620 2-4	52 20 16 12 .20 .50 .30 2 1.000L .800 2-3 2 1.000L 2.025 2-4 3	56 20 20 12 .10 .40 .50 2-3 2 1.000L .640 2-3 2 1.000L 1.620 2-4	56 20 20 12 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025	56 20 20 12 .10 .60 .30 2-3 2 1.000L .960 2-3 2 1.000L 2.430	56 20 20 12 .20 .40 .40 .2 1.000L .640 2-3 2 1.000L 1.620 2-4 3	56 20 20 12 .20 .50 .30 2 1.000L .800 2-3 2 1.000L 2.025 2-4 3
Ax Sp Hi Lo	n. Base le acing tch ad cles	C at a2 a3 G N B M G N B M G N B B M	52 20 16 12 .10 .40 .50 2-3 2 1.000L 2-3 2 1.000L 1.620 2-4 3 1.693L	52 20 16 12 .10 .50 .40 2-3 2 1.000L 2.025 2-4 3	52 20 16 12 .10 .60 .30 2-3 2 1.000L .960 2-3 2 1.000L 2.430 2-4 3	52 20 16 12 .20 .40 .40 2-3 2 1.000L .640 2-3 2 1.000L 1.620 2-4 3 1.333L	52 20 16 12 .20 .50 .30 2 -3 2 1.000L 2.025 2-4 3 .616L	56 20 20 12 .10 .40 .50 2-3 2 1.000L 1.620 2-4 3	56 20 20 12 .10 .50 .40 2 -3 2 1.000L 2.025 2-4 3 1.000L	56 20 20 12 .10 .60 .30 2-3 2 1.000L .960 2-3 2 1.000L 2.430 2-4 3	56 20 20 12 .20 .40 .40 2-3 2 1.000L .640 2-3 2 1.000L 1.620 2-4 3	56 20 20 12 .50 .50 .30 2–3 2 1.000L 2-3 2 1.000L 2.025 2-4 3
Ax Sp Hi Lo	n. Base le acing tch ad cles	C a1 a2 a3 G N B M G N B M G N B M	52 20 16 12 .10 .40 .50 2-3 2 1.000L .640 2-3 2 1.000L 1.620	52 20 16 12 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025 2-4 3	52 20 16 12 .10 .60 .30 2-3 2 1.000L .960 2-3 2 1.000L 2.430 2-4 3 400L 4.129	52 20 16 12 .20 .40 .40 .2-3 2 1.000L 1.620 2-4 3 1.333L 2.936	52 20 16 12 .20 .50 .30 2 1.0001L .800 2-3 2 1.0001L 2.025 2-4 3 .616L 3.483	56 20 20 12 .10 .40 .50 2-3 2 1.000L .640 2-3 2 1.000L 1.620 2-4 3 1.693L 3.037	56 20 20 12 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025	56 20 20 12 .10 .60 .30 2-3 2 1.000L .960 2-3 2 1.000L 2.430 2-4 3 .400L 4.129	56 20 20 12 .20 .40 .40 .2-3 2 1.000L 1.640 2-4 3 1.333L 2.936	56 20 20 12 .20 .30 2-3 2 1.000L 2-3 2 1.000L 2.025 2-4 3.616L 3.483
WI Axx Sp Hii Lo On Ax	n. Base le acing tch ad cles	L X X X' C a ₁ a ₂ a ₃ G N B M G N B M	52 20 16 12 .10 .40 .50 2-3 2 1.009L 1.620 2-4 3 1.693L 3.037 2-4 3	52 20 16 12 .10 .50 .40 2-3 2 1.000L 2.025 2-4 3 1.000L 3.573 2-4 3	52 20 16 12 .10 .60 .30 2-3 2 1.000L .960 2-3 2 1.000L 2.430 2-4 3 .400L 4.129	52 20 16 12 .20 .40 .40 .40 2-3 2 1.000L 1.620 2-4 3 1.333L 2.936 2-4 3	52 20 16 12 .20 .50 .30 2-3 2 1.000L 2.025 2-4 3 .616L 3.483 2-4 3	56 20 20 12 .10 .40 .50 2-3 2 1.000L .640 2-3 2 1.000L 3 1.693L 3.037 2-4 3	56 20 20 12 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 3.573 2-4 3	56 20 20 12 .10 .60 .30 2-3 2 1.000L .960 2-3 2 1.000L 2.430 2-4 3 .400L 4.129 2-4 3	56 20 20 12 .20 .40 .40 2-3 2 1.000L .640 2-3 2 1.000L 1.620 2-4 3 1.333L 2.936	56 20 20 12 .20 .50 .30 2-3 2 1.000L .800 2-3 2 1.000L 3.483 2-4 3
WHAX Sp Hi Lo On Ax	n. Base le acing tch ad cles 10	C a1 a2 a3 G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B B M G N B B M G G N B B M G N B B M G C N B B M G C N B B M G C N B B M G C N B B M G C N B B M G C N B B M G C N B B M G C N B B M G C N B B M G C N B B M G C N B B M G C N B B M G C N B B M G C N B B M G C N B B M G C N B B M C M B M C	52 20 16 12 .10 .40 .50 2-3 2 1.0001L .640 2-3 2 1.0001L 1.620 2-4 3 3.037 2-4	52 20 16 12 .10 .50 .40 2-3 2 1.000L 2.025 2-4 3 1.000L 3.573 2-4	52 20 16 12 .10 .60 .30 2-3 2 1.000L .960 2-3 2 1.000L 2.430 2-4 3 .400L 4.129	52 20 16 12 .20 .40 .40 .40 2-3 2 1.000L 1.620 2-3 2 1.090L 1.620 2-4	52 20 16 12 .20 .50 .30 2-3 2 1.000L 2.025 2-4 3 .616L 3.483 2-4	56 20 20 12 .10 .40 .50 2-3 2 1.000L 1.620 2-4 3.037 2-4 3.037	56 20 20 12 .10 .50 .40 2-3 2 1.000L 2.025 2-4 3 1.000L 3.573	56 20 20 12 .10 .60 .30 2-3 2 1.000L 2.43 3 .400L 4.129 2-4 3 3.400L	56 20 20 20 21 22 40 2-3 2 1.000L 1.620 2-4 3 1.333L 2.936 2-4 3 1.333L 3.133L	56 20 20 12 .20 .50 .30 2-3 2 1.000L 2.025 2 1.000L 2.025 3.483 2-4 3.483
WHAX Sp Hi Lo On Ax	n. Base le acing tch ad cles 10	L X X X C a1 a2 a3 G N B M G N B B M G N B B M B M B M B M B M B M B M B M B M	52 20 16 12 .10 .40 .50 2-3 2 1.000L 1.620 2 1.000L 3.037 2-4 3.037 2-4 3.037	52 20 16 12 .10 .50 .40 2–3 2 1.000L 2.025 2-4 3 1.000L 3.573 2-4 3.573 2-4 3	52 20 16 12 .10 .60 .30 2-3 2 1.000L 2-3 2 1.000L 2.430 2-4 3 .400L 4.129 2-4 3	52 20 16 12 .20 .40 2-3 2 1.000L 1.640 2-3 2 1.000L 2-4 3 1.333L 2-936 2-4 3 1.333L	52 20 16 12 .20 .50 .30 2–3 2 1.0000L 2-3 2 2.025 3.616L 3.483 2–4 3.616L	56 20 20 12 .10 .40 .50 2-3 2 1.000L .640 2-3 2 1.000L 3 1.693L 3.037 2-4 3	56 20 20 20 11 11 .10 .50 .40 2-3 2 1.000L 2.025 2-4 3 1.000L 3.573 2-4 3 1.000L	56 20 20 12 .10 .60 .30 2-3 2 1.000L .960 2-3 2 1.000L 2.430 2-4 3 .400L 4.129 2-4 3	56 20 20 12 .20 .40 .40 2-3 2 1.000L .640 2-3 2 1.000L 1.620 2-4 3 1.333L 2.936	56 20 20 12 .20 .50 .30 2-3 2 1.000L .800 2-3 2 1.000L 3.483 2-4 3
WHAX Sp Hi Lo On Ax	n. Base le acing tch ad cles 10	C a1 a2 a3 G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M M G N M B M M M G N M B M M M M M M M M M M M M M M M M M	52 20 16 12 .10 .40 .50 2-3 2.0001 .640 2-3 1.0001 1.620 3.037 2-4 3.037 2-4 3.693L 4.646 2-5 4	52 20 16 12 .10 .50 .40 2–3 2 1.000L 2.025 2–4 3.573 2–4 3.573 2–4 3.573 1.000L 5.318	52 20 16 12 .10 .60 .30 2-3 2 1.000L .960 2-3 2 1.000L 2.430 2-4 3 .400L 4.129 2-4 3 .400L 6.003 1-4 3	52 20 16 12 .20 .40 .40 2-3 2 1.000L 1.620 2-4 3 1.333L 2.936 2-4 3 1.333L 4.427 1-4 3	52 20 16 12 .20 .50 .30 2-3 2 1.0000L 2-3 2 1.0000L 2.025 3.483 2-4 3.483 2-4 3.616L 5.106 1-4	56 20 20 12 .10 .40 .50 2-3 2 1.000L 1.620 2-4 3.087 2-4 3.087 2-4 3.087	56 20 20 20 11 11 .10 .50 .40 2-3 2 1.000L 2.0025 3.573 2-4 3.573 2-4 5.318 1-4 3	56 20 20 12 .10 .30 2-3 2 1.000L 2-3 2 1.000L 2.43 3 .400L 4.129 2-4 3 .400L 6.003 1-4 3	56 20 20 20 20 40 2-3 2 1.000L 1.640 2-3 2 1.000L 2-4 3 1.333L 2.936 2-4 3 4.427	56 20 20 12 .20 .30 2-3 2 1.000L 2-3 2 1.000L 2.025 2-4 3.483 2-4 3.616L 5.106 1-4 2
WI Axx Sp Hii Lo On Ax	n. Base le acing teh ad cles 10 20 30	ELXXX' C a1 a2 a3 GN BM GN BM GN BBM GN BBM GN BBM GGN BBM AGN	52 20 16 12 .10 .40 .50 2-3 2 1.000L 1.620 2-4 3 1.693L 3.037 2-4 3 4.646 2-5	52 20 16 12 .10 .50 .40 2-3 2 1.000L 2.025 2-4 3 1.000L 3.573 2-4 3 1.000L 5.318	52 20 16 12 .10 .60 .30 2-3 2 1.000L 2-3 2 1.000L 2.430 2-4 3 .400L 4.129 2-4 3 .400L 5.003 1-4	52 20 16 12 .20 .40 .40 .40 2-3 2 1.000L 1.620 2-4 3 1.333L 2.936 2.43 3 1.333L 4.427	52 20 16 12 .20 .50 .30 2-3 2 1.000L 2.025 2-4 3 .616L 3.483 2-4 3 .616L 5.106 1-4	56 20 20 12 .10 .40 .50 2-3 2.1.000L 1.620 2-4 3.037 2.1.693L 3.037 2.4 4.646	56 20 20 12 .10 .50 .40 2-3 2 1.000L 2.025 2-4 3 1.000L 3.573 2-4 3 1.000L 5.318	56 20 20 12 110 .60 .30 2-3 2 1.000L 2.430 2-4 3 .400L 4.129 2-4 3 .400L 6.003 1-4	56 20 20 12 .20 .40 .40 .2-3 2 1.000L 1.620 2-4 3 1.333L 2.936 2-4 3 1.333L 4.427	56 20 20 12 .20 .50 .30 2-3 2 1.000L .800 2-3 2 1.000L 2.025 2-4 3 .616L 3.483 2-4 3 .616L 5.106
WHAX Sp Hi Lo On Ax	n. Bassen. n. Bassen.	E L XX X C A1 A2 A3 G N B M G R G N B M G R G N B M G R G R G R G R G R G R G R G R G R G	52 20 16 12 .10 .40 .50 2-3 2.0001 .640 2-3 1.0001 1.620 2-4 3.037 2-4 3.693L 4.646 2-5 4 8.888 6.464 2-5	52 20 16 12 .10 .50 .40 2–3 2 1.000L 2.025 2–4 3.573 2–4 3.573 2–4 3.573 1.000L 5.318 1–4 3.625R 7.106 1–5	52 20 16 12 .10 .60 .30 2-3 2 1.000L 2-3 2 2.000L 2.430 2-4 3 .400L 4.129 2-4 3 .400L 6.003 1.058R 7.944	52 20 16 12 .20 .40 2-3 2 1.000L 1.640 2-3 2 1.000L 1.620 2-4 3 1.333L 2.936 2-4 3 2.936 2-4 3 2.936 6.664 6.664	52 20 16 12 .20 .50 .30 2–3 1.000L 2.025 1.000L 2.025 2–4 3.483 2–4 3.616L 5.106 1–4 2.3533R 6.927 1–5	56 20 20 12 .10 .40 .50 2-3 2 1.000L 1.620 2-4 3 1.693L 3.037 2-4 3 3.1548 4.646 1-4 3.1348 6.275 6.275	56 20 20 20 12 .10 .50 .40 2-3 2 1.000L 2.025 2-4 3.573 2-4 3.573 2-4 5.318 1-4 .625R 7.106	56 20 20 20 12 .10 .30 2-3 2 1.000L 2.960 2-3 2 1.000L 2.443 2-4 3 .400L 4.129 2-4 3 .400L 4.003 1.003 1.003 1.003 1.003 1.004 1.003	56 20 20 20 12 .20 .40 2-3 2 1.000L 1.6620 2-4 3 1.333L 2.936 2-4 3 2.000R 6.006 6.006 14	56 20 20 12 .20 .30 2-3 2 1.000L 2-3 2 1.000L 2-3 2-4 3.616L 3.483 2-4 3.616L 5.106 1-4 2.353 R 6.927
WHAX Sp Hi Lo On Ax	n. Base le acing teh ad cles 10 20 30	ELXXX CC a1 a2 a3 GN B M GN B B M GN B B M GN B B M GN B B M GN B B M GN B B M GN B B M M GN B B M M GN B B M M GN B B M M GN B B M M GN B B M M GN B B M M GN B B M M GN B B M M GN B B M M M GN B M M GN B M M GN B M M M GN B M M M M M M M M M M M M M M M M M M	52 20 16 12 .10 .40 .50 2-3 2 1.000 L .640 2-3 2 1.000 L 1.620 2-4 3 1.693 L 3.037 2-4 3 889 R 6.464 2-5 4	52 20 16 12 .10 .50 .40 2-3 2 1.000L 2.025 2-4 3 1.000L 3.573 2-4 3.573 2-4 3.000L 5.318 1-4 3.525R 7.106 1-5 3	52 20 16 12 .10 .60 .30 2-3 2 1.000L 2.430 2 1.000L 2.430 2 4.00L 4.129 2-4 3 4.00L 6.003 1-4 3 3 1.059R 7.944	52 20 16 12 .20 .40 2-3 2 1.000L .640 2-3 2 1.000L 1.620 2-4 3 1.333L 4.427 1 4 3 2.000R 6.064 1-5 3	52 20 16 12 .20 .30 2-3 2 1.000L .800 2-3 2 1.000L 2.025 2-4 3 .616L 5.106 1-4 2 353R 6.927 1-5 3	56 20 20 12 .10 .40 .50 2-3 2 1.000L 1.620 2-4 3 1.693L 4.646 1-4 3 1.34R 6.275 2-5 4	56 20 20 12 .10 .50 .40 2-3 2 1.000L 2.025 2-4 3 1.000L 3.573 2-4 3 1.000L 5.318 1-4 3.625R 7.106 1-4 3	56 20 20 20 20 20 20 20 112 .10 .60 .30 2-3 2 1.000L 2.430 2-4 3 .400L 4.129 2-4 3 4.001 6.003 1-4 3 1.059R 7.944 1-4 3	56 20 20 20 20 40 12 2-3 1.000L 1.620 2-4 3 1.333L 2.936 2-4 3 2.000R 6.064 1-4 3	56 20 20 12 .20 .50 .30 2-3 2 1.000L 2.025 2-4 3 .616L 5.106 1-4 2 .353R 6.927
WHAX Sp Hi Lo On Ax	n. Bassen. n. Bassen.	E L XX X C A1 A2 A3 G N B M G R G N B M G R G N B M G R G R G R G R G R G R G R G R G R G	52 20 16 12 .10 .40 .50 2-3 2.0001 .640 2-3 1.0001 1.620 2-4 3.037 2-4 3.693L 4.646 2-5 4 8.888 6.464 2-5	52 20 16 12 .10 .50 .40 2–3 2 1.000L 2.025 2–4 3.573 2–4 3.573 2–4 3.573 1.000L 5.318 1–4 3.625R 7.106 1–5	52 20 16 12 .10 .60 .30 2-3 2 1.000L 2-3 2 2.000L 2.430 2-4 3 .400L 4.129 2-4 3 .400L 6.003 1.058R 7.944	52 20 16 12 .20 .40 2-3 2 1.000L 1.640 2-3 2 1.000L 1.620 2-4 3 1.333L 2.936 2-4 3 2.936 2-4 3 2.936 6.664 6.664	52 20 16 12 .20 .50 .30 2-3 2 1.000L 2-3 2.0025 2-4 3.483 2-4 3.616L 5.106 1-4 2.3533R 6.927 1-5	56 20 20 12 .10 .40 .50 2-3 2 1.000L 1.620 2-4 3 1.693L 3.037 2-4 3 3.1548 4.646 1-4 3.1348 6.275 6.275	56 20 20 20 12 .10 .50 .40 2-3 2 1.000L 2.025 2-4 3.573 2-4 3.573 2-4 5.318 1-4 .625R 7.106	56 20 20 20 12 .10 .30 2-3 2 1.000L 2.960 2-3 2 1.000L 2.443 2-4 3 .400L 4.129 2-4 3 .400L 4.003 1.003	56 20 20 20 12 .20 .40 2-3 2 1.000L 1.6620 2-4 3 1.333L 2.936 2-4 3 2.000R 6.006 6.006 14	56 20 20 12 .20 .30 2-3 2 1.000L 2-3 2 1.000L 2-3 2-4 3.616L 3.483 2-4 3.616L 5.106 1-4 2.353 R 6.927
WHAX Sp Hi Lo On Ax	n. Bassele acing tech acing tech acing tech add cles 10 20 30 40 60 60	E L XX C a1 a2 G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G G N B M G G N B M G G N B M G G N B M G G G N B M G G G G G G G G G G G G	52 20 16 12 .10 .40 .50 2-3 2 1.000 L 1.620 2-4 3 1.693 L 4.646 2-5 4 .889 R 6.464 2-5 4 .889 R 8.712 1.52	52 20 16 12 .10 .50 .40 2–3 2 1.000L 2.025 2-4 3 1.000L 5.318 1–4 3 .625R 7.106 1–5 3.888 1–5	52 20 16 12 .10 .60 .30 2-3 2 1.000L 2.430 2-4 3 .400L 4.129 2-4 3 .400L 6.003 1-4 3 1.059R 7.944 1-5 3 1.0224 1-5	52 20 16 12 .20 .40 2-3 2 1.000L 1.620 2-4 3 1.333L 2.936 2-4 3 2.000R 6.064 1-5 3 1.202L 1.822L 1.822L	52 20 16 12 .20 .50 .30 2–3 2 1.000L 2.025 2 4 3 .616L 5.106 1–4 2 .353R 6.927 1–5 3 .100L	56 20 20 12 .10 .40 .50 2-3 2 1.000L 1.620 2-4 3 1.693L 3.037 2-4 3.134R 6.275 2-5 4.333R 8.201	56 20 20 20 12 .10 .50 .40 2-3 2 1.000L 2.025 2-4 3 1.000L 3.573 2-4 3 1.000L 3.573 2-4 3 1.000L 3.625R 7.106 1-5	56 20 20 20 20 20 20 20 12 .10 .60 .30 2-3 2 1.000L 2.430 2-4 3 .400L 4.129 2-4 3 1.059R 7.944 1-4 3 1.059R 1.059R 10.066 1-5	56 20 20 20 20 40 12 2-3 2 1.000L 1.620 2-4 3 1.333L 2.936 2-4 3 2.000R 6.064 1-4 3 2.000R 8.054 1-5	56 20 20 20 12 .20 .50 .30 2-3 2 1.000L 2.025 2-4 3 .616L 3.483 2-4 3.616L 2.025 1.000L 2.025 2-4 3.616L 2.025 1.000L 2.025 2-4 3.0616L 3.0616L 2.0616L 3.0616L 3.0616L 2.0616L 3.0616L 3.0616L 2.0616L 3.0616
WHAX Sp Hi Lo On Ax	n. Bassen. n. Bassen.	E L XX C a1 a2 a3 G N B M B M G N B M B M G N B M B B	52 20 16 12 .10 .40 .50 2-3 2.0001 .640 2-3 2.0001 .1.620 2-4 3.037 2-4 3.693L 3.037 2-4 4.889R 8.712 1-5 3	52 20 16 12 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 3.573 2-4 3 1.000L 5.318 1-4 3 6.625R 7.106 1-5 3 2.300L 9.388 1-5 3	52 20 16 12 .10 .60 .30 2-3 2 1.000L .960 2-3 2 1.000L 2.430 2-4 3 .400L 6.003 1-4 1-5 3 3 1.055R 7.944 1-5 3	52 20 16 12 .20 .40 .40 2-3 2 1.000L 1.620 2-4 3 1.333L 2.936 2-4 3 1.333L 4.427 1 4 3 2.000R 6.064 1-5 3 1.200L 8.224	52 20 16 12 .20 .50 .30 2-3 2 1.000L .800 2-3 2 1.000L 3.483 2-4 3.616L 5.106 1-4 2 .353R 6.927 1-5 3 1.000L 9.31 1.000 1.000L 9.31 1.000	56 20 20 12 .10 .40 .50 2-3 2 1.000L .640 2-3 1.000L 1.620 2-4 3 1.693L 4.693L 4.698L 4.548 1.493L 4.693L 3.134R 6.275 2-5 4.3333R 8.201 1-5 3	56 20 20 20 12 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 3.573 2-4 3 1.000L 5.318 1-4 3 .625R 7.106 1-4 3 625R 9.106 1-5 3	56 20 20 20 112 .10 .60 .30 2-3 2 1.000L .960 2-3 2 1.000L 2.430 2-4 3 .400L 4.129 2-4 3 .400L 6.003 1-4 3 1.059R 7.944 1-4 3 1.059R 10.066 1-5 3	56 20 20 12 20 40 40 2-3 2 1.000L .640 2-3 1.000L 1.620 2-4 3 1.333L 4.427 1-4 3 2.000R 6.064 1-4 3 2.000R 8.054 1-5 3	56 20 20 20 112 20 50 .30 2-3 2 1.000L .800 2-3 2 1.000L 2.025 2-4 3 .616L 5.106 1-4 2 .353R 6.927 1-4 2 .553R 9.052 1-5 3
WHAX Sp Hi Lo On Ax	n. Bassele acing tech acing tech acing tech add cles 10 20 30 40 60 60	E L XX X C a1 a2 G N B M B M G N B M B M G N B M B M G N B M B M G N B M B M B M B M B M B M B M B M B M B	52 20 16 12 .10 .40 .50 2-3 2 1.000 L .620 2-4 3 1.693 L 4.646 2-5 4 .889 R 6.464 2-5 4 8.89 R 8.712 1-5 3.400 L 1.52	52 20 16 12 .10 .50 .40 2-3 2 1.000L 2.025 2-4 3 1.000L 5.318 1-4 3 .625R 7.106 1-5 3 2.300L 1.538 1-5 3 2.300L 1.4366	52 20 16 12 .10 .60 .30 2-3 2 1.000L 2.430 2-4 3 .400L 4.129 2-4 3 .400L 1.059R 7.944 1-5 3 1.0224 1-5 3 1.200L 1.5218	52 20 16 12 .20 .40 .40 2-3 2 1.000L 1.620 2-4 3 1.333L 2.936 2-4 3 2.000R 6.064 1-5 3 1.200L 1.520 1.427	52 20 16 12 .20 .50 .30 2-3 2 1.000L .800 2-8 2 1.000L 2.025 2-4 3.483 2-4 3.616L 5.106 1-4 2 .353R 6.927 1-5 3.100L 9.100 1-5 3.100L 9.100 1-5 3.100L	56 20 20 12 .10 .40 .50 2-3 2 1.000L 1.620 2-4 3 1.693L 4.646 1-4 3.037 2-4 3.134R 6.275 2-5 4.333R 8.201 1-5 3.900L 13.090	56 20 20 20 12 1.10 .50 .40 2-3 2 1.000L 2.025 2-4 3.573 2-4 3.625R 7.106 1-4 3.625R 9.106 1-5 3.2,700L	56 20 20 20 20 20 20 20 20 30 2-3 2 1.000L 2.430 2-4 3 .400L 4.129 2-4 3 1.059R 7.944 1-4 3 1.059R 10.066 1-5 3 1.500L 1.4928	56 20 20 20 20 40 12 2-3 1.000L 1.620 2-4 3 1.333L 2.936 2-4 3 2.000R 6.064 1-4 3 2.000R 8.054 1-5 3 1.600L 1.2832	56 20 20 20 20 20 50 12 20 .50 .800 2-3 2 1.000L 2.025 2-4 3 .616L 5.106 1-4 2 2.353R 6.927 1-4 2 2.353R 6.927 1-5 3 400L 1.800
WHAX Sp Hi Lo On Ax	n. Bassesen. n. Ba	ELXXX CC a1 a2 a2 GN B M G GN B M G G	52 20 16 12 .10 .40 .40 .50 2-3 2.0001 .640 2-3 2.0001 .1.620 2-4 3.6931 3.037 2-4 4.889R 8.712 1-5 3.4001 13.545 1-5	52 20 16 12 .40 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 3.573 2-4 3 1.000L 5.318 1-4 3 625R 7.106 1-5 3 2.300L 9.388 1-5 3 2.300L 9.388	52 20 16 12 .10 .60 .30 2-3 2 1.000L .960 2-3 2.000L 2.430 2-4 3 .400L 6.003 1-4 .129 2-4 3 .400L 1.005	52 20 16 12 .20 .40 .40 2-3 2 1.000L 1.620 2-4 3 1.333L 2.936 2-4 3 1.333L 4.427 1 -4 3 2.000R 6.064 1-5 3 1.200L 8.224 1-5 3 1.200L 1.200L 1.200L 1.333L 1.3	52 20 16 12 .20 .50 .30 2-3 1.000L .800 2-3 1.000L 2.025 2-4 3.616L 5.106 1-4 2 .353R 6.927 1-5 3 .100L 9.100 1-5 3 1.000L 1.4100 1-5	56 20 20 12 .10 .40 .50 2-3 2 1.000L .640 2-4 3 1.693L 3.037 2-4 3 1.693L 4.646 1-4 3 .134R 6.275 2-5 4 8.201 1-5 3.393R 8.201 1-5 3.990 1-5	56 20 20 20 12 .10 .50 .40 2-3 2 1.000L 3.573 2-4 3 1.000L 3.573 2-4 3 3.625R 7.106 1-4 3 625R 9.106 1-5 3 2.700L 1.400L 1.400L 1.400 1.40	56 20 20 20 112 .10 .60 .30 2-3 2 1.000L .960 2-3 2 1.000L 2.430 2-4 3 .400L 4.129 2-4 3 .400L 6.003 1-4 3 1.059R 7.944 1-4 3 1.059R 10.066 1-5 3 1.500L 14.928	56 20 20 20 12 .20 .40 .40 2-3 2 1.000L .640 2-3 1.000L 1.620 2-4 3 1.333L 2.936 2-4 3 2.000R 6.064 1-4 3 2.000R 8.054 1-5	56 20 20 20 20 112 20 .50 .30 2-3 2 1.000L .800 2-3 2 1.000L 2.025 2-4 3 .616L 5.106 1-4 2 .353R 6.927 1-4 2 .353R 9.052 1-5 3 .400L 13.802
WHAX Sp Hi Lo On Ax	n. Bassele acing tech acing tech acing tech add cles 10 20 30 40 60 60	E L XX X C a1 a2 G N B M B M G N B M B M G N B M B M G N B M B M G N B M B M B M B M B M B M B M B M B M B	52 20 16 12 .10 .40 .50 2-3 2 1.000 L .620 2-4 3 1.693 L 4.646 2-5 4 .889 R 6.464 2-5 4 8.89 R 8.712 1-5 3.400 L 1.52	52 20 16 12 .10 .50 .40 2-3 2 1.000L 2.025 2-4 3 1.000L 5.318 1-4 3 .625R 7.106 1-5 3 2.300L 1.538 1-5 3 2.300L 1.4366	52 20 16 12 .10 .60 .30 2-3 2 1.000L 2.430 2-4 3 .400L 4.129 2-4 3 .400L 1.059R 7.944 1-5 3 1.0224 1-5 3 1.200L 1.5218	52 20 16 12 .20 .40 .40 2-3 2 1.000L 1.620 2-4 3 1.333L 2.936 2-4 3 2.000R 6.064 1-5 3 1.200L 1.520 1.427	52 20 16 12 .20 .50 .30 2-3 2 1.000L .800 2-8 2 1.000L 2.025 2-4 3.483 2-4 3.616L 5.106 1-4 2 .353R 6.927 1-5 3.100L 9.100 1-5 3.100L 9.100 1-5 3.100L	56 20 20 12 .10 .40 .50 2-3 2 1.000L 1.620 2-4 3 1.693L 4.646 1-4 3.037 2-4 3.134R 6.275 2-5 4.333R 8.201 1-5 3.900L 13.090	56 20 20 20 12 1.10 .50 .40 2-3 2 1.000L 2.025 2-4 3.573 2-4 3.625R 7.106 1-4 3.625R 9.106 1-5 3.2,700L	56 20 20 20 20 20 20 20 20 30 2-3 2 1.000L 2.430 2-4 3 .400L 4.129 2-4 3 1.059R 7.944 1-4 3 1.059R 10.066 1-5 3 1.500L 1.4928	56 20 20 20 20 40 12 2-3 1.000L 1.620 2-4 3 1.333L 2.936 2-4 3 2.000R 6.064 1-4 3 2.000R 8.054 1-5 3 1.600L 1.2832	56 20 20 20 20 20 50 12 20 .50 .800 2-3 2 1.000L 2.025 2-4 3 .616L 5.106 1-4 2 2.353R 6.927 1-4 2 2.353R 6.927 1-5 3 400L 1.800
WI Axx Sp Hi-Lo On Ax	n. Bassesen. n. Ba	E L XX X C a1 a2 G N B M B M G N B M G N B M B M G N B M B M B M G N B M B M B M B M B M B M B M B M B M B	52 20 16 12 .10 .40 .50 2-3 2.1.0001 .640 2-3 1.0001 .620 3.037 2-4 3.037 2-4 8.898 6.464 2-5 4 8.898 6.464 2-5 4 8.891 1-5 3 3.4001 13,545 1-5 3	52 20 16 12 .10 .50 .40 2–3 1.000L 2.025 1.000L 2.025 2–4 3.573 2–4 3.573 1.000L 5.318 1–4 3.625R 7.106 1–5 3 2.300L 9.388 1–5 3 2.300L 1.4366 1–5 3	52 20 16 10 10 .60 .60 .30 2-3 2 1.000L .960 2-3 2 .000L 2.430 .400L 4.129 2-4 3 .400L 6.003 1-4 3 1.056R 7.944 1-5 3 1.200L 1.5218 1-5 3	52 20 16 12 .20 .40 .40 .40 2-3 2 1.000L 1.620 2-4 3 1.333L 2.936 2-4 3 2.936 2-4 3 3.333L 4.427 1 -4 3 2.000R 6.064 1-5 3 1.200L 1.5 3 1.200L 1.5 3 1.200L 1.5 3 1.333L	52 20 16 12 .20 .50 .30 2–3 2 1.0000L 2.025 2–4 3.483 2–4 3.616L 5.106 1–4 2 .3533R 6.927 1–5 3.100L 9.100 1–5 3.100L 1–5 3.100L 1–5 3.100L	56 20 20 20 12 .10 .40 .50 2-3 2 1.000L 1.620 2-4 3.037 2-4 3.037 2-4 3.037 2-4 3.037 2-4 3.038 1.693L 4.646 1-4 3.338 8.201 1-5 3.3900L 13.090 1-5 3.900L	56 20 20 20 12 .10 .50 .40 2-3 2 1.000L .800 2-3 2.002L 3.573 2-4 3.000L 5.318 1-4 3.625R 7.106 1-5 3 2.700L 13.991 1-5 3	56 20 20 20 12 .10 .60 .30 2-3 2 1.000L 2.43 2 1.000L 2.43 3 .400L 4.129 2-4 3 1.059R 7.944 3 1.059R 7.944 3 1.059R 1.059	56 20 20 20 20 40 12 .20 .40 2-3 2 1.000L 1.620 2-4 3 1.333L 2.936 2-4 3 2.000R 6.064 1 3 2.000R 8.054 1-5 3 1.600L 12.832 1-5 3	56 20 20 20 12 .20 .30 2-3 2 1.000L 2-02 2-4 3 .616L 5.106 1-4 2 3.53R 6.927 1-4 2 2.353R 9.052 1-5 3.400L 13.802

Table 7.12

CONTROLLING CONDITIONS AND MAXIMUM MOMENTS IN SIMPLE SPANS PRODUCED BY THE TYPE 3-3 TRUCKS WEIGHING ONE KIP EACH



Ninety variations in the Type 3-3 truck are given in this Table. Each truck number, from 1, to 90, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

Tr	uck N	o	1	2	3	4	5	6	7	8	9	10
W	h. Base		40	40	40	40	40	44	44	44	44	44
A		X.	12	12	12	12	12	12	12	12	12	12
_	acing	X'	88	8	8	8	88	12	12	12	12	12
-	tch	С	12	12	12	12	12	12	12	12	12	12
Lo		\mathbf{a}_{1}	.10	.10	.10	.20	.20	.10	.10	.10	.20	.20
Or	l :les	\mathbf{a}_2	.30 .60	.40 .50	.50 .40	.30 .50	.40 .40	.30 .60	.40 .50	.50 .40	.30 .50	.40 .40
	ies	a ₃ G	5-6	2-3	2-3	5-6	2-3	56	2-3	2–3	5-6	2-3
	10	N	5~6 6	2-3	2-3	6	2-3	6	2-3 2	2-3 2	ა–ა 6	2-3 2
		В	1.000R	1.000L	1.000L	.997R	1.000L	1.000R	1.000L	1.000L	.997R	1.000L
	1	M	.640	.640	.800	.533	.640	.640	.640	.800	.533	.640
		G	4-6	2-3	2-3	4-6	2-3	5-6	2-3	2-3	5-6	2-3
	20	N	5	2	2	5	2	6	2	2	6	2
		B M	.667R 1.814	1.000L 1.620	1.000L 2.025	.668R 1.509	1.000L 1.620	1.000R 1.620	1.000L 1.620	1.000L 2.025	0.997R 1.350	1.000L 1.620
		G	4-6	2-4	2-4	4-6	1-3	4-6	2-4	2.023	4-6	1-3
	30	Ň	5	3	3	5	2	5	3	3	4-6 5	ı–s 2
	00	В	.667R	1.062L	.471L	.668R	1.333R	1.333R	1.062L	.471L	1.336R	1.333R
		M	3.309	2.872	3.454	2.756	2.936	2.936	2.872	3.454	2.444	2.936
		G	3-6	2-6	1-5	26	14	4-6	1-4	1-4	1-4	1-4
ب	40	N	5 2.534R	4	3	4	2	5	3	3	2	2
ξ		B M	2.534 R 4.920	1.260R 4.570	0.966L 0.5253	.543R 4.240	4.668	1.333R 4.427	.297R 4.469	685R 5.241	0.654L 3.841	.360L 4.668
Span-Feet		G	2-6	1-6	1-6	2-6	1-6	2-6	1-6	1-5	2-6	1-4
pa	50	N	4	3	3	4	3	4	3	3	4	2
S		В	.111R	3.466L	2.434L	.543R	1.734L	.778L	4.132L	1.276L	.290L	.360L
		M	7.150	6.874	7.584	6.238	6.826	6.361	6.309	7.160	5.570	6.501
		G	1-6	1-6	1-6	1-6	1-6	1-6	1-6	1-6	1-6	1-6
	60	N	4	3	3	3	3	4	3	3	3	3
		B M	1.500R 9.538	3.466L 9.334	2.434L 10.065	2.766L 8.658	1.734L 9.316	$0.700 \mathrm{R} \\ 8.708$	4.132L 8.753	2.968L	3.432L 7.964	2.268L 8.818
	·	-G	1-6	1	1-6		1-6			9.579		
	80	N	4	3	3	$^{1-6}_{3}$	3	1–6 4	$^{1-6}$	$_{3}^{1-6}$	1-6 3	1-6 3
	- 00	B	1.500R	3.466L	2.434L	2.766L	1.734L	.700R.	4.132L	2.968L	3.432L	2.268L
		M	14.528	14.284	15.040	13.628	14.304	13.706	13.681	14.542	12.915	13.796
		G	1-6	1–6	1-6	1-6	1–6	1-6	1-6	1-6	1-6	1-6
	100	N	4	3	3	3	3	4	3	3	3	3
		B M	1.500R	3.466L	2.434L	2.766L	1.734L	.700R	4.132L	2.968L	3.432L	2.268L
		TAT	19.523	19.254	20.025	18.611	19.296	18.705	18.639	19.520	17.886	18.783

a1, a2, and a3-Represent the ratio of gross vehicle weight on axles.

G-Axle group causing maximum moment, thus, 1-3 means axles 1, 2, and 3.

N-Number of critical axle under which maximum moment occurs.

B-Distance to right or left of mid-span to point of maximum moment.

M-Maximum moment.

-	ick No		11 48	12 48	13 48	14 48	15 48	16 44	17	18	19 44	20
Ax		x	12	12	12	12	12	12	12	12	12	$\frac{44}{12}$
	cing	X'	16	16	16	16	16	8	8	8	8	8
Hit Loa		C aı	.10	.10	.10	.20	.20	.10	.10	.10	.20	.20
On		\mathbf{a}_2	.30	.40	.50	.30	.40	.30	.40	.50	.30	.40
$\frac{\mathbf{A}\mathbf{x}}{\mathbf{A}}$	les	a ₃	.60 5-6	.50 2-3	.40 2-3	.50 5-6	$\frac{.40}{2-3}$	60 56		40 2_3	.50 5–6	2-3
	10	N	6	2	2	6	2	6	2	2	6	2
		B M	1.000R $.640$	1.000L .640	1.000L .800	$.997\mathbf{R}$ $.533$	1.000L $.640$	1.000R .640	1.000L $.640$	1.000L .800	.997R	1.000L .640
ľ		G	5-6	2-3	2-3	5-6	2-3	4-6	2-3	2-3	4-6	2-3
j	20	N B	$_{1.000\mathrm{R}}^{6}$	$^{2}_{1.000L}$	$\frac{2}{1.000L}$	$_{.997\mathrm{R}}^{6}$	$^{2}_{1.000L}$	5 .667R	2 1.000L	$^{2}_{1.000}$ L	$_{.668 m R}^{5}$	2 1.000L
		M	1.620	1.620	2.025	1.350	1.620	1.814	1.620	2.025	1.509	1.620
	30	G N	5–6 6	$\frac{2-4}{3}$	$\frac{2-4}{3}$	$^{1-3}_2$	$^{1-3}_{2}$	46 5	4–6 5	$^{1-3}_{2}$	4–6 5	1–3 2
	00	В	1.000R	1.062L	.471L	1.800R	1.333R	.667R	.668R	.167R	$.668\mathbf{R}$	$1.333\mathbf{R}$
ĺ		- <u>M</u> - G	2.613	$\frac{2.872}{1-4}$	$\frac{3.454}{1-4}$	$\frac{2.304}{1-4}$	$\frac{2.936}{1-4}$	3.309 4-6	$\frac{2.756}{1-4}$	$\frac{3.400}{1-4}$	2.756 4-6	2.936 1-3
ا ب	40	N	5	3	3	2	2	5	3	3	5	2
8		B M	$2.000\mathbf{R} \\ 4.060$	$.297\mathbf{R}$ 4.469	$.685\mathbf{R} \ 5.241$.654L 3.841	360L 4.668	$\frac{.667 \mathrm{R}}{4.807}$	0.204L $0.4.135$	322R 4.968	668R 4.004	1.333R 4.427
Span-Feet		G	2-6	1-4	1-4	1-4	1–4	2-6	2-6	1-5	2-6	1-4
Spe	50	N B	$^{4}_{1.667L}$	$^3_{.297 m R}$	$^{3}_{.685 m R}$	$^2_{.654 extbf{L}}$	$^{2}_{.360L}$.778R	4 2.149R	$^3_{1.583}$ L	4 1.293R	$^2_{.723}$ L
-		M	5.600	6.137	7.071	5.507	6.501	6.561	6.067	6.909	5.661	6.240
ľ		G	1-6	1-6	1-6	1-6	1-5	2-6	1-6	1-6	1-6	1-6
	60	N B	.100L	4.798L	$^3_{3.502 m L}$	$\frac{3}{4.098L}$	$^{3}_{.778 \mathbf{L}}$.778R	$^3_{4.466 m L}$	$\frac{3}{3.234L}$	$^{4}_{4.234R}$	3 2.534 L
.		M	$\frac{7.700}{}$	8.186	-9.102	7.382	8.340	8.809	8.466	9.340	7.733	8.573
	80	G N	16 4	$^{1-6}_{3}$	$^{1-6}_{3}$	$^{1-6}_{3}$	$^{1-6}_3$	1–6 4	$^{1-6}_{3}$	1-6 3	$^{1-6}$	1-6 3
-		В М	.100L 12.700	4.798L 13.090	3.502L 14.051	$\frac{4.098L}{12.312}$	2.802L 13.296	2.300R 13.766	$\frac{4.466L}{13.383}$	3.234L 14.297	4.234R 12.658	2.534L 13.546
- 1		G	1-6	1-6	1-6	1-6	1-6	1-6	1-6	1-6	1-6	1-6
	100	N B	.100L	$^{3}_{4.798\mathrm{L}}$	3 3.502L	3 4.098L	$^{3}_{2.802L}$	4 2.300R	3 4.466L	3 3,234L	4 4.234R	3 2.534L
								Z.OVUR.		3.434L	4.4041	4.03414
- 1		M	17.700	18.032	19.021	17.270	18.277	18.753	18.333	19.271	17.613	18.530
Tr	ick N	M			19.021	17.270 24						
Wh	ı. Bas	M o. e L	17.700 21 48	18.032 22 48	19.021 23 48	17.270 24 48	18.277 25 48	18.753 26 52	18.333 27 52	19.271 28 52	17.613 29 52	18,530 30 52
Wh Ax	ı. Bası le	o. e L	17.700 21 48 12	18.032 22 48 12	19.021 23 48 12	17.270 24 48 12	18.277 25 48 12	18.753 26 52 12	18.333 27 52 12	19.271 28 52 12	17.613 29 52 12	18,530 30 52 12
Wh Ax	n. Base le acing	M o. e L	17.700 21 48	18.032 22 48	19.021 23 48	17.270 24 48	18.277 25 48	18.753 26 52	18.333 27 52	19.271 28 52	17.613 29 52	18,530 30 52
Wh Ax Spa Hit Loa	n. Base le acing ch	o. e L X X' C a ₁	17.700 21 48 12 12 16 .10	18.032 22 48 12 12 16 .10	19.021 23 48 12 12 16 .10	17.270 24 48 12 12 16 .20	18.277 25 48 12 12 16 .20	18.753 26 52 12 16 16 .10	18.333 27 52 12 16 16 .10	19.271 28 52 12 16 16 .10	17.613 29 52 12 16 16 .20	18.530 30 52 12 16 16 .20
Wh Ax Spa Hit	n. Base le acing ch ad	M o. e L X X' C	17.700 21 48 12 12 16	18.032 22 48 12 12 16	19.021 23 48 12 12 16	17.270 24 48 12 12 16	18.277 25 48 12 12 16	18.753 26 52 12 16 16	18.333 27 52 12 16 16	19.271 28 52 12 16 16	17.613 29 52 12 16 16 .20 .30 .50	18.530 30 52 12 16 16 .20 .40 .40
Wh Ax Spa Hit Loa On	n. Basele le acing ch ad	M o. e L X X' C a1 a2 a3 G	17.700 21 48 12 12 16 .10 .30 .60 5-6	18.032 22 48 12 12 16 .10 .40 .50 2–3	19.021 23 48 12 12 16 .10 .50 .40 2-3	17.270 24 48 12 12 16 .20 .30 .50 5-6	18.277 25 48 12 12 16 .20 .40 .40 2-3	18.753 26 52 12 16 16 .10 .30 .60 5-6	18.333 27 52 12 16 .10 .40 .50 2-3	19.271 28 52 12 16 16 .10 .50 .40 2-3	17.613 29 52 12 16 16 .20 .30 .50	18.530 30 52 12 16 16 .20 .40 .40 2-3
Wh Ax Spa Hit Loa On	n. Base le acing ch ad	M o. e L X X C a ₁ a ₂ a ₃ G N B	17.700 21 48 12 12 16 .10 .30 .60 5-6 6 1.000R	18.032 22 48 12 16 .10 .40 .50 2–3 2 1.000L	19.021 23 48 12 12 16 .10 .50 .40 2-3 2 1.000L	17.270 24 48 12 12 16 .20 .30 .50 5-6 6 .997R	18.277 25 48 12 12 16 .20 .40 .40 2-3 2 1.000L	18.753 26 52 12 16 .10 .30 .60 5-6 6 1.000R	18.333 27 52 12 16 .10 .40 .50 2-3 2 1.000L	19.271 28 52 12 16 .10 .50 .40 2-3 2 1.000L	17.613 29 52 12 16 .20 .30 .50 5-6 6 .997R	18.530 30 52 12 16 16 .20 .40 .40 2-3 2 1.000L
Wh Ax Spa Hit Loa On	n. Basele le acing ch ad	M o. e L X X C a1 a2 a3 G N B M	17.700 21 48 12 12 16 .10 .30 .60 5-6 1.000R .640	18.032 22 48 12 12 16 .10 .40 .50 2–3 2 1.000L .640	19.021 23 48 12 12 16 .10 .50 .40 2-3 2 1.000L .800	17.270 24 48 12 12 16 .20 .30 .50 5-6 6 .997R .533	18.277 25 48 12 12 16 .20 .40 .40 2-3 1.000L .640	18.753 26 52 12 16 16 .10 .30 .60 5-6 6 1.000R .640	18.333 27 52 12 16 16 .10 .40 .50 2-3 2 1.000L .640	19.271 28 52 12 16 16 .10 .50 .40 2-3 2 1.000L .800	17.613 29 52 12 16 .20 .30 .50 5-6 6 .997R .533	18.530 30 52 12 16 16 .20 .40 .40 2-3 2.000L .640
Wh Ax Spa Hit Loa On	n. Basele le acing ch ad	M o. e L X X C a1 a2 a3 G N B M G N	17.700 21 48 12 12 16 .10 .30 .60 5-6 6 1.000R .640 5-6 6	18.032 22 48 12 12 16 .10 .40 .50 2 1.000L .640 2–3 2	19.021 23 48 12 16 .10 .50 .40 2-3 2 1.000L .800 2-3 2	17.270 24 48 12 12 16 .20 .30 .50 5-6 6 .997R .533 5-6 6	25 48 12 16 .20 .40 .40 2-3 2 1.000L .640 2-3 2	18.753 26 52 12 16 16 .30 .60 5-6 6 1.000R .640 5-6 6	18.333 27 52 12 16 16 .10 .40 .50 2-3 2 1.000 L .640 2-3 2	19.271 28 52 12 16 16 .50 .40 2-3 2 1.000L .800 2-3 2	17.613 29 52 12 16 .20 .30 .50 5-6 6 .997R .533 5-6 6	30 52 12 16 .40 .40 2-3 2 1.000L .640 2-3 2
Wh Ax Spa Hit Loa On	n. Base le acing ch ad les	M o. e L X X C a1 a2 a3 G N B M G N B	17.700 21 48 12 16 .10 .30 .60 5-6 6 1.000R .640 5-6 1.000R	18.032 22 48 12 12 16 .10 .40 .50 2 1.000L .640 2-3 2 1.000L	19.021 23 48 12 16 .10 .50 .40 2-3 1.000L .800 2-3 2 1.000L	24 48 12 12 16 .20 .30 .50 5-6 6 .997R .533	18.277 25 48 12 12 16 .20 .40 .40 2-3 2 1.000L .640 2-3 2 1.000L	26 52 12 16 16 .10 .30 .60 5-6 6 1.000R .640 5-6 6 1.000R	18.333 27 52 12 16 .10 .40 .50 2 1.000L .640 2 1.000L	19.271 28 52 12 16 16 .50 .40 2-3 1.000L .800 2-3 2 1.000L	17.613 29 52 12 16 .20 .30 .50 5–6 6 .997R .533 5–6 6	18.530 30 52 12 16 .20 .40 .40 .40 2-3 2 1.000L .640 2-3 2 1.000L
Wh Ax Spa Hit Loa On	n. Base le acing ach ad les 10	M o. e L X X C a1 a2 a3 G N B M G N	17,700 21 48 12 16 10 .30 .60 5-6 1.000R .640 5-6 1.000R 1.620 4-6	18.032 22 48 12 16 .10 .40 .50 2-3 1.000L .640 2-3 1.000L 1.620 1.620 1.630	19.021 23 48 12 12 16 .10 .50 .40 2-3 1.000L .800 2-3 1.000L 2.025 1-3	17.270 24 48 12 12 16 .20 .30 .50 5-6 6 .997R .533 5-6 6	18.277 25 48 12 12 16 20 .40 .40 2-3 1.000L .640 2-3 1.000L 1.002 1.020	18.753 26 52 12 16 16 .30 .60 5-6 6 1.000R .640 5-6 6	18.333 27 52 12 16 16 .50 .50 2-3 1.000L .640 2-3 1.000L 1.62 1.000L	19.271 28 52 12 16 16 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025 1-3	17.613 29 52 12 16 16 .20 .30 .50 5-6 6 .997R .533 5-6 .997R 1.350 1-3	18,530 30 52 12 16 16 .20 .40 .40 2-3 1.000L .640 2-3 1.000L 1.620 1-3
Wh Ax Spa Hit Loa On	n. Base le acing ch ad les	M o. e L X X' C a1 a2 a3 G N B M G N B M G N B N B M	17.700 21 48 12 12 16 .10 .30 .60 5-6 6 1.000R 1.620 4-6 5	18.032 22 48 12 16 .10 .40 .50 2-3 2 1.000L 1.620 1-3 2	19.021 28 48 12 16 .10 .40 2-3 1.000L 2.025 1-3 2	24 48 12 12 16 .50 .50 5-6 6 .997R .533 5-6 .997R 1,350	18.277 25 48 12 16 .20 .40 .40 2-3 1.000L .640 2-3 1.000L 1.620 1-3 2	18.753 26 52 12 16 16 .10 .30 .60 5-6 6 1.000R 1.620 5-6 6	18.333 27 52 12 16 16 .50 .50 2-3 1.000L .640 2-3 2 1.000L 1.620 1-3	19.271 28 52 12 16 16 .10 .50 .40 2-3 2 1.000L 2.025 1-3 2	17.613 29 52 12 16 16 .50 .50 5-6 .997R .997R 1.350 1-3 2	18.530 52 12 16 16 .20 .40 2-3 2 1.000L 1.620 1-3 2
Wh Ax Spa Hit Loa On	n. Base le acing ach ad les 10	M o. e L X X' C a ₁ a ₂ a ₃ G N B M G N B M G	17,700 21 48 12 16 10 .30 .60 5-6 1.000R .640 5-6 1.000R 1.620 4-6	18.032 22 48 12 16 .10 .40 .50 2-3 1.000L .640 2-3 1.000L 1.620 1.620 1.630	19.021 23 48 12 12 16 .10 .50 .40 2-3 1.000L .800 2-3 1.000L 2.025 1-3	24 48 12 12 16 .20 .30 .50 5-6 6 .997R .533 5-6 6 .997R 1.350 4-6	18.277 25 48 12 12 16 20 .40 .40 2-3 1.000L .640 2-3 1.000L 1.002 1.020	18.753 26 52 12 16 16 .30 .60 5-6 6 1.000R .640 5-6 1.000R 1.6020 5-6	18.333 27 52 12 16 16 .50 .50 2-3 1.000L .640 2-3 1.000L 1.62 1.000L	19.271 28 52 12 16 16 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025 1-3	17.613 29 52 12 16 16 .20 .30 .50 5-6 6 .997R .533 5-6 .997R 1.350 1-3	18,530 30 52 12 16 16 .20 .40 .40 2-3 1.000L .640 2-3 1.000L 1.620 1-3
Wh Ax Spa Hit Loa On Ax	a. Bassle acing sch ad les 10 20	M o. e L X X X C a1 a2 a3 G N B M G N B M G N B M G G N B M G G N G G N G G N G G G G N G G G G G	17,700 21 48 12 16 .10 .30 .60 5-6 6 1.000R 1.620 4-6 5 1.333R 2.936 4-6	18.032 22 48 12 16 .10 .40 .50 2-3 1.000L .640 2-3 2.400R 2.753 3-1-4	19.021 23 48 12 12 16 .10 .50 .40 2-3 2 1.0001 2.025 1-3 2.167R 3.400 1-4	24 48 12 12 16 .20 .30 .50 5-6 6 .997R .333 5-6 6 1.350 4-6 5 1.336R 2.444 4-6	18.277 25 48 12 12 16 .20 .40 .40 .40 2-3 2 1.000L 1.620 1-3 2 1.333R 2.936 1-3	26 52 12 16 16 .10 .30 .60 5-6 6 1.000R .640 5-6 6 1.000R 1.620 5-6 6 1.000R	18.333 27 52 12 16 16 .10 .40 .50 2-3 2 1.000L 1.620 1-3 2.400R 2.753 1-4	19.271 28 52 12 16 16 .10 .50 .40 2-3 1.000L .800 2-3 2 1.000L 2.025 1-3 2 .167R 3.400 1-4	17.613 29 52 12 16 16 .20 .30 .50 5-6 .997R .533 5-6 6 .997R 1.350 1-3 2 1.800R 2.304 1-3	18.530 30 52 12 16 16 .40 .40 .40 2-3 2 1.000L 1.620 1-3 2.33386 2.9386 1-3
Wh Ax Spa Hit Loa On Ax	n. Base le acing ach ad les 10	M o. e L X X C a1 a2 a3 G N B M G S N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M B M G N B M G N B M B M G N B M B M G N B M B M G N B M B M B M G N B M B M B M B M B M B M B M B M B M B	17,700 21 48 12 12 16 .10 .30 .60 5-6 6 1.000R .640 5-6 1.000R 1.620 4-6 5 1.333R 2.936	18.032 22 48 12 16 .10 .40 .50 2-3 1.000L .640 2-3 1.000L 1.3 2 400R 2.753 1-4 3 204L	19.021 23 48 12 12 16 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L .800 1-3 2 1.007 3 4 2 3 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	24 48 12 12 16 .20 .50 5-6 .997R .533 5-6 .997R 1.350 4-6 1.336R 2.444	18.277 25 48 12 12 16 20 .40 .40 2-3 2 1.000L .640 2-3 2 1.000L 1.620 1-3 2 2 1.333R 2.936 1-3 2 1.333R	18.753 26 52 12 16 16 .10 .30 .60 5-6 1.000R .640 5-6 1.000R 1.620 5-6 5-6 5-6 5-6 5-6 5-6 5-6 5-6 5-6 5-6	18.333 27 52 12 16 16 .10 .40 .50 2-3 2 1.000L .640 2-3 2 1.000L .620 1-3 2 400R 2.753	19.271 28 52 12 16 16 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025 1-3 2 1.67R 3.400	17.613 29 52 12 16 16 .50 .50 5-6 6 .997R .533 5-6 6 1.350 1-3 2 1.800R 2.304	18,530 30 52 12 16 .20 .40 .40 .40 .2 1.000L .640 2-3 2 1.000L 1.620 1-3 2 1.333R 2.936
Whax Spare Hit Lose On Ax	a. Bassle acing sch ad les 10 20	M Oo. e L X X C a1 a2 a3 G N B M G N B M G N B M G N B M G N B M M G N B M M G N B M M G N B M M G N B M M M G N B M M M G N B M M M M M M M M M M M M	17,700 21 48 12 12 16 .10 .30 .60 5-6 6 1.000R .640 5-6 6 1.000R 1.620 4-6 5 1.333R 2.936 4-6 5 1.333R 4.427	18.032 22 48 12 16 .10 .40 .50 2-3 2.000L 1.620 1-3 2.400R 2.753 1-4 3 2.044L 4.135	19.021 23 48 12 16 .10 .50 .40 2-3 1.000L .800 2-3 2 1.000L 2.025 1-3 2 .167R 3.400 1-4 3 322R 4.968	24 48 12 16 .20 .30 .50 5-6 6 .997R 1.350 4-6 5 1.336R 2.444 4-6 5 1.336R 3.687	18.277 25 48 12 12 16 .20 .40 .40 .40 2-3 2 1.000L 1.620 1-3 2 1.333R 2.936 1-3 2 1.333R 4.427	18.753 26 52 12 16 16 16 .30 .60 5-6 1.000R 1.620 5-6 1.000R 2.613 4-6 5 2.000R 4.060	18.333 27 52 12 16 16 .10 .40 .50 2-3 2 1.000L 1.620 1-3 2 .400R 2.753 1-4 3 204L 4.135	19.271 28 52 12 16 16 10 .50 .40 2-3 1.0001 .800 2-3 2 1.0101 2.025 1-3 2 .167R 3.400 1-4 3 3.22R 4.968	17.613 29 52 12 16 16 .20 .30 .50 5-6 6 .997R 1.350 1-3 2 1.800R 2.30 2.30 1.35 1.3	18,530 30 52 12 16 16 .40 .40 .40 2-3 2 1.000L 1.620 1-3 2 1.333R 2 1.333R 4.427
Whax Spare Hit Lose On Ax	a. Bassle acing sch ad les 10 20	M o. e L X X C a1 a2 a3 G N B M G N B M G N B M G N B M G N B M O N B	17,700 21 48 12 16 10 .30 .60 5-6 6 1.000R .640 5-6 6 1.000R 1.620 4-6 5 1.333R 2.936 4-6 5 1.333R 4.427	18.032 22 48 12 16 10 .40 .50 2-3 1.000L .640 2-3 2.000L 1-3 2.400R 2.753 1-4 3.204L 4.135 1-4 3	19.021 23 48 12 12 16 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025 1-3 2 1.67R 3.400 1-4 3 3.22R 4.968 1-4 3	24 48 12 16 .20 .30 .50 5-6 .997R .533 5-6 .997R 1.350 4-6 1.336R 2.444 4-6 5 1.336R 3.687 1-4 2	18.277 25 48 12 12 16 20 .40 .40 2-3 2 1.000L .640 2-3 2 1.000L 1.620 1-3 2 1.333R 2.936 1-3 2 1.333R 4.427 1-4 2	18.753 26 52 12 16 16 .10 .30 .60 5-6 6 1.000R .640 5-6 1.000R 1.620 5-6 5-6 2.613 4-6 5 2.000R 4.060 4-6 5	18.333 27 52 12 16 16 .10 .40 .50 2-3 1.000L .640 2-3 1.000L 1.620 1-3 2 400R 2.753 1-4 3 2.04L 4.135 1-4 3	19.271 28 52 12 16 16 .10 .50 .40 2-3 2. 1.000L .800 2-3 2 1.000L 2.025 1-3 2 .167R 3.400 1-4 3 3.22R 4.968 1-4 3	17.613 29 52 12 16 16 .50 .50 5–6 .997R .533 5–6 .997R 1.350 1–3 2 1.800R 2.304 1–3 2 1.800R 3.541 1–4 2	18,530 30 52 12 16 .20 .40 .40 .2 1.000L .640 2-3 2 1.000L 1.620 1-3 2 1.333R 2.936 1-3 2 1.333R 4.427
Wh Ax Spa Hit Loa On Ax	a. Bassale le cacing what ad les 10 20 40	M o. e L X X C a1 a2 a3 G N B M G N B M G N B M G N B M G N B M G N B M B M G N B M B M B M B M B M B M B M B M B M B	17,700 21 48 12 12 16 .10 .30 .60 5-6 6.000R .640 5-6 1.000R 1.620 4-6 5 1.333R 2.936 4-6 5 1.333R 4.427 4-6 5 1.333R	18.032 22 48 12 16 .10 .40 .50 2-3 2.000L .640 2-3 2.000L 1.620 1-3 2 .400R 2.753 1-4 3 .204L 4.135 1-4 3 2.044L	19.021 23 48 12 12 16 .10 .50 .40 2-3 2 1.0001 .800 2-3 2 .107 1-4 3 .322R 4.968 1-4 3 .322R	24 48 12 16 .20 .30 .50 5-6 6.997R 1.350 4-6 5 1.336R 2.444 4-6 5 1.336R 2.441 1-4 2 1.155L	18.277 25 48 12 12 16 .20 .40 .40 .40 .2-3 2 1.000L .640 2-3 2 1.020 1-3 2 1.333R 2.936	18.753 26 52 12 16 16 10 .30 .60 5-6 1.000R 1.620 5-6 1.000R 2.000R 4.060 4-6 5 2.000R	18.8333 27 52 12 16 16 16 .10 .40 .50 2-3 2 1.000L .640 2-3 2 .400R 2.753 1-4 3 .204L 4.135 1-4 3 .204L	19.271 28 52 12 16 16 16 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 3 2 1.67R 3.400 1-4 3 .322R 4.968 1-4 3 3.322R	17.613 29 52 12 16 16 .20 .50 5-6 .997R .533 5-6 6 .997R 1.350 1-3 2 1.800R 2.304 1-3 2 1.800R 2.1800R 2.1800R	18.530 30 52 12 16 .40 .40 .40 2-3 2 1.000L 1.620 1-3 2 1.333R 2.936 1-3 2 1.333R 2.936 1-3 2 1.333R 2.936 1-3 2 1.333R 2.936 1-3 2 1.938 1
Whax Spare Hit Lose On Ax	a. Bassale le cacing what ad les 10 20 40	M o. e L X X C a1 a2 a3 G N B M G N B M G N B M G N B M G N B M O N B	17,700 21 48 12 16 10 .30 .60 5-6 6 1.000R .640 5-6 6 1.000R 1.620 4-6 5 1.333R 2.936 4-6 5 1.333R 4.427	18.032 22 48 12 16 10 .40 .50 2-3 1.000L .640 2-3 2.000L 1-3 2.400R 2.753 1-4 3.204L 4.135 1-4 3	19.021 23 48 12 12 16 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025 1-3 2 1.67R 3.400 1-4 3 3.22R 4.968 1-4 3	24 48 12 16 .20 .30 .50 5-6 .997R .533 5-6 .997R 1.350 4-6 1.336R 2.444 4-6 5 1.336R 3.687 1-4 2	18.277 25 48 12 12 16 20 .40 .40 2-3 2 1.000L .640 2-3 2 1.000L 1.620 1-3 2 1.333R 2.936 1-3 2 1.333R 4.427 1-4 2	18.753 26 52 12 16 16 .10 .30 .60 5-6 6 1.000R .640 5-6 1.000R 1.620 5-6 5-6 2.613 4-6 5 2.000R 4.060 4-6 5	18.333 27 52 12 16 16 .10 .40 .50 2-3 1.000L .640 2-3 1.000L 1.620 1-3 2 400R 2.753 1-4 3 2.04L 4.135 1-4 3	19.271 28 52 12 16 16 .10 .50 .40 2-3 2. 1.000L .800 2-3 2 1.000L 2.025 1-3 2 .167R 3.400 1-4 3 3.22R 4.968 1-4 3	17.613 29 52 12 16 16 .50 .50 5–6 .997R .533 5–6 .997R 1.350 1–3 2 1.800R 2.304 1–3 2 1.800R 3.541 1–4 2	18,530 30 52 12 16 .20 .40 .40 .2 1.000L .640 2-3 2 1.000L 1.620 1-3 2 1.333R 2.936 1-3 2 1.333R 4.427
Whax Spare Hit Lose On Ax	a. Bassale le cacing what ad les 10 20 40	M o. e L XX C a1 a2 a3 G N B M B M G N B M G N B M G N B M B M G N B M B M G N B M B M B M G N B M B M B M B M B M B M B M B M B M B	17,700 21 48 12 12 16 .10 .30 .60 5-6 6.1.000R .640 5-6 6.000R 1.620 4-6 5.1.333R 2.936 4-6 5.1.333R 4.427 4-6 5.1.333R 5.921 2-6	18.032 22 48 12 16 .10 .40 .50 2-3 2.000L .640 2-3 2.000L 1.620 1-3 2.400R 2.753 1-4 3 .204L 4.135 1-4 3 .204L 5.802 1-6 3	19.021 23 48 12 12 16 .10 .50 .40 2-3 2 1.0001 .800 2-3 2 1.000L 2.025 1-3 2 1.67R 3.400 1-4 3 3.322R 4.968 1-4 3 3.322R 6.800 1-6 3	24 48 12 16 .20 .30 .50 5-6 6 .997R 1.350 4-6 5 1.336R 2.444 4-6 5 1.336R 2.141 5.185 1-6 3	18.277 25 48 12 12 16 .20 .40 .40 .40 .2-3 2 1.000L .640 2-3 2 1.333R 2.936 1-3 2 1.333R 2.936 1-3 2 1.333R 2.936 1-3 3 1 1.620 1-6 3	18.753 26 52 12 16 16 10 .30 .60 5-6 1.000R 1.620 5-6 1.000R 2.000R 4.060 4-6 5 2.000R 4.080 4-6 5 2.000R 5.548	18.833 27 52 12 16 16 .10 .40 .50 2-3 2 1.000L .640 2-3 2 .400R 2.753 1-4 3 .204L 4.135 1-4 3 .204L 5.802 1-4 3	19.271 28 52 12 16 16 16 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025 1-3 3.322R 4.968 1-4 3 3.322R 6.800 1-4 3	17.613 29 52 12 16 16 20 .50 5-6 .997R .533 5-6 6 .997R 1.350 1-3 2 1.800R 2.304 1-3 2 1.850R 1-3 2 1.850R 1-3 1.4 2 1.551.5 1-4 2	18.530 30 52 12 16 16 .40 .40 2-3 2 1.000L 1.620 1-3 2 1.333R 2.936 1-3 2 1.333R 2.936 1-4 2 1.427 1-4 2 1.427 1-4 2 1.723L 6.240 1-4
Whax Spare Hit Lose On Ax	a. Basic le acing character and less an	M o. e L X X C a1 a2 a3 G N B M G N B M G N B M G N B M G N B M G G G N B M G G G N B M G G G G G G G G G G G G G G G G G G	17,700 21 48 12 12 16 .10 .30 .60 5-6 6 1.000R .640 5-6 1.000R .640 5-6 1.333R 4.427 4-6 5 1.333R 4.427 4-6 5 1.333R 5.921	18.032 22 48 12 16 .10 .40 .50 2-3 1.000L .640 2-3 1.000L .640 2-3 1.000L .640 1-3 2 4 .4135 1-4 3 .204L 4.135 1-4 3 .204L 5.802 1-6	19.021 23 48 12 12 16 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025 1-3 2.167R 3.400 1-4 3 .322R 4.968 1-4 3 .322R 6.800 1-6	24 48 12 16 .20 .30 .50 5-6 .997R .533 5-6 .997R 1.356 1.336R 2.444 4-6 5 1.336R 3.687 1-4 2 1.1551 5.185	18.277 25 48 12 16 .20 .40 .40 .40 .40 .640 2-3 2 1.000L .640 2-3 2 1.000L .640 1-3 2 1.3333R 2.936 1-3 2 1.3333R 4.427 1-4 2 .723L 6.240 1-6	18.753 26 52 12 16 16 .10 .30 .60 5-6 6 1.000R .640 5-6 6 1.000R 2.613 4-6 5 2.000R 4.060 4-6 5 2.000R 5.548	18.333 27 52 12 16 16 .10 .40 .50 2-3 2 1.000L .640 2-3 2 1.000L 1.620 1-3 2 400R 2.753 1-4 3 .204L 4.135 1-4 3 .204L 5.802 1-4	19.271 28 52 12 16 16 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025 1-3 2 1.67R 3.400 1-4 3 .322R 4.968 1-4 3 .322R 6.800 1-4	17.613 29 52 12 16 16 .50 .50 5–6 6 .997R .533 5–6 8.997R 1.350 1–3 2 1.800R 2.304 1–3 2 1.500R 3.541 1–4 5.185 1–4	18,530 30 52 12 16 .20 .40 .40 .40 .23 1.000L .640 2-3 2 1.000L 1.620 1-3 2 1.333R 4.427 1-4 6.240 6.240 1.42 1.23 1.333R
Whax Spare Hit Lose On Ax	a. Basic le le le le le le le le le le le le le	M o. e L X X X C C a ₁ a ₂ a ₃ G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G O N B M B M G O N B M G O N B M G O N B M G O N B M G O N B M B M B M B M B M B M B M B M B M B	17,700 21 48 12 16 .10 .30 .60 5-6 6.1.000R .640 5-6 6.000R 1.620 4-6 5.1.333R 2.936 4-6 5.1.333R 4.427 4-6 5.1.333R 5.921 2-6 4 .1111.81000 1-6	18.032 22 48 12 16 .10 .40 .50 2-3 2.000L .640 2-3 2.000L .620 1-3 2.400R 2.753 1-4 3 2.04L 4.135 1-4 3 2.04L 5.802 1-6 3 5.132L 7.907 1-6	19.021 23 48 12 16 .10 .50 .40 2-3 2 1.0001 .800 2-3 2 .10025 1-3 2 .167R 3.400 1-4 3 .322R 4.968 1-4 3 3.322R 6.800 1-6 3 3.768.869	24 48 12 16 .20 .30 .50 5-6 6 .997R 1.350 4-6 5 1.336R 2.444 4-6 5 1.336R 2.412 1.155L 5.185 1-6 3 4.432L 7.095 1-6	18.277 25 48 12 12 16 .20 .40 .40 .40 2-3 2 1.000L .640 2-3 2 1.333R 2.936 1-3 2 1.333R 2.936 1-3 3 3 3 3 1 3 3 1 3 1 1 4 2 1 6 2 4 0 1 6 3 3 3 0 6 8 1 8 0 8 9 1 6 6 8 1 6 8 8 8 8 8 8 8 8 8 8 8 8 8 8	18.753 26 52 12 16 16 10 .30 .60 5-6 1.000R 1.620 5-6 1.000R 2.613 4-6 5 2.000R 4.060 4-6 5.548 2-6 4.000R 7.215	18.8333 27 52 12 16 16 16 .10 .40 .50 2-3 1.000L .640 2-3 2 1.000L 1.620 1-3 2 .400R 2.753 1-4 3 .204L 5.802 1-4 3 .204L 5.802 1-4 3 .204L 5.802 1-6	19.271 28 52 12 16 16 16 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025 1-3 2 .167R 3.400 1-4 3 .322R 4.968 1-4 3 .322R 6.800 1-4 8 3 .322R 6.800 1-4 8 8.632 1-6	17.613 29 52 12 16 16 20 .30 .50 5-6 .997R .533 5-6 6 .997R 1.350 1-3 2 1.800R 2.304 1-3 2 1.850L 1-3 2 1.155L 5.185 1-4 2 1.155L 6.850 1-6	18.530 30 52 12 16 16 .20 .40 .40 2-3 2 1.000L 1.620 1-3 2 1.333R 2.936 1-3 2 1.333R 2.936 1-4 2 1.42 1.42 2 723L 6.240 1-4 2 723L 6.240 1-4 1-4 1-4 1-4 1-4 1-1 1-1 1
Whax Spare Hit Lose On Ax	a. Basic le acing character and less an	M o. e L X X C a1 a2 a3 G N B M G N B M G N B M G N B M G N B M G N B M M G N B M M G N B M M B M M G N B M M B M M B M B M M B M B M B M B M	17,700 21 48 12 12 16 .10 .30 .60 5-6 6 1.000R .640 5-6 1.000R 1.620 4-6 5 1.333R 4.427 4-6 5 1.333R 4.427 4-6 5 1.333R 4.427 4-6 5 1.333R 8.891 8.991	18.032 22 48 12 16 .10 .50 2-3 2.1.000L .640 2-3 1.000L .640 2-3 2.004L 4.135 1-4 3 .204L 4.135 1-6 3 .5132L 7.907	19.021 23 48 12 12 16 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025 1-3 2.167R 3.400 1-4 3 3.322R 4.968 1-4 3 .322R 6.800 1-6 3 3.768L	24 48 12 16 .20 .30 .50 5-6 .997R .533 5-6 .997R 1.356 4-6 5 1.336R 2.444 4-6 5 1.336R 3.687 1-4 2 1.1551 1-6 3 4.432L 7.095	18.277 25 48 12 16 .20 .40 .40 .40 .40 .2-3 2 1.000L .640 2-3 2 1.000L 1.620 1-3 2 1.3333R 2.936 1-3 2 1.3333R 4.427 1-4 2 .723L 6.240 1-6 3 3.068L 8.089	18.753 26 52 12 16 16 .10 .30 .60 5-6 6 1.000R .640 5-6 6 1.000R 2.613 4-6 5 2.000R 4.060 4-6 5 2.000R 4.060 4-6 5 1.000R 5.548 2-6 4 1.000L 7.215	18.333 27 52 12 16 16 .10 .40 .50 2-3 2 1.000L .640 2-3 2 .400R 2.753 1-4 3 .204L 4.135 1-4 3 .204L 5.802 1-4 3 .204L 5.802 1-4 3 .204L 5.802 1-4 3 5.798L	19.271 28 52 12 16 16 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025 1-3 2.167R 3.400 1-4 3 .322R 4.968 1-4 3 .322R 6.800 1-4 3 .322R 8.632	17.613 29 52 12 16 16 20 .30 .50 5-6 .997R 1.350 1-3 2 1.800R 2.304 1-3 2 1.155L 5.185 1-4 2 1.155L 5.185 1-4 2 1.155L 5.185 1-6 8 3.598L	18,530 30 52 12 16 .20 .40 .40 .40 .23 1.000L .640 2-3 2 1.000L 1.620 1-3 2 1.333R 4.427 1-4 2.723L 8.072
Whax Spare Hit Lose On Ax	a. Basic le le le le le le le le le le le le le	M o. e L X X X C a1 a2 a3 G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M B M G N B M G N B M B M G N B M B M G N B M B M G N B M B M B M B M G N B M B M B M B M B M B M B M B M B M B	17,700 21 48 12 12 16 .10 .30 .60 5-6 6.000R .640 5-6 1.000R 1.620 4-6 5 1.333R 2.936 4-6 5 1.333R 4.427 4-6 5 1.333R 5.921 2-6 4.111L 8.000 1-6 4.500R	18.032 22 48 12 16 .10 .40 .50 2-3 2.000L .640 2-3 2.000L .620 1-3 2.400R 2.753 1-4 3 2.04L 4.135 1-4 3 2.04L 5.802 1-6 3 5.132L 12.797	19.021 23 48 12 16 .10 .50 .40 2-3 2 1.0001 .800 2-3 2 .0001 .025 1-3 2 .167R 3.400 1-4 3 .322R 4.968 1-4 3 3.322R 6.800 1-6 3 3.768L 1.8.869	24 48 12 16 .20 .30 .50 5-6 6 .997R 1.350 4-6 5 1.336R 2.444 4-6 5 1.336R 2.445 1.155L 5.185 1-6 3 4.432L 7.095	18.277 25 48 12 16 .20 .40 .40 .40 .2-3 2 1.0001 .640 2-3 2 1.0001 1.620 1-3 2 1.333R 2.936 1-3 2 1.333R 2.936 1-3 3 3.0681 8.089 1-6 3 3.068L 1.3.050	18.753 26 52 12 16 16 10 .30 .60 5-6 1.000R 1.620 5-6 1.000R 2.613 4-6 5 2.000R 4.060 4-6 5.548 2-6 4.000R 7.215 1-6 4 7.00R 1.215	18.833 27 52 12 16 16 .10 .40 .50 2-3 1.000L .640 2-3 2 .400R 2.753 1-4 3 .204L 5.802 1-4 3 .204L 5.802 1-6 3 .204L 5.802 1-6 3 .204L 5.802 1-6 3 .204L 5.802 1-6 3 .204L 5.802 1-6 3 .204L 5.802 1-6 3 .204L 5.802 1-6 3 .204L 5.802	19.271 28 52 12 16 16 16 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 3 2 .167R 3.400 1-4 3 .322R 4.968 1-4 3 .322R 6.800 1-4 3 3.322R 6.800 1-6 3 3.322R 4.3632 1-6 3 4.302L 1.3329	17.613 29 52 12 16 16 .20 .30 .50 5-6 .997R .533 5-6 6 .997R 1.350 1-3 2 1.800R 2.304 1-3 2 1.850R 1.350 1-6 3.541 1-4 2 1.155L 5.185 1-4 2 1.155L 6.850 1-6 3 5.098L 11.427	18.530 30 52 12 16 16 .20 .40 .40 2-3 2 1.000L 1.620 1-3 2 1.333R 2.936 1-3 2 1.333R 2.936 1-4 2 1.3427 1-4 2 723L 6.240 1-4 2 723L 8.072 1-6 3 3.602L 1.2,560
Whax Spare Hit Lose On Ax	a. Basile acing what add less 10 20 40 50 60 80	M o. e L XX C C a1 a2 a3 G N B M G R G N B M G R G N B M G R B M G R G R B M G R G R B M G R B M G R B M G R G R B M G R B M G R B M G R G R B M G R B R B M G R B R B M G R B R B R B M G R B R B R B R B R B R B R B R B R B R	17,700 21 48 12 12 16 .10 .30 .60 5-6 6 1.000R .640 5-6 6 1.000R .620 4-6 5 1.333R 2.936 4-6 5 1.333R 4.427 4-6 5 1.333R 4-6 5 1.333R 4-6 5 1.333R 4-6 5 1.333R 4-6 5 1.333R 4-6 5 1.333R 4-6 5 1.333R 4-6 5 1.333R 4-6 6 6 6 6 6 6 6 6 6 6 7 6 6 6 6 7 6 7 6	18.032 22 48 12 16 .10 .40 .50 2-3 2.0001 .640 2-3 2 1.0001 1.620 1-3 2 400R 2.753 1-4 3 2.041 5.802 1-6 3 5.1321 7.907 1-6 3 5.1321 12.797 1-6	19.021 23 48 12 16 .10 .50 .40 2-3 2.0001 .800 2-3 2 1.0001 2.025 1-3 2.167R 3.400 1-4 3 3.22R 6.800 1-6 3 3.768L 8.869 1-6 3 3.768L 1.809 1-6	24 48 12 16 .20 .30 .50 5-6 .997R .533 5-6 6 .997R .1356R 2.444 4-6 5 1.336R 2.444 4-6 5 1.356R 3.687 1-4 2 1.155.185 1-6 3 4.432L 7.095 1-6 3 4.432L	18.277 25 48 12 12 16 .20 .40 .40 .40 2-3 1.000L .640 2-3 2 1.000L 1.620 1-3 2 1.333R 2.936 1-3 1.4427 1-6 2.723L 6.240 1-6 3 3.068L 8.089 1-6 3 3.068L 13.050 1-6	18.753 26 52 12 16 16 10 .30 .60 5-6 1.000R .640 5-6 1.000R 2.613 4-6 5.000R 4.060 4-7 1.000L 7.215 1-6 4.700R 12.106 1-6	18.833 27 52 12 16 16 .10 .40 .50 2-3 1.000L .640 2-3 2 1.000L 1.620 1-3 2.400R 2.753 1-4 3 .204L 5.802 1-4 3 .204L 7.470 1-6 3 5.798L 12.222 1-6	19.271 28 52 12 16 16 .10 .50 .40 2-3 1.000L .800 2-3 2 1.000L 2.025 1-3 2 1.67R 3.400 1-4 3 .322R 4.968 1-4 3 .322R 8.632 1-6 3 4.302L 1.678 8.632	17.613 29 52 12 16 16 20 .30 .50 5-6 .997R 1.350 1-3 2 1.800R 2.304 1-3 2 1.155L 5.185 1-4 2 1.155L 5.185 1-4 2 1.155L 5.185 1-6 8 3.598L	18,530 30 52 12 16 16 .20 .40 .40 2-3 2.1.000L .640 2-3 2 1.000L 1.620 1-3 2 1.333R 4.427 1-4 2 .723L 8.072 1-6 3 3.602L
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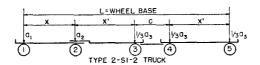
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E B 2.000R 1.062L .958R .054L 1.86R .667R .668R .891L .668R 2.000R B M 4.060 4.284 5.049 3.434 4.266 4.807 4.004 4.779 4.004 4.060 B C 2-6 1-4 1-4 1-4 1-4 2-6 2-6 1-5 2-6 1-4 B 1.667L .597R .958R .054L .186R .778R 2.149R 1.352L 1.293R .178L M 5.600 5.941 6.878 5.101 6.099 6.561 6.067 6.697 5.661 5.833 G 2-6 1-6 1-6 1-6 1-5 2-6 2-6 2-6 1-6 5.833 B 1.667L 4.598L 3.302L 3.698L 3.16L .778R 2.149R 3.034L 1.293R 2.134L B 1.667L 4.598L 3.802L 3.698L <t< td=""><td>Spa Hit Loa On</td><td>le acing ach ad les 10</td><td>X X X' C a₁ a₂ a₃ G N B M G N B M G N B B M</td><td>16 16 12 .10 .30 .60 5-6 6 1.000R 5-6 6 1.000R 1.620 5-6 1.000R</td><td>16 16 12 .10 .40 .50 2 1.000L, .640 2-3 2 1.000L, 1.620 2-4 3</td><td>16 16 12 .10 .50 .40 2-3 2 1.000L 2.025 2-4 3 471L</td><td>16 16 12 .20 .30 .50 5-6 6 .997R .533 5-6 6 .997R 1.350 2-4 3</td><td>16 16 12 .20 .40 .40 .2-3 2 1.000L 1.620 2-4 3 747L</td><td>16 8 16 .10 .30 .60 5-6 6 1.000R .640 4-6 5 .667R 1.814 4-6 5</td><td>16 8 16 .10 .40 .50 2-3 2 1.000L 1.620 4-6 5</td><td>16 8 16 .10 .50 .40 2–3 2 1.000L .800 2–3 2 1.000L 2.025 2–3 2 1.000L</td><td>16 8 16 .20 .30 .50 5-6 6 .997R .533 4-6 5 .668R 1.509 4-6 5</td><td>16 8 16 .20 .40 .40 2-3 2 1.000L .640 2-3 2 1.000L 1.620 2-3</td></t<>	Spa Hit Loa On	le acing ach ad les 10	X X X' C a ₁ a ₂ a ₃ G N B M G N B M G N B B M	16 16 12 .10 .30 .60 5-6 6 1.000R 5-6 6 1.000R 1.620 5-6 1.000R	16 16 12 .10 .40 .50 2 1.000L, .640 2-3 2 1.000L, 1.620 2-4 3	16 16 12 .10 .50 .40 2-3 2 1.000L 2.025 2-4 3 471L	16 16 12 .20 .30 .50 5-6 6 .997R .533 5-6 6 .997R 1.350 2-4 3	16 16 12 .20 .40 .40 .2-3 2 1.000L 1.620 2-4 3 747L	16 8 16 .10 .30 .60 5-6 6 1.000R .640 4-6 5 .667R 1.814 4-6 5	16 8 16 .10 .40 .50 2-3 2 1.000L 1.620 4-6 5	16 8 16 .10 .50 .40 2–3 2 1.000L .800 2–3 2 1.000L 2.025 2–3 2 1.000L	16 8 16 .20 .30 .50 5-6 6 .997R .533 4-6 5 .668R 1.509 4-6 5	16 8 16 .20 .40 .40 2-3 2 1.000L .640 2-3 2 1.000L 1.620 2-3
M 5.600 5.941 6.878 5.101 6.099 6.561 6.067 6.697 5.661 5.833	Spa Hit Loa On	le acing ch ad les 10 20	X X X' C a ₁ a ₂ a ₃ G N B M G N B M	16 16 12 10 .30 .60 5-6 6 1.000R 1.620 5-6 1.000R 1.620 5-6 6 1.000R 1.620	16 16 12 .10 .40 .50 2-3 2 1.000L 1.620 2-3 2 1.000L 1.620 2-4 3 1.0622 2.872	16 16 12 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025 2-4 3 .471L 3.454 1-4	16 16 12 .20 .30 .50 5-6 6 .997R .533 5-6 6 .997R 1.350 2-4 3 1.504L 2.236 1-4	16 16 12 .20 .40 .40 .2-3 2 1.000L .640 2-3 2 1.000L 1.620 2-3 2 1.000L	16 8 16 .10 .30 .60 5-6 1.000R .640 4-6 5 .667R 1.814 4-6 5 .667R 3.309	16 8 16 .10 .40 .50 2 1.000L .640 2-3 2 1.000L 1.620 4-6 5 .668R 2.756	16 8 16 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025 2-3 2 1.000L 3.267 2-3 2 1.000L	16 8 16 .20 .30 .50 5-6 6 .997R .533 4-6 5 .668R 1.509 4-6 5 .668R 2.756	16 8 16 .20 .40 .40 .2 2 1.000L .640 2-3 2 1.000L 1.620 2-3 2 1.000L
M 5.600 5.941 6.878 5.101 6.099 6.561 6.067 6.697 5.661 5.833	Spa Hitt Los On Ax	le acing ch ad les 10 20	X X X' C a ₁ a ₂ a ₃ G N B M G N B M G N B M	16 16 12 .10 .30 .60 5-6 6 1.000R 1.620 5-6 6 1.000R 2.613	16 16 12 .10 .40 .50 2-3 2 1.000L 1.620 2-4 3 1.062L 2.872 2-4 3	16 16 12 .10 .50 .40 2 2 1.000L .800 2–3 2 1.000L 2.025 2–4 3 .471L 3.454 1–4	16 16 12 .20 .30 .50 5-6 .997R .533 5-6 .997R 1.350 2-4 3 1.504L 2.236	16 16 12 .20 .40 .40 .40 2-3 2 1.000L .640 2-3 2 1.000L .620 2-4 3 .747L 2.809	16 8 16 .10 .30 .60 5-6 6 1.000R .640 4-6 5 .667R 1.814 4-6 5 .667R 3.309 4-6 5	16 8 16 .10 .40 .50 2-3 2 1.000L .640 2-3 2 1.000L .620 4-6 5 .668R 2.756 4-6 5	16 8 16 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 3.267 2-3 2 1.000L 3.267	16 8 16 .20 .30 .50 5–6 6 .997R .533 4–6 5 .668R 1.509 4–6 5 .668R 2.756 4–6 5	16 8 16 .20 .40 .40 .2-3 2 1.000L 2-3 2 1.000L 2-3 2 1.000L 2.613 1-3 2
M 5.600 5.941 6.878 5.101 6.099 6.561 6.067 6.697 5.661 5.833	Spa Hitt Los On Ax	le acing ch ad les 10 20	X X X Y C a 1 a 2 a 3 G N B M G N B M G N B M M G N B M M M B M	16 16 12 10 .30 .60 5-6 6 1.000R 1.620 5-6 1.000R 2.613 4-6 5.000R 2.613	16 16 12 .10 .40 .50 2-3 2 1.000L .640 2-3 2 1.000L 1.620 2-4 3 1.062L 2.872 2-4 3 1.062L 4.284	16 16 12 .10 .50 .40 2-3 2 1.000L 2.025 2-4 3 .471L 3.454 1-4 3 .558R	16 16 12 .20 .30 .50 .5 6 .997R .533 5-6 6 .997R 1.350 2-4 3 1.504L 2.236 1-4 2 .054L 3.434	16 16 12 .20 .40 .40 .40 .2-3 2 1.000L 1.620 2-4 3 .7471L 2.809 1-4 2 1.86R 4.266	16 8 16 .10 .30 .60 .5-6 6 1.000R .640 4-6 5 .667R 1.814 4-6 5 .667R 3.309 4-6 5 .667R 4.814	16 8 16 .10 .40 .50 2-3 2 1.000L 1.620 4-6 5.668R 2.756 4-6 5.668R 4.004	16 8 16 .10 .50 .40 2-3 2 1.000L 2.025 2-3 2 1.000L 3.267 2-4 3.891L 4.779	16 8 16 .20 .30 .50 .5-6 6 .997R .533 4-6 .668R 1.509 4-6 .568R 4-6 .668R	16 8 16 .20 .40 .40 .2-3 2 1.000L 1.620 2-3 2 1.000L 1.620 2-3 2 1.000L 2.613 2 2 1.000L 4.0613
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Spa Hitt Los On Ax	le acing ch ad les 10 20 30	X X X Y C a1 a2 a3 G N B M G N B B M G N B B M G G N B B M G G N B B M G G N B G N B G N B G N B G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M M G G N B M M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G M M M M M M M M M M M M M M M	16 16 12 .10 .30 .60 5-6 1.000R 1.620 5-6 6 1.000R 2.613 4-6 5 2.000R 4.060 2-6	16 16 12 .10 .40 .50 2-3 2 1.000L 1.620 2-4 3 1.062L 2.872 2-4 3 1.062L 4.284 4.284	16 16 12 .10 .50 .40 2 2 1.000L .800 2–3 2 1.000L 2.025 2–4 3 .471L 3.454 1–4 3 .958R 5.049	16 16 12 .20 .30 .50 5-6 .997R .533 5-6 .997R 1.350 2-4 3 1.504L 2.236 1-4 2.054L 3.434	16 16 12 .20 .40 .40 2-3 2 1.000L 1.620 2-4 3 .747L 2.809 1-4 4.266 1-4	16 8 16 .10 .30 .60 5-6 1.000R .640 4-6 5.667R 1.814 4-6 5.667R 3.309 4-6 5.667R 4.807	16 8 16 .10 .40 .50 2-3 2 1.000L 1.620 4-6 5 .668R 2.756 4-6 5 .668R 4-6 4-6 4-6 4-6 4-6 4-6 4-6 4-6	16 8 16 .10 .50 .40 2-3 2 1.000L 2.025 2-3 2 1.000L 3.267 2-4 3 .891L 4.779 1-5	16 8 16 .20 .30 .50 .5–6 .697R .533 4–6 .568R 1.509 4–6 .5668R 2.756 4–6 .668R 4.004 2–6	16 8 16 .20 .40 .40 .2-3 2 1.000L 2-3 2 1.000L 2-3 2 1.000L 2.613 1-3 2 2.000R 4.060 1-4
$ \begin{bmatrix} 60 & N & 4 & 3 & 3 & 3 & 3 & 4 & 4 & 3 & 4 & 3 \\ B & 1.667L & 4.598L & 3.302L & 3.698L & .316L & .778R & 2.149R & 3.034L & 1.293R & 2.134L \\ M & 7.842 & 7.954 & 8.880 & 6.930 & 7.933 & 8.809 & 8.303 & 9.119 & 7.656 & 8.142 \\ \hline G & 1-6 & 1-6 & 1-6 & 1-6 & 1-6 & 1-6 & 1-6 & 1-6 & 1-6 & 1-6 \\ 80 & N & 4 & 3 & 3 & 3 & 4 & 3 & 3 & 4 & 3 \\ B & 1.00R & 4.598L & 3.802L & 3.698L & 2.402L & 2.500R & 4.266L & 3.034L & 4.634R & 2.134L \\ M & 12.700 & 12.866 & 13.834 & 11.873 & 12.870 & 13.578 & 13.161 & 14.081 & 12.302 & 13.123 \\ \hline G & 1-6 & 1-6 & 1-6 & 1-6 & 1-6 & 1-6 & 1-6 & 1-6 & 1-6 \\ 100 & N & 4 & 3 & 3 & 3 & 3 & 3 & 4 & 3 & 3 & 4 & 3 \\ B & 1.00R & 4.598L & 3.302L & 3.698L & 2.402L & 2.500R & 4.266L & 3.034L & 4.634R & 2.134L \\ \hline \end{bmatrix} $	Spa Hit Loa On	le acing ch ad les 10 20 30	X X X C a1 a2 a3 a3 G N B M G N B M G G N B M B M B M B M B M B M B M B M B M B	16 16 12 10 .30 .60 5-6 6 1.000R 1.620 5-6 1.000R 2.613 4-6 5 2.000R 4.060	16 16 12 .10 .40 .50 2-3 2 1.000L .640 2-3 2 1.000L 1.620 2-4 3 1.062L 2.872 2-4 3 1.062L 4.284 1-4 3 597R	16 16 12 .10 .50 .40 .2-3 2 1.000L .800 2-3 2 1.000L 2.025 2-4 3 .471L 3.454 1-4 3 .958R 5.049 1-4 3 .958R	16 16 12 .20 .30 .50 .5 -6 6 .997R 1.350 2-4 1.350 2-4 2 .054L 2.236 1-4 2 .054L 2.541	16 16 12 .20 .40 .40 .40 2-3 2 1.000L 1.620 2-4 3 .747L 2.809 1-4 2 1.86R 4.266 1-4 2 1.86R	16 8 16 .10 .30 .60 .60 1.000R .640 4-6 .667R 1.814 4-6 .5 .667R 3.309 4-6 .5 .667R 4.807 2-6 4.807	16 8 16 .10 .40 .50 2-3 2 1.000L 1.620 4-6 5.668R 2.756 4-6 5.668R 4.004 2-6 4.004 2-6 4.004	16 8 16 .10 .50 .40 2-3 2 1.000L 2.025 2-3 2 1.000L 3.261 3.261 4.779 1-5 3 1.352L	16 8 16 .20 .30 .50 .5-6 6 .997R .533 4-6 .668R 1.509 4-6 5 .668R 2.756 4-6 5 .668R 4-04	16 8 16 .20 .40 .40 .2-3 2 1.000L 1.620 2-3 2 1.000L 2.613 2 1.000L 2.613 2 2.000R 4.060 1-4 2.178L
M 7.842 7.954 8.880 6.930 7.933 8.809 8.303 9.119 7.656 8.142	Spa Hitt Los On Ax	le acing ch ad les 10 20 30	X X' C a1 a2 a2 a3 G N B M G N B B M G N B B M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M M G N B B M M M G N B B M M M M M M M M M M M M M M M M M	16 16 12 .10 .30 .60 5-6 1.000R 1.620 5-6 6 1.000R 2.613 4-6 5 2.000R 4.060 4.060	16 16 12 .10 .40 .50 2-3 2 1.000L 1.620 2-4 3 1.062L 2.87 2 2-4 3 1.062L 2.84 1-4 3 597R 5.941	16 16 12 .10 .50 .40 2-3 2 1.000L 2.025 2-4 3 .471L 3.454 1-4 3 .958R 6.878	16 16 12 .20 .30 .50 5-6 6.997R .350 2-4 3 1.504L 2.236 1-4 2 .054L 1-4 2 .054L 5.101	16 16 12 .20 .40 .40 .40 2-3 2 1.000L 1.620 2-4 3 .747L 2.809 1-4 2 1.86R 4.266 1-4 2 1.86R 6.099	16 8 16 .10 .30 .60 5-6 1.000R .640 4-6 5.667R 1.814 4-6 5.667R 4.807 2-6 4.778R 6.561	16 8 16 .10 .40 .50 2-3 2 1.000L 1.620 4-6 5 .668R 2.756 4-6 5 .668R 4.004 2-6 4.004 2-6 4.004 4.006 4.00	16 8 16 .10 .50 .40 2-3 2 1.000L 2.025 2-3 2 1.000L 3.267 2-4 3 .891L 4.779 1-5 3 1.352L 6.697	16 8 16 .20 .30 .50 .5–6 .6 .997R .533 4–6 .5 .668R 1.509 4–6 .5 .668R 4.004 2–6 4 1.293R 5.661	16 8 16 .20 .40 .40 .2-3 2 1.000L 2-3 2 1.000L 2.613 1-3 2 2.000B 4.060 1-4 2 1.78L 5.833
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Spa Hitt Los On Ax	solution in the second	X X' C a1 a2 a3 G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M O N B M D D D D D D D D D D D D D D D D D D	16 16 12 10 .30 .60 5-6 6 1.000R 1.620 5-6 1.000R 2.613 4-6 5 2.000R 4.060 2-6 4.667L 5.600	16 16 12 .10 .40 .50 2-3 2 1.000L .640 2-3 2 1.000L 1.620 2-4 3 1.062L 2.872 2-4 3 624 1-4 3 597R 5.941 1-6 3	16 16 12 .10 .50 .40 .50 .40 2-3 2 1.000L 2.025 2-4 3 .471L 3.454 1-4 3 .958R 6.878 1-6 3	16 16 12 .20 .30 .50 .50 6 .997R .533 5-6 6 .997R 1.350 2-4 1.350 2-4 2 .054L 2.236 1-4 2 .054L 5.101 1-6 3	16 16 12 .20 .40 .40 .40 .40 .640 2-3 2 1.000L 1.620 2-4 2 .869 1-4 2 1.86R 6.099 1-5 3	16 8 16 .10 .30 .60 .60 .640 4-6 .667R 1.814 4-6 .5 .667R 3.309 4-6 .5 .667R 4.807 2-6 4.807 2-6 4.778R 6.561 2-6 4	16 8 16 .10 .40 .50 .2-3 2 1.000L 1.620 4-6 .568R 2.756 4-6 5.668R 4.004 2-6 4.004 2-6 4.004 2-7 4-6 5-7 6-6 5-7 6-6 6-6 7-7 6-6 7-7 6-6 7-7 6-6 7-7 6-6 7-7 6-6 7-7 6-6 7-7 7-7	16 8 16 .10 .50 .40 2-3 2 1.000L 2.025 2-3 2 1.000L 3.267 2-4 3 891L 4.779 1-5 3 1.352L 6.697 1-6	16 8 16 .20 .30 .50 .5-6 6 .997R .533 4-6 .668R 1.509 4-6 5 .668R 2.756 4-0 4-2-6 4.004 2-6 4.004 2-6 4.004 2-6 4.004 2-6 4.004 2-6 4.004 2-6 4.004 4.004 2-6 4.004 4.004 2-6 4.004 4	16 8 16 .20 .440 .40 .2-3 2 1.000L .640 .2-3 2 1.000L .2-613 2 2.000R .4.060 1-4 2.78L 5.833 1-6 3
B .100R 4.598L 3.302L 3.698L 2.402L 2.500R 4.266L 3.034L 4.634R 2.134L M 12.700 12.866 13.834 11.873 12.870 13.578 13.161 14.081 12.302 13.123 G 1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6	Spa Hitt Los On Ax	solution in the second	X X X C C a1 a2 a2 a3 G N B M G N B B M G N B B M G N B B M G N B B M B M G N B B M B M G N B B M B M G N B B M B M G N B B M B M B B M B M B B B M B B M B B B B M B B B B M B	16 16 12 .10 .30 .60 5-6 6 1.000R 1.620 5-6 1.000R 2.613 4-6 5.000R 4.060 2-6 4 1.667L 5.600	16 16 12 .10 .40 .50 2-3 2 1.000L .640 2-3 2 1.000L 1.620 2-4 3 1.062L 2.872 2-4 3 1.062L 4.284 1-4 3 597R 5.941 1-6 3 4.598L	16 16 12 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025 2-4 3.471L 3.454 1-4 3 .958R 5.049 1-4 3 .958R 6.878 1-6 3 3.302L	16 16 12 .20 .30 .50 5-6 6.997R .533 5-6 8.997R 1.350 2-4 3 1.504L 2.236 1-4 2.054L 3.434 1-4 2 .054L 5.101 1-6 3 3.698L	16 16 12 .20 .40 .40 .40 2-3 2 1.000L 1.620 2-4 3 .747L 2.809 1-4 2 1.86R 4.266 6.099 1-5 3 3.316L	16 8 16 .10 .30 .60 5-6 6 1.000R .640 4-6 5 .667R 1.814 4-6 5 .667R 4.807 2-6 4 .778R 6.561 2-6 4	16 8 16 .10 .40 .50 2-3 2 1.000L 1.620 4-6 5 .668R 2.756 4-6 5 .668R 4.004 2-6 4 2.149R 6.067 2-6 4 2.149R	16 8 16 .10 .50 .40 2-3 2 1.000L 2.025 2-3 2 1.000L 3.267 2-4 3 .891L 4.779 1-5 3 1.352L 6.697 1-6 3 3.034L	16 8 16 .20 .30 .50 .5-6 .697R .533 4-6 .568R 1.509 4-6 .5.668R 2.756 4-6 .5.668R 4.004 2-6 4 1.293R 5.661 2-6 4	16 8 16
M 12.700 12.866 13.834 11.873 12.870 13.578 13.161 14.081 12.302 13.123 G 1-6<	Spa Hitt Los On Ax	le le coing so de les les les les les les les les les le	XXX' C a1 a2 a3 G N B M G N B M G N B M G N B M G N B M G G N B M G G N B M G G N B M G G N G G N G G G G G G G G G G G G G	16 16 12 10 .30 .60 5-6 6 1.000R 1.620 5-6 6 1.000R 2.613 4-6 5 2.000R 4.060 2-6 4 1.667L 5.600 2-6 4 1.667L 5.600	16 16 12 .10 .40 .50 2-3 2 1.000L .640 2-3 2 1.000L 1.620 2-4 3 1.062L 2.872 2-4 3 597R 5.941 1-6 3 4.598L 7.954 1-6	16 16 12 .10 .50 .40 .2-3 2 1.000L .800 2-3 2 1.000L 2.025 2-4 3 .471L 3.454 1-4 3 .958R 6.878 1-6 3 3.302L 8.880 1-6	16 16 12 .20 .30 .50 .5 – 6 6 .997R 1.350 2–4 1.350 2–4 2.236 1-4 2.054L 5.101 1–6 3.698L 6.9930 1–6	16 16 12 .20 .40 .40 .40 .40 .40 .640 2-3 2 1.000L 1.620 2-4 2 .809 1-4 2 .186R 6.099 1-5 3 .316L 7,933 1-6	16 8 16 .10 .30 .60 .60 .60 .640 .640 .667R 1.814 .65 .667R 3.309 .4-6 .5667R 4.807 .2-6 .4 .778R 6.561 .2-6 .4 .778R 8.809 .1-6	16 8 16 .10 .40 .50 .50 .2-3 2 1.000L 1.620 4-6 .568R 2.756 4-6 .668R 4.004 2-6 4 2.149R 6.067 2-6 4 2.149R 8.303 1-6	16 8 16 .10 .50 .40 2-3 2 1.000L 2.025 2-3 2 1.000L 3.267 2-4 3.267 2-4 3.891L 4.779 1-5 3 3.3691L 9.119 9.119	16 8 16 .20 .30 .50 .5-6 6 .997R .533 4-6 .568R 1.509 4-6 .568R 4.004 2-6 4 1.293R 5.661 2-6 4 1.293R 7.653	16 8 16 20 .40 .40 .40 .40 .640 2-3 2 1.000L 1.620 2-3 2 1.000L 2.613 1-3 2 2.000R 4.060 1-4 2.178L 5.833 1-6 3 2.13442 1.620
100 N 4 3 3 3 3 4 3 3 4 3 3 4 3 4 3 3 1 4 3 4 3	Spa Hitt Los On Ax	le le coing so de les les les les les les les les les le	XXX' C C C C C C C C C C C C C C C C C C	16 16 12 10 .30 .60 5-6 1.000R 1.620 5-6 6 1.000R 2.613 4-6 5 2.000R 4.060 2-6 4 1.667L 7.842 1-6 4	16 16 12 .10 .40 .50 2-3 2 1.000L .640 2-3 2 1.000L 1.620 2-4 3 1.062L 2.872 2-4 3 1.062L 4.284 1-4 3 597R 5.941 1-6 3 4.598L 7.954 1-6 3	16 16 12 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025 2-4 3 .471L 3.454 1-4 3 .958R 6.878 1-6 3 3.302L 8.880 1-6 3	16 16 12 .20 .30 .50 5-6 6.997R .533 5-6 .997R 1.350 2-4 3 1.504L 2.054L 2.054L 3.434 1-4 2 .054L 5.101 1-6 3 3.698L 6.930 1-6 3	16 16 12 .20 .40 .40 .40 2-3 2 1.000L 1.620 2-4 3 .747L 2.809 1-4 2 1.86R 6.099 1-5 3 3.16L 7.933 1-6 3	16 8 16 .10 .30 .60 5-6 1.000R .640 4-6 5.667R 1.814 4-6 5.667R 4.807 2-6 4.778R 6.561 2-6 4.778R 8.809 1-6 4	16 8 16 .10 .40 .50 2-3 2 1.000L 1.620 4-6 5 .668R 2.756 4-6 .5 .668R 4.004 2-6 4 2.149R 8.303 1-6 3	16 8 16 .10 .50 .40 2-3 2 1.000L 2.025 2-3 2 1.000L 3.267 2-4 3 .891L 4.779 1-5 3 .352L 6.697 1-6 3 .034L 9.119	16 8 16 .20 .30 .50 .50 .50 .50 .50 .50 .50 .50 .50 .5	16 8 16 20 40 40 2-3 2 1.000L 1.620 2-3 2 1.000L 2.613 1-3 2 2.000R 4.060 1-4 2 1.78L 5.833 1-6 3 2.134L 8.142 1-6 3
B .100R 4.598L 3.802L 3.698L 2.402L 2.500R 4.266L 3.034L 4.634R 2.134L	Spa Hitt Los On Ax	le le coing so de les les les les les les les les les le	XXX' CC a1 a2 a3 BM GN BM GN BM GN BM GN BM GN BM GN BM GN BM GN BM GN BM GN BM GN BM MBM GN BM MBM GN BM MBM GN BM MBM GN BM MBM MBM MBM MBM MBM MBM MBM MBM MBM	16 16 12 10 .30 .60 5-6 6 1.000R 1.620 5-6 6 1.000R 2.613 4-6 5 2.000R 4.060 2-6 4 1.667L 5.600 2-6 4 1.687L 7.842 1-641 1.7842 1-641 1.7842 1-641 1.7842 1-641 1.7842 1-641 1.7842 1-641 1.7842 1.784	16 16 12 .10 .40 .50 2-3 2 1.000L .640 2-3 2 1.000L 1.620 2-4 3 1.062L 4.284 1-4 3 .597R 5.941 1-6 3 4.598L 7.954 1-6 3 4.598L 1.2.866	16 16 12 .10 .50 .40 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025 2-4 3 .471L 3.454 1-4 3 .958R 6.878 1-6 3 3.302L 3.302L 1.3.834	16 16 12 .20 .30 .50 .50 6 .997R .533 5-6 6 .997R 1.350 2-4 1.350 2-4 2 .054L 2.236 1-4 2 .054L 5.101 1-6 3 3.698L 1.6930 1-6 3 3.698L 11.873	16 16 12 .20 .40 .40 .40 .40 .640 2-3 2 1.000L 1.620 2-4 2 .869 1-4 2 .186R 6.099 1-5 3 .316L 7,933 1-6 3 2,402L 1.870	16 8 16 .10 .30 .60 .60 .60 .640 4-6 5 .667R 1.814 4-6 5 .667R 3.309 4-6 5 .667R 4.807 2-6 4 .778R 6.561 2-6 4 .778R 8.809 1-6 4 .778R 8.809 1-6 4 .738R 8.809	16 8 16 .10 .40 .50 .50 2-3 2 1.000L 1.620 4-6 .568R 4.004 2-6 4 2.149R 6.067 2-6 4 2.149R 8.303 1-6 3 4.266L 13.161	16 8 16 .10 .50 .40 2-3 2 1.000L 2.025 2-3 2 1.000L 3.267 2-4 3 891L 4.779 1-5 3 3.034L 9.119 1-6 3 3.034L 14.081	16 8 16 .20 .30 .50 .5-6 6 .997R .533 4-6 .5668R 1.509 4-6 5 .668R 2.756 4-6 5 .668R 4.004 2-6 4 1.293R 5.661 2-6 4 1.293R 7.656 1-6 4 4.634R 12.302	16 8 16 .20 .440 .40 .40 .2-3 2 1.000L .640 2-3 2 1.000L .2.613 1-3 2 2.000R 4.060 1-4 2.178L 5.833 1-6 3 2.134L 1-6 3 2.134L 1-6 3 2.134L 13.123
M 17.700 17.813 18.807 16.839 17.856 18.563 18.116 19.058 17.249 18.112	Spa Hitt Los On Ax	le le cing ch ad les 10 20 30 40 50 60 80	XXX' C a1 a2 a3 B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G O N B M B M D D D D D D D D D D D D D D D D	16 16 12 10 .30 .60 5-6 6 1.000R 1.620 5-6 6 1.000R 2.613 4-6 5 2.000R 4.060 2-6 4.667L 7.842 1-6 4 1.00R 12.700 1-6	16 16 12 .10 .40 .50 .50 2-3 2 1.0001 .640 2-3 2 1.0001 1.620 2-4 3 1.0621 2.872 2-4 3 1.0621 4.284 1-4 3597R 5.941 1-6 3 4.5981 7.954 1-6 3 4.5981 1.2866	16 16 12 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025 2-4 3 .471L 3.454 1-4 3 .958R 6.878 1-6 3 3.302L 8.880 1-6 3 3.302L 13.834 1-6	16 16 12 .20 .30 .50 5-6 6.997R .533 5-6 6.997R 1.350 2-4 3 1.504L 2.236 1-4 2 .054L 5.101 1-6 3 3.698L 6.930 1-6 3 3.698L 11.873	16 16 12 .20 .40 .40 .40 2-3 2 1.000L 1.620 2-4 3 .747L 2.809 1-4 2 1.86R 6.099 1-5 3 .316L 7.933 1-6 3 2.402L 12.870 1-6	16 8 16 .10 .30 .60 5-6 1.000R .640 4-6 5.667R 1.814 4-6 5.667R 4.807 2-6 4.778R 6.561 2-6 4.778R 8.809 1-6 1.3.578 1.500R 13.578	16 8 16 10 .40 .50 2-3 2 1.000L 1.620 4-6 5 .668R 2.756 4-6 5 .668R 4.004 2-6 4 4.149R 8.303 1-6 3 4.266L 13.611 1-6	16 8 16	16 8 16 .20 .30 .50 .50 .50 .5 .6 .97R .533 4-6 .5 .668R 1.509 4-6 .5 .668R 4.004 2-6 4 1.293R 7.656 1-6 4 4.634R 12.302 1-6	16 8 16 .20 .40 .40 .40 .2-3 2 1.000L 1.620 2-3 2 1.000L 2.613 1-3 2 2.000R 4.060 1-4 2.178L 5.833 1-6 3 2.134L 8.142 1-6 3 2.134L 8.142 1-6
	Spa Hitt Los On Ax	le le cing ch ad les 10 20 30 40 50 60 80	XXX' C a1 a2 a3 B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M B M G N B M B M G N B M B M G N B M B M B M B M B M B M B M B M B M B	16 16 12 10 .30 .60 5-6 6 1.000R 1.620 5-6 6 1.000R 2.613 4-6 5 2.000R 4.060 2-6 4 1.667L 5.600 2-6 4 1.667L 7.842 1-6 4 1.00R 12.700 1-6 4 1.00R	16 16 12 .10 .40 .50 .50 2-3 2 1.000L .640 2-3 2 1.000L 1.620 2-4 3 1.062L 2.872 2-4 3 6.5941 1-6 3 4.598L 1-63 4.598L 1-63 3 4.598L 1-63 3 4.598L	16 16 12 .10 .50 .40 .50 .40 .2-3 2 1.000L .800 2-3 2 1.000L .025 2-4 3 .471L 3.454 1-4 3 .958R 6.878 1-6 3 3.302L 8.880 1-6 3 3.302L 8.884 1-6 3 3.302L 3.302L	16 16 12 .20 .30 .50 .50 .50 .50 .50 .50 .50 .50 .50 .5	16 16 12 .20 .40 .40 .40 .40 .2-3 2 1.000L 1.620 2-4 2 1.001 2.809 1-4 2 1.86R 6.099 1-5 3 3.16L 7,933 1-6 3 2.402L	16 8 16 .10 .30 .60 .61 .61 .61 .61 .61 .61 .61 .61 .61 .61	16 8 16 .10 .40 .50 .2-3 2 1.000L 1.620 4-6 .568R 2.756 4-6 5.668R 4.004 2-6 4.149R 8.303 1-6 3 4.266L 1.620	16 8 16 .10 .50 .40 .2-3 2 1.000L .800 2-3 2 1.000L .3.267 .2-4 3 .891L 4.779 1-5 3 3.034L 9.119 1-6 3 3.034L 1-6 3 3.034L 1-6 3 3.034L 1-6 3 3.034L	16 8 16 .20 .30 .50 .5-6 6 .997R .533 4-6 .668R 1.509 4-6 5 .668R 2.756 4 4.004 2-6 4 1.293R 7.656 1-6 4 4.044 1.293R 7.664 4.634R 12.302 1-6 4.634R 4.634R	16 8 16 .20 .440 .40 .2-3 2 1.000L .640 .2-3 2 1.000L .2-613 2 1.000R .4.060 1-4 2.178L 5.833 1-6 3 2.1344L 8.142 1.66 3 2.1344L 3.123 1-6 3 2.1344L

	ick No		51	52	53	54	55	56	57	58	59	60
Ax	ı. Base le	<u>х</u> _	52 16	52 16	$\frac{52}{16}$	52 16	52 16	56 16	56 16	56 16	56 16	56 16
	icing_	_ X'	12	12	12	12	12	16	16	16	16	16
Hit		_c	16	16	16	16	16	16	16	16	16	16
Los	ad	\mathbf{a}_1	.10 .30	.10 .40	.10 .50	.20 .30	.20 .40	.10 .30	.10 .40	.10 .50	.20 .30	.20 .40
Ax	les	a ₃	.60	.50	.40	.50	.40	.60	.50	.40	.50	.40
	10	G N	$_{6}^{5-6}$	$\frac{2-3}{2}$	$^{2-3}_{2}$	$_{6}^{5-6}$	2-3 2	5–6 6	$^{2-3}_2$	$_{2}^{-3}$	5–6 6	2-3 2
	10	В	1.000R	1.000L	1.000L	.997R	1.000L	1.000R	1.000L	1.000L	.997R	1.000L
	1.17	_M	640	.640	.800	.533	.640	.640	.640	.800	.533	.640
	20	G N	$^{5-6}$	$_{2}^{-3}$	$^{2-3}_2$	5–6 6	$\frac{2-3}{2}$	5–6 6	$^{2-3}_2$	$^{2-3}_{2}$	5–6 6	$^{2-3}_2$
		В	1.000R	1.000 L	1.000L	.997R	1.000L	1.000R	1.000L	1.000L	.997R	1.000L
		M	$\frac{1.620}{}$	1.620	2.025	$\frac{1.350}{}$	$\frac{1.620}{0.00}$	1.620	$-\frac{1.620}{0.00}$	$-\frac{2.025}{}$	-1.350	-1.620
	30	G N	4-6 5	$\frac{2-3}{2}$	$\frac{2-3}{2}$	$^{4-6}_{5}$	$\substack{2-3\\2}$	$_{6}^{5-6}$	$^{2-3}_2$	$egin{smallmatrix} 2-3 \ 2 \end{smallmatrix}$	5–6 6	$^{2-3}_2$
		\mathbf{B}	1.333R	1.000L	1.000L	1.336R	1.000L	1.000R	1.000L	1.000 L	.997R	1.000L
		M G	2.936 4-6	$\frac{2.613}{2-4}$	$\frac{3.267}{2-4}$	2.444 46	2.613	2.613 4-6	$\frac{2.613}{2-4}$	$\frac{3.267}{2-4}$	$\frac{2.176}{4-6}$	$\frac{2.613}{1-3}$
	40	N	5	3	3	5	$\frac{1-3}{2}$	5	3	3	4-0 5	2
8		В	1.333R 4.427	1.651L	.891L	1.336R	2.000R	2.000R	1.651L	.891L	2.004R	2.000R
Span-Feet		_M	4-6	$\frac{3.972}{1-4}$	4.779 1-4	3.687 2-6	4.060 1-4	4.060	$\frac{3.972}{1-4}$	4,779 1-4	$\frac{3.380}{1-4}$	$\frac{4.060}{1-4}$
ba	50	N	5	3	3	4	2	5	3	3	2	2
02		B M	1.333R 5.921	096R 5.601	6.603	460R 4.971	.178L 5.833	$2.000R \\ 5.548$	$096R \\ 5.601$	6.603	4.772	5.833
ŀ			2.6	1-6	1-6	2-6	1-5	2-6	1-4	1-4	14	1-4
	60	N	4	3	3	4	3	4	3	3	2	2
		B M	.111 L 8.000	$^{4.932}_{7.673}$	$8.568L \\ 8.644$	6.971	$\begin{array}{c} .623 L \\ 7.670 \end{array}$	$1.000L \\ 7.215$	096R - 7.269	.595R 8.435	6.439	.178L 7.665
		G	1-6	1-6	1-6	1-6	1-6	1-6	1-6	1-6	1-6	1-6
	80	N B	$^4_{1.700 m R}$	3 4.932L	$3 \\ 3.568 $ L	3	$^{3}_{2.668L}$	4 .900 R	$^{3}_{5.598L}$	$^{3}_{4.102L}$	$^{3}_{4.698L}$	$3 \atop 3.202 \mathbf{L}$
		M	12.736	12.572	13.591	4.032L 11.571	12.621	11,910	11.994	13.102L	10.978	12.126
		G	1-6	1–6	1-6	1-6	1-6	16	1-6	1-6	1-6	1-6
	100	N B	$^4_{1.700 m R}$	$^{3}_{4.932 m L}$	$3 \\ 3.568 $ L	$^{ m 3}_{ m 4.032L}$	$^{3}_{2.668 \rm L}$	$^4_{.900 m R}$	$^{3}_{5.598 m L}$	$^3_{4.102L}$	$^{3}_{4.698L}$	$3 \atop 3.202 \mathbf{L}$
1		M	17.729	17.511	18.559	16.531	17.603	16.908	16.915	18.066	15.923	17.101
Tr	uck N	0.	61	62	63	64	65	66	67	68	69	70
W	ı. Bas	еL	48	48	48	48	48	52	52	52	52	52
Wh Ax	ı. Bası le	e L X	48	48 20	48 20	48	48 20	52 20	52 20	52 20	52 20	52_20
Ax Spa	ı. Bası le acing	еL	48	48	48	48	48	52	52	52	52	52
Wh Ax	n. Base le acing tch	e L X X'	48 20 8	48 20 8	48 20 8 12 .10	48 20 8 12 .20	48 20 8 12 .20	52 20 12 12 .10	52 20 12	52 20 12	52 20 12 12 12	52 20 12 12 12 .20
Ax Sp: Hit Lo: On	n. Base le acing tch ad	E L X X' C a ₁ a ₂	48 20 8 12 .10 .30	48 20 8 12 .10 .40	48 20 8 12 .10 .50	48 20 8 12 .20 .30	48 20 8 12 .20 .40	52 20 12 12 .10 .30	52 20 12 12 .10 .40	52 20 12 12 .10 .50	52 20 12 12 .20 .30	52 20 12 12 .20 .40
Ax Sp: Hit	n. Base le acing tch ad	E L X X' C a ₁ a ₂ a ₃	48 20 8 12 .10 .30 .60	48 20 8 12 .10 .40 .50	48 20 8 12 .10 .50 .40	48 20 8 12 .20 .30 .50	48 20 8 12 .20 .40 .40	52 20 12 12 .10 .30 .60	52 20 12 12 .10 .40 .50	52 20 12 12 .10 .50 .40	52 20 12 12 .20 .30 .50	52 20 12 12 .20 .40 .40
Ax Sp: Hit Lo: On	n. Base le acing tch ad	E L X X' C a ₁ a ₂ a ₃ G N	48 20 8 12 .10 .30 .60 5-6 6	48 20 8 12 .10 .40 .50 2-8 2	48 20 8 12 .10 .50 .40 2–3 2	48 20 8 12 .20 .30 .50 5-6 6	48 20 8 12 .20 .40 .40 2-3 2	52 20 12 12 .10 .30 .60 5-6 6	52 20 12 12 .10 .40 .50 2-3 2	52 20 12 12 .10 .50 .40 2-3 2	52 20 12 12 .20 .30 .50 5-6 6	52 20 12 12 .20 .40 .40 2-3 2
Ax Sp: Hit Lo: On	n. Base le acing tch ad	e L X X' C a ₁ a ₂ a ₃ G	48 20 8 12 .10 .30 .60 5-6 6 1.000R	48 20 8 12 .10 .40 .50 2–3 2 1.000L	48 20 8 12 .10 .50 .40 2-3 2 1.000L	48 20 8 12 .20 .30 .50 5-6 6 .997R	48 20 8 12 .20 .40 .40 2-3 2 1.000L	52 20 12 12 .10 .30 .60 5–6 6 1.000R	52 20 12 12 .10 .40 .50 2-3 2 1.000L	52 20 12 12 .10 .50 .40 2-3 2	52 20 12 12 .20 .30 .50 5-6 6 .997R	52 20 12 12 .20 .40 .40 2–3 2
Ax Sp: Hit Lo: On	n. Base le acing tch ad les	e L X X' C a ₁ a ₂ a ₃ G N B M	48 20 8 12 .10 .30 .60 5-6 1.000R .640 4-6	48 20 8 12 .10 .40 .50 2-8 2 1.000 L .640 2-3	48 20 8 12 .10 .50 .40 2-3 1.000L .800 2-3	48 20 8 12 .20 .30 .50 5-6 6 .997R .533 4-6	48 20 8 12 .20 .40 .40 2-3 1.000L .640 2-3	52 20 12 12 .10 .30 .60 5–6 6 1.000R .640	52 20 12 12 .10 .40 .50 2-3 1.000L .640 2-3	52 20 12 12 .10 .50 .40 2–3 2 1.000L .800 2–3	52 20 12 12 .20 .30 .50 5–6 6 .997R .533 5–6	52 20 12 12 .20 .40 .40 .2-3 2 1.000L .640 2-3
Ax Sp: Hit Lo: On	n. Base le acing tch ad	e L X X X' C a ₁ a ₂ a ₃ G N B M G N	48 20 8 12 .10 .30 .60 5-6 6 1.000R .640 4-6 5	48 20 8 12 .10 .40 .50 2-8 2 1.000 L .640 2-3 2	48 20 8 12 .10 .50 .40 2-3 2 1.000L .800 2-3 2	48 20 8 12 .20 .30 .50 5-6 6 .997R .533 4-6 5	48 20 8 12 .20 .40 .40 2-3 2 1.000L .640 2-3 2	52 20 12 12 .10 .30 .60 5–6 6 1.000R .640 5–6 6	52 20 12 12 .10 .40 .50 2-3 2 1.000L .640 2-3 2	52 20 12 12 .10 .50 .40 2–3 2 1.000L .800	52 20 12 12 .20 .30 .50 5–6 6 .997R .533 5–6	52 20 12 12 .20 .40 .40 2–3 2 1.000L .640 2–3
Ax Sp: Hit Lo: On	n. Base le acing tch ad les	e L X X' C a ₁ a ₂ a ₃ G N B M	48 20 8 12 .10 .30 .60 5-6 1.000R .640 4-6	48 20 8 12 .10 .40 .50 2-8 2 1.000 L .640 2-3	48 20 8 12 .10 .50 .40 2-3 1.000L .800 2-3	48 20 8 12 .20 .30 .50 5-6 6 .997R .533 4-6	48 20 8 12 .20 .40 .40 2-3 1.000L .640 2-3	52 20 12 12 .10 .30 .60 5–6 6 1.000R .640	52 20 12 12 .10 .40 .50 2-3 1.000L .640 2-3	52 20 12 12 .10 .50 .40 2–3 2 1.000L .800 2–3	52 20 12 12 .20 .30 .50 5–6 6 .997R .533 5–6	52 20 12 12 .20 .40 .40 .2-3 2 1.000L .640 2-3
Ax Sp: Hit Lo: On	n. Base le acing tch ad les 10	e L	48 20 8 12 .10 .30 .60 5-6 6 1.000R .640 4-6 5 .667R 1.814	48 20 8 12 .10 .40 .50 2-8 2 1.000L 1.620 2-4	48 20 8 12 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025 2-4	48 20 8 12 .20 .30 .50 5-6 6 .997R .533 4-6 5 .668R 1.509 4-6	48 20 8 12 .20 .40 .40 2-3 2 1.000L .640 2-3 2 1.000L 1.620 2-4	52 20 12 12 .10 .30 .60 5-6 6 1.000R 5-6 6 1.000R 1.620 4-6	52 20 12 12 .10 .40 .50 2-3 2 1.000L .640 2-3 2 1.000L 1.620 2-4	52 20 12 12 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025	52 20 12 12 .20 .30 .50 5-6 6 .997R .533 5-6 6 .997R 1.350	52 20 12 12 20 40 .40 2-3 2 1.000L 2-3 2 1.000L 1.620 2-4
Ax Sp: Hit Lo: On	n. Base le acing tch ad les	e L X X C a1 a2 a3 G N B M G N B M	48 20 8 12 .10 .30 .60 5-6 6 1.000 R .640 4-6 5 .667 R 1.814	48 20 8 12 .10 .40 .50 2-8 2 1.000L .640 2-3 2 1.000L 1.620	48 20 8 12 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L .2025	48 20 8 12 .20 .30 .50 5-6 .997R .533 4-6 .668R 1.509	48 20 8 12 .20 .40 .40 .2-3 2 1.000L .640 2-3 2 1.000L 1.620	52 20 12 12 .10 .30 .60 5-6 6 1.000R .640 5-6 6 1.000R 1.620	52 20 12 12 .10 .40 .50 2-3 2 1.000L .640 2-3 2 1.000L 1.620	52 20 12 12 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L .2025	52 20 12 12 .20 .30 .50 5-6 6 .997R .533 5-6 6 .997R 1.350	52 20 12 12 .20 .40 .40 .2-3 2 1.000L .640 2-3 2 1.000L 1.620
Ax Sp: Hit Lo: On	n. Base le acing tch ad les 10	E L X X X C A1 A2 A3 G N B M G N B M G N B M G N B M G N B M G N B M M G N B M M G N B M M M M M M M M M M M M M M M M M M	48 20 8 12 .10 .60 5-6 6.000R .640 4-6 5.667R 1.814 4-6 5.667R 3.309	48 20 8 12 .10 .50 2-3 2 1.000L .640 2-3 2.002L 1.620 2-4 3 1.062L 2.872	48 20 8 12 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025 2-4 3 .471L 3.454	48 20 8 12 .20 .30 .50 5-6 6 .997R .533 4-6 5 .668R 1.509 4-6 5	48 20 8 12 .20 .40 .40 .40 2-3 2 1.000L 1.620 2-4 3 .747L 2.809	52 20 12 12 .10 .30 .60 5-6 6 1.000R .640 5-6 5 1.000R 1.620 4-6 5 1.333R 2.936	52 20 12 12 .10 .40 .50 .50 2-3 2 1.000L 1.620 2-4 3 1.062L 2.872	52 20 12 12 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025 2-4 3 471L 3.454	52 20 12 12 .20 .30 .50 .5-6 .997R .533 5-6 6 .997R 1.350 4-6 5 1.336R	52 20 12 12 .20 .40 .40 .2-3 2 1.000L 1.620 2-4 3 .747IL 2.809
Ax Sp: Hit Lo: On	n. Bass le acing tch ad les 10	E L X X X C A1 A2 A3 G N B M G R M R M	48 20 8 12 .10 .30 .60 5-6 6 1.000R .640 4-6 5 .667R 1.814 4-6 5 .667R 3.309	48 20 8 12 .10 .40 .50 2-3 2 1.000L 1.620 2-4 3 1.062L 2.872 2-6	48 20 8 12 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025 2-4 3 .471L 3.454	48 20 8 12 .20 .30 .50 5-6 6 .997R .533 4-6 5 .668R 1.509 4-6 5 .668R 2.756	48 20 8 12 .20 .40 2-3 2 1.000L 1.620 2-4 3 .747L 2.809 2-5	52 20 12 12 .10 .30 .60 5-6 6 1.000R 1.620 4-6 5 1.3333R 2.936	52 20 12 12 .10 .40 .50 2-3 2 1.000L 1.620 2-4 3 1.060L 2.872 2-4	52 20 12 12 .10 .50 .40 2-3 2 1.000L 2.025 2-3 2 1.000L 2.025 2-4 3 .471L 3.454	52 20 12 20 30 50 5-6 6 .997R .533 5-6 6 .997R 1.350 4-6 5 1.336R 2.444	52 20 12 .20 .40 2-3 2 1.000L 1.620 2-4 3 .747L 2.809 2-4
Wir Ax Spo Hii Loo On Ax	n. Base le acing tch ad les 10	E L X X X C A1 A2 A3 G N B M G N B M G N B M G N B M G N B M G N B M M G N B M M G N B M M M M M M M M M M M M M M M M M M	48 20 8 12 .10 .60 5-6 6.000R .640 4-6 5.667R 1.814 4-6 5.667R 3.309	48 20 8 12 .10 .50 2-3 2 1.000L .640 2-3 2.002L 1.620 2-4 3 1.062L 2.872	48 20 8 12 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025 2-4 3 .471L 3.454	48 20 8 12 .20 .50 5-6 6 .997R .533 4-6 5 .668R 1.509 4-6 5 .668R 2.756 2-6 4 4.543R	48 20 8 12 .20 .40 .40 .40 2-3 2 1.000L 1.620 2-4 3 .747L 2.809	52 20 12 12 .10 .30 .60 5-6 6 1.000R 1.620 4-6 5 1.333R 2.936 4-6 5 1.333R	52 20 12 12 .10 .40 .50 .50 2-3 2 1.000L 1.620 2-4 3 1.062L 2.872	52 20 12 12 .10 .50 .40 2–3 2 1.000L 2.025 2-4 3.471L 3.454 2-4 3.471L	52 20 12 20 30 50 5-6 6 997R .533 5-6 6 .997R 1.356 4-6 5 1.336R 2.444 4-6 5	52 20 12 12 .20 .40 .40 .2-3 2 1.000L 1.620 2-4 3 .747IL 2.809
Wir Ax Spare Hit Loc On Ax	n. Bass le acing tch ad les 10	e L	48 20 8 12 .10 .30 .60 .640 5-6 6 1.000R .640 4-6 .667R 1.814 4-6 .5 .667R 3.309 3-6 5-7 4-8 .600 4-8 .600 5-8 .600 5-9 .600 .600 5-9 .600 5-9 .600	48 20 8 12 .10 .40 .50 2-3 2 1.000L .640 2-3 2 1.000L 1.620 2-4 3 1.062L 2.872 2-6 4 1.260R 4.570	48 20 8 12 .10 .50 .40 2-3 2.000L .800 2-3 2.025 2-4 3.471L 3.454 2-5 3 2.136L 5.120	48 20 8 12 .20 .50 5-6 6 .997R .533 4-6 5 .668R 1.509 4-6 5 .668R 2.756 4 .4.440	48 20 8 12 .20 .40 2-3 2 1.000L 1.620 2-4 3 .747L 2.809 2-5 3 2.606L 4.245	52 20 12 12 .10 .30 .60 5-6 6 1.000R 1.620 4-6 5 1.3333R 2.936 4-6 5 1.3333R 4-4 4.427	52 20 12 12 .10 .40 .50 2-3 2 1.000L 1.620 2-4 3 1.060L 2.872 2-4 3 1.062L 4.284	52 20 12 12 .10 .50 .40 .2–3 2 1.000L 2.025 2-4 3 .471L 3.454 2–4 3 4.71S	52 20 12 20 30 50 5-6 6 .997R .533 5-6 6 .997R 1.350 4-6 5 1.336R 2.444 4-6 5 1.336R 3.687	52 20 12 .20 .40 2-3 2 1.000L 1.620 2-4 3 .747L 2.809 2-4 3 .747L 4.139
Wir Ax Spare Hit Loc On Ax	n. Bassele le acing tech ad les 10 20 30 40	e L	48 20 8 12 .10 .30 .60 5-6 6 1.000R .640 4-6 5 .667R 1.814 4-6 5 .667R 2.534R 4.920 2-6	48 20 8 12 .10 .40 .50 2-8 2 1.000L .640 2-3 2 1.000L 1.620 2-4 3 1.062L 2.872 2-6 4 1.2607	48 20 8 12 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025 2-4 3.471L 3.454 2-5 3 2.1364 5.120 2-6	48 20 8 12 .20 .30 .50 5-6 6 .997R .533 4-6 .668R 1.509 4-6 5 .668R 2.756 4 .543R 4.240 2-6	48 20 8 12 .20 .40 .40 .40 .2-3 2 1.000L 1.620 2-4 3 .747L 2.809 2-5 3 2.666L 4.245 2-6	52 20 12 12 .10 .30 .60 5-6 6 1.000R 1.620 4-6 5 1.333R 2.936 4-6 5 1.333R 4-6 4.427 2-6	52 20 12 12 .10 .40 .50 2-3 2 1.000L 1.620 2-4 3 1.062L 2.872 2-4 3 1.062L 4.284 2-6	52 20 12 12 12 .10 .50 .40 2-3 2 1.000L 2.025 2-4 3 .471L 3.454 2-4 3 .471L 5.036 2-6	52 20 12 20 30 5-6 6 .997R .533 5-6 6 .997R 1.350 4-6 5 1.336R 2.444 4-6 5 1.336R 2.456	52 20 12 .20 .40 .40 2-3 2 1.000L 1.620 2-4 3 .747L 2.809 2-4 3 .747L 4.139
Wir Ax Spo Hii Loo On Ax	n. Bass le acing tch ad les 10	e L XXX' C a1 a2 a3 G N B M G N B M G N B M G N B M G N B M G N B M G N B M B M G N B M B M B M B M B M B M B M B M B M B	48 20 8 12 .10 .30 .60 5-6 6 1.000R .640 4-6 .5 .667R 1.814 4-6 .5 .667R 3.309 3-6 5 .640 2-6 4-6 5 .640 4-6 .640 4-6 .640 4-9 .640 .6	48 20 8 12 .10 .40 .50 2-3 2 1.000L .640 2-3 2 1.000L 1.620 2-4 3 1.062L 2.872 2-6 4 1.260R 4.570 2-6 4 1.260R	48 20 8 12 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025 2-4 31 .471L 3.454 2-5 3 2.136L 5.120 2-6 3.594L	48 20 8 12 .20 .50 5-6 6 .997R .533 4-6 5 .668R 1.509 4-6 5 .668R 2.756 4 .4.240 2-6 4.240	48 20 8 12 .20 .40 2-3 2 1.000L 1.620 2-4 3 .747L 2.809 2-5 3 2.606L 4.245 2-6 3 4.168L	52 20 12 12 .10 .30 .60 5-6 6 1.000R 1.620 4-6 5 1.3333R 2.936 4-6 5 1.3333R 4.427 2-6 4.778L	52 20 12 12 .10 .40 .50 2-3 2 1.000L 1.620 2-4 3 1.060L 2.872 2-4 3 1.062L 4.284 2-6 4.520R	52 20 12 12 .10 .50 .40 2-3 2 1.000L 2.025 2-4 3 .471L 5.036 2-4 3 .471L 5.036	52 20 12 20 30 50 5-6 6 .997R 1.350 4-6 5 1.336R 2.444 4-6 5 1.336R 3.687 2-6 4	52 20 12 .20 .40 2-3 2 1.000L 1.620 2-4 3 .747L 4.139 1-4 2.731R
Wir Ax Spare Hit Loc On Ax	n. Bassele le acing tech ad les 10 20 30 40	e L XX X C a1 a2 a3 G N B M G N B M G N B M G N B M G N B M G N B M G N B M M G N B M M G N B M M G N B M M G N B M M M M G N B M M M M M M M M M M M M M M M M M M	48 20 8 12 .10 .30 .60 5-6 6 1.000R 4-6 5 .667R 1.814 4-6 5 .667R 2.534R 4.920 2-6 4.111R 7.150	48 20 8 12 .10 .40 .50 2-3 2.000L .640 2-3 2.000L 1.620 2-4 3.1.062L 2.872 2-6 4 1.260R 4.570 2-6 4,260R 6.813	48 20 8 112 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025 2-4 3 .4711L 3.454 2-5 3 2.136L 5.120 2-6 3 3.594L 7.249	48 20 8 12 .20 .30 .50 5-6 6 .997R .533 4-6 5 .668R 1.509 4-6 5 .668R 2.756 4 .543R 4.240 2-6 4.543R 4.240 2-6 4.543R 6.238	48 20 8 12 .20 .40 .40 .40 .40 2-3 1.000L .640 2-4 3.747L 2.809 2-5 3.604L 4.245 2-6 3.168L 6.144	52 20 12 12 .10 .30 .60 5-6 6 1.000R 1.620 4-6 5 1.333R 2.936 4-6 5 1.333R 4-6 5 1.3333R 4-7 8.640	52 20 12 12 .10 .40 .50 2-3 2 1.000L 1.620 2-4 3 1.062L 2.87 2-4 3 1.062L 4.284 4.284 4.520R 6.123	52 20 12 12 10 .50 .40 2-3 2 1.000L 2.025 2-4 3 .471L 3.454 2-4 3 .471L 5.036 2-6 3 4.187L 6.798	52 20 12 20 30 50 5-6 6 8 997R .533 5-6 6 997R 1.350 4-6 5 1.336R 2.444 4-6 5 1.336R 2.444 4-6 5 1.336R 2-6 4-6 5 1.336R	52 20 12 20 40 40 2-3 2 1.000L 1.620 2-4 3 .747L 2.809 2-4 3 .747L 4.139 1-4 2.731R 5.707
Wir Ax Spare Hit Loc On Ax	n. Bassele le acing tech ad les 10 20 30 40	e L XXX' C a1 a2 a3 G N B M G N B M G N B M G N B M G N B M G N B M G N B M B M G N B M B M B M B M B M B M B M B M B M B	48 20 8 12 .10 .30 .60 5-6 6 1.000R .640 4-6 .5 .667R 1.814 4-6 .5 .667R 3.309 3-6 5 .640 2-6 4-6 5 .640 4-6 .640 4-6 .640 4-9 .640 .6	48 20 8 12 .10 .40 .50 2-3 2 1.000L .640 2-3 2 1.000L 1.620 2-4 3 1.062L 2.872 2-6 4 1.260R 4.570 2-6 4 1.260R	48 20 8 12 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025 2-4 31 .471L 3.454 2-5 3 2.136L 5.120 2-6 3.594L	48 20 8 12 .20 .50 5-6 6 .997R .533 4-6 5 .668R 1.509 4-6 5 .668R 2.756 4 .4.240 2-6 4.240	48 20 8 12 .20 .40 2-3 2 1.000L 1.620 2-4 3 .747L 2.809 2-5 3 2.606L 4.245 2-6 3 4.168L	52 20 12 12 .10 .30 .60 5-6 6 1.000R 1.620 4-6 5 1.3333R 2.936 4-6 5 1.3333R 4.427 2-6 4.778L	52 20 12 12 .10 .40 .50 2-3 2 1.000L 1.620 2-4 3 1.060L 2.872 2-4 3 1.062L 4.284 2-6 4.520R	52 20 12 12 .10 .50 .40 2-3 2 1.000L 2.025 2-4 3 .471L 5.036 2-4 3 .471L 5.036	52 20 12 20 30 55 5-6 6 .997R 1.350 4-6 5 1.336R 2.444 4-6 5 1.336R 2.492 4-6 5 1.336R 2.500 2.6000 2.6000 2.6000 2	52 20 12 .20 .40 2-3 2 1.000L 1.620 2-4 3 .747L 4.139 1-4 2.731R 5.707
Wir Ax Spare Hit Loc On Ax	n. Bass le acing tech ad les 10 20 30 40	e L XX X C a1 a2 A3 G N B M G N B M G N B M G N B M G N B M G N B M B M G N B M B M G N B M B M B M B M B M B M B M B M B M B	48 20 8 12 .10 .60 5-6 6 1.000R .640 4-6 5 .667R 3.309 3-6 5 2.534R 4.920 2-6 4 .111R 7.150 2-6 4 1.11R	48 20 8 12 .10 .40 .50 2-3 2 1.000L .640 2-3 2 1.000L 2.872 2-6 4 1.260R 4.570 2-6 4 1.260R 4.260R 4.260R 4.260R	48 20 8 12 .10 .50 .40 2-3 1.000L .800 2-3 1.000L 2.025 2-4 3.471L 3.454 2-5 3.594L 7.249 1-6 3 2.034L	48 20 8 12 .20 .30 .50 5-6 6 5 .668R 1.509 4-6 5 .668R 2.756 2-6 4 .543R 4.240 2-6 4 .543R 4.543R 4.543R	48 20 12 .20 .40 .40 .40 .40 .40 .40 .40 .4	52 20 12 .10 .60 .60 5-6 6 1.000R .640 5-6 1.000R 1.620 4-6 5 1.333R 4.427 2-6 4 4.778L 6.861	52 20 12 12 .10 .40 .50 2-3 2 1.000L .640 2-3 1.002L 2-4 3 1.062L 4.2872 2-4 4.520R 6.123	52 20 12 12 .10 .50 .40 2-3 2 1.000L 2-3 2 1.000L 2.025 2-4 3 .471L 5.036 2-6 6.798 1-6 3 2.568L	52 20 12 20 30 5-6 6 997R .533 5-6 6 .997R 1.356 4-6 5 1.336R 3.687 2-6 4 .290L 5.570	52 20 12 20 .40 2-3 2 1.000L .640 2-3 2 1.000L 1.620 2-4 3.747L 2.809 2-4 3.747L 4.139 1-4 2.731R 5.707 1-6 3.468L
Wir Ax Spare Hit Loc On Ax	n. Bass le acing tech ad les 10 20 30 40	e L XX X' C a1 a2 a3 BM G N B M G N B M G N B M G N B M G N B M G N B M B M G N B M B M G N B M B M G N B M B M B M B M B M B M B M B M B M B	48 20 8 12 .10 .60 5-6 60 .640 4-6 5 .667R 1.814 4-6 5 .667R 2.534R 4.920 2-6 4 1.11R 7.150 2-6 4 1.111R 9.400	48 20 8 12 .10 .40 .50 2-8 2 1.000L .640 2-3 1.000L 1.620 2-4 3 1.062L 2.872 2-6 4.570 2-6 4.260R 6.813 2-6 4 1.260R 9.057	48 20 8 12 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025 2-4 3.454 2-5 3.471L 5.120 2-6 3 3.594L 7.249 1-6 3 2.034L 9.635	48 20 30 30 .50 5-6 6 5-6 .533 4-6 5-668R 1.509 4-6 5-668R 2.756 2-6 4.240 2-6 4.543R 6.238 2-6 4.543R 8.238	48 20 8 12 .20 .40 .40 .40 2-3 2 1.000L 1.620 2-4 3 .747L 2.809 2-5 3 2.606L 4.245 2-668L 6.144 1-6 3 934L 8.481	52 20 12 12 .10 .60 5-6 6 1.000R 1.620 4-6 5 1.333R 4.427 2-6 4.778L 6.361 2.96 4.778L 6.869	52 20 12 12 .10 .40 .50 2-3 2 1.000L 1.640 2-4 3 1.062L 2.872 2-4 3 1.062L 4.284 4.284 4.520R 6.123 2-6 4.520R 8.373	52 20 12 12 .10 .50 .40 2-3 2 1.000L 2.025 2-4 3.471L 5.036 2-6 3 4.1871L 6.798 1-6 3 2.568L 9.142	52 20 12 20 30 50 5-6 6 997R 1.350 4-6 5 1.336R 2.444 4-6 5 5 2.445 4-6 5 2.45 4-6 5 2.45 4-6 5 2.45 2.45 2.45 2.45 2.50 2.66 4.25 4.25 4.25 4.25 4.25 4.25 4.25 4.25	52 20 12 20 40 40 2-3 2 1.000L 1.620 2-4 3.747L 2.809 2-4 3.747L 4.139 1-4 2.731R 5.707 1-6 3 1.468L 7.968
Wir Ax Spare Hit Loc On Ax	n. Bass le acing tech ad les 10 20 30 40	E L XX C A1 A2 A3 G N B M B M G N B M B M G N B M B B	48 20 8 12 .10 .60 5-6 6 1.000R .640 4-6 5 .667R 3.309 3-6 2.534R 4.920 2-6 4 .111R 7.150 2-6 4 111R 9.400 1-6 4-6 4-6 4-6 5-7 4-1 111R 9.400	48 20 8 12 .10 .40 .50 2-3 2 1.000L .640 2-3 1.000L 1.620 2-4 3 1.062L 2.872 2-6 4 1.260R 4.570 2-6 48 1.260R 9.057 1-6 3	48 20 8 12 .10 .50 .40 2-3 1.000L .800 2-3 1.000L 2.025 2-4 3.471L 3.454 2-5 3.594L 7.249 1-6 3 2.034L 9.635 1-6 3	48 20 8 12 .20 .30 .50 5-6 6 5 .668 R 1.509 4-6 5 .668 R 2.756 2-6 4 .543 R 4.543 R 4.543 R 8.238 2-6 4	48 20 8 12 .20 .40 .40 .40 .40 .40 .40 .40 .4	52 20 12 12 .10 .60 5-6 6 1.000R .640 5-6 1.000R 1.620 4-6 5 1.333R 4-936 4-778L 6.361 2-6 4,778L 8.609 1-6 4	52 20 12 12 .10 .40 .50 2-3 2 1.000L .640 2-3 1.062L 2.872 2-4 3 1.062L 4.284 2-6 4 .520R 8.373 1-6 3	52 20 12 12 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025 2-4 3 .471L 5.036 2-6 6.798 1-6 3 2.568L 9,142	52 20 12 20 30 5-6 6 997R .533 5-6 6 .997R 1.356 4-6 5 1.336R 2.444 4-6 5 1.336R 4.290L 5.570 2-6 4 2.290L 7.569 1-6 4	52 20 12 20 40 40 2-3 2 1.000L .640 2-3 2 1.000L 1.620 2-4 3.747L 4.139 1-4 2.731R 5.707 1-6 3 1.468L 7.968 1-6 3
Wir Ax Spare Hit Loc On Ax	and Bass le le le le le le le le le le le le le	e L XX X C a1 a2 a3 G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M B M G N B M G N B M B M G N B M B M B M B M B M B M B M B M B M B	48 20 8 12 .10 .30 .60 5-6 6.000R .640 4-6 5 .667R 1.814 4-6 5 .667R 2.534R 4.920 2-6 4 .111R 7.150 2-6 4 1.116 9.400 1-6 4 1.900R	48 20 8 12 .10 .40 .50 2-8 2.1.000L .640 2-3 2.000L 1.620 2-4 3 1.062L 2.872 2-6 4.260R 6.813 2-6 4 1.260R 6.813 3-66L	48 20 8 12 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025 2-4 3.454 2-5 3 3.594L 7.249 1-6 3 2.0341L 9.635 1-6 3 2.0341L 9.635	48 20 8 12 .20 .30 .50 5-6 6 8 .997R .533 4-6 5 .668R 1.509 4-6 5 .668R 2.756 2-6 4 4.240 2-6 4 .543R 4.240 2-6 4 .543R 4.543R	48 20 8 12 .20 .40 .40 2-3 2 1.000L 1.620 2-4 3 .747L 2.809 2-5 3 4.168L 6.144 1-6 3 934L 8.481 1-6 3 .934L	52 20 12 12 .10 .30 .60 5-6 6 1.000R 1.620 4-6 5 1.333R 2.936 4-6 5 1.333R 4.427 2-78 4.778L 6.361 2-6 4 7.78L 8.609 1-6 4 1.620	52 20 12 12 10 .40 .50 2-3 2 1.000L 1.640 2-4 3 1.062L 2.872 2-4 3 2-6 4.284 2-6 4.520R 6.123 2-6 4.520R 8.373 1-6 3 3.732L	52 20 12 12 .10 .50 .40 2-3 2 1.000L 2.025 2-4 3.471L 5.036 2-6 3 4.1871L 6.798 1-6 3 2.568L 1-6 3 2.568L	52 20 12 20 30 50 5-6 6 997R .533 5-6 6 .997R 1.356 2.444 4-6 5 1.336R 2.444 4-6 5 5 2.456 4 2.957 2-757 2-7	52 20 12 20 40 40 2-3 2 1.000L 1.620 2-4 3 .747L 2.809 2-4 3 .747L 4.139 1-4 2 7.31R 5.707 1-6 3 1.468L 7.968 1-6
Wir Ax Spare Hit Loc On Ax	and Bass le le le le le le le le le le le le le	e L XX X C a1 a2 G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M M G N B M M M M M M M M M M M M M M M M M M	48 20 8 12 .10 .30 .60 5-6 6 1.000R .640 4-6 5 .667R 1.814 4-6 5 .667R 2.534R 4.920 2-6 4 .111R 7.150 2-6 4 .111R 9.400 1-6 4 9.900R 14.145	48 20 8 12 .10 .40 .50 2-3 2 1.000L .640 2-3 2 1.000L 1.620 2-6 4 1.260R 4.570 2-6 4 1.260R 6.813 2-6 3 3.066L 1.3.852	48 20 8 12 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025 2-4 3.4714 2-5 3 .471L 5.120 2-6 3 3.594L 7.249 1-6 3 2.034L 9.635 1-6 3 2.034L 14.618	48 20 8 12 .20 .30 .50 5-6 6 .533 4-6 5 .668R 1.509 4-6 5 .668R 2.756 2-6 4 .543R 4.240 2-6 4 .543R 8.238 2-6 4.543R 8.238 1.568R	48 20 8 12 .20 .40 .40 2-3 2 1.000L 1.620 2-4 3 .747L 2.809 2-5 3 4.168L 6.144 1-6 3 .934L 1.66 3 .934L 1.3.477	52 20 12 11 .10 .30 .60 5-6 6 1.000R 1.620 4-6 5 1.333R 2.936 4-6 5 1.333R 4.427 2-6 4 .778L 8.669 1-6 4 1.100R	52 20 12 12 .10 .40 .50 2-3 2 1.000L 1.620 2-4 3 1.062L 2.872 2-4 3 1.062L 2.872 2-6 4.284 2-6 4.520R 8.373 1-6 3 3.732L 1.3242	52 20 12 20 12 .10 .50 .40 .40 .800 2-3 2 1.000L 2.025 2-4 3.471L 5.036 2-6 3 4.187L 6.798 1-6 3 2.568L 9.142 1-6 3 2.568L 14.114	52 20 12 20 30 50 5-6 6 997R 1.350 4-6 5 1.336R 2.444 4-6 5 1.336R 2.490L 5.570 2-6 4 2.90L 5.570 1-6 4 3.68R 1.7569 1-6 4 3.68R 1-7569 1-6 4 3.68R 1-7569 1-6 4 4.69 4.290L 5.570 1-6 5.570 1-6 5.570 1-7569 1-7	52 20 12 .20 .40 .40 2-3 2 1.000L 1.620 2-4 3 .747L 2.809 2-4 3 .747L 2.809 1-6 3 3.747L 2.809 1-6 3 1.468L 1-6 3 1.468L 1.2.959
Wir Ax Spare Hit Loc On Ax	and Bass le le le le le le le le le le le le le	e L XX X C a1 a2 a3 G N B M B M G N B M G N B M G N B M B M G N B M B M G N B M B M B M B M B M B M B M B M B M B	48 20 8 12 .10 .30 .60 5-6 6.000R .640 4-6 5.667R 1.814 4-6 5.667R 3.309 3-6 5.111R 7.150 2-6 4 1.111R 9.400 1-6 4 1.900R 14.145 1-6 4	48 20 8 12 .10 .40 .50 2-8 2 1.000L .640 2-3 2.000L 1.620 2-4 3 1.062L 2.872 2-6 4 1.260R 6.813 2-6 4 1.260R 3.066L 13.852 1-6 3	48 20 8 12 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025 2-4 3.454 2-5 3 2.136L 5.120 2-6 3 3.594L 7.249 1-6 3 2.034L 1.618 1-6 3	48 20 30 30 .50 5-6 6 5-6 .533 4-6 5-668R 1.509 4-6 5-668R 2.756 2-6 4-343R 4.240 2-6 4.543R 6.238 1-6 4.543R 4.240 2-6 4.543R 4.240 2-6 4.543R 4.240 2-6 4.543R 4.240 2-6 4.543R 4.240 2-6 4.543R 4.240 2-6 4.543R 4.240 2-6 4.543R 4.240 2-6 4.543R 4.240 2-6 4.543R 4.240 2-6 4.543R 4.240 2-6 4.543R 4.240 2-6 4.543R 4.240 2-7 4.543R 4.240 2-6 4.543R 4.240 2-7 4.543R 4.240 2-6 4.543R 4.240 2-7 4.543R 4.240 2-7 4.543R 4.240 2-7 4.543R 4.240 2-7 4.543R 4.240 2-7 4.543R 4.240 2-7 4.543R 4.240 2-7 4.543R 4.240 2-7 4.543R 4.240 2-7 4.543R 4.240 2-7 4.543R 4.240 2-7 4.543R 4.240 2-7 4.543R 4.240 2-7 4.543R 4.240 2-7 4.543R 4.240 2-7 4.543R 4.240 2-7 4.543R 4.240 2-7 4.543R 4.240 2-7 4.543R 4.240 2-7 4.543R 4.034	48 20 8 12 .20 .40 .40 .40 2-3 2 1.000L 1.620 2-4 3 .747L 2.809 2-5 3 2.606L 4.245 2-6 3 4.168L 6.144 1-6 3 934L 8.481 1-6 3 .934L 13.477 1-6 3	52 20 12 12 .10 .30 .60 5-6 6 1.000R 1.620 4-6 5 1.333R 2.936 4-6 5 1.333R 4.427 2-6 4 .778L 6.361 2-6 4 1.778L 6.360 1-6 1.000R 1.100R 1.333R 1.333R 1.427 1.333R	52 20 12 12 10 .40 .50 2-3 2 1.000L 1.620 2-4 3 1.062L 2.872 2-4 3 2.640 2-6 4.284 2-6 4.520R 6.123 2-6 4 5.20R 6.123 3.732L 1.3.242 1.3.242	52 20 12 12 .10 .50 .40 2–3 2 1.000L 2.025 2–4 3.471L 3.454 2–4 3.471L 5.036 2–6 3 4.1871L 6.798 1–6 3 2.568L 1–16 3 2.568L 14.114 1–6 3	52 20 12 20 30 50 5-6 6 997R .533 5-6 6 .997R 1.356 2.444 4-6 5 1.336R 2.444 4-6 5 5 4 4.290L 5.570 2-6 4 2.990L 7.569 1-6 4 3.368R 12.110 1-6 4	52 20 12 20 40 40 2-3 2 1.000L 1.640 2-4 3 .747L 2.809 2-4 3.747L 4.139 1-4 2.731R 5.707 1-6 3 1.468L 1.968 1.959 1-6 3
Wir Ax Spare Hit Loc On Ax	n. Bass le acing teh ad les 10 20 30 40 50 60	E L XX C A1 A2 A3 G N B M	48 20 8 12 .10 .30 .60 5-6 6 .000R .640 4-6 5 .667R 1.814 4-6 5 .667R 2.534R 4.920 2-6 4 .111R 7.150 2-6 4 1.9400 1-6 4 1.900R 1.4145 1-6	48 20 8 12 .10 .40 .50 2-3 1.000L .640 2-3 1.000L 1.620 2-4 3.062L 2.872 2-6 4.1.260R 4.570 2-6 4.260R 9.057 1-6 3 3.066L 13.856L 1.688	48 20 8 12 .10 .50 .40 2-3 1.000L .800 2-3 1.000L 2.025 2-4 3.471L 3.454 2-5 3.471L 3.454 2-6 3.594L 7.249 1-6 3 2.034L 9.635 1-6 3 2.034L 14.618	48 20 8 12 .20 .30 .50 5-6 6 5 .668R 1.509 4-6 5 .668R 2.756 2-6 4 .543R 4.240 2-6 4.543R 8.238 1-6 4.248 1.543R 1.5	48 20 8 12 .20 .40 .40 .40 .40 .2-3 2 1.000L .640 2-3 2 1.000L 2-4 3 .7471L 2.809 2-5 3 2.606L 4.245 2-6 34.168L 6.144 1-6 3 934L 8.481 1-6 3 .934L 13.477 1-6	52 20 12 12 .10 .60 5-6 6 1.000R .640 5-6 1.000R 1.620 4-6 5 1.333R 2.936 4-78L 6.361 2-6 4 7.78L 8.609 1-6 4 1.100R 1.00R	52 20 12 12 .10 .40 .50 2-3 2 1.000L .640 2-3 1.062L 2.872 2-4 3 1.062L 4.2872 2-6 4 5.20R 8.373 1-6 3 3.732L 1.322L	52 20 12 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025 2-4 3.471L 5.036 2-6 3 4.187L 6.798 1-6 3 2.568L 9.142 1-6 3 2.568L 9.142 1-6	52 20 12 20 30 5-6 6 8-997R .533 5-6 6 .997R 1.336R 2.444 4-6 5 1.336R 4.290L 7.569 1-6 4 3.368R 12.110 1-6	52 20 12 20 40 40 2-3 2 1.000L .640 2-3 2 1.000L 1.620 2-4 3.747L 4.139 1-4 2.731R 5.707 1-6 3 1.468L 7.968 1-6 3

Fruck I Wh. Ba		71 56	72 56	73 56	74 56	75 56	76 52	77 52	78 52	79 52	80 52
wn. ba Axle	se L	20	20	20	20	20	20	20	20	20	20
Spacing	; X'	16	16	16	16	16	8	8	8	8	8
Hitch	C	12	12	12	12	12	16	16	16	16	16
Load On	a ₁ a ₂	.10 .30	.10 .40	.10 .50	.20 .30	.20	.10 .30	.10	.10 .50	.30	.20 .40
Axles	83 2	.60	.50	.40	.50	.40	.60	.50	40	.50	.40
10	G	5–6 6	$^{2-3}_2$	2–3 2	5-6 6	$\substack{2-3\\2}$	5–6 6	$^{2-3}_2$	2-3 2	5–6 6	2-3 2
	B M	1.000R $.640$	1.000L .640	1.000L $.800$.997R .533	1.000L $.640$	1.000R $.640$	1.000L .640	1.000L .800	.997R $.533$	1.000
	G	5-6	2-3	2–3	5-6	2-3	4-6	2-3	2–3	4-6	2-3
20		6	$^{2}_{1.000L}$	2	6	2	$_{.667R}^{5}$	2 1.000L	2	.668R	2
	M	$1.000 \mathbf{R} \\ 1.620$	1.620	1.000L 2.025	0.997R 0.350	1.000L 1.620	1.814	1.620	$1.000L \\ 2.025$	1.509	1.000 1.62
20	G	5-6	2-4	2-4	2-4	2–4	4-6	4–6	2–3	4-6	2-3
36	N B	$^6_{1.000 m R}$	$^3_{1.062 m L}$	3 .471L	3 $1.504L$	3 .747 L ₊	.667R	$_{.668 m R}^{5}$	2 1.000L	.668 R	$\frac{2}{1.000}$
	M	2.613	2.872	3.454	2.236	2.809	3.309	2.756	3.267	2.756	2.61
. 40	G N	4-6 5	$\substack{2-4\\3}$	$\frac{2-4}{3}$	$\frac{2-4}{3}$	2-4 3	4-6 5	4–6 5	$^{2-4}_{3}$	4–6 5	$\frac{2-4}{3}$
E	B M	$2.000\mathbf{R}$	1.062L 4.284	.471L	1.504L	.747L	$\frac{.667 \mathrm{R}}{4.807}$.668R	0.891L 4.779	.668R	1.246 3.88
Span-rect	G	4.060 2-6	1-4	5.036 1-4	3.394 2-6	4.139 1–4	2-6	4.004 2-6	2-6	$\frac{4.004}{2-6}$	2-6
6 50) N	4	3	3	4	.731R	4	4	3	4	3
1	B M	1.667L 5.600	$.897\mathrm{R}$ 5.747	1.231R 6.687	1.123L 4.922	5.707	.778R 6.561	$^{2.149\mathrm{R}}_{6.067}$	4.482L 6.578	1.293R 5.661	5.168 5.49
20	G	2-6	1-6	1-6	2-6	1-4	26	2-6	1-6	2-6	1-6
60	N B	$^{4}_{1.667L}$	3 4.398 L	$3 \\ 3.102L$	$\frac{4}{1.123}$ L	$^2_{.731R}$.778R	$^{4}_{2.149\mathrm{R}}$	$\begin{array}{c} 3 \\ \mathbf{2.834L} \end{array}$	4 1.293R	$\frac{3}{1.734}$
	M	7.842	7.724	8.658	6.919	7.538	8.809	8.303	8.900	7.656	7.71
80	G N	1–6 4	$^{1-6}_{3}$	1-6 3	1–6 3	16 3	1–6 4	$^{1-6}_{3}$	1–6 3	1–6 4	1–6 3
	B M	.300R 12.501	4.398L 12.644	3.102L 13.618	3.298L 11.438	2.002L 12.448	2.700R 13.391	4.066L 12.941	2.834L 13.866	5.034R 11.951	1.734 12.70
	G	1-6	1-6	1-6	1-6	1-6	1-6	1-6	1-6	1-6	1-6
100) N	4	3	3	3	3	4	3	3	4	3 1.734
1	B M	.300R 17.501	4.398L 17.595	3.102L 18.594	3.298L 16.411	$\frac{2.002L}{17.438}$	$\substack{2.700\mathrm{R}\\18.373}$	$rac{4.066 ext{L}}{17.899}$	2.834L 18.846	5.034R 16.887	17.69
Fruck l	T.	0.1	00	00					00		
		81	82	83	84	85	86	87	88	89	90
Wh. Ba	se L	56	56	56	56	56	60	60	60	60	60
Wh. Ba Axle Spacing	se L X x X'	56	56 20 12	56 20 12	56 20 12	56 20 12	60 20 16	20 16		60 20 16	60
Wh. Ba Axle Spacing Hitch	se L X X C	56 20 12 16	56 20 12 16	56 20 12 16	56 20 12 16	56 20 12 16	20 16 16	20 16 16	20 16 16	60 20 16 16	60 20 16 16
Wh. Ba Axle Spacing Hitch Load On	se L X x X'	56	56 20 12	56 20 12 16 .10 .50	56 20 12	56 20 12	60 20 16	20 16	60 20 16	60 20 16	60 20 16
Wh. Ba Axle Spacing Hitch Load	X X X' C a1 a2 a3	56 20 12 16 .10 .30 .60	56 20 12 16 .10 .40	56 20 12 16 .10 .50 .40	56 20 12 16 .20 .30 .50	56 20 12 16 .20 .40 .40	20 16 16 .10 .30 .60	60 20 16 16 .10 .40 .50	60 20 16 16 .10 .50 .40	20 16 16 .20 .30	60 20 16 16 .20 .40
Wh. Ba Axle Spacing Hitch Load On	X X X' C a1 a2 a3 G	56 20 12 16 .10 .30	56 20 12 16 .10 .40	56 20 12 16 .10 .50 .40 2–3	56 20 12 16 .20 .30	56 20 12 16 .20 .40	60 20 16 16 .10 .30 .60 5–6	60 20 16 16 .10 .40	60 20 16 16 .10 .50	60 20 16 16 .20 .30 .50	60 20 16 16 .20 .40 .40 2–3
Wh. Ba Axle Spacing Hitch Load On Axles	X X X C C a ₁ a ₂ a ₃ G N B	56 20 12 16 .10 .30 .60 5-6 6	56 20 12 16 .10 .40 .50 2-3 2	56 20 12 16 .10 .50 .40 2–3 2	56 20 12 16 .20 .30 .50 5-6 6	56 20 12 16 .20 .40 .40 2-3 2	60 20 16 16 .10 .30 .60 5–6 6 1.000R	60 20 16 16 .10 .40 .50 2-3 2	60 20 16 16 .10 .50 .40 2-3 2 1.000L	60 20 16 16 .20 .30 .50 5–6 6	20 16 16 .20 .40 .40 2-3 2 1.000
Wh. Ba Axle Spacing Hitch Load On Axles	X X X C C a ₁ a ₂ a ₃ G	56 20 12 16 .10 .30 .60 5-6 6	56 20 12 16 .10 .40 .50 2-3 2	56 20 12 16 .10 .50 .40 2–3 2	56 20 12 16 .20 .30 .50 5-6 6	56 20 12 16 .20 .40 .40 2-3 2	20 16 16 .10 .30 .60 5-6 6	60 20 16 16 .10 .40 .50 2-3 2	20 16 16 .10 .50 .40 2-3 2	60 20 16 16 .20 .30 .50 5–6 6 .997R .533	20 16 16 .20 .40 .40 2–3 2 1.000
Wh. Ba Axle Spacing Hitch Load On Axles	Se L X X X C a1 a2 a3 G N B M G N N	56 20 12 16 .10 .30 .60 5-6 6 1.000R .640 5-6	56 20 12 16 .10 .40 .50 2-3 2 1.000L .640 2-3 2	56 20 12 16 .10 .50 .40 2–3 2 1.000L .800 2–3 2	56 20 12 16 .20 .30 .50 5-6 6 .997R .533 5-6 6	56 20 12 16 .20 .40 .40 2-3 2 1.000L .640 2-3 2	60 20 16 16 .10 .30 .60 5–6 6 1.000R .640 5–6 6	60 20 16 16 .10 .40 .50 2-3 2 1.000L .640 2-3 2	60 20 16 16 .10 .50 .40 2-3 2 1.000L .800 2-3 2	60 20 16 16 .20 .50 .50 5–6 6 .997R .533 5–6	60 20 16 16 .20 .40 .40 2-3 2 1.000 .64 2-3 2
Wh. Ba Axle Spacing Hitch Load On Axles	se L	56 20 12 16 .10 .30 .60 5-6 1.000R .640 5-6	56 20 12 16 .10 .40 .50 2-3 1.000L .640 2-3	56 20 12 16 .10 .50 .40 2–3 1.000L .800 2–3	56 20 12 16 .20 .30 .50 5-6 6 .997R .533 5-6	56 20 12 16 .20 .40 .40 2-3 2 1.000L .640	60 20 16 16 .10 .30 .60 5–6 6 1.000R .640 5–6	60 20 16 16 .10 .40 .50 2-3 2 1.000L .640 2-3	60 20 16 16 .10 .50 .40 2-3 2 1.000L .800	60 20 16 16 .20 .30 .50 5–6 6 .997R .533	60 20 16 16 .20 .40 .40 2-3 2 1.000 .64 2-3 2
Wh. Ba Axle Spacing Hitch Load On Axles 10	X X' C a1 a2 a3 G N B M G N B M G	56 20 12 16 .10 .30 .60 5-6 6 1.000R .640 5-6 6 1.000R 1.620	56 20 12 16 .10 .40 .50 2-3 2 1.000L .640 2-3 2 1.000L 1.620	56 20 12 16 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025 2-3	56 20 12 16 .20 .30 .50 5-6 6 .997R .533 5-6 6 .997R 1.350 4-6	56 20 12 16 .20 .40 .40 2-3 2 1.000L .640 2-3 2 1.000L 1.620 2-3	60 20 16 16 .10 .30 .60 5–6 1.000R .640 5–6 6 1.000R 1.620 5–6	60 20 16 16 .10 .40 .50 2-3 2 1.000L .640 2-3 2 1.000L 1.620	60 20 16 16 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025	60 20 16 16 .20 .30 .50 5-6 6 .997R .533 5-6 6 .997R 1.350 5-6	60 20 16 16 .20 .40 .40 2-3 2 1.000 .64 2-3 2 1.000 1.62
Wh. Ba Axle Spacing Hitch Load On Axles	X	56 20 12 16 .30 .60 5-6 6 1.000R 1.620 4-6 5 1.333R	56 20 12 16 .10 .40 .50 2-3 2 1.000L 1.620 2-3 2 1.000L	56 20 12 16 .10 .50 .40 2-3 1.000L 2-3 2 1.000L 2.025 2-3 1.000L 2.025	56 20 12 16 .20 .30 .50 5-6 6 .997R .533 5-6 6 .997R 1.350 4-6 5	56 20 12 16 .20 .40 .40 .40 2-3 2 1.000L 1.620 2-3 2 1.000L	60 20 16 16 .10 .30 .60 5-6 1.000R 5-6 6 1.000R 1.620 5-6 6	60 20 16 16 .10 .40 .50 2-3 2 1.000L 1.620 2-3 2 1.000L	60 20 16 16 .10 .50 .40 2-3 2 1.000L 2-3 2 1.000L 2.025 2-3 2 1.000L	60 20 16 .20 .30 .50 .5-6 6 .997R .533 5-6 6 .997R 1.350 5-6 6	60 20 16 16 .20 .40 .40 2-3 2 1.000 1.62 2-3 2 1.000
Wh. Ba Axle Spacing Hitch Load On Axles 10	SE L X X X C a1 a2 a3 G N B M G N B M G N B M G N B M M M M M M M M M M M M	56 20 12 16 .10 .60 5-6 6.000R .640 5-6 1.000R 1.620 4-6 5 1.333R 2.936	56 20 12 16 .10 .40 .50 2-3 2 1.000L 1.620 2-3 2 1.000L 2-3 2 1.000L 2-3 2 2.3 2	56 20 12 16 .10 .50 .40 2-3 2 1.000L 2.025 2-3 2 1.000L 2.025 2-3 2 1.000L 3.267	56 20 12 16 .20 .30 .50 .50 5-6 6 .997R .533 5-6 6 .997R 1.350 4-6 5	56 20 12 16 .20 .40 .40 .40 .2-3 2 1.000L 1.620 2-3 2 1.000L 2-613	60 20 16 16 .10 .30 .60 5-6 6 1.000R 5-6 6 1.000R 1.620 5-6 6	60 20 16 16 .10 .40 .50 2-3 2 1.000L 1.620 2-3 2 1.000L 2-3 2 1.000L 2-3 2 2.1.000L	60 20 16 16 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025 2-3 2 1.000L 3.267	60 20 16 .20 .30 .50 .5-6 6 .997R 1.350 5-6 6 .997R 2.176	60 20 16 16 .20 .40 2-3 2 1.000 .64 2-3 2 1.000 1.62 2-3 2.1.000 2.63
Wh, Ba Axle Spacing Hitch Load On Axles 10 30	SE L X X X C a1 a2 a3 G N B M B M G N B M G N B M G N B M B M G N B M B M G N B M B M B M G N B M B M G N B M B M B M G N B M B B	56 20 12 16 .30 .60 5-6 6 1.000R 1.620 4-6 5 1.333R 2.936 4-6 5	56 20 12 16 .10 .40 .50 2-3 2.000L 1.620 2-3 2 1.000L 2.613 2	56 20 12 16 .10 .50 .40 2-3 2.000L .800 2-3 2.000L 2.025 2-3 2.000L 3.267 2-4 3	56 20 12 16 .20 .30 .50 5-6 .997R .533 5-6 .997R 1.350 4-6 5	56 20 12 16 .20 .40 .40 .40 2-3 2 1.000L 1.620 2-3 2 1.000L 2.613 2 4 3	60 20 16 .10 .30 .60 .60 .60 .60 .60 .60 .60 .60 .60 .6	60 20 16 16 .10 .40 .50 2-3 2 1.000L 1.620 2-3 2 1.000L 2.613 2	60 20 16 16 .10 .50 .40 2-3 2 1.000L 2.025 2-3 2 1.000L 3.267 2-4 3	60 20 16 .20 .30 .50 .5-6 6 .997R 1.350 5-6 6 .997R 2.176 4-6	60 20 16 16 .20 .40 .40 2-3 2 1.000 1.62 2-3 2 1.000
Wh, Ba Axle Spacing Hitch Load On Axles 10 30	Se L X X X C a1 a2 a3 G N B M G N B M G N B M G N B M G N B M G N B M G N B M B M B M B B M B B M B B	56 20 12 16 .10 .30 .60 5-6 6 1.000R 1.620 4-6 1.333R 2.936 4-6 5.1.333R	56 20 12 16 .10 .40 .50 2-3 2 1.000L 1.640 2-3 2 1.000L 2-613 2-4 3 1.651L	56 20 12 16 .10 .50 .40 2-3 2 1.000L 2.025 2 1.000L 2.025 2 3.267 2-4 3.891L	56 20 12 16 .20 .30 .50 5-6 6 .997R .533 5-6 6 .997R 1.356 1.336R 2.444 4-6 5 1.336R	56 20 12 16 .20 .40 2-3 2 1.000L 1.640 2-3 2 1.000L 2-3 2 2.0100L 2.613 2-4 3 1.246L	60 20 16 .10 .30 .60 5–6 6 1.000R 1.640 5–6 6 1.000R 2.613 4–6 2.613	60 20 16 16 .10 .40 .50 2-3 2 1.000L 1.620 2-3 2 1.000L 2-3 2 2.000L 2-3 2 1.000L	60 20 16 16 .10 .50 .40 2-3 2 1.000L 2.025 2 1.000L 3.267 2-3 2 1.000L 3.267 2-3 3.267	60 20 16 .20 .30 .50 5-6 6 .997R .533 5-6 6 .997R 1.350 5-6 6 .997R 2.176 4-6 5 2.004R	60 20 16 .40 .40 .40 2-3 2 1.000 .64 2-3 2 1.000 2.61 2-4 3 1.246
Wh, Ba Axle Spacing Hitch Load On Axles 10 30	SE L X X C a1 a2 a3 O N B M G O O N B M G O O N B M G O O O O O O O O O O O O	56 20 12 16 .30 .60 5-6 6 1.000R 1.620 4-6 5 1.333R 2.936 4-6 5	56 20 12 16 .10 .40 .50 2-3 2.000L 1.620 2-3 2 1.000L 2.613 2	56 20 12 16 .10 .50 .40 2-3 2.000L .800 2-3 2.000L 2.025 2-3 2.000L 3.267 2-4 3	56 20 12 16 .20 .30 .50 5-6 .997R .533 5-6 .997R 1.350 4-6 5	56 20 12 16 .20 .40 .40 .40 2-3 2 1.000L 1.620 2-3 2 1.000L 2.613 2 4 3	60 20 16 .10 .30 .60 .60 .60 .60 .60 .60 .60 .60 .60 .6	60 20 16 16 .10 .40 .50 2-3 2 1.000L 1.620 2-3 2 1.000L 2.613 2	60 20 16 16 .10 .50 .40 2-3 2 1.000L 2.025 2-3 2 1.000L 3.267 2-4 3	60 20 16 .20 .30 .50 .5-6 6 .997R 1.350 5-6 6 .997R 2.176 4-6	60 20 16 .20 .40 .40 2-3 2 1.000 .64 2-3 2 1.000 2.61 2-4 3 1.246
Wh, Ba Axle Spacing Hitch Load On Axles 10 30	SE L X X C a1 a2 a3 O N B M G N B M B M B M B M B M B M B M B M B M B M B M B M B M B M B M B B	56 20 12 16 .10 .30 .60 5-6 6 1.000R 1.620 4-6 5 1.333R 2.936 4-2 5 5 1.333R 4.427	56 20 12 16 .10 .40 .50 2-3 2.000L .640 2-3 2.000L .623 2.000L .623 2.3 2.613 2-4 3.972 1-4 3	56 20 12 16 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025 2 3.267 2-4 3 .891L 4.779 1-4	56 20 12 16 .20 .30 .50 5-6 6 .997R .533 5-6 6 .997R 1.350 4-6 5 1.336R 2.444 4-6 5 1.336R 3.687	56 20 12 16 .20 .40 .40 2-3 2 1.000L .640 2-3 2 1.000L 2-3 2 1.000L 3.887 1-4 2	60 20 16 .10 .30 .60 5–6 6 1.000R 1.640 5–6 6 1.000R 2.613 4–6 5–2 2.000R 4.060 4.060	60 20 16 16 .10 .40 .50 2-3 2 1.000L 1.620 2-3 2 1.000L 2-3 2 1.000L 2-3 2 1.000L 3 2 1.051L 3.972	60 20 16 16 16 .10 .50 .40 2-3 2 1.000L 2.025 2 1.000L 3.267 2-4 3.267 2-4 3.891L 4.779 1-4 3	60 20 16 .20 .30 .50 5-6 6 .997R .533 5-6 6 .997R 1.350 5-6 6 .997R 2.176 4-6 5 2.004R 3.380 4-6	60 20 16 16 20 .40 .40 2-3 2 1.000 0.64 2-3 2 1.000 2.61 2-4 3.88 1.246 3.88
Wh. Ba Axle Spacing Hitch Load On Axles	SE L X X C a1 a2 a3 O N B M G O O N B M G O O N B M G O O O O O O O O O O O O	56 20 12 16 .10 .30 .60 5-6 6 1.000R 1.620 4-6 5 1.333R 2.936 4-6 5 1.333R 4.427	56 20 12 16 .10 .40 .50 2-3 2 1.000L 1.620 2-3 2 1.000L 2.613 2 1.000L 2.613 2 1.000L 3 1.000L	56 20 12 16 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025 2-3 2 1.000L 3.267 2-4 3 .891L 4.779 1-4	56 20 12 16 .20 .30 .50 5-6 6.997R 1.350 4-6 5 1.336R 2.444 4-6 5 1.336R 2.444 2-6 5	56 20 12 16 .20 .40 .40 2-3 2 1.000L .640 2-3 2 1.000L 1.620 2-3 2 1.000L 2.613 2 1.246L 3.887 1-4	60 20 16 .10 .30 .5–6 6 1.000R 1.620 5–6 6 1.000R 2.613 4–6 5 2.000R 4.060	60 20 16 .10 .40 .50 2-3 2 1.000L 1.620 2-3 2 1.000L 2.613 2 1.0613 3 1.6514 3.972 1-4	60 20 16 16 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025 2-3 2 1.000L 3.267 2-4 3 .891L 4.779 1-4	60 20 16 .20 .30 .50 5-6 6 .997R 1.350 5-6 6 .997R 2.176 4-6 5.004R 3.380 4-6	160 200 166 166 .400 .400 2-3 2 1.0000 2-61 2-3 2 1.0000 2.61 2-4 3 1.246 3.888 1-4 2.389
Wh. Ba Axle Spacing Hitch Load On Axles 10 30 40 50 60 60 60 60 60 60 60 60 60 60 60 60 60	Se L	56 20 12 16 .10 .60 5-6 6.000R .640 5-6 1.000R 1.620 4-6 5 1.333R 2.936 4-2 1.333R 4.427 4-6 5 1.333R 4.427	56 20 12 16 .10 .40 .50 2-3 2.000L .640 2-3 2.000L .623 2.000L .623 2-3 2.613 2-4 3.972 1-4 3.3968 5.403 2-6	56 20 12 16 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025 2 3.267 2-4 3.891L 4.779 1-4 3.868R 6.410 1-6	56 20 12 16 .20 .30 .50 5-6 6 .997R .533 5-6 6 .997R 1.356 4-6 5 1.336R 2.444 4-6 5 1.336R 3.687 2-6 4.460R 4.971	56 20 12 16 .20 .40 .40 2-3 2 1.000L .640 2-3 2 1.000L 1.620 2-3 2 1.000L 2-3 2 1.000L 3.887 1-4 2 3.369R 5.434	60 20 16 .10 .30 .60 5–6 6 1.000R 1.620 5–6 6 1.000R 1.620 5–6 2.613 4–6 2.603 4.060 4.060 4.55 5.548 5.548 5.548 5.548 5.5548	60 20 16 16 16 .10 .40 .50 2-3 2 1.000L .640 2-3 2 1.000L 2-640 2-3 2 1.000L 2-613 2 1.651L 3.972 1-4 3 3.396R 5.403	60 20 16 16 .10 .50 .40 2-3 2 1.000L 2.025 2-3 2 1.000L 3.267 2-4 3.267 2-4 3.8891L 4.779 1-4 3.868R 6.410 1-4	60 20 16 .20 .30 .50 .5-6 6 .997R .997R 1.350 5-6 6 .997R 2.176 4-6 5 2.004R 3.380 4-6 5 2.004R 4.620	60 20 20 16 16 16 16 10 2-3 2 1.000 1.62 2-3 2 1.000 2-3 2 1.000 1.62 2-3 2 3 1.000 1.62 2-3 2-3 2-3 1.000 1.64 2-3 2-3 2-3 2-3 2-3 2-3 2-3 2-3
Wh, Ba Axle Spacing Hitch Load On Axles 10 30	Se L	56 20 12 16 .10 .30 .60 5-6 6 1.000R 1.620 4-6 5 1.333R 2.936 4-6 5 1.333R 4.427 4-6 5 1.333R 4.291	56 20 12 16 .10 .40 .50 2-3 2 1.000L 1.620 2-3 2 1.000L 2.613 2-4 3 1.651L 3.972 1-4 3 .396R 5.403	56 20 12 16 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025 2-3 2 1.000L 3.267 2-4 3 891L 4.779 1-4 3868R 6.410	56 20 12 16 .20 .30 .50 5-6 .997R .353 5-6 .997R 1.350 4-6 5 1.336R 2.444 4-6 5 1.336R 2.444 4-6 4.460R 4.971	56 20 12 16 .20 .40 2-3 2 1.000L 1.620 2-3 2 1.000L 2.613 2 1.04 2.1 3 1.246L 3.887 1-4 2 369R 5.434	60 20 16 .10 .30 .60 5–6 6 1.000R 1.620 5–6 6 1.000R 2.613 4–6 5 2.000R 4.060 4–6 5	60 20 16 16 10 40 .50 2-3 2 1.000L 1.620 2-3 2 1.000L 2.641 3 1.651L 3.972 1-4 3 396R 5.403	60 20 16 16 16 .10 .50 .40 2-3 2 1.000L 2.025 2-3 2 1.000L 3.267 2-4 3 .891L 4.779 1-4 3 .868R 6.410	60 20 16 .20 .30 .50 5-6 6 .997R .533 5-6 6 .997R 2.176 4-6 5 .004R 3.380 4-6 5 .004R 4.620	60 20 166 .20 .40 .40 .40 .64 2-3 2 1.000 1.62 2-3 2 1.000 2.64 3 1.246 3.88 1-4 2 3.869 5.43 1-4 2
Wh. Ba Axle Spacing Hitch Load On Axles 10 30 40 50 60 60 60 60 60 60 60 60 60 60 60 60 60	Se L X X C a1 a2 B M G N B M B M G N B M B M G N B M B M G N B M B M B M G N B M B M B M B M B M B M B M B	56 20 12 16 .10 .60 5-6 6.000R 1.000R 1.620 4-6 5.1.333R 2.936 4-6 5.5 1.333R 4.427 4-6 5.921 2-6 4.111L 8.000	56 20 12 16 .10 .40 .50 2-3 2.000L .640 2-3 2.000L .623 2.000L .623 2.613 2-4 3.972 1-4 3.972 1-4 3.9468 5.403 7.598	56 20 12 16 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025 2 3.267 2-4 3.891L 4.779 1-4 3.868R 6.410 1-6 3 3.368L 8.421	56 20 12 16 .20 .30 .50 5-6 6 .997R .333 5-6 5 997R 1.356 4-6 5 1.336R 2.444 4-6 5 1.336R 4.460R 4.971 2-6 4.6971	56 20 12 16 .20 .40 .40 2-3 2 1.000L .640 2-3 2 1.000L 3.887 1-4 2 3.69R 5.434 1-4 2 3.69R 7.267	60 20 16 .10 .30 .60 5–6 6 1.000R 1.620 5–6 6 1.000R 2.613 4–6 2.000R 4.060 4–6 5.548 2.000R 4.060 4	60 20 16 16 16 .10 .40 .50 2-3 2 1.000L .640 2-3 2 1.000L 2-640 2-3 2 1.000L 2-613 2 1.651L 3.972 1-4 3 3.998 5.403 1-4 3 3.998 7.071	60 20 16 16 16 .10 .50 .40 2-3 2 1.000L 2.025 2 1.000L 3.267 2-4 3.267 2-4 3.891L 4.779 1-4 3.868R 6.410 1-4 3 .868R 8.240	60 20 16 .20 .30 .50 5-6 6 .997R .937R 1.350 5-6 6 .997R 2.176 4-6 5 2.004R 3.380 4-6 5 2.004R 4.630 4.630 6.64 6.997R 6.997	60 20 16 16 16 20 40 40 40 2-3 2 1.000 1.66 2-3 2 2 1.000 2-3 2 1.000 1.63 2 1.000 1.64 2-3 2 3 2 3 2 1.000 1.64 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.
Wh. Ba Axle Spacing Hitch Load On Axles 10 30 40 50 60 60 60 60 60 60 60 60 60 60 60 60 60	Se L	56 20 12 16 .10 .30 .60 .640 5-6 1.000R 1.620 4-6 5 1.333R 2.936 4-6 5 1.333R 4.427 4-6 5 1.333R 5.921 2-6 4.111L 8.000 1.620 1.620	56 20 12 16 .10 .40 .50 2-3 2 1.000L .640 2-3 2 1.000L 2.613 2 1.000L 2.613 2 -4 3 .972 1-4 3 .396R 5.403 2-6 4 1.409R 7.598	56 20 12 16 .10 .50 .40 2-3 2.0001 2.025 2-3 2.0001 2.025 2-3 2.0007 2-4 3.8911 4.779 1-4 3.868R 6.410 1-6 3.3368R 8.421 1-6	56 20 12 16 .20 .30 .50 5-6 6 .997R 1.350 4-6 5 1.336R 2.444 4-6 5 1.336R 3.687 2-6 4.460R 4.971 2-6 4.460R 6.971 1-6	56 20 12 16 .20 .40 .40 2-3 2 1.000L 1.620 2-3 2 1.000L 2.613 2-4 3 1.246L 3.887 1-4 2 3.69R 5.434 1-4 2 3.369R 7.267 1-6	60 20 16 .10 .30 .60 5-6 1.000R .640 5-6 1.000R 1.620 5-6 2.000R 4.060 4-6 5.548 2-6 4 1.000L	60 20 16 16 10 .40 .50 2-3 2 1.000L 1.620 2-3 2 1.000L 2.643 2 1.000L 2.613 2 1.651L 3.972 1-4 3 3.96R 5.403 1-4 3 3.996R 7.071 1-6	60 20 16 16 .10 .50 .40 2-3 2 1.000L 2.025 2-3 2 1.000L 3.267 2-4 3.267 2-4 3.8891L 4.779 1-4 3.868R 6.410 1-4 3.868R 8.240 1-6	60 20 16 .20 .30 .50 5–6 6 .997R 1.350 5–6 6 .997R 2.176 4–6 5 2.004R 4.620 2–6 4.373L 6.304 1–6	60 20 166 .20 .40 .40 .40 .64 2-3 2 1.000 .62 2-3 2 1.000 .64 2-3 2 3 1.246 3.88 1-4 2 3.89 1.246 3.89 1.246 2.369 3.89 1.246 3.89 1.246 3.89 1.246 1.
Wh. Ba Axle Spacing Hitch Load On Axles 10 30 40 60	Se L X X C a1 a2 G N B M B M G N B M B M B M B M B M B M B M B M B M B M B M B M B M B M B M B M B B	56 20 12 16 .10 .30 .60 5-6 6 1.000R 1.620 4-6 1.333R 2.936 4-6 5 1.333R 4.427 4-6 5 1.333R 4.427 4-6 5 1.833R 6.940 1.900R	56 20 12 16 .10 .40 .50 2-3 2 1.000L .640 2-3 2 1.000L 2-613 2-4 3 1.651L 3.972 1-4 3 .396R 5.403 2-6 4 1.409R 7.598 1-6 3 4,732L	56 20 12 16 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025 2-3 2.000L 3.267 2-4 3.891L 4.779 1-4 3 8.868R 6.410 1-6 3 3.368L 8.421 1-6 3 3.368L	56 20 12 16 .20 .30 .50 5-6 6 .997R .533 5-6 6 .997R 1.350 4-6 5 1.336R 2.444 4-6 5 4 .460R 4.971 2-6 4 4.660R 4.971 1-6	56 20 12 16 .20 .40 .40 2-3 2 1.000L 1.620 2-3 2.000L 2.613 2-4 3.887 1-4 2 3.369R 5.434 1-4 2 3.669R 7.267 1-6 3 2.268L	60 20 16 .10 .30 .60 5–6 6 1.000R 1.620 5–6 1.000R 2.613 4–6 5 2.000R 4.060 4–6 5.548 4.060 4.	60 20 16 16 16 .10 .40 .50 2-3 2 1.000L 1.620 2-3 2 1.000L 2-640 2-3 2 1.000L 2-613 2-4 3 1.651L 3.972 1-4 3 3.96R 5.403 1-4 3 3.96R 7.071 1-6 3 5.398L	60 20 16 16 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 3.267 2-4 3.267 2-4 3.891L 4.779 1-4 3.868R 6.410 1-4 3.868R 8.240 1-6 3.902L	60 20 16 .20 .30 .50 5-6 6 .997R .533 5-6 6 .997R 1.350 5-6 6 .997R 2.176 4-6 5 2.004R 3.380 4-6 5 2.004R 4.630 4.373L 6.304 1.630 1.6	60 20 16 16 16 2-3 2 1.000 1.662 2-3 2 1.000 2.61 2-3 3 3 4 4 2 2.369 2.44 2.369 5.49 5.49 5.49 5.49 5.49 5.49 5.49 5.4
Wh. Ba Axle Spacing Hitch Load On Axles 10 30 40 60	Se L X X C A1 A2 B2 B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M B M B M G N B M B M B M B M B M B M B B	56 20 12 16 .10 .30 .60 .60 .640 5-6 1.000R 1.620 4-6 5 1.333R 2.936 4-6 5 1.333R 5.921 2-6 4 1.1112 8.000 1-6 4 1.254	56 20 12 16 .10 .40 .50 2-3 2 1.000L .640 2-3 2 1.000L 2.613 2-4 3 1.651L 3.972 1-4 3 .396R 5.403 2-6 4 1.409R 7.598 1-6 3 4.732L	56 20 12 16 .10 .50 .40 2-3 2 1.0001 2.025 2-3 2 1.0001 2.025 2-3 2 1.0001 3.267 2-4 3.8911 4.779 1-4 3.868R 6.410 1-6 3.3.368I 8.421 1-6 3.3.68I 1.3.374	56 20 12 16 .20 .30 .50 5-6 6 .997R .533 5-6 .997R 1.350 4-6 5 1.336R 2.444 4-6 5 4.460R 4.971 2-6 4.460R 4.971 1-6 4.460R 4.971 1-6 1.368R 1.368R 1.368R	56 20 12 16 .20 .40 .40 2-3 2 1.000L 1.620 2-3 2 1.000L 2.613 2-4 3 1.246L 3.887 1-4 2 3.69R 5.434 1-4 2 3.369R 7.267 1-6 3 2.266L 12.196	60 20 16 .10 .30 .60 5–6 6 1.000R 1.620 5–6 1.000R 2.613 4–6 5 2.000R 4.060	60 20 16 16 10 40 .50 2-3 2 1.000L 1.620 2-3 2 1.000L 1.620 2-3 2 1.000L 1.621 2.613 2-4 3 1.651L 3.972 1-4 3.996R 5.403 1-4 3.396R 7.071 1-6 3 5.398L 11.766	60 20 16 16 .10 .50 .40 2-3 2 1.000L 2.025 2-3 2 1.000L 3.267 2-4 3.267 2-4 3.868R 6.410 1-4 3.868R 8.240 1-6 3 3.902L 1.2.888	60 20 16 .20 .50 .50 5-6 6 .997R 1.350 5-6 6 .997R 2.176 4-6 5 2.004R 4.620 2-6 4.373L 4.6304 1-6 3.4298L 10.533	60 20 16 16 .20 .40 .40 .40 .40 .64 2-3 2 1.000 .62 2-3 2 .20 .64 3 1.24 2 .369 5.43 1-4 2 2 .369 7.22 1-6 8 8 8 1-6 8 8 8 8 8 8 8 8 8 8 8 8 8
Wh. Ba Axle Spacing Hitch Load On Axles 10 30 40 60	Se L X X X X C a1 a2 a3 G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G G N B M G G N B M G G N B M G G N B M G G G N B M G G G N B M G G G N B M G G G G N B M G G G G G N B M G G G G G G G G G G G G	56 20 12 16 .10 .30 .60 5-6 6 1.000R 1.620 4-6 1.333R 2.936 4-6 5 1.333R 4.427 4-6 5 1.333R 4.427 4-6 5 1.833R 6.940 1.900R	56 20 12 16 .10 .40 .50 2-3 2 1.000L .640 2-3 2 1.000L 2-613 2-4 3 1.651L 3.972 1-4 3 .396R 5.403 2-6 4 1.409R 7.598 1-6 3 4,732L	56 20 12 16 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 2.025 2-3 2.000L 3.267 2-4 3.891L 4.779 1-4 3 8.868R 6.410 1-6 3 3.368L 8.421 1-6 3 3.368L	56 20 12 16 .20 .30 .50 5-6 6 .997R .533 5-6 6 .997R 1.350 4-6 5 1.336R 2.444 4-6 5 4 .460R 4.971 2-6 4 4.660R 4.971 1-6	56 20 12 16 .20 .40 .40 2-3 2 1.000L 1.620 2-3 2.000L 2.613 2-4 3.887 1-4 2 3.369R 5.434 1-4 2 3.669R 7.267 1-6 3 2.268L	60 20 16 .10 .30 .60 5–6 6 1.000R 1.620 5–6 1.000R 2.613 4–6 5 2.000R 4.060 4–6 5.548 4.060 4.	60 20 16 16 16 .10 .40 .50 2-3 2 1.000L 1.620 2-3 2 1.000L 2-640 2-3 2 1.000L 2-613 2-4 3 1.651L 3.972 1-4 3 3.96R 5.403 1-4 3 3.96R 7.071 1-6 3 5.398L	60 20 16 16 .10 .50 .40 2-3 2 1.000L .800 2-3 2 1.000L 3.267 2-4 3.267 2-4 3.891L 4.779 1-4 3.868R 6.410 1-4 3.868R 8.240 1-6 3.902L	60 20 16 .20 .30 .50 5-6 6 .997R .533 5-6 6 .997R 1.350 5-6 6 .997R 2.176 4-6 5 2.004R 3.380 4-6 5 2.004R 4.630 4.373L 6.304 1.630 1.6	60 20 16 .20 .40 .40 .40 .40 .40 .40 .64 .23 .2 1.000 .62 .2 .2 .2 .3 .2 .2 .3 .2 .3 .2 .3 .2 .3 .2 .3 .2 .3 .2 .3 .2 .3 .2 .3 .3 .2 .3 .3 .3 .3 .3 .3 .3 .3 .3 .3

Table 7.13

CONTROLLING CONDITIONS AND MAXIMUM MOMENTS IN SIMPLE SPANS PRODUCED BY THE TYPE 2-S1-2 TRUCKS WEIGHING ONE KIP EACH



Ninety-six variations in the Type 2-S1-2 truck are given in this Table. Each truck number, from 1 to 96, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

Tr	uck N	o,	1	2	3	4	5	6	7	8	9	10
W	h. Bas	e L	36	36	36	36	40	40	40	40	44	44
Ax		X	8	8	8	8	8	8	8	8	8	8
Sp	acing	Χ'_	10	10	10	10	12	12	12	12	14	14
Hi	tch	C	8	8	8	8	8	8	8	8	8	8
Lo		a ₁	.10	.10	.20	.26	.10	.10	.20	.20	.10	.10
On		\mathbf{a}_2	.20	.30	.20	.30	.20	.30	.20	.30	.20	.30
Ax	les	аз	.70	.60	.60	.50	.70	.60	.60	.50	.70	.60
	1	G N	4	2	5 5	2 2	4 4	2	5	2	4	2
	10	В	4	2	0	0	0	2	5 0	2	4	2
	l	M	.585	.750	.500	.750	.585	.750	.500	.750	.585	.750
	J	G	3-4	1-3	3-4	1-2	3-4	1-2	3-4	1-2	3-4	1-2
	20	N	4	2	3	2	4	2	3	2	4	2
		$\hat{\mathbf{B}}$	1.996R	$1.0\overline{0}0L$	2.000L	1.600R	1.996R	1.000R	2.000L	$1.6\overline{0}0R$	1.996R	1.000R
		M	1.496	1.630	1.280	1.764	1.496	1.620	1.280	1.764	1.496	1.620
		G	3-5	1-3	2-4	13	3~5	1-3	2-4	1-3	3-5	1-3
	30	N	4	2	3	2	4	2	3	2	4	2
		В	.333L	1.000L	.333R	.053L	.666L	1.333L	$.667\mathbf{R}$.303L	.999L	1.667L
		M	3.156	3.120	2.702	3.368	2.930	2,936	2,509	3.202	2.711	2.756
		G	2-5	1-5	15	1-4	2-5	1-4	1-4	1-4	3-5	1-4
ب	40	N	4	3	3	2	4	2	2	2	4	2
<u>.</u> &		B M	1.741R 5.172	.200L	.200R	1.836L	1.705R	3.500L	3.000L	2.236L	.999L	4.000L
Span-Feet				5.001	4.601	5.271	4.735	4.645	4.180	4.972	4.454	4.320
ar	50	G N	$^{1-5}_3$	1-5 3	15 3	${\overset{1-4}{2}}$	$^{1-5}$	$^{1-5}$	$^{1-5}_{3}$	$^{1-4}_{2}$	2-5	1-5
Sp	90	В	1.133L	.200L	.200R	1.836L	1.066L	0	.400R	$^{2}_{2.236L}$	$^{4}_{1.668 m R}$	$^3_{.200 m R}$
		M	7.593	7.501	7.101	7.340	7.057	6.900	6.503	7.033	6.537	6.301
		G	1-5	1–5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5
	60	Ň	3	3	3	2	3	3	3	2	3	3
		В	1.133L	.200L	.200R	3.867L	1.066L	ŏ	.400R	4.534L	.999L	.200R
		M	10.088	10.001	9.601	9.782	9.553	9.400	9.003	9.209	9.018	8.801
		G	1-5	1–5	1-5	1-5	1-5	1-5	${1-5}$	15	1-5	1-5
	80	N	3	3	3	2	3	3	3	2	3	3
		В	1.133L	.200 L	$.200\mathrm{R}$	3.867L	1.066 L	0	$.400\mathrm{R}$	4.534L	.999L	$.200\mathbf{R}$
	Í	M	15.083	15.001	14.601	14.720	14.548	14.400	14.002	14.123	14.013	13.801
		G	1 - 5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5
	100	N	3	3	3	2	3	3	3	2	3	3
	1	В	1.133L	.200L	.200R	3.867L	1.066L	0	.400R	4.534L	.999L	.200R
	1	M	20.080	20.000	19.600	19.683	19.545	19.400	19.002	19.072	19.011	18.800

a1, a2, and a3-Represent the ratio of gross vehicle weight on axles.

G-Axle group causing maximum moment, thus, 1-3 means axles 1, 2, and 3.

N-Number of critical axle under which maximum moment occurs.

B-Distance to right or left of mid-span to point of maximum moment.

M-Maximum moment.

	ick No		11	12	13	14	15	16	17	18	19	20
	. Base		44	44	48	48	48	48	52	52	52	52
Axl	le icing	X X'	8 14	8 14	$\frac{8}{16}$	8 16	8 16	8 16	8 18	$\frac{8}{18}$	8 18	8 18
Hit		-Ĉ	8	8	8	8	8	8	8	8	8	8
Loa	ıd	a ₁	.20 .20	.20 .30	.10 .20	.10 .30	.20 .20	.20 .30	.10 .20	.10	.20 .20	.20
Ax]	les	a ₂ a ₃	.60	.50	.70	.60	.60	.50	.70	.60	.60	.50
	10	G N	5 5	2 2	4	2 2	5 5	$\frac{2}{2}$	4	$\frac{2}{2}$	5 5	$\frac{2}{2}$
-	10	\mathbf{B}	0	0	0	0	0	0	0	0	0	0
-		G G	3-4	$\frac{.750}{1-2}$	3-4	$\frac{.750}{1-2}$	3-4		3-4	.750 1-2	3-4	$\frac{.750}{1-2}$
{	20	N B	3 2.000L	$^2_{1.600\mathrm{R}}$	4 1.996R	$\frac{2}{1.000\mathrm{R}}$	3 2.000L	$\frac{2}{1.600\mathrm{R}}$	4 1.996R	$^{2}_{1.000R}$	$^{3}_{2.000\mathbf{L}}$	$\frac{2}{1.600\mathbf{R}}$
		M	1.280	1.764	1.496	1.620	1.280	1.764	1.496	1.620	1.280	1.764
	30	G N	1-3 2	1-3	3–4 4	1-2	3-4 3	$^{1\!-\!2}_2$	$_4^{-4}$	$\overset{1-2}{2}$	$^{3-4}$	$\frac{1-2}{2}$
	00	В	1.000L	.553L	1.996R	1.000R	2.000L	1.600R	1.996R	1.000R	2.000L	$1.600\mathbf{R}$
		M G	$\frac{2.320}{1-4}$	$\frac{3.040}{1-3}$	35	$\frac{2.613}{1-3}$	$\frac{2.253}{1-3}$	2.993	$\frac{2.632}{3-5}$	2.613	2.253	$\frac{2.993}{1-3}$
اب	40	N	2	2	4	2	2	2	4	2	2	2
F.		$_{\mathbf{M}}^{\mathbf{B}}$	3.500L 3.845	553L 4.706	1.332L 4.235	$^{2.000L}_{4.060}$	$^{1.333 m L}_{3.627}$	0.804L $0.804L$	1.665L 4.020	$^{2.333}_{3.882}$	$1.667 L \\ 3.442$	1.054L 4.386
Span-Feet		G	1-5	1-4	2-5	1-4	1-4 2	1-4	3-5	1-4	1-4	1-4
Sp	50	N B	$^3_{.600 m R}$	2.635L	$^4_{1.631 m R}$	4.500L	4.000L	$^2_{3.035\mathrm{L}}$	$^{4}_{1.665\mathrm{L}}$	5.000L	$^2_{4.500\mathrm{L}}$	$\begin{array}{c} 2 \\ 3.435 \mathbf{L} \end{array}$
		M G	5.907 1-5	6.733	6.102	$\frac{5.924}{1-5}$	5.456 1-5	6.438	$\frac{5.760}{1-5}$	5.600 1-5	5.124 1-5	6.148
	60	N	3	2	3	3	3	2	3	3	3	2
l		B M	$600 m R \ 8.406$	2.635L 8.797	8.482	8.203	7.800 m R	$8.035L \\ 8.495$	$0.865 L \\ 7.947$	7.600R	$1.000 \mathbf{R} \\ 7.217$	3.435 L 8.1 9 8
		G	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1–5	15	15
	80	N B	$^3_{ m .600R}$	$^{2}_{5.201 L}$	3 .932L	$^3_{.400 m R}$	$^3_{.800 m R}$	$5.868 \mathbf{L}$	$^3_{.865 \mathbf{L}}$	$^3_{.600 m R}$	$^3_{1.000 m R}$	6.535L
- 1		M	13.405	13.537	13.479	13.202	12.808	12.962	12,944	12.605	12.213	12.399
1		α.		1-5	1-5	1–5	1-5	1–5	1-5	$^{1-5}_{3}$	$^{1-5}$	1–5
	100	G N	$^{1-5}_{3}$	2	3	3	3	2	3		U	2
	100	N B	$^3_{600 m R}$	5.201L	.932L	$.400\mathrm{R}$.800R	5.868L	.865L	$.600\mathbf{R}$	1.000R	$6.535 \mathbf{L}$
Tru		N B M	3									
	100 ick No	N B M D.	3 .600R 18.404 21 56	5.201L 18.470 22 56	.932L 18.477 23 56	.400R 18.202 24 56	.800R 17.806 25 60	5.868L 17.876 26 60	.865L 17.942 27 60	.600R 17.604 28 60	1,000R 17.210 29 64	6.535L 17.292 30 64
Wh Axl	ick No i. Base le	N B M	3.600R 18.404 21 56 8	5.201L 18.470 22 56 8	.932L 18.477 23 56 8	.400R 18.202 24 56 8	.800R 17.806 25 60 8	5.868L 17.876 26 60 8	.865L 17.942 27 60 8	.600R 17.604 28 60 8	1,000R 17.210 29 64 8	6.535 L 17.292 30 64 8
Wh Axl	ick No i. Base le icing	N B M D.	3 .600R 18.404 21 56	5.201L 18.470 22 56 8 20 8	.932L 18.477 23 56	.400R 18.202 24 56	.800R 17.806 25 60 8 22 8	5.868L 17.876 26 60	.865L 17.942 27 60	.600R 17.604 28 60	1,000R 17.210 29 64	6.535L 17.292 30 64
Wh Axl Spa Hit Loa	ick No i. Base le icing ich	N B M D, e L X X' C	3 .600R 18.404 21 56 8 20 8	5.201L 18.470 22 56 8 20 8 .10	.932L 18.477 23 56 8 20 8	.400R 18.202 24 56 8 20 8 .20	.800R 17.806 25 60 8 22 8 .10	5.868L 17.876 26 60 8 22 8 .10	.865L 17.942 27 60 8 22 8 .20	.600R 17.604 28 60 8 22 8 .20	1.000R 17.210 29 64 8 24 8	6.535L 17.292 30 64 8 24 8
Wh Axl Spa Hit	ick No i. Base le icing ich	N B M D. E L X X' C	3 .600R 18.404 21 56 8 20 8	5.201L 18.470 22 56 8 20 8 .10 .30 .60	.932L 18.477 23 56 8 20 8	.400R 18.202 24 56 8 20 8 .20 .30 .50	.800R 17.806 25 60 8 22 8	5.868L 17.876 26 60 8 22 8 .10 .30 .60	.865L 17.942 27 60 8 22 8	.600R 17.604 28 60 8 22 8 .20 .30 .50	1,000R 17.210 29 64 8 24 8	6.535L 17.292 30 64 8 24 8 .10 .30 .60
Wh Axl Spa Hit Loz On	nck No i. Base le icing ich ad	N B M D. E L X X' C a ₁ a ₂ a ₃ G	3 .600R 18.404 21 56 8 20 8 .10 .20 .70	5.201L 18.470 22 56 8 20 8 .10 .30 .60	.932L 18.477 23 56 8 20 8 .20 .20 .60	.400R 18.202 24 56 8 20 8 .20 .30 .50	.800R 17.806 25 60 8 22 8 .10 .20 .70	5.868L 17.876 26 60 8 22 8 .10 .30 .60	.865L 17.942 27 60 8 22 8 .20 .20 .60	.600R 17.604 28 60 8 22 8 .20 .30 .50	1,000R 17.210 29 64 8 24 8 .10 .20 .70	6.535L 17.292 30 64 8 24 8 .10 .30 .60
Wh Axl Spa Hit Loz On	ick No i. Base le icing ich	N B M D. C X X' C a1 a2 a3 G N B	3 .600R 18.404 21 56 8 20 8 .10 .20 .70 4 4	5.201L 18.470 22 56 8 20 8 .10 .30 .60	.932L 18,477 23 56 8 20 8 .20 .20 .60 5 5	.400R 18.202 24 56 8 20 8 .20 .30 .50	.800R 17.806 25 60 8 22 8 .10 .20 .70 4 4	5.868L 17.876 26 60 8 22 8 .10 .30 .60 2 2	.865L 17.942 27 60 8 22 8 .20 .20 .60	.600R 17.604 28 60 8 22 8 .20 .30 .50	1,000R 17.210 29 64 8 24 8 .10 .20 .70 4 4	6.535L 17.292 30 64 8 24 8 .10 .30 .60
Wh Axl Spa Hit Loz On	nck No i. Base le icing ich ad	N B M D. C X X' C a1 a2 a3 G N B M	3 .600R 18.404 21 56 8 20 8 .10 .20 .70	5.201L 18.470 22 56 8 20 8 .10 .60	.932L 18,477 23 56 8 20 8 .20 .20 .60	.400R 18.202 24 56 8 20 8 .20 .30 .50	.800R 17.806 25 60 8 22 8 .10 .20 .70	5.868L 17.876 26 60 8 22 8 .10 .30 .60	.865L 17.942 27 60 8 22 8 .20 .20 .60	.600R 17.604 28 60 8 22 8 .20 .30 .50	1.000R 17.210 29 64 8 24 8 .10 .20 .70	6.535L 17.292 30 64 8 24 8 .10 .30 .60
Wh Axl Spa Hit Loz On	nck No i. Base le icing ich ad	N B M D D C E L X X C C C C C C C C C C C C C C C C C	3 .600R 18.404 21 56 8 20 8 .10 .20 .70 4 4 0 .585	5.201L 18.470 22 56 8 20 8 .10 .30 .60 2 2 0 .750	.932L 18.477 23 56 8 20 .20 .20 .60 5 5 0 .500	.400R 18.202 24 56 8 20 8 .20 .30 .50 2 2 2 0 .750	.800R 17.806 25 60 8 22 8 .10 .20 .70 4 4 0 .585 3–4	5.868L 17.876 26 60 8 22 8 .10 .30 .60 2 2 0 .750	.865L 17.942 27 60 8 22 8 .20 .20 .60 5 5 0 .500	.600R 17.604 28 60 8 22 20 .30 .50 2 2 0 .750	1,000R 17,210 29 64 8 24 8 .10 .20 .70 4 4 0 .585 3-4	6.535L 17.292 30 64 8 24 8 .10 .30 .60 2 2 0 .750
Wh Axl Spa Hit Loz On	ack No. Base le ucing ach ad les	N B M D. E L X X' C a1 a2 a3 G N B M G	3 .600R 18.404 21 56 8 20 8 .10 .20 .70 4 4 0 .585 3-4	5.201L 18.470 22 56 8 20 8 .10 .30 .60 2 2 0 .750	.932L 18.477 23 56 8 20 8 .20 .20 .60 5 5 0 .500	.400R 18.202 24 56 8 20 8 .20 .30 .50 2 2 0 .750 1-2	.800R 17.806 25 60 8 22 8 .10 .20 .70 4 4 0 .585	5.868L 17.876 26 60 8 22 8 .10 .30 .60 2 2 0 .750	.865L 17.942 27 60 8 22 8 .20 .20 .60 5 5 0 .500	.600R 17.604 28 60 8 22 8 .20 .30 .50 2 2 2 0 .750	1.000R 17.210 29 64 8 24 8 .10 .20 .70 4 4 0 .585	6.535L 17.292 30 64 8 24 8 .10 .30 .60 2 2 2 0 .750 1-2
Wh Axl Spa Hit Loz On	ack No. Basele le le le le le le le le le le le le	N B M O. E L X X' C a1 a2 a3 G N B M G N B M G N B M G G N B M G C C C C C C C C C C C C C C C C C C	3 .600R 18.404 21 56 8 20 8 .10 .20 .70 .70 .4 4 4 0 0.585 3-4 1.996R 1.496	5.201L 18.470 22 56 8 20 8 .10 .30 .60 2 0 .750 1-2 1.620 1-2	.932L 18.477 23 56 8 20 8 .20 .20 .20 .60 5 5 0 .500 3–4 3 2.000L 1.280 3–4	.400R 18.202 24 56 8 20 8 .20 .30 .50 2 2 0 .750 1-2 2 1.600R 1.764	.800R 17.806 25 60 8 22 8 .10 .20 .70 4 4 0 .585 3–4 4 1.996R 1.496	5.868L 17.876 26 60 8 22 8 .10 .30 .60 2 2 0 .750 1-2 2 1.000R 1.620 1-2	.865L 17.942 27 60 8 22 8 .20 .20 .60 5 5 0 .500 3-4 3 2.000L 1.280 3-4	.600R 17.604 28 60 8 22 8 .20 .30 .50 2 2 0 .750 1-2 2 1.600R 1.764	1,000R 17,210 29 64 8 24 8 .10 .20 .70 4 4 0 .585 3–4 4 1,996R 1,496 3–4	6.585L 17.292 30 64 8 24 8 .10 .30 .60 2 2 2 0 .750 1-2 2 1.0000R 1.620 1-2
Wh Axl Spa Hit Loz On	ack No. Base le ucing ach ad les	N B M D. 2 L X X' C C a1 a2 a3 G N B M G N B M M G N B B	3 .600R 18.404 21 56 8 20 .8 .10 .20 .70 4 4 4 1.996R 1.496	5.201L 18.470 22 56 8 20 8 .10 .30 .60 2 0 .750 1-2 1.000R 1.620 1-2 1.000R	.932L 18.477 23 56 8 20 8 .20 .20 .60 5 5 0 .500 3–4 3 2.000L 1.280 3–4 3 2.000L	.400R 18.202 24 56 8 20 8 .20 .30 .50 2 2 0 .750 1-2 2 1.600R 1.764	.800R 17.806 25 60 8 22 8 .10 .20 .70 4 4 0 .585 3-4 4 1.996R 1.496	5.868L 17.876 26 60 8 22 8 .10 .30 .60 2 2 0 .750 1-2 2 1.000R	.865L 17.942 27 60 8 22 8 .20 .60 5 5 0 .500 3-4 3 2.000L 1.280 3-4 3 2.000L	.600R 17.604 28 60 8 22 8 .20 .30 .50 2 2 0 .750 1-2 2 1.600R 1.764 1-2 2 1.600R	1,000R 17,210 29 64 8 24 8 1,10 20 70 4 4 0 .585 3-4 4 1,996R 1,496 3-4 4 1,996R	6.585L 17.292 30 64 8 24 8 .10 .30 .60 2 2 0 .7550 1-2 2 1.000R 1.620 1-2 2 1.000R
Wh Axl Spa Hit Loz On	ack No. Basele le le le le le le le le le le le le	N B M M D. D. S L X X Y C a1 a2 a3 G N B M M G N B M M B M M M M M M M M M M M M M M M	3 .600R 18.404 21 56 8 20 8 .10 .20 .70 .4 4 4 1.996R 1.496 3-4 4 1.996R 2.632	5.201L 18.470 22 56 8 20 8 .10 .30 .60 2 0 .750 1-2 1.000R 1.620 1.000R 2.613	.932L 18.477 23 56 8 20 8 .20 .20 .60 5 5 0 .500 3-4 3 2.000L 1.280 3-4 3 2.000L 2.253	.400R 18.202 24 56 8 20 .30 .50 2 2 2 0 .750 1-2 1.600R 1.764 1-2 2 1.600R 2.993	.800R 17.806 25 60 8 22 8 .10 .20 .70 4 4 0 .585 3–4 4 1.996R 1.496 3-4 4 1.996R 2.632	5.868L 17.876 26 60 8 22 8 .10 .30 .60 2 2 0 .750 1-2 2 1.000R 1.620 1-2 2	.865L 17.942 27 60 8 22 8 .20 .20 .60 .50 .500 3-4 3 2.000L 1.280 3-4 3 2.000L 2.253	.600R 17.604 28 60 8 22 8 .20 .30 .50 2 2 0 .750 1-2 2 1.600R 1-2 2 1.600R 2.993	1,000R 17,210 29 64 8 24 8 .10 .20 .70 4 4 0 .585 3-4 4 1,996R 1,996R 2,632	6.585L 17.292 30 64 8 24 8 .10 .30 .60 2 2 0 .750 1-2 2 1.0000R 1.620 1-2 2 1.000R 2.613
White Axis Span Hitt Load On Axis	ack No. Basele le le le le le le le le le le le le	N B M M S L X X Y C a1 a2 a3 G N B B M G N B B M G N B B M G N B M G N B M G N B M M G N B M M G N B M M G N B M M M G N B M M M G N B M M M M M M M M M M M M M M M M M M	3 .600R 18.404 21 56 8 20 .20 .70 4 4 4 1.996R 1.496 3-4 4 1.996R 2.632 3-5 4	5.201L 18.470 22 56 8 20 8 .10 .30 .60 2 0 .750 1-2 1.000R 1.620 1-2 1.000R 2.613	.932L 18.477 23 56 8 20 8 .20 .20 .60 5 5 0 .500 3-4 3 2.000L 1.280 3-4 3 2.000L 2.253 1-3 2	.400R 18.202 24 56 8 20 8 .20 .30 .50 2 2 2 0 .750 1-2 2 1.600R 2.993 1-2 2	.800R 17.806 25 60 8 22 8 .10 .20 .70 4 4 0 .585 3-4 4 1.996R 2.632 3-4 4	5.868L 17.876 26 60 8 22 8 .10 .30 .60 2 0 .750 1-2 2 1.000R 2.613 1-2 2	.865L 17.942 27 60 8 22 8 .20 .60 5 5 0 0.500 3-4 3 2.000L 1.280 3-4 3 2.253 3-4 3	.600R 17.604 28 60 8 22 8 .20 .30 .50 2 2 0 .750 1-2 2 1.600R 2.993 1-2 2	1,000R 17,210 29 64 8 24 8 1,10 2,20 7,70 4 4 0 0,585 3-4 4 1,996R 2,632 3-4 4	6.585L 17.292 30 64 8 24 8 .10 .30 .60 2 0 .750 1-2 2 1.000R 2.613 1-2 2
White Axis Span Hitt Load On Axis	ack No. Baselecing ch ad les 20	N B M C C a1 a2 a3 G N B M G N B M G N B M G G N B M G G N B M G G N B M G G N B M M G G N B M M G G N B M M G G N B M M G G M M B M M G G M M M M G G M M M M	3 .600R 18.404 21 56 8 20 8 .10 .20 .70 4 4 0 .585 3-4 1.996R 1.496 3-4 4 1.9968R 2.632 3-5	5.201L 18.470 22 56 8 20 8 .10 .30 .60 .750 1-2 1.000R 1.620 1.020 1.020R 2.613 1-3	.992L 18.477 23 56 8 20 .20 .20 .50 .50 3-4 3 2.000L 1.280 3-4 3 2.000L 1.253	.400R 18.202 24 56 8 20 8 .20 .30 .50 2 2 2 0 .750 1-2 1.600R 1.764 1-2 1.600R 2.993	.800R 17.806 25 60 8 22 8 .10 .20 .70 .585 3-4 4 1.996R 1.496 3-4 1.996R 2.632	5.868L 17.876 26 60 8 22 8 8 .10 .30 .60 2 2 2 0 .750 1-2 2 1.000R 1.620 1-2 2 1.000R 2.2 1.000R	.865L 17.942 27 60 8 22 .20 .20 .60 5 5 0 .500 3-4 3 2.000L 1.280 3-4 3 2.000L 2.26 3-4 3	.600R 17.604 28 60 8 22 8 .20 .30 .50 2 2 0 .750 12 2 1.600R 1.764 12 2 1.600R 2.993	1,000R 17,210 29 64 8 24 8 1.10 .20 .70 4 4 0 .585 3-4 4 1,996R 1,496 3-4 1,996R 2,632 2,632	6.585L 17.292 30 64 8 24 8 .10 .30 .60 2 2 0 .750 1-2 1.000R 1.620 1-2 1.000R 2.613
White Axis Span Hitt Load On Axis	ick No. Base le lecting what less 10 20 40	N B M D. D. D. D. D. D. D. D. D. D. D. D. D.	3 .600R 18.404 21 56 8 .10 .20 .70 4 4 4 0 .585 3-4 4 1.996R 2.632 3-5 4 1.997L 3.997L 3.997L	5.201L 18.470 22 56 8 20 8 .10 .30 .60 2 2 .750 1-2 1.000R 1.620 1-2 2 1.000R 2.613 1-3 2 2.667L 3.707 1-4	.932L 18.477 23 56 8 20 .20 .20 .60 5 5 0 .500 3-4 3 2.000L 1.280 3-4 3 2.000L 2.253 1-3 2 2.000L 3.260 1-4	.400R 18.202 24 56 8 20 8 .20 .30 .50 2 2 2 0 .750 1-2 2 1.600R 2.993 1-2 2 1.600R 2.993 1-2	.800R 17.806 25 60 8 22 8 .10 .20 .70 4 4 0 .585 3-4 4 1.996R 2.632 3-4 4 1.996R 2.632 3-4 4 3-4 4 3-4 4 3-4 4 3-4 4 3-7 3-8 3-7 3-7 3-7 3-7 3-7 3-7 3-7 3-7 3-7 3-7	5.868L 17.876 26 60 8 22 8 .10 .30 .60 2 2 0 .750 1-2 1.000R 1.620 1-2 2 1.000R 2.613 1-2 2 1.000R 3.613 1-2 1.000R 3.613	.865L 17.942 27 60 8 22 8 8 .20 .20 .60 5 5 0 .500 3-4 3 2.000L 1.280 3-4 3 2.000L 2.253 3-4 3 2.000L 3.240 1-3	.600R 17.604 28 60 8 22 8 .20 .30 .50 2 2 0 .750 1-2 1.600R 1.764 1-2 2 1.600R 2.993 1-2 2 1.600R 4.232	1,000R 17,210 29 64 8 24 8 1,10 2,20 70 4 4 0 0,585 3-4 4 1,996R 2,632 3-4 4 1,996R 2,632 3-4 4 1,996R 3,785 3,785 3,785 3,785	6.585L 17.292 30 64 8 24 8 .10 .30 .60 2 0 .750 1-2 2 1.000R 2.613 1-2 1.000R 2.613 1-2 1.000R 3.610 1-3
Wh Axl Spa Hit Loz On	ack No. Baselecing ch ad les 20	N B M D	3 .600R 18.404 21 56 8 20 8 .10 .20 .70 4 4 0 .585 3-4 1.996R 1.496 3-4 1.996R 2.632 3-5 4 1.997L 3.808	5.201L 18.470 22 56 8 20 8 .10 .30 .60 2 2 2 .750 1-2 1.000R 1.620 1-2 1.000R 2.613 1-3 2 2.667L 3.707 1-4 2.5.500L	.992L 18.477 23 56 8 20 8 8.20 .20 .60 .5 5 0.500 3-4 3 2.000L 1.280 3-2 2.000L 2.253 1-3 2 2.000L 3.260 1-4 2.500 1-4 2.5000L	.400R 18.202 24 56 8 20 .8 .20 .30 .50 2 2 2 0 .750 1-2 1.600R 2.993 1-2 2 1.600R 2.993 1-2 2 1.400R 2.993 1-2 2 2 1.305L	.800R 17.806 25 60 8 22 8 .10 .20 .70 .4 4 0 .585 3-4 4 1.996R 1.496 2.632 4 1.996R 2.632 3-4 1.996R 3.785	5.868L 17.876 26 60 8 22 8 8 .10 .30 .60 .750 1-2 2 1.000R 2.610 1-2 2 1.000R 3.610	.865L 17.942 27 60 8 22 .20 .20 .60 .5 5 5 0 .500 3-4 3 2.000L 1.280 3-4 3 2.000L 2.254 3-4 3 2.000L 2.254 1.280	.600R 17.604 28 60 8 22 8 8 .20 .30 .50 2 2 0 .750 1-2 2 1.600R 2.993 1-2 2 1.600R 4.232 1-3 2 2 1.555L	1,000R 17,210 29 64 8 24 8 1,10 .20 .70 .74 4 4 0 .585 3-4 4 1,996R 2,632 4 1,996R 2,785 3-4 4 1,996R 2,785 3-4 4 1,996R 2,785 3-4 4 4 1,996R 2,785 3-4 4 4 1,996R 2,785 3-4 4 4 4 1,996R 2,785 3-4 4 4 4 1,996R 2,785 3-4 4 4 4 4 1,996R 2,785 3-4 4 4 4 1,996R 2,99	6.585L 17.292 30 64 8 24 8 .10 .30 .60 2 2 0 .750 1-2 1.000R 1.620 1-2 2 1.000R 2.613 1-2 2 1.000R 2.613 1-2 2 1.000R 3.610 1-3 2 3.333L
White Axis Span Hitt Load On Axis	ick No. Base le lecting what less 10 20 40	N B M D	3 .600R 18.404 21 56 8 20 .8 .10 .20 .70 4 4 4 1.996R 2.632 3-5 4 1.997L 3.96R 2.632 3-5 4 1.997L 3.95R	5.201L 18.470 22 56 8 20 8 .10 .30 .60 2 2 0 .750 1-2 1.000R 1.620 1-2 2 1.000R 2.613 1-3 2 2.667L 3.707 1-4 2 5.500L 5.284	.932L 18.477 23 56 8 20 8 20 .20 .50 5 5 0 .500 3-4 3 2.000L 1.280 3-4 3 2.000L 2.253 1-3 2 2.0000L 3.260 1-4 2 5.000L	.400R 18.202 24 56 8 20 8 .20 .30 .50 2 2 0 .750 1-2 2 1.600R 2.993 1-2 2 1.600R 2.993 1-2 2 1.600R 2.913 1-2 2 1.600R	.800R 17.806 25 60 8 22 8 .10 .20 .70 4 4 0 .585 3-4 4 1.996R 2.632 3-4 4 1.996R 2.632 3-4 4 2.330L 5.331	5.868L 17.876 26 60 8 22 8 10 .30 .60 2 2 0 .750 1-2 1.000R 1.620 1-2 1.000R 2.613 1-2 1.000R 3.61 1-3 2 3.000L 5.008	.865L 17.942 27 60 8 22 8 8 .20 .20 .60 5 5 0 .500 3-4 3 2.000L 1.280 3-4 3 2.000L 2.253 3-4 3 2.000L 4.365	.600R 17.604 28 60 8 22 .30 .50 .50 1-2 2 0 .750 1-2 1.600R 2.993 1-2 2 1.600R 4.232 1-3 2 1.5551L 5.733	1,000R 17,210 29 64 8 24 8 1,10 2,20 70 4 4 0 0,585 3-4 4 1,996R 2,632 3-4 4 1,996R 2,632 3-4 4 2,632 3-5 4 4 2,632 3-4 4 4 2,996R 2,632 3-4 4 4 2,996R 2,632 3-4 4 4 4 2,996R 2,996R 2,632 3-4 4 4 4 2,996R	6.585L 17.292 30 64 8 24 8 .10 .30 .60 2 2 0 .750 1-2 2 1.000R 2.613 1-2 2 1.000R 2.613 1-2 2 3.3338L 4.833
White Axis Span Hitt Load On Axis	ick No. Base le lecting what less 10 20 40	N B M D. C a1 a2 G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M M G N B M M G N B M M M G N B M M M G N B M M M G N B M M M G N M M M M M M M M M M M M M M M	3.600R 18.404 21 56 8 20 8 .10 .20 .70 4 4 0 .585 3-4 1.996R 1.496 3-4 1.99682 3-5 4 1.997L 3.808 3-5 4 1.997L 5.544 2-5 4	5.201L 18.470 22 56 8 20 8 .10 .30 .60 2 2 .750 1-2 1.000R 1.620 1-2 1.000R 2.613 1-3 2 2.667L 3.707 1-4 2.5.500L 5.284 1-4	.932L 18.477 23 56 8 20 8 8.20 .20 .60 5 5 0.500 3-4 3 2.000L 1.280 3-4 3 2.000L 2.253 1-3 2 2.000L 4.800 1-4 2 5.000L 4.800	.400R 18.202 24 56 8 20 .8 .20 .30 .50 2 2 2 0 .750 I-2 1.600R 1.764 1-2 1.600R 2.993 I-2 2 1.600R 2.993 I-2 2 1.305L 2.903 I-2 2.904 I-2 2.905 I-2 2 I-2 2 I-2 2 I-2 2 I-2 I-2 I-2 I-2	.800R 17.806 25 60 8 .22 8 .10 .20 .70 .585 3-4 4 1.996R 1.496 2.632 4 4 1.996R 2.632 3-4 4 4 1.996R 2.5330L 5.331 3-5 4	5.868L 17.876 26 60 8 22 8 8 .10 .30 .60 2 2 2 1.000R 1.620 1-2 1.000R 2.613 1-2 2 1.000R 2.613 1-2 2 1.000R 3.610 1-3 2 3.000L 5.008	.865L 17.942 27 60 8 22 8 .20 .20 .60 5 5 0 .500 3-4 3 2.000L 1.280 3-4 3 2.000L 2.251 3-4 3 2.000L 4.565 1-4 2	.600R 17.604 28 60 8 22 8 .20 .30 .50 2 2 0 .750 12 2 1.600R 2.993 12 2 1.600R 4.232 13 2 1.555L 5.733	1,000R 17,210 29 64 8 24 8 8 1,10 20 70 70 4 4 0 0,585 3-4 4 1,996R 2,632 4 1,996R 2,632 3-4 4 1,996R 2,632 5,785	6.585L 17.292 30 64 8 24 8 .10 .30 .60 2 2 0 .750 1-2 1.000R 1.620 1-2 1.000R 2.613 1-2 2 1.000R 3.610 1-3 3.333L 4.833 1-4 2
White Axis Span Hitt Load On Axis	le le le le le le le le le le le le le l	N B M D	3 .600R 18.404 21 56 8 20 8 .10 .20 4 4 0 .585 3-4 4 1.996R 2.632 3-5 4 1.997L 3.05 3.05 4 1.997L 3.05 3.05 4 4.1.997L 3.05 3.05 4.1.997L 3.05 4.1.907 4.1.9	5.201L 18.470 22 56 8 20 8 .10 .30 .60 2 0 .750 1-2 1.000R 1.620 1-2 2 1.000R 2.613 1-3 2 2.6671 3.707 1-4 2 5.500L 5.284 1-4 2 5.500L	.932L 18.477 23 56 8 20 8 .20 .20 .60 5 5 0 .500 3-4 3 2.000L 1.280 3-4 3 2.000L 3.265 1-3 2.000L 3.260 1-4 2.000L 3.260 1-4 2.000L 3.260 1-4 2.000L	.400R 18.202 24 56 8 20 .8 .20 .30 .50 2 2 0 .750 1-2 1.600R 1.764 1-2 2 1.600R 2.993 1-2 1.3051 5.890 1-4	.800R 17.806 25 60 8 22 8 .10 .20 .70 4 4 0 .585 3-4 4 1.996R 2.632 3-4 4 1.996R 3.785 4 2.330L 5.331 3-5 4 2.330L	5.868L 17.876 26 60 8 22 8 1.10 .30 .60 2 2 0 .750 1-2 1.000R 2.613 1-2 2 1.000R 2.613 1-2 2 1.000R 3.60 1-3 2 2 2 1.000R 3.60 2 2 2 2 2 2 2 2 2 2 2 2 3.000L 5.008 1-4 2 6.000L	.865L 17.942 27 60 8 22 8 8 .20 .20 .60 5 5 0 .500 3-4 3 2.000L 1.280 3-4 3 2.000L 3.240 1-3 2 2.333L 4.565 1-4 2 5.500L	.600R 17.604 28 60 8 22 .20 .30 .50 2 2 0 .750 1-2 2 1.600R 2.993 1-2 2 1.600R 4.232 2 1.5551L 5.733 1-4 4.234L	1,000R 17,210 29 64 8 24 8 1,10 20 70 4 4 0 .585 3-4 4 1,996R 2,632 3-4 4 1,996R 3,785 3-5 4 2,663L 5,121 3-5 4 2,663L	6.585L 17.292 30 64 8 24 8 .10 .30 .60 2 0 .750 1-2 2 1.000R 2.613 1-2 2 1.000R 2.613 1-2 4.833 1-4 4.833 1-4 6.500L
White Axis Span Hitt Load On Axis	ack No. Least Base le coing sch ad les 10 20 40 50 60	NBM Oo. L XY C a1 a2 a3 G NBM	3 ,600R 18.404 21 56 8 20 8 .10 .20 .70 4 4 0 .585 3-4 1.996R 1.496 2.632 3-5 4 1.997L 3.808 3-5 4 1.997L 5.544 2-5 5.544 2-5 4 1.588R 7.474 1.588R 7.474 1.588R 7.474	5.201L 18.470 22 56 8 20 8 .10 .30 .60 2 2 2 0 .750 1-2 1.000R 1.620 1-2 2.067L 3.707 1-4 2 5.500L 5.284 1-4 2 5.500L 7.203 1-5	.992L 18.477 23 56 8 20 8 8 .20 .20 .60 5 5 0 .500 3-4 3 2.000L 1.280 3-4 3 2.000L 1.280 1-3 2 2.000L 2.25 5.000L 4.800 1-4 2 5.000L 4.800 1-4 2 5.000L 6.734	.400R 18.202 24 56 8 20 8 .20 .30 .50 2 2 2 0 .750 1-2 2 1.600R 1.764 1-2 2 1.600R 2.993 1-2 2 1.600R 2.993 1-2 2 3.000 1-2 2 3.000 1.750	.800R 17.806 25 60 8 22 8 .10 .20 .70 .585 3-4 4 1.996R 1.496 2.632 3-4 4 1.996R 2.632 3-4 4 2.330L 5.331 3-5 4 2.330L 7.068 1.7068	5.868L 17.876 26 60 8 22 8 8 .10 .30 .60 .750 1-2 2 1.000R 2.610 1-3 2 2 1.000R 2.610 1-3 2 6.000L 5.008 1-4 6.8800 1-5	.865L 17.942 27 60 8 22 8 .20 .20 .50 .500 3-4 3 2.000L 1.280 3-4 3 2.000L 2.251 3-4 3 2.000L 2.255 5-1 4.565 1-4 2.5500L 6.403	.600R 17.604 28 60 8 22 8 .20 .30 .50 2 2 0 .750 1-2 2 1.600R 2.993 1-2 2 1.600R 4.232 1-3 2 1.555L 5.733 1-4 2,234L 7.641 7.641	1,000R 17,210 29 64 8 24 8 10 20 70 4 4 0 5,585 3-4 4 1,996R 2,632 3-4 4 1,996R 2,632 5,121 3-5 4 2,663L 5,121 3-5 4 2,663L 5,121 6,855	6.585L 17.292 30 64 8 24 8 .10 .30 .60 2 2 0 .750 1-2 1.000R 1.620 1-2 1.000R 2.610 1-3 2 3.333L 4.833 1-4 6.505L 6.505L 6.505L 6.505L
White Axis Span Hitt Load On Axis	le le le le le le le le le le le le le l	N B M D. C a1 A2 A3 G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M	3 .600R 18.404 21 56 8 20 8 .10 .20 .70 4 4 0 .585 3-4 4 1.996R 2.632 3-5 4 1.997L 3.05 4 1.997L 3.05 4 1.997L 3.05 4 1.997L 3.05 4 1.996R 3.05 4 4 1.996R 3.05 4 4 4 1.996R 3.05 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	5.201L 18.470 22 56 8 20 8 .10 .30 .60 2 0 .750 1-2 1.000R 1.620 1-2 2.613 1-3 2 2.667L 3.707 1-4 2 5.500L 5.284 1-4 2 5.500L 7.203 1-5 3	.932L 18.477 23 56 8 20 8 .20 .50 .50 .500 3-4 3 2.000L 1.280 3-4 3 2.000L 3.260 1-4 2.000L 3.260 1-4 2.000L 3.260 1-4 2.000L 3.260 1-4 2.000L 3.260 1-4 3.	.400R 18.202 24 56 8 20 8 .20 .30 .50 2 2 2 0 .750 1-2 2 1.600R 2.993 1-2 2 1.600R 4.232 1-3 2 2 1.3061L 5.890 1-4 2 3.835L 7.905	.800R 17.806 25 60 8 22 8 .10 .20 .70 4 4 0 .585 3-4 4 1.996R 2.632 3-4 4 1.996R 2.632 3-4 4 2.330L 5.331 3-5 4 2.330L 7.068 1-5 3	5.868L 17.876 26 60 8 22 8 1.10 .30 .60 2 2 0 .750 1-2 1.000R 1.620 1-2 2 1.000R 2.613 1-2 2 1.000R 3.610 1-3 2 3.000L 5.008 1-4 6.880 1-5 3	.865L 17.942 27 60 8 22 8 8 .20 .20 .60 5 5 0 .500 3-4 3 2.000L 1.280 3-4 3 2.000L 2.253 3-4 3 2.000L 2.253 1-3 2 2.333L 4.565 1-4 2 5.500L 6.403 1-5 3	.600R 17.604 28 60 8 22 8 .20 .30 .750 2 2 0 .750 1-2 2 1.600R 2.993 1-2 2 1.600R 2.993 1-2 2 1.555 1-600R 4.232 1-555 1.600R 4.232 1.600R 4.232 1.600R	1,000R 17,210 29 64 8 24 8 110 20 .70 4 4 0 .585 3-4 4 1,996R 2,632 3-4 4 1,996R 2,632 3-5 4 2,663L 6,855 1-5 3	6.585L 17.292 30 64 8 24 8 .10 .30 .60 2 0 .750 1-2 2 1.000R 2.613 1-2 2 1.000R 2.613 1-2 2 1.000R 2.613 1-2 2 1.000R 3.633L 4.833 1-4 6.563 1-5 3
White Axis Span Hitt Load On Axis	ack No. Least Base le coing sch ad les 10 20 40 50 60	N B M D. C a1 a2 G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M B M G N B M B M B M G N B M B M G N B M B M B M G N B M B M B M B M B M B M B M B M B M B	3	5.201L 18.470 22 56 8 20 8 .10 .30 .60 2 2 0 .750 1-2 1.000R 1.620 1-2 2.067L 3.707 1-4 2 5.500L 5.284 1-4 2 5.500L 7.203 1-5 3 800R 12.008	.992L 18.477 23 56 8 20 8 8 .20 .20 .60 5 5 0 .500 3-4 3 2.000L 1.280 3-4 3 2.000L 1.280 1-3 2 2.000L 2.25 5.000L 4.800 1-4 2 5.000L 6.734 1-5 3 1.200R 11.618	.400R 18.202 24 56 8 20 8 .20 .30 .50 2 2 2 0 .750 1-2 2 1.600R 1.764 1-2 2 1.600R 2.993 1-2 2 1.600R 2.993 1-2 2 3.835L 7.995 1-4 2 3.835L 1.2.019	.800R 17.806 25 60 8 22 8 .10 .20 .70 .70 4 4 0 .585 3-4 4 1.996R 1.496 2.632 3-4 4 2.936R 2.5330L 5.331 3-5 4 2.330L 7.068 1-5 3 3 1-5 4 1.996R 1.99	5.868L 17.876 26 60 8 22 8 8 .10 .30 .60 .750 1-2 2 1.000R 1.620 1-2 1.000R 2.610 1-3 2 3.000L 5.008 1-4 6.880 1-5 3 1.000R 1.1.413	.865L 17.942 27 60 8 22 8 8 .20 .20 .60 5 5 0 .500 3-4 3 2.000L 1.280 3-4 3 2.000L 2.261 3-4 3 2.000L 2.265 5 6.403 1-5 5 6.403 1-5 3 1.400R 11.025	.600R 17.604 28 60 8 22 8 .20 .30 .50 2 2 2 0 .750 12 2 1.600R 2.993 12 2 1.600R 4.232 13 2 1.555L 5.733 14 4.234L 1-764 1-4 2 4.234L 1.720	$\begin{array}{c} 1.000\text{R} \\ 17.210 \\ \hline \\ 29 \\ 64 \\ 8 \\ 24 \\ \hline \\ 8 \\ 24 \\ \hline \\ 8 \\ 1.00 \\ 20 \\ .70 \\ \hline \\ 4 \\ 0 \\ .585 \\ 3-4 \\ 4 \\ 1.996\text{R} \\ 1.496 \\ 3-4 \\ 4 \\ 1.996\text{R} \\ 2.632 \\ 3-4 \\ 4 \\ 1.996\text{R} \\ 2.663L \\ 5.121 \\ 3-5 \\ 4 \\ 2.663L \\ 5.121 \\ 3-5 \\ 4 \\ 2.663L \\ 5.121 \\ 3-5 \\ 4 \\ 1.996\text{R} \\ 1.496 \\ 1.996\text{R} \\ 1.$	6.585L 17.292 30 64 8 24 8 .10 .30 .60 .60 2 2 0 .750 1-2 1.000R 1.620 1-2 1.000R 2.610 1-3 3.610 1-3 2 3.333L 4.833 1-4 6.505L 6.505L 3 1.200R 10.818
White Axis Span Hitt Load On Axis	10k No. 1. Base 1. Bas	N B M D. C a1 a2 a3 G N B M	3 .600R 18.404 21 56 8 20 8 .10 .20 .70 4 4 9 6 1.99 6R 2.632 3-5 4 1.99 6R 2.632 3-5 4 9 7 1.55 8R 7.474 1-5 3 .79 8L 12.410 1-5	5.201L 18.470 22 56 8 20 8 .10 .30 .60 .750 1-2 2 1.000R 1.620 1-2 2 1.000R 2.613 1-3 2 2.667L 3.707 1-4 2 5.500L 7.203 1-5 3 8.800R 12.008 12.008	.932L 18.477 23 56 8 20 8 20 .20 .50 .50 3-4 3 2.000L 1.280 3-4 3 2.000L 2.253 1-3 2 2.000L 4.800 1-4 2 5.000L 6.734 1-5 3 1.2008 1.2108 1.2108	.400R 18.202 24 56 8 20 .30 .50 8 .20 .30 .50 2 2 1.600R 1.764 1-2 2 1.600R 2.993 1-2 2 1.305L 5.890 1-4 2 3.835L 7.905 1-4 2 3.835L 7.905	.800R 17.806 25 60 8 22 8 .10 .20 .70 4 4 4 0 .585 3-4 4 1.996R 2.632 3-4 4 1.996R 2.633 3-5 4 2.330L 7.068 1-5 3 3 1.1816 1.1816	5.868L 17.876 26 60 8 22 8 1.10 30 .60 2 2 0 7.750 1-2 1.000R 1.620 1-2 2 1.000R 2.613 1-2 2 1.000R 2.613 1-3 2 1.000R 3.610 1-3 2 1.000L 6.880 1-5 3 1.000R 11.413	.865L 17.942 27 60 8 22 8 8 .20 .20 .60 5 5 0 0.500 3-4 3 2.000L 1.280 3-4 3 2.000L 2.253 3-4 3 2.000L 2.253 1-3 2.331L 4.565 1-4 2 5.500L 6.403 1-5 1.400R 11.025 11-5	.600R 17.604 28 60 8 22 .30 .50 .50 .750 1-2 2 1.600R 2.993 1-2 2 1.5551L 5.733 1-4 2 4.234L 7.617 1-2 4.234L 1.1720	1.000R 17.210 29 64 8 24 8 1.00 .20 .70 4 4 0 0.585 3-4 4 1.996R 2.632 3-4 4 1.996R 2.632 3-4 2.663L 6.855 1-5 3 .664L 11.342	6.585L 17.292 30 64 8 24 8 .10 .30 .60 2 2 0 .750 1-2 2 1.000R 2.613 1-2 2 1.000R 2.613 1-3 2 3.333L 4.833 1-4 2 6.563 1-5 3 1.200R 10.818
White Axis Span Hitt Load On Axis	ack No. Least Base le coing sch ad les 10 20 40 50 60	N B M D. C a1 a2 G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M B M G N B M B M B M G N B M B M G N B M B M B M G N B M B M B M B M B M B M B M B M B M B	3	5.201L 18.470 22 56 8 20 8 .10 .30 .60 2 2 0 .750 1-2 1.000R 1.620 1-2 2.067L 3.707 1-4 2 5.500L 5.284 1-4 2 5.500L 7.203 1-5 3 800R 12.008	.992L 18.477 23 56 8 20 8 8 .20 .20 .60 5 5 0 .500 3-4 3 2.000L 1.280 3-4 3 2.000L 1.280 1-3 2 2.000L 2.25 5.000L 4.800 1-4 2 5.000L 6.734 1-5 3 1.200R 11.618	.400R 18.202 24 56 8 20 8 .20 .30 .50 2 2 2 0 .750 1-2 2 1.600R 1.764 1-2 2 1.600R 2.993 1-2 2 1.600R 2.993 1-2 2 3.835L 7.995 1-4 2 3.835L 1.2.019	.800R 17.806 25 60 8 22 8 .10 .20 .70 .70 4 4 0 .585 3-4 4 1.996R 1.496 2.632 3-4 4 2.936R 2.5330L 5.331 3-5 4 2.330L 7.068 1-5 3 3 1-5 4 1.996R 1.99	5.868L 17.876 26 60 8 22 8 8 .10 .30 .60 .750 1-2 2 1.000R 1.620 1-2 1.000R 2.610 1-3 2 3.000L 5.008 1-4 6.880 1-5 3 1.000R 1.1.413	.865L 17.942 27 60 8 22 8 8 .20 .20 .60 5 5 0 .500 3-4 3 2.000L 1.280 3-4 3 2.000L 2.261 3-4 3 2.000L 2.265 5 6.403 1-5 5 6.403 1-5 3 1.400R 11.025	.600R 17.604 28 60 8 22 8 .20 .30 .50 2 2 2 0 .750 12 2 1.600R 2.993 12 2 1.600R 4.232 13 2 1.555L 5.733 14 4.234L 1-764 1-4 2 4.234L 1.720	$\begin{array}{c} 1.000 \mathrm{R} \\ 17.210 \\ \hline \\ 29 \\ 64 \\ 8 \\ 24 \\ \hline \\ 8 \\ 24 \\ \hline \\ 8 \\ 1.00 \\ -20 \\ -70 \\ \hline \\ 4 \\ 0 \\ .585 \\ \hline \\ 3-4 \\ 4 \\ 1.996 \mathrm{R} \\ 1.496 \\ 3-4 \\ 4 \\ 1.996 \mathrm{R} \\ 2.632 \\ 3-4 \\ 4 \\ 1.996 \mathrm{R} \\ 2.663 \mathrm{L} \\ 5.121 \\ 3-5 \\ 4 \\ 2.663 \mathrm{L} \\ 5.121 \\ 3-5 \\ 4 \\ 2.663 \mathrm{L} \\ 5.121 \\ 3-5 \\ 4 \\ 3.664 \mathrm{L} \\ 1.1342 \\ \end{array}$	6.585L 17.292 30 64 8 24 8 .10 .30 .60 .60 2 2 0 .750 1-2 1.000R 1.620 1-2 1.000R 2.610 1-3 3.610 1-3 2 3.333L 4.833 1-4 6.505L 6.505L 3 1.200R 10.818

_	uck No		31	32	33	34	35	36	37	38	39	40
$\frac{\mathbf{W}\mathbf{h}}{\mathbf{A}\mathbf{x}}$	n. Base	e L X	8	8	12	12	12	40 12	12	12	12	$\frac{44}{12}$
	acing	Χ̈́	24	24	10	10	10	10	12	12	12	12
Hi		C	8	8	8	8	88	8	. 8	8	8	8
Lo		\mathbf{a}_1	.20 .20	.20 .30	.10 .20	.10 .30	.20 .20	.20 .30	$.10 \\ .20$.10 .30	.20 .20	.20 .30
Ax		\mathbf{a}_3	.60	.50	.70	.60	.60	.50	.70	.60	.60	.50
	10	G	5	2	4	2	5	2	4	2	5	2
	10	N B	5 0	2 0	$\frac{4}{0}$	2 0	5 0	2 0	4 0	$\frac{2}{0}$	5 0	$\frac{2}{0}$
		M	.500	.750	.585	.750	.500	.750	.585	.750	.500	.750
	20	G N	3-4 3	$_{2}^{1-2}$	$_{4}^{3-4}$	$\frac{2}{2}$	3-4 3	23 2	$^{3-4}_{4}$	$\frac{2}{2}$	$^{3-4}_3$	$\frac{2}{2}$
	20	В	2.000L	1.600R	1.996R	2.0001.	2.000L	1.788L	1.996R	0	2.000L	0
- 1		M	1.280	1.764	1.496	1.600	1.280	1.575	1.496	1.500	1.280	1.500
	30	G N	$_{3}^{-4}$	$\frac{1-2}{2}$	$_{4}^{3-5}$	$\frac{2-4}{3}$	$_{3}^{2-4}$	$^{1-3}_{2}$	$_{4}^{3-5}$	$^{1-3}_2$	$^{2-4}_3$	$_{2}^{1-3}$
		В	2.000L	1.600R	.333L	1.000R	.333R	.547R	.666L	1.000L	.667R	.297R
		M G	$\frac{2,253}{3-4}$	2.993	$\frac{3.156}{2-5}$	$\frac{2.973}{2-5}$	2.702	$\frac{2.974}{1-4}$	$\frac{2.930}{2-5}$	$\frac{2.720}{2-4}$	2.509	$\frac{2.802}{1-4}$
	40	N	3	2	4	3	4	2	4	3	4	2
8		B M	$\frac{2.000 L}{3.240}$	1.600R 4.232	1.741R 5.172	$\frac{1.222 \text{L}}{4.934}$	2.000R 4.480	1.356L 4.839	1.705R 4.735	1.429R 4.436	2.000R 4.080	1.755L 4.532
Span-Feet		G	1-3	1-3	2-5	1-5	1-5	1-4	2-5	1-5	1-5	1-4
Spa	50	N	2	2	4	3	3	2	4	3	3	2
01		B M	$\frac{2.667 L}{4.386}$	1.805L 5.577	1.741R 7.408	$\substack{0\\7.300}$	6.707	1.356L 6.914	1.705R 6.973	.200R 6.701	6.113	1.755L 6.602
		G	1-4	1-4	1-5	15	1-5	1-5	1-5	1-5	1-5	1-5
	60	N	2	2	3	3	3	2	3	3	3	2
		B M	6.000L 6.080	4.634L 7.333	9.881	$\frac{0}{9.800}$	600R 9.206	3.467L 9.333	0.866L 0.346	0.200 R 0.201	800R 8.611	4.134L 8.751
1		G	1-5	1-4	1–5	1-5	1–5	1-5	1-5	1. 5	1-5	1-5
	80	N B	$6.000 \mathbf{L}$	$^{2}_{4.634L}$	3 .933L	3 0	$^3_{.600 m R}$	$^{2}_{3.467 \rm L}$	$^3_{.866 \mathbf{L}}$	$^3_{.200 m R}$	$^3_{.800 m R}$	$^{2}_{4.134L}$
		M	10.432	11.423	14.878	14.800	14.205	14.283	14.343	14.201	13.608	13.680
	100	G	1~5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5
	100	N B	$^3_{1.600 m R}$	$^{2}_{8.536L}$	3 .933L	$\frac{3}{0}$	$^3_{600 m R}$	$\frac{2}{3.467 L}$	$^3_{.866 extbf{L}}$	3 .200ዊ	3 .800R	$^2_{4.134\mathrm{L}}$
		M	15.426	15.593	19.876	19.800	19.204	19,253	19.341	19.260	18,606	18.637
m												
announce of	ack No		41	42	43	44	45	46	47	48	49	50
W	ı. Base	e L	48	48	48	48	52	52	52	52	56	56_
Wi Ax	ı. Base											
Mi Ax Spa Hit	n. Base le acing tch	e L X	48 12 14 8	48 12 14 8	48 12 14 8	48 12 14 8	52 12 16 8	52 12 16 8	52 12 16 8	52 12 16 8	56 12 18 8	56_ 12 18_ 8
Wi Ax Spa Hit Los	n. Base le acing tch ad	X X' C a ₁	48 12 14 8	48 12 14 8 .10	48 12 14 8 .20	48 12 14 8 .20	52 12 16 8 .10	52 12 16 8 .10	52 12 16 8 .20	52 12 16 8 .20	56 12 18 8 .10	56 12 18 8 .10
Mi Ax Spa Hit	n. Base le acing tch ad	X X' C	48 12 14 8	48 12 14 8	48 12 14 8	48 12 14 8	52 12 16 8	52 12 16 8	52 12 16 8	52 12 16 8	56 12 18 8	56_ 12 18_ 8
Wind Ax Spare Hit Los	n. Base le acing tch ad les	E L X X' C a ₁ a ₂ a ₃ G	48 12 14 8 .10 .20 .70	48 12 14 8 .10 .30 .60	48 12 14 8 .20 .20 .60	48 12 14 8 .20 .30 .50	52 12 16 8 .10 .20 .70	52 12 16 8 .10 .30 .60	52 12 16 8 .20 .20 .60	52 12 16 8 .20 .30 .50	56 12 18 8 .10 .20 .70	56 12 18 8 .10 .30 .60
Wind Ax Spare Hit Los	n. Base le acing tch ad	E L X X' C a ₁ a ₂ a ₃	48 12 14 8 .10 .20 .70	48 12 14 8 .10 .30 .60	48 12 14 8 .20 .20 .60	48 12 14 8 .20 .30	52 12 16 8 .10 .20 .70	52 12 16 8 .10 .30 .60	52 12 16 8 .20 .20 .20	52 12 16 8 .20 .30 .50	56 12 18 8 .10 .20 .70	56 12 18 8 .10 .30 .60
Wind Ax Spare Hit Los	n. Base le acing tch ad les	E L X X X' C a ₁ a ₂ a ₃ G N B M	48 12 14 8 .10 .20 .70 4 4 0 .585	48 12 14 8 .10 .30 .60 2 2 0	48 12 14 8 .20 .20 .60 5 0 .500	48 12 14 8 .20 .30 .50 2 2 0 .750	52 12 16 8 .10 .20 .70 4 4 0 .585	52 12 16 8 .10 .30 .60 2 2 0 .750	52 12 16 8 .20 .20 .60 5 5 0 .500	52 12 16 8 .20 .30 .50 2 2 0 .750	56 12 18 8 .10 .20 .70 4 4 0 .585	56_ 12 18 8 .10 .30 .60 2 2 0 .750
Wind Ax Spare Hit Los	le le acing teh ad les 10	E L X X X' C a ₁ a ₂ a ₃ G N B M G	48 12 14 8 .10 .20 .70 4 4 0 .585 3-4	48 12 14 8 .10 .30 .60 2 2 0 .750	48 12 14 8 .20 .20 .60 5 0 .500 3-4	48 12 14 8 .20 .30 .50 2 2 0 .750	52 12 16 8 .10 .20 .70 4 4 0 .585	52 12 16 8 .10 .30 .60 2 2 0 .750	52 12 16 8 .20 .20 .60 5 0 .500 3-4	52 12 16 8 .20 .30 .50 2 2 0 .750	56 12 18 8 .10 .20 .70 4 4 0 .585	56 12 18 8 .10 .30 .60 2 2 0 .750
Wind Ax Spare Hit Los	n. Base le acing tch ad les	E L X X X' C a1 a2 a3 G N B M G N B	48 12 14 8 .10 .20 .70 4 4 0 .585 3-4 1.996R	48 12 14 8 .10 .30 .60 2 2 0 .750	48 12 14 8 .20 .20 .60 5 5 0 .500 3-4 3 2.000L	48 12 14 8 .20 .30 .50 2 2 0 .750	52 12 16 8 .10 .20 .70 4 4 0 .585 3-4 4 1.996R	52 12 16 8 .10 .30 .60 2 2 0 .750	52 12 16 8 .20 .20 .60 5 5 0 .500 3-4 3 2.000L	52 12 16 8 .20 .30 .50 2 2 0 .750	56 12 18 8 .10 .20 .70 4 4 0 .585 3–4 1.996R	56 12 18 8 .10 .30 .60 2 2 0 .750 2 2
Wind Ax Spare Hit Los	le le acing teh ad les 10	E L X X C a ₁ a ₂ a ₃ G N B M G N B M	48 12 14 8 .10 .20 .70 4 4 0 .585 3-4 1.996 R	48 12 14 8 .10 .30 .60 2 2 0 .750 2 2 1.500	48 12 14 8 .20 .20 .60 5 5 0 .500 3-4 3 2.0001L 1.280	48 12 14 8 .20 .30 .50 2 2 0 .750 2 1.500	52 12 16 8 .10 .20 .70 4 4 0 .585 3-4 4 1.996R	52 12 16 8 .10 .30 .60 2 2 0 .750 2 2 0 1.500	52 12 16 8 .20 .60 5 5 0 .500 3-4 3 2.000L 1.280	52 12 16 8 .20 .30 .50 2 2 0 .750 2 2 0 .750	56 12 18 8 .10 .20 .70 4 4 0 .585 3–4 4 1.996R 1.496	56 12 18 8 .10 .30 .60 2 2 0 .750 2 2
Wind Ax Spare Hit Los	le le acing teh ad les 10	X X X' C a ₁ a ₂ a ₃ G N B M G N B M	48 12 14 8 .10 .20 .70 4 4 0 .585 3-4 1.996 8 1.496	48 12 14 8 .10 .30 .60 2 2 0 .750 2 2 0 1.500 1-3 2	48 12 14 8 .20 .60 5 5 0 .500 3-4 3 2.000L 1.280 4	48 12 14 8 .20 .30 .50 2 2 0 .750 2 2 0 1.500 1-2 2	52 12 16 8 .10 .20 .70 4 4 0 .585 3–4 4 1.996R 1.496	52 12 16 8 .10 .30 .60 2 2 0 .750 2 2 0 1.500 1-2 2	52 12 16 8 .20 .20 .60 5 0 .500 3-4 3 2.000L 1.280 3-4 3	52 12 16 8 .20 .30 .50 2 2 0 .750 2 2 0 1.500	56 12 18 8 .10 .20 .70 4 4 0 .585 3–4 1.996R 1.496	56 12 18 8 .10 .30 .60 2 2 0 .750 2 2 0 1.500 1-2 2
Wind Ax Spare Hit Los	n. Base le acing tch ad les 10	E L X X X C a ₁ a ₂ a ₃ G N B M G N B M G N B B M B M G N B B M B M G N B B M B M G N B B M B B M B B M B B B B B B B B B B	48 12 14 8 .10 .20 .70 4 4 0 .585 3-4 4 1.996R 1.496	48 12 14 8 .10 .30 .60 2 2 0 .750 2 2 0 1.500 1-3 2 1.3333L	48 12 14 8 .20 .20 .50 5 5 0 .500 3-4 3 2.000L 1.280 3-5 4 1.000L	48 12 14 8 8 .30 .50 2 2 0 .750 2 2 0 1.500 1-2 2 2 2	52 12 16 8 8 .10 .20 .70 4 4 0 .585 3–4 4 1.996R 1.496	52 12 16 8 .10 .30 .60 2 2 0 .750 2 2 0 1.500 12 2	52 12 16 8 .20 .20 .60 .5 5 5 0 .500 3-4 3 2.000L 1.280 3-4 3 2.000L	52 12 16 8 .20 .30 .50 2 2 0 .750 2 2 2 0 1.500 1-2 2 2.400R	56 12 18 8 .10 .20 .70 4 4 0 .585 3-4 4 1.996R 1.496	56 12 18 8 .10 .30 .60 2 2 0 .750 2 2 2 0 1.500 1-2 1.500R
Wind Ax Spare Hit Los	n. Base le acing tch ad les 10	E L X X X C a ₁ a ₂ a ₃ G N B M G N B M G N B M G N B M G N B M	48 12 14 8 .10 .20 .70 4 4 0 .585 3-4 1.996R 1.496 1.496 991L 2.711	48 12 14 8 .10 .30 .60 2 2 0 .750 2 2 0 1.500 1-3 2	48 12 14 8 .20 .60 5 5 0 .500 3-4 3 2.000L 1.280 4	48 12 14 8 20 30 .50 2 2 0 .750 2 2 0 1.500 1-2 2.400R 2.646	52 12 16 8 .10 .20 .70 4 4 0 .585 3-4 4 1.996R 1.496 3-4 4 1.996R 2.632	52 12 16 8 .10 .30 .60 2 2 0 .750 2 2 0 1.500 1-2 2.1.500R	52 12 16 8 .20 .20 .60 5 5 0 .500 3-4 3 2.000L 1.280 3-4 3 2.000L 1.280	52 12 16 8 .20 .30 .50 2 2 0 750 2 2 0 1.500 1-2 2.400R 2.646	56 12 18 8 .10 .20 .70 4 4 0 .585 3–4 4 1.996R 1.996R 2.632	56 12 18 8 .10 .30 .60 2 2 0 .750 2 2 2 1.500 1-2 2.1500R
Wif Ax Spe Hit Los On Ax	n. Base le acing tch ad les 10	C A1 A2 A3 GN B M M GN B M M GN B M M GN B M M GN B M M GN B M M GN B M M M M M M M M M M M M M M M M M M	48 12 14 8 .10 .20 .70 4 4 0 .585 3-4 4 .996R 1.496 3-5 4 .999L 2.711 3-5 4	48 12 14 8 .10 .30 .60 2 2 0 .750 2 2 0 1.500 1-3 2 1.333L 2.536 2-4 3	48 12 14 8 .20 .20 .20 .60 5 5 0 .500 3-4 3 2.000L 1.280 3-5 4 1.000L 2.320 2-4 3	48 12 14 8 .20 .30 .50 2 2 0 1.500 1-2 2 2.400R 2.646 1-3 2	52 12 16 8 .10 .20 .70 4 4 4 0 .585 3-4 4 1.996R 2.632 3-5 4	52 12 16 8 .10 .30 .60 2 2 0 .750 2 2 0 1.500 1-2 2 1.500R 2.430 2-4 3	52 12 16 8 .20 .20 .50 5 5 0 .500 3-4 3 2.000L 2.253 3-5 4	52 12 16 8 .20 .30 .50 2 2 0 .750 2 2 0 1.500 1–2 2.400R 2.646 1–3 2	56 12 18 8 .10 .20 .70 .4 4 0 .585 3-4 4 1.996R 1.496 2.632 3-5 4	56 12 18 8 .10 .30 .60 2 2 0 .750 2 2 2 0 1.500 1-2 2 1.500 2.430
Ax Spare Hitt Los On Ax	n. Base le acing teh ad les 10 20	E L X X X' C a1 a2 a3 G N B M G N B B M G N B B M B M G N B B M B M B M B M B M B M B M B M B B M B M B B M B	48 12 14 8 .10 .20 .70 4 4 0 .585 3-4 1.996R 1.496 1.496 4 9.991L 2.711 3-5 4	48 12 14 8 .10 .30 .60 2 2 0 .750 2 2 0 1.500 1-3 2 1.3331L 2.536 2-4 3.857R	48 12 14 8 .20 .20 .60 .50 .500 3-4 3 2.000IL 1.280 3-5 4 1.000L 2.320 2-4 3 1.000R	48 12 14 8 .20 .30 .50 2 2 0 .750 2 2 0 1.500 1-2 2.400R 2.646 1-3 2.047R	52 12 16 8 .10 .20 .70 4 4 0 .585 3-4 4 1.996R 1.496 2.632 3-5 4 1.332L	52 12 16 8 .10 .30 .60 2 2 0 .750 2 2 1.500 1-2 2 1.500 2-4 3 2-4 3 2.286R	52 12 16 8 .20 .20 .60 5 5 0 .500 3-4 3 2.000L 1.280 2.253 3-5 4 1.333L	52 12 16 8 .20 .30 .50 2 2 2 0 .750 2 2 2 2 2 0 1.500 1-2 2.400R 2.640R 2.640R	56 12 18 8 .10 .20 .70 .70 .4 4 0 .585 3–4 4 1.996R 1.496 3–4 1.996R 2.632 2.632	56 12 18 8 .10 .80 .60 2 2 0 .750 2 2 0 1.500 1-2 2.1.500 2.430 1-3 2.2.000L
Ax Spare Hitt Los On Ax	n. Base le acing teh ad les 10 20 30	e L	48 12 14 8 .10 .20 .70 4 4 0 .585 3-4 4 .996R 1.496 3-5 4 .999L 2.711 3-5 4	48 12 14 8 .10 .30 .60 2 2 0 .750 2 2 0 1.500 1-3 2 1.333L 2.54 3 1.857R 4.160 2-5	48 12 14 8 .20 .20 .50 5 5 0 .500 3-4 3 2.000L 1.280 3-5 4 1.000L 2.320 2-4 3 1.000R 3.815 2-5	48 12 14 8 .20 .30 .50 2 2 0 .750 2 2 0 1.500 1-2 2 2.400R 2.646 1-3 2 .047R 4.301 1-4	52 12 16 8 .10 .20 .70 4 4 4 0 .585 3-4 4 1.996R 2.632 3-5 4	52 12 16 8 .10 .30 .60 .2 2 2 0 1.500 1-2 2 1.500R 2.430 2-4 3 2.286R 3.892 1-4	52 12 16 8 .20 .20 .50 5 5 0 .500 3-4 3 2.000L 2.253 3-5 4	52 12 16 8 .20 .30 .50 2 2 0 .750 2 2 2 0 1.500 1-2 2.400R 2.646 1.3 2 .204L 4.135 1.44	56 12 18 8 .10 .20 .70 .70 .4 4 0 .585 3–4 4 1.996R 1.496 4 1.996R 2.632 3–5 4 4.065L 4.020 3.55	56 12 18 8 .10 .30 .60 .2 2 2 0 .750 2 2 1.500R 2.430 1-3 2 2.000L 3.660 1-4
Wif Ax Spe Hit Los On Ax	n. Base le acing teh ad les 10 20	E L X X X C a1 a2 a3 G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M M G N B M M G N B M M G N B M M G N B M M M G N B M M M G N N B M M M G N N B M M M M M M M M M M M M M M M M M	48 12 14 8 .10 .20 .70 4 4 0 .585 3-4 1.996 R 1.496 R 2.711 3-5 4 9.991 2.711 3-5 4 2.9991 2.744 4.9991 4.745 4.9991 4.745 4.9991 4.745 4.9991 4	48 12 14 8 .10 .30 .60 2 2 0 .750 2 2 0 1.500 1-3 2.536 2-4 3 1.857R 4.160 2-5 3	48 12 14 8 .20 .20 .20 .60 5 5 0 .500 3-4 3 2.0001L 1.280 3-5 4 1.000L 2.320 2-4 3 1.000R 3.815 2-5 4	48 12 14 8 .20 .30 .50 2 2 0 .750 2 2 0 1.500 1-2 2.400R 2.646 1-3 2.047R 4.301 1-4	52 12 16 8 .10 .20 .70 4 4 0 .585 3-4 4 1.996R 1.496 2.632 3-5 4 1.332L 4.235 2-5 4	52 12 16 8 .10 .30 .60 2 2 0 .750 2 2 0 1.500 1-2 2 2.430 2-4 3 2.286R 3.892	52 12 16 8 .20 .20 .60 5 5 0 .500 3-4 3 2.000L 1.280 3-4 3 2.000L 2.253 3-5 4 1.333L 3.627 2-5 4	52 12 16 8 .20 .30 .50 2 2 0 .750 2 2 2 0 1.500 1-2 2.400R 2.646 1-3 2.204L 4.135 1-4	56 12 18 8 .10 .20 .70 4 4 0 .585 3-4 1.996R 1.496 4 1.996R 2.632 3-5 4 1.665L 4.020 3 5	56 12 18 8 .10 .60 .60 2 2 0 .750 2 2 1.500 1-2 2 1.500 2.430 1-3 2 2.000L 3.660 1-4 2
Ax Spare Hitt Los On Ax	n. Base le acing teh ad les 10 20 30	e L	48 12 14 8 .10 .20 .70 4 4 0 0 .585 3-4 4 1.996 R 1.496 3-5 4 999 L 2.711 3-5 4 999 L 2.711 3-74 4 999 L 2.711 3-74 4.711 4.711	48 12 14 8 .10 .30 .60 2 2 0 .750 2 2 0 1.500 1-3 2 1.333L 2.54 3 1.857R 4.160 2-5	48 12 14 8 .20 .20 .50 5 5 0 .500 3-4 3 2.000L 1.280 3-5 4 1.000L 2.320 2-4 3 1.000R 3.815 2-5	48 12 14 8 .20 .30 .50 2 2 0 .750 2 2 0 1.500 1-2 2 2.400R 2.646 1-3 2 .047R 4.301 1-4	52 12 16 8 .10 .20 .70 .4 4 0 .585 3–4 4 1.996R 2.632 3–5 4 1.395R	52 12 16 8 .10 .30 .60 .2 2 2 0 1.500 1-2 2 1.500R 2.430 2-4 3 2.286R 3.892 1-4	52 12 16 8 .20 .20 .60 5 5 0 .500 3-4 3 2.000L 1.280 3-4 3 2.000L 2.25 4 1.383L 3.627 2-5	52 12 16 8 .20 .30 .50 2 2 0 .750 2 2 2 0 1.500 1-2 2.400R 2.646 1.3 2 .204L 4.135 1.44	56 12 18 8 .10 .20 .70 .70 .4 4 0 .585 3–4 4 1.996R 1.496 4 1.996R 2.632 3–5 4 4.065L 4.020 3.55	56 12 18 8 .10 .30 .60 2 2 2 0 .750 2 2 1.500R 2.430 1-3 2 2.000L 3.660 1-4
Ax Spare Hitt Los On Ax	n. Basselle acing leading beth add les 10 20 30 40	E L X X X C C a1 a2 a2 a3 G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G G N B M M G G N B M M M G G N B M M G G N B M M M M M M M M M M M M M M M M M M	48 12 14 8 .10 .20 .70 4 4 0 .585 3-4 1.996R 1.496R 1.496R 2.711 3-5 4 999L 4.454 2-5 4 1.668R 6.537	48 12 14 8 .10 .30 .60 2 2 0 .750 2 2 0 1.500 1-3 2.536 2-4 3 1.857R 4.160 2-5 3 1.00	48 12 14 8 .20 .20 .20 .60 5 5 0 .500 3-4 3 2.000L 1.280 2-4 3 1.000L 2.320 2-4 3 1.000R 3.815 2-5 4 2.000R 5.664 1-5	48 12 14 8 .20 .30 .50 2 2 0 .750 2 2 0 1.500 1-2 2.400R 2.646 1-3 2.047R 4.301 1-4 6.295 1-4	52 12 16 8 .10 .20 .70 4 4 0 .585 3-4 1.996R 2.632 3-5 4 1.332L 4.235 2-5 4 1.631R 6.102	52 12 16 8 .10 .30 .60 2 2 0 .750 2 2 0 1.500 1-2 2 1.500R 2.430 2-4 3 2.286R 3.892 1-4 2.5.689 1-5	52 12 16 8 .20 .20 .60 5 5 0 .500 3-4 3 2.000L 1.280 3-4 3 2.000L 2.253 3-5 4 1.333L 3.627 2-5 4 2.000R 5-5 4 1.333L 4.000R 5-5 60 60 60 60 60 60 60 60 60 60	52 12 16 8 .20 .30 .50 2 2 0 .750 2 2 2 0 1.500 1-2 2.400R 2.646 1-3 2.204L 4.135 1-4 5.593 1-4	56 12 18 8 .10 .20 .70 4 4 0 .585 3-4 1.996R 2.632 3-5 4 1.665L 4.020 3 5 4 1.665L 5.760 2-5	56 12 18 8 .10 .30 .60 .2 2 0 .750 2 2 0 1.500 1-2 2 1.500R 2.430 1-3 2 2.000L 3.660 1-4 4.7536L 5.361 1-5
Ax Spare Hitt Los On Ax	n. Base le acing teh ad les 10 20 30	E L X X X C C A1 A2 A3 G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M B M G N B M B M G N B M B M B M B M B M B M B M B M B M B	48 12 14 8 .10 .20 .70 .4 4 0 .585 3-4 1.996 1.496 3-5 4 9.991 2.771 3-5 4 9.9991 4.454 2-5 4 1.668 6.537 2-5 4	48 12 14 8 .10 .30 .60 2 2 0 .750 2 1.500 1-3 2 1.3331L 2.536 2-4 3 1.857R 4.160 2-5 3 1.000L 6.168	48 12 14 8 .20 .20 .60 5 5 0 .500 3-4 3 2.000L 1.280 3-5 4 1.000L 2.320 2-4 3 1.000R 3.815 2-5 4 2.000R 5.664 1-5 3	48 12 14 8 .20 .30 .50 2 2 0 .750 2 2 0 1.500 1-2 2 2.400R 2.646 1-3 2.047R 4.301 1-4 2 2.155L 6.295 1-4 2	52 12 16 8 .10 .20 .70 4 4 0 .585 3-4 4 1.996R 1.496 3-4 1.996R 2.632 3-5 4 1.332L 4.235 2-5 4 1.631R 6.102 2-5 4	52 12 16 8 .10 .30 .60 2 2 0 .750 2 2 1.500 12 2 1.500 2-4 3 2.286R 3.892 1-4 2.4250L 5.689	52 12 16 8 .20 .20 .60 5 5 0 .500 3-4 3 2.000L 1.280 3-4 3 2.000L 1.280 3-5 4 1.333L 3.627 2-5 4 2.000R 5.264 1-5 3	52 12 16 8 .20 .30 .50 2 2 0 .750 2 2 2 2 2 2 2 2 2 2 4.135 1-4 2 2.5551 5.993 1-4	56 12 18 8 .10 .20 .70 .70 .4 4 0 .585 3-4 4 1.996R 1.496 3-4 1.996R 4.020 3.5 4 1.665L 4.020 3.5 4 1.665L 5.760 2-5 4	56 12 18 8 .10 .80 .80 .750 2 2 0 1.500 1-2 2 1.500R 2.430 1-3 2 2.000L 3.660 1-4 2 4.750L 5.361 1-5 3
Ax Spare Hitt Los On Ax	n. Basselle acing leading beth add les 10 20 30 40	E L X X X C a1 a2 a3 B M G N B M B M G N B M B M G N B M B M G N B M B M G N B M B B	48 12 14 8 .10 .20 .70 4 4 0 .585 3-4 1.996R 1.496 1.495 4 9.991L 2.711 3-5 4 9.991L 4.454 2-5 4 1.668R 6.537 2-5 4 1.668R 8.778	48 12 14 8 .10 .30 .60 2 2 0 .750 2 2 0 1.500 1-3 2 1.3331L 2.536 2-4 3 1.857R 4.160 2-5 3 1.0004 6.168 1-5 3 4.00R 8.602	48 12 14 8 .20 .20 .20 .60 5 5 0 .500 3-4 3 2.000L 1.280 2-4 3 1.000L 2.320 2-4 3 1.000R 3.815 2-5 4 2.000R 5.664 1-5 3 1.000R 8.017	48 112 14 8 .20 .30 .50 2 2 0 .750 2 2 0 1.500 1-2 2 2.400R 2.646 1-3 2 0.447R 4.301 1-4 2 2.155L 6.295 1-4 2 2.155L	52 12 16 8 .10 .20 .70 4 4 0 .585 3-4 4 1.996R 1.496 4 1.996R 2.632 3-5 4 1.332L 4.235 2-5 4 1.6102 2.5 4 1.6102 4 4.6102 2.5 4 4.6102 2.631R 8.344	52 12 16 8 .10 .30 .60 2 2 0 .750 2 2 1.500 1-2 2.430 2-4 3 2.286R 3.892 1-4 2.5.689 1-5 3.600R 8.006	52 12 16 8 .20 .20 .60 5 5 0 .500 3-4 3 2.000L 1.280 3-4 3 2.000L 1.285 4 1.333L 3.627 2-5 4 2.000R 5.264 1.353L 1.353L 1.353L	52 12 16 8 .20 .30 .50 2 2 0 .750 2 2 2 0 1.500 1-2 2.400R 2.646 1-3 2.204L 4.135 1-4 2.555L 5.993 1-4 2.555L 8.057	56 12 18 8 .10 .20 .70 4 4 0 .585 3-4 1.996R 1.496 2.632 3-5 4 1.665L 4.020 3.5 4 1.665L 5.760 2-5 4 1.595R 7.909	56 12 18 8 .10 .30 .60 2 2 0 .750 2 2 1.500 1-2 2 1.500 2.430 1-3 2 2.000L 3.660 1-4 2,430 1-5 3.60 1-5 3.60 1-5 3.60 1-5 3.60 1-5 3.60 1-5 3.60 1-5 3.60 1-5 3.60 1-5 3.60 1-5 3.60 1-5 3.60 1-5 3.60 1-5 3.60 1.50 3.60 1.50 3.60 1.50 3.60 1.50 3.60 1.50 3.60 1.50 3.60 1.50 3.60 1.50 3.60 1.50 3.60 1.50 3.60 1.50 3.60 1.50 3.60 1.50 3.60 1.50 3.60 1.50 3.60
Ax Spare Hitt Los On Ax	a. Basselle leacing lich had been less less less less less less less l	E L X X X Y C a1 a2 a3 G N B M G N B M G N B M G N B M G N B M G G N B M G G G N B M G G G G G G G G G G G G	48 12 14 8 .10 .20 .70 .4 4 0 .585 3-4 1.996R 1.496 3-5 4 1.9991L 2.711 3-5 4 1.668R 6.537 2-5 4 1.668R 8.778	48 12 14 8 .10 .30 .60 2 2 0 .750 2 1.500 1-3 2 1.333L 2.536 2-4 3 1.857R 4.160 2-5 3 1.000L 6.168 1-5 3 4.00R 8.602	48 12 14 8 .20 .20 .20 .60 .5 5 0 .500 3-4 3 2.0001 1.280 3-5 4 1.0001 2.320 2-4 3 1.000R 5.664 1-5 3 1.000R 8.017 1-5	48 12 14 8 .20 .30 .50 2 2 0 .750 2 2 0 .750 2 2 2 .400R 2 2.4400R 2.646 1-3 2.047R 4.301 1-4 2 2.1551 6.295 1-4 2 2.1551 8.364 1-5	52 12 16 8 .10 .20 .70 4 4 0 .585 3-4 4 1.996R 1.496 2.632 3-5 4 1.332L 4.235 2-5 4 1.631R 6.102 2-5 4 1.631R 8.344 1.631R 8.344 1.585	52 12 16 8 .10 .30 .60 2 2 0 .750 2 2 1.500 12 2 1.500 2-4 3 2.286R 3.892 1-4 2 4.250L 5.689 1-5 8.006 1-5	52 12 16 8 .20 .20 .60 5 5 0 .500 3-4 3 2.000L 1.280 3-4 3 2.000L 1.280 3-5 4 1.333L 3.627 2-5 4 2.000R 5.264 1-5 3 1.2000R 7.424 1.2000R	52 12 16 8 .20 .30 .50 2 2 2 0 .750 2 2 2 2 2 2 2 2 4.135 1-4 2 2.5551 5.993 1-4 2 2.5551 8.057 1-5	56 12 18 8 .10 .20 .70 4 4 0 .585 3-4 4 1.996R 1.496 3-4 1.996R 2.632 3-5 4 1.665L 5.760 2-5 4 1.595R 7.909 1-5	56 12 18 8 .10 .80 .80 .2 2 2 0 1.500 1-2 2 1.5008 1-3 2 2.000L 3.660 1-4 2 4.750L 5.361 1-5 3 .800R 7.411 1-5
Ax Spare Hitt Los On Ax	n. Basselle acing leading beth add les 10 20 30 40	E L X X X C a1 a2 a3 B M G N B M B M G N B M B M G N B M B M G N B M B M G N B M B B	48 12 14 8 .10 .20 .70 4 4 0 .585 3-4 1.996R 1.496 1.495 4 9.991L 2.711 3-5 4 9.991L 4.454 2-5 4 1.668R 6.537 2-5 4 1.668R 8.778	48 12 14 8 .10 .30 .60 2 2 0 .750 2 2 0 1.500 1-3 2 1.3331L 2.536 2-4 3 1.857R 4.160 2-5 3 1.0004 6.168 1-5 3 4.00R 8.602	48 12 14 8 .20 .20 .20 .60 5 5 0 .500 3-4 3 2.000L 1.280 2-4 3 1.000L 2.320 2-4 3 1.000R 3.815 2-5 4 2.000R 5.664 1-5 3 1.000R 8.017	48 112 14 8 .20 .30 .50 2 2 0 .750 2 2 0 1.500 1-2 2 2.400R 2.646 1-3 2 0.447R 4.301 1-4 2 2.155L 6.295 1-4 2 2.155L	52 12 16 8 .10 .20 .70 4 4 0 .585 3-4 4 1.996R 1.496 4 1.996R 2.632 3-5 4 1.332L 4.235 2-5 4 1.6102 2.5 4 1.6102 4 4.6102 2.5 4 4.6102 2.631R 8.344	52 12 16 8 .10 .30 .60 2 2 0 .750 2 2 1.500 1-2 2.430 2-4 3 2.286R 3.892 1-4 2.5.689 1-5 3.600R 8.006	52 12 16 8 .20 .20 .60 5 5 0 .500 3-4 3 2.000L 1.280 3-4 3 2.000L 1.285 4 1.333L 3.627 2-5 4 2.000R 5.264 1.353L 1.353L 1.353L	52 12 16 8 .20 .30 .50 2 2 0 .750 2 2 2 0 1.500 1-2 2.400R 2.646 1-3 2 2.400R 2.504L 4.135 1-4 2.555L 5.993 1-4 2.555L 8.057	56 12 18 8 .10 .20 .70 4 4 0 .585 3-4 1.996R 1.496 2.632 3-5 4 1.665L 4.020 3.5 4 1.665L 5.760 2-5 4 1.595R 7.909	56 12 18 8 .10 .30 .60 2 2 0 .750 2 2 1.500 1-2 2 1.500 2.430 1-3 2 2.000L 3.660 1-4 2,430 1-5 3.60 1-5 3.60 1-5 3.60 1-5 3.60 1-5 3.60 1-5 3.60 1-5 3.60 1-5 3.60 1-5 3.60 1-5 3.60 1-5 3.60 1-5 3.60 1-5 3.60 1.50 3.60 1.50 3.60 1.50 3.60 1.50 3.60 1.50 3.60 1.50 3.60 1.50 3.60 1.50 3.60 1.50 3.60 1.50 3.60 1.50 3.60 1.50 3.60 1.50 3.60 1.50 3.60 1.50 3.60
Ax Spare Hitt Los On Ax	a. Basselle leacing lich had been less less less less less less less l	E L XX X C A1 A2 A3 G N B M B M G N B M G N B M G N B M B M G N B M B M G N B M B M G N B M B M B M G N B M B M B M G N B M B M B M B M B M B M B M B M B M B	48 12 14 8 .10 .20 .70 .70 4 4 0 .585 3-4 1.996R 1.496 3-5 4 1.9991L 2.711 3-5 4 1.668R 6.537 2-5 4 1.668R 8.778 8.778 1.799L 12.841	48 12 14 8 .10 .30 .60 2 2 0 .750 2 1.500 1-3 2 1.333L 2.536 2-4 3 1.857R 4.160 2-5 3 1.000L 6.168 1-5 3.400R 8.602 1.55 3 4.00R 13.602	48 12 14 8 .20 .20 .50 .500 .500 3-4 3 2.0001 1.280 2-4 3.0001 2.320 2-4 3.000R 3.815 2-5 4 2.000R 5.664 1-5 3 1.000R 8.017 1-5 3 1.000R 13.013	48 12 14 8 .20 .30 .50 2 2 0 .750 2 2 0 .750 2 2 0 1.500 1-2 2 2.400R 2.646 1-3 2.047R 4.301 1-4 2 2.1551 6.295 1-4 2 2.1551 8.364 1-5 2 4.801L 13.087	52 12 16 8 .10 .20 .70 4 4 0 .585 3-4 4 1.996R 1.496 2.632 3-5 4 1.332L 4.235 2-5 4 1.631R 6.102 2.5 4 1.631R 8.344 1.588 4 1.588 1.	52 12 16 8 .10 .30 .60 2 2 0 .750 2 2 1.500 12 2 1.500 2-4 3 2.286R 3.892 1-4 2 4.250L 5.689 1-5 3 .600R 8.006 1-5 3 6.00R 13.005	52 12 16 8 .20 .20 .60 5 5 0 .500 3-4 3 2.000L 1.280 3-4 3 2.000L 1.283 3-5 4 2.253 3-5 4 2.000R 5.2000R 5.2000R 5.2000R 5.2000R 5.2000R 5.2000R 5.2000R 5.2000R 7.424 1.253 3.2000R 5.2000R 5.2000R 5.2000R 5.2000R 7.424 1.253 3.2000R 7.424 1.253 3.2000R 7.424 1.253 3.2000R 7.424 1.253 3.2000R 7.424 1.253 3.2000R 7.424 1.253 3.2000R 7.424 1.2000R 7.424 1.2000R 7.424 1.2000R 7.424 1.2000R 7.424 1.2000R 7.424 1.2000R	52 12 16 8 .20 .30 .50 .50 2 2 0 .750 2 2 2 0 1.500 1-2 2 2.440R 2.646 1.3 2 2.5551L 5.993 1-4 2 2.5555L 5.993 1-5 2.555468L 1.5568R	56 12 18 8 .10 .20 .70 4 4 0 .585 3-4 4 1.996R 1.496 3-4 4 1.996R 2.632 3-5 4 1.665L 5.760 2-5 4 1.595R 7.909 1-5 3 666L 12.741	12 18 8 10 .30 .80 .60 .750 2 2 2 0 .7550 1-2 2 1.500R 2.480 1-3 2 2.000L 5.361 1-5 3 .800R 7.411 1-5 3 800R 7.411 1-5 3 800R 12.408
Ax Spare Hitt Los On Ax	1. Base le accing teh ad les 10 20 30 40 50 60 80	E L XX X' C A1 A2 A3 G N B M G N G N B M G N B M G N B M G N B M G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M B M G N B M B B	48 12 14 8 .10 .20 .70 4 4 0 .585 3-4 1.996R 1.496 3-5 4 9991L 2.711 3-5 4 .9991L 4.454 2-5 4 1.668R 8.778 1-5 3 1.7991L 12.841 1-5	48 12 14 8 .10 .30 .60 2 2 0 .750 2 2 0 1.500 1-3 2.536 2-4 3 1.857R 4.160 2-5 3 1.000L 6.168 1-5 3 400R 8.602 1-5 3 4.60R 13.602 1-5	48 12 14 8 .20 .20 .60 5 5 0 .500 3-4 3 2.0001L 1.280 3-5 4 1.000L 2.320 2-4 3.000R 3.815 2-5 3 1.000R 8.017 1-5 3 1.000R 13.013	48 12 14 8 .20 .30 .50 2 2 0 .750 2 2 0 1.500 1-2 2 2.400R 2.646 1-3 2 .047R 4.301 1-4 2 2.1551 6.295 1-4 2 2.1551 8.364 1-5 2 4.801L 13.087 1-5	52 12 16 8 .10 .20 .70 4 4 0 .585 3–4 1.996R 1.996R 2.632 3–5 4 1.332L 4.235 2–5 4 1.631R 6.102 2–5 4 1.631R 8.344 1–5 3.732L 1.631R 8.344 1–5 1.631R 8.344 1.5531R 8.3451R 1.5531R 8.3451R 1.5531R 8.3451R 1.5531R 8.3451R 1.5531R 8.3451R 1.5531R 8.3451R 1.5531R 8.3451R 1.5531R 8.3451R 1.5531R 8.3451R 1.5531R 8.3451R 8.3451R 1.5531R 8.3451R 1.5531R 8.3451R 1.5531R 8.3451R 1.5531R 8.3451R 1.5531R 8.3451R 1.5531R 8.3451R 1.5531R 8.3451R 1.5531R 8.3451R 1.5531R 8.3451R 1.5531R 8.3451R 1.5531R 8.3451R 1.5531R 8.3451R 1.5531R 8.3541R 1.5531R 8.3541R 1.5531R 8.3541R 1.5531R 8.3541R 1.5531R 8.3541R 8.3541R 1.5531R 8.3541R	52 12 16 8 .10 .30 .60 2 2 0 .750 2 2 0 1.500 1-2 2 1.500 2-4 3 2.430 2-4 3.89 1-5 .60 1-5 .60 1-5 .60 1-5 .60 1-5 .60 1-5 .60 1-5 .60 1-5 .60 1-5 .60 1-5 .60 1-5 .60 1-5 .60 1-5 .60 1-5 .60 1-5 .60 1-5 .60 .60 .60 .60 .60 .60 .60 .60	52 12 16 8 .20 .20 .60 .5 5 5 0 .500 3-4 3 2.0000L 2.253 3-5 4 2.000L 2.253 3-5 4 1.383L 3.62 2.000R 1.200R 7.424 1-5 3 1.200R	52 12 16 8 .20 .30 .50 2 2 0 .750 2 2 2 0 1.500 1-2 2.400R 2.646 1-3 2 .204L 4.135 1-4 2 2.5555L 8.057 1-5 2.4686 1-5 2.5555L 8.057	56 12 18 8 .10 .20 .4 4 0 .585 3-4 1.996R 1.496 4 1.665L 4.020 3.5 4 1.665L 5.760 2-5 4 1.595R 7.909 1-5 3 .665L 1.2741 1.555	12 18 8 1.0
Ax Spare Hitt Los On Ax	a. Basselle accing the control of th	e L	48 12 14 8 .10 .20 .70 .70 4 4 0 .585 3-4 1.996R 1.496 3-5 4 1.9991 2.7711 3-5 4 1.668R 6.537 2-5 4 1.668R 8.778 8.778 1.7991 1.2.841 1-5 3 1.7991 1.991	48 12 14 8 .10 .30 .60 2 2 0 .750 2 1.500 1-3 2 1.3331L 2.536 2-4 3 1.857R 4.160 2-5 3 4.000L 6.168 1-5 3 4.000L 6.168 1-5 3 4.000L 6.168 1-5 3 4.000L 6.168 1-5 3 4.000L 6.168 1-5 3 4.000L 6.168 1-5 3 4.000L 6.168 1-5 3 4.000L 6.168 1-5 3 4.000L 6.168 1-5 3 4.000L 6.168 1-5 3 4.000L 6.168 1-5 3 4.000L 6.168 1-5 3 4.000L 6.168 1-5 3 4.000L 6.168 1-5 3 4.000L	48 12 14 8 .20 .20 .60 5 5 0 .500 3-4 3 2.0001 1.280 2-4 3.0001 2.320 2-4 3.815 2-5 4 2.000R 5.664 1-5 3 1.000R 8.017 1-5 3 1.000R 13.013 1-5 3 1.000R	48 12 14 8 .20 .30 .50 2 2 0 .750 2 2 0 .750 2 2 0 1.500 1-2 2 2.400R 2.646 1-3 2.047R 4.301 1-4 2 2.1551 6.295 1-4 2 2.155L 8.364 1-5 2 4.801L 13.087 1-5 2 4.801L	52 12 16 8 .10 .20 .70 4 4 0 .585 3-4 4 1.996R 2.632 3-5 4 1.332L 4.235 2-5 4 1.631R 6.102 2-5 4 1.631R 8.344 1-5 1-5 1-5 1-5 1-5 1-5 1-5 1-5	52 12 16 8 .10 .30 .60 2 2 0 .750 2 2 1.500 12 2 1.500 2-4 3 2.286R 3.892 1-4 2 4.250L 5.689 1-5 3 .600R 8.006 1-5 3 .600R 1.05 1.05 1.000R	52 12 16 8 .20 .20 .60 5 5 0 .500 3-4 3 2.000L 1.280 3-4 3 2.000L 2.253 3-5 4 1.333L 3.627 2-5 4 2.000R 5.264 1-5 3 1.200R 7.424 1-5 3 1.200R 7.424 1-5 3 1.200R 7.425 3 1.200R	52 12 16 8 20 30 .50 2 2 2 0 .750 2 2 2 0 1.500 1-2 2 2.400R 2.646 1 3 2 2.204L 4.135 1-4 2 2.555L 8.057 1-5 2 5.468L 1.2506 1.506 1.506 1.507 2 2.506R	56 12 18 8 .10 .20 .70 .70 .4 4 0 .585 3-4 1.996R 1.496 3-4 1.99632 3-5 4 1.665L 5.760 2-5 4 1.595R 7.909 1-5 3 .665L 12.741 1-5 3 .665L	12 18 8 10 .30 .80 .80 .750 2 2 2 0 1.500 1-2 2 1 500R 2.430 1-3 2 2.000L 5.361 1-5 3 800R 7.411 1-5 3 800R 12.408 1-5 3 800R 12.408 1-5 3 800R
Ax Spare Hitt Los On Ax	1. Base le accing teh ad les 10 20 30 40 50 60 80	e L	48 12 14 8 .10 .20 .70 .4 4 0 .585 3-4 1.996R 1.496 1.496 2.711 3-5 4 9.991L 4.454 2-5 4 1.668R 6.537 4 1.668R 8.778 1-5 3 1.799L 12.841 1-5 3	48 12 14 8 .10 .30 .60 2 2 0 .750 2 2 0 1.500 1-3 2 1.3331L 2.536 2-4 3 1.857R 4.160 2-5 3 1.000L 6.168 1-5 3 400R 8.602 1-5 3 400R 13.602 1-5 3 400R 13.602	48 12 14 8 .20 .20 .20 .60 5 5 0 .500 3-4 3 2.0001L 1.280 2-4 3 1.000L 2.320 2-4 3 3.815 2-5 4 2.000R 5.664 1-5 3 1.000R 8.017 1-5 3 1.000R 13.013	48 12 14 8 .20 .30 .50 2 2 0 .750 2 2 0 1.500 1-2 2 2.400R 2.646 1-3 2 0.047R 4.301 1-4 2 2.155L 6.295 1-4 2 2.155L 8.364 1-5 2 4.801L 13.087 1-5 2	52 12 16 8 .10 .20 .70 4 4 0 .585 3-4 4 1.996R 1.496 2.632 3-5 4 1.996R 2.632 3-5 4 1.936R 6.102 2 -5 4 1.631R 6.102 2 -5 4 1.631R 8.344 1.55	52 12 16 8 .10 .30 .60 2 2 0 .750 2 2 1.500 1-2 2.430 2.430 2.430 2.430 1.500 1.	52 12 16 8 .20 .20 .60 5 5 0 .500 3-4 3 2.000L 2.253 3-5 4 2.000L 2.253 3-5 4 2.000L 3.627 2-5 4 2.000R 5.264 1-5 3 1.2800 1.383L 3.627 3.74 4.75 1.200R 1.25 1.200R 1.2418 1.2418 1.253 1.200R 1.2418	52 12 16 8 .20 .30 .30 .750 2 2 0 .750 1-2 2.400R 2.6446 1.3 2.204L 4.135 1-4 2 2.5555L 5.93 1-4 2 2.5555L 5.93 1-5 2 5.468L 12.506 1-5 2	56 12 18 8 .10 .20 .70 4 4 0 .585 3-4 1.996R 1.496 4 1.996R 2.632 3-5 4 1.665L 4.020 3 5 4 1.665L 5.760 2-5 4 1.595R 7.909 1-5 3 665L 12,741 1-5 3	56 12 18 8 .10 .30 .60 2 2 2 0 .750 2 2 1.500 1-2 2 1.500 2.430 1-3 2.000L 3.660 1-4 2 4.750L 5.361 1-5 3 800R 7.411 1-5 3 800R 12.408 1-5 3

	ick No		51	52	53	54	55	56	57	58	59	60
	. Base		56	56	60	60	60	60	64	64	64	64
Axl Spa	ie icing	X X′	$\begin{array}{c} 12 \\ 18 \end{array}$	12 18	$\begin{array}{c} 12 \\ 20 \end{array}$	$\frac{12}{20}$	$\begin{array}{c} 12 \\ 20 \end{array}$	$\begin{array}{c} 12 \\ 20 \end{array}$	$\frac{12}{22}$	12 22	12 22	12 22
Hit		С	8	8	8	8	8	8	8	8	8	1
Loa On	ıd	\mathbf{a}_1 \mathbf{a}_2	.20 .20	.20 .30	.10 .20	.10 .30	.20 .20	$.20 \\ .30$.10 .20	.10 .30	.20 .20	.20
Axl	les	a ₃	.60	.50	.70	.60	.60	.50	.70	.60	.60	5
	10	G N	5 5	2 2	4 4	2 2	5 5	2 2	4 4	2 2	5 5	2 2
	10	\mathbf{B}	0	0	0	0	0	0	0	0	0	0
]-		M	<u>.500</u> 3–4	.750 2	.585 3-4	.750 2	3-4	.750 2	.585 3-4	.750 2	3-4	2
- 1	20	G N	3 -4 3	2	4	2	3-4	2	4	2	3	2
1		B M	$\frac{2.000L}{1.280}$	$\begin{smallmatrix}0\\1.500\end{smallmatrix}$	1.996R 1.496	$\begin{smallmatrix} 0\\ 1.500\end{smallmatrix}$	2.000L 1.280	$\substack{0\\1.500}$	1.996R 1.496	$\substack{0\\1.500}$	2.000L 1.280	0 1.
-		G	3-4	1-2	3-4	1-2	3-4	1-2	3-4	1-2	3-4	1-
	30	N	3	2	4	2	3	2	4	2	3	2
		B M	$2.000 L \\ 2.253$	2.400R 2.646	$1.996\mathbf{R} \\ 2.632$	1.500R 2.430	2.000L 2.253	2.400R 2.646	1.996R 2.632	1.500R 2.430	2.000L 2.253	2.40
ľ		G	2-4	1-3	35	1-3	2-4	1-2	3-4	1-2	3-4	1-
늉	40	N B	$^3_{1.667 m R}$	$^2_{.455L}$	4 1.997L	2 2.334L	$^3_{2.000\mathrm{R}}$	$^2_{2.400\mathrm{R}}$	$^4_{1.996 m R}$	$^{2}_{1,500 m R}$	3 2.000L	2.40
Fe		M	3.442	3.971	3.808	3.482	3.260	3.872	3.785	3.422	3.240	3.
Span-Feet		G	3-5	1-4	3-5	2-4	24	1-3	3-6	2-4	2-4	1-
S	50	N B	$^{4}_{1.667L}$	$^{2}_{2.955L}$	$^{4}_{1.997L}$	3 3.143R	$^3_{2.000\mathbf{R}}$	$^{2}_{.705L}$	$^{4}_{2.330L}$	$^{3}_{3.572\mathrm{R}}$	$^3_{2.333\mathrm{R}}$.9
		M	4.933	5.697	5.544	5.089	4.748	5.474	5.331	4.829	4.565	5.
	60	G N	$^{2-5}_{\ \ 4}$	$^{1-4}_2$	$\substack{2-5\\4}$	$^{1-4}_2$	25 4	$^{1-4}_2$	3–5 4	$^{1-4}_{2}$	$^{1-4}_{3}$	1-2
	•	\mathbf{B}	2.000R	2.995L	1.558R	5.250L	2.000R	3.354L	2.330L	5.750L	6.000R	3.7
).		M G	6.854 1–5	7,755 1-5	$\frac{7.474}{1-5}$	$\frac{6.967}{1-5}$	6.454	7.457	$\frac{7.068}{1-5}$	6.641	6.080 1-5	$-\frac{7}{1}$
İ	80	Ň	3	$\frac{1-5}{2}$	3	3	1-5 3	$^{1-4}_2$	1–3 3	15 3	3	2
		B M	$1.400 \mathrm{R} \\ 11.825$	6.135L 11.935	.598L 12.206	1.000R 11.813	1.600R 11.232	3.354L 11.584	.531L 11.673	1.200R 11.218	1.800R 10.641	$\frac{3.7}{11}$
- 1		G	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	
1	100	N	3	2	3	3	3	2	3	3	3	2
		B M	$1.400 \mathrm{R} \\ 16.820$	6.135L 16.841	.598L 17.206	1.000R 16.810	$1.600\mathbf{R} \\ 16.226$	6.802L 16.261	531L 16.672	1.200R 16.214	1.800R 15.632	7.4
Tru	1 37											
	ick in	0.	61	62	63	64	65	66	67	68	69	,
	. Bas	e L	68	68	68	68	56	56	56	56	60	
$\overline{\mathbf{A}}\mathbf{x}$	ı. Bası le	e L X	68 12	68 12	68 12	68	56 16	56 16	56 16	56 16	60 16	
$\overline{\mathbf{A}}\mathbf{x}$	n. Base le acing	e L	68	68	68	68	56	56	56	56	60	
Axl Spa Hit Loa	n. Base le acing ch ad	E L X X' C a ₁	68 12 24 8 .10	68 12 24 8 .10	68 12 24 8	68 12 24 8 .20	56 16 16 8	56 16 16 8	56 16 16 8 .20	56 16 16 8	60 16 18 8 .10	
Axl Spa Hit	n. Base le acing tch ad	e L X X' C	68 12 24 8	68 12 24 8	68 12 24 8	68 12 24 8	56 16 16 8	56 16 16 8	56 16 16 8	56 16 16 8	60 16 18 8	
Axl Spa Hit Loa On	n. Base le acing tch ad les	E L X X' C a ₁ a ₂ a ₃ G	68 12 24 8 .10 .20 .70	68 12 24 8 .10 .30 .60	68 12 24 8 .20 .20 .60	68 12 24 8 .20 .30 .50	56 16 16 8 .10 .20 .70	56 16 16 8 .10 .30 .60	56 16 16 8 .20 .20 .60	56 16 16 8 .20 .30 .50	60 16 18 8 .10 .20 .70	
Axl Spa Hit Loa On	n. Base le acing tch ad	E L X X' C a ₁ a ₂ a ₃	68 12 24 8 .10 .20 .70	68 12 24 8 .10 .30 .60	68 12 24 8 .20 .20 .60	68 12 24 8 .20 .30 .50	56 16 16 8 .10 .20 .70	56 16 16 8 .10 .30 .60	56 16 16 8 .20 .20 .60	56 16 16 8 .20 .30 .50	60 16 18 8 .10 .20 .70	
Axl Spa Hit Loa On	n. Base le acing tch ad les	E L X X X' C a1 a2 a3 G N B M	68 12 24 8 .10 .20 .70 4 0 .585	68 12 24 8 .10 .30 .60 2 2 0	68 12 24 8 .20 .20 .60 5 0 .500	68 12 24 8 .20 .30 .50 2 2 0 .750	56 16 16 8 .10 .20 .70 4 4 0 .585	56 16 16 8 .10 .30 .60 2 2 0 .750	56 16 16 8 .20 .20 .60 5 5 0 .500	56 16 16 8 .20 .30 .50 2 2 0 .750	60 16 18 8 .10 .20 .70 4 4 0 .585	
Axl Spa Hit Loa On	n. Base le acing tch ad les	e L X X' C a ₁ a ₂ a ₃ G N B M	68 12 24 8 .10 .20 .70 4 4 0 .585	68 12 24 8 .10 .30 .60 2 2 0 .750	68 12 24 8 .20 .20 .60 5 0 .500	68 12 24 8 .20 .30 .50 2 2 0 .750	56 16 16 8 .10 .20 .70 4 0 .585	56 16 16 8 .10 .30 .60 2 2 0 .750	56 16 16 8 .20 .20 .60 5 0 .500	56 16 16 8 .20 .30 .50 2 2 0 .750	60 16 18 8 .10 .20 .70 4 4 0 .585	
Axl Spa Hit Loa On	n. Base le acing tch ad les	e L X X' C a ₁ a ₂ a ₃ G N B M	68 12 24 8 .10 .20 .70 4 4 0 .585 3-4 1.996R	68 12 24 8 .10 .30 .60 2 2 0 .750 2	68 12 24 8 .20 .20 .60 5 0 .500 3–4 3 2.000L	68 12 24 8 .20 .30 .50 2 2 0 .750	56 16 16 8 .10 .20 .70 4 4 0 .585 3–4 4 1.996R	56 16 16 8 .10 .30 .60 2 2 0 .750 2	56 16 16 8 .20 .20 .60 5 5 0 .500 3–4 2.000L	56 16 16 8 .20 .30 .50 2 2 0 .750 2	60 16 18 8 .10 .20 .70 4 4 0 .585 3–4 1.996R	
Axl Spa Hit Loa On	n. Base le acing tch ad les	E L X X X' C a1 a2 a3 G N B M G N B M	68 12 24 8 .10 .20 .70 4 4 0 .585 3-4 1.996R	68 12 24 8 .10 .30 .60 2 2 0 .750 2 1.500	68 12 24 8 .20 .60 5 0 .500 3–4 3 2.000L 1.280	68 12 24 8 .20 .30 .50 2 2 0 .750 2 2 0	56 16 16 8 .10 .20 .70 4 0 .585 3-4 1.996R 1.496	56 16 16 8 .10 .30 .60 2 2 0 .750 2 0 1.500	56 16 16 8 .20 .60 5 5 0 .500 3–4 2.000L 1.280	56 16 16 8 .20 .30 .50 2 2 0 .750 2 2 0	60 16 18 8 .10 .20 .70 4 4 0 .585 3–4 4 1.996R 1.496	1
Axl Spa Hit Loa On	n. Base le acing tch ad les	E L X X X C a1 a2 a3 G N B M G N B M G N B M	68 12 24 8 .10 .20 .70 4 4 0 .585 3-4 4 1.996R 1.496	68 12 24 8 .10 .30 .60 2 2 0 .750 2 2 0 1.500	68 12 24 8 .20 .20 .60 5 5 0 .500 3–4 3 2.000IL 1.280	68 12 24 8 .20 .30 .50 2 2 0 .750 2 2 0 1.500	56 16 16 8 .10 .20 .70 4 0 .585 3–4 4 1.996R 1.496	56 16 16 8 .10 .30 .60 2 2 0 .750 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	56 16 16 8 .20 .20 .60 5 5 0 .500 3–4 3 2.000L 1.280 3–4 3	56 16 16 8 8 .20 .30 .50 2 2 0 .750 2 2 2 0 1.500	60 16 18 8 .10 .20 .70 4 4 0 .585 3–4 1.996R 1.496	
Axl Spa Hit Loa On	n. Base le acing cch ad les 10	E L X X X' C a1 a2 a3 G N B M G N B M G	68 12 24 8 .10 .20 .70 .4 4 0 .585 3-4 4 1.996R 1.496	68 12 24 8 .10 .30 .60 2 2 0 .750 2 2 0 1.500 1-2 2 1.500R	68 12 24 8 .20 .20 .60 5 5 0 .500 3-4 3 2.000L 1.280 3.4 3 2.000L	68 12 24 8 .20 .30 .50 2 2 0 .750 2 2 0 1.500 1-2 2 2.400R	56 16 16 8 .10 .20 .70 4 4 0 .585 3-4 4 1.996R 1.496	56 16 16 8 .10 .30 .60 2 2 0 .750 2 2 0 1.500 2-3 3.200L	56 16 16 8 .20 .20 .50 5 5 0 .500 3-4 3 2.000L 1.280 3-4 3 2.000L	56 16 16 8 20 .30 .50 2 2 0 .750 2 2 0 1.500 1-2 2 3.200R	60 16 18 8 .10 .20 .70 4 4 0 .585 3-4 4 1.996R 1.496	11 3-
Axl Spa Hit Loa On	n. Base le acing sch ad les 10 20	E L X X' C a1 a2 a3 G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G M G M G G M G M G M M G G M M G G M M G G M M G G M M M G G M M M G G M M M G G M	68 12 24 8 .10 .20 .70 4 4 0 .585 3–4 4 1.996R 1.496 3-4 4 1.996R 2.632 3–4	68 12 24 8 .10 .30 .60 2 2 0 .750 2 1.500 1-2 2 1.500R 2.430 1-2	68 12 24 8 -20 .20 .20 .60 5 5 0 .500 3-4 3 2.0001L 1.280 3-4 3 2.0002 3-4 3 3-4 3 3-4 3 3-4 3 3-4 3 3-4 3 3-4 3 3-4	68 12 24 8 .20 .30 .50 2 2 0 .750 2 1.500 1-2 2 2.400R 2.646 1-2	56 16 16 8 .10 .20 .70 4 4 0 .585 3-4 4 1.996R 1.496 3-4 4 1.996R 2.632 3-5	56 16 16 8 .10 .30 .60 2 2 0 .750 2 2 0 1.500 2-3 3.200L 2.321 2-4	56 16 16 8 .20 .20 .50 .500 3–4 3 2.0001L 1.280 3–4 3 2.0001L 2.253 2.254	56 16 16 8 20 30 .50 2 2 0 .750 2 2 2 3 0 1.500 1-2 2 3.200R 2.300R 2.300R 2.300R 2.300R 2.300R 2.300R 2.300R 2.300R 2.300R 3.000R 3.000	60 16 18 8 .10 .20 .70 4 4 0 .585 3–4 1.996R 1.496	
Axi Spa Hitt Loa On Axi	n. Base le acing cch ad les 10	E L X X' X' C a1 a2 a3 G N B M G N B B M G N B M G N B M G N B M G N B M C G N B M C G N B M C G N B M C G N B M C G N B M C G N B M C G N B M C G N B M C G N B M C G N C M C M C M C M C M C M C M C M C M C	68 12 24 8 .10 .20 .70 4 4 0 .585 3-4 4 1.996R 2.632 3-4 4	68 12 24 8 .10 .30 .60 2 2 2 0 1.500 1-2 2 1.500R 2.430 1-2 2	68 12 24 8 .20 .20 .60 5 5 0 .500 3-4 3 2.000L 2.253 3-4 3	68 12 24 8 .20 .30 .50 2 2 0 .750 2 2 2 2 2 2.400R 2.646 1-2 2	56 16 16 8 .10 .20 .70 .4 4 0 .585 3-4 4 1.996R 1.496 3-4 4 1.996R 2.632 3-5 4	56 16 16 8 .10 .30 .60 2 2 0 .750 2 2 0 1.500 2-3 2 3.200L 2.3221 2-4 3	56 16 16 8 .20 .20 .50 .500 3-4 3 2.000L 1.280 2.253 2-4 3	56 16 16 8 20 30 50 2 2 0 750 2 2 0 1.500 1-2 2 3.200R 2.321 1-3	60 16 18 8 .10 .20 .70 .4 4 0 .585 3-4 4 1.996R 2.632 3-5 4	2 2 2 2 2 2 3 - 3 - 2 2 2 2 2 2 2 2 2 2
Axi Spa Hitt Loa On Axi	n. Base le acing sch ad les 10 20	E L X X' C a1 a2 a3 G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G M G M G G M G M G M M G G M M G G M M G G M M G G M M M G G M M M G G M M M G G M	68 12 24 8 .10 .20 .70 4 4 0 .585 3–4 4 1.996R 1.496 3-4 4 1.996R 2.632 3–4	68 12 24 8 .10 .30 .60 2 2 0 .750 2 1.500 1-2 2 1.500R 2.430 1-2	68 12 24 8 -20 .20 .20 .60 5 5 0 .500 3-4 3 2.0001L 1.280 3-4 3 2.0002 3-4 3 2.0001 3.243 3.243	68 12 24 8 .20 .30 .50 2 2 0 .750 2 1.500 1-2 2 2.400R 2.646 1-2	56 16 16 8 .10 .20 .70 4 4 0 .585 3-4 4 1.996R 1.496 3-4 4 1.996R 2.632 3-5	56 16 16 8 .10 .30 .60 2 2 0 .750 2 2 0 1.500 2-3 3.200L 2.321 2-4	56 16 16 8 .20 .20 .50 .500 3–4 3 2.0001L 1.280 3–4 3 2.0001L 2.253 2.254	56 16 16 8 20 30 .50 2 2 0 .750 2 2 2 3 0 1.500 1-2 2 3.200R 2.300R 2.300R 2.300R 2.300R 2.300R 2.300R 2.300R 2.300R 2.300R 3.000R 3.000	60 16 18 8 .10 .20 .70 .4 4 0 .585 3–4 4 1.996R 1.496 3–4 4 1.996R 3–4 3–4 4 3–4 3–4 4 3–4 3–4 4 3–4 4 3–4 3–	2.77 2.17 2.17 2.10 2.10 2.17 2.17 2.17 2.17 2.17 2.17 2.17 2.17
Axi Spa Hitt Loa On Axi	a. Bassale acing le acing such ad less 10 20 40	e L	68 12 24 8 .10 .20 .70 4 4 0 .585 3-4 4 1.996R 2.632 3-4 4 1.996R 3.735 3-5	68 12 24 8 .10 .30 .60 2 2 0 .750 2 2 1.500 1-2 1.500R 2.430 1-2 1.500R 2.430 1-2 1.500R 2.1500R	68 12 24 8 .20 .20 .60 5 5 0 .500 3-4 3 2.000L 1.280 3-4 3 2.000L 3-4 3 2.040 2-4	68 12 24 8 .20 .30 .50 .50 2 2 0 .750 2 2 2 0 1.500 1-2 2.400R 2.646 1-2 2.400R 3.872 1-3	56 16 16 8 .10 .20 .70 4 4 0 .585 3-4 1.996R 1.496 2.632 3-5 4 1.3924 4 1.3225 2-5	56 16 16 8 .10 .30 .60 2 2 0 .750 2 2 0 1.500 2-3 2 3.200L 2.321 2-4 3 2.286R 3.892 2-5	56 16 16 8 20 .20 .60 5 5 0 .500 3-4 3 2.000L 1.280 3-4 3 2.000L 2.253 2-4 3 1.333R 3.627 25	56 16 16 8 20 30 50 2 2 0 750 2 2 0 1.500 1-2 2 3.200R 2.321 1-3 2 3.96R 3.737 1-4	60 16 18 8 .10 .20 .70 .4 4 0 .585 8–4 4 1.996R 1.496 2.632 3–5	2 2 2 2 2 4 1 1 3 - 3 - 3 - 2 2 - 2 2 - 2 2 - 3 - 3 - 3
Axl Spa Hit Loa On	n. Base le acing sch ad les 10 20	e L X X Y C a1 a2 a3 G N B M G N B M G N B M H B	68 12 24 8 .10 .20 .70 4 4 0 .585 3–4 4 1.996R 2.632 4 1.996R 2.663 L	68 12 24 8 .10 .30 .60 2 2 0 .750 2 1.500 1-2 2 1.500 1-2 2 1.500 3 1-2 2 1.500 3 3 4 2 8 3 4 2 8	68 12 24 8 -20 .20 .20 .60 5 5 0 .500 3-4 3 2.0001L 1.280 3-4 3 2.0002 3-4 3 2.0001 3.243 3.243	68 12 24 8 .20 .30 .50 2 2 0 .750 2 1.500 1-2 2 2.400R 1-2 2 2.400R 3.872	56 16 16 8 .10 .20 .70 4 4 0 .585 3-4 4 1.996R 1.496 2.632 3-5 4 1.332L 4.235	56 16 16 8 .10 .30 .60 2 2 0 .750 2 0 1.500 2-3 2.200L 2-321 2-4 3 2.286R 3.892	56 16 16 16 8 .20 .20 .60 5 5 0 .500 3–4 3 2.0001L 1.280 3–4 3 2.0001L 2.253 2–4 3 3.34 3.4 3.4 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5	56 16 16 8 20 30 50 2 2 0 .750 2 2 2 0 1.500 1-2 2 3.200R 2.202R 2.303R 2.304R 3.306R 3.737	60 16 18 8 .10 .20 .70 .4 4 0 .585 3–4 4 1.996R 1.496 2.632 3–5 4 1.665L 4.020	2.00 2.00 2.00 2.00 2.70 3.00 2.70 3.00 2.70 3.00 3.00 3.00 3.00 3.00 3.00 3.00 3
Axi Spa Hitt Loa On Axi	a. Bassale acing le acing such ad less 10 20 40	E L X X X Y C C a1 a2 a3 G N B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M B M B M B M B M B M B M B M B M	68 12 24 8 .10 .20 .70 4 4 0 .585 3-4 4 1.996R 2.632 3-4 4 1.996R 2.632 3-5 4 4 1.996R 2.532	68 12 24 8 .10 .30 .60 2 2 0 .750 2 1.500 1-2 2 1.500R 2.430 1-2 2 1.500R 3.422 1-3 2 3.000L 4.608	68 12 24 8 .20 .20 .60 5 5 0 .500 3-4 3 2.000L 1.280 3-4 3 2.000L 2.253 3-4 3 2.000L 3.240 2-4 3.240 4.386	68 12 24 8 .20 .30 .50 2 2 0 .750 2 2 0 1.500 1-2 2.400R 2.640 1-2 2 2.400R 3.872 1-3 2 1.206L 5.153	56 16 16 8 .10 .20 .70 4 4 0 .585 3-4 1.996R 1.496 2.632 3-5 4 1.3924 4 1.325 4 4.0 1.325 4 4.0 1.325 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0	56 16 16 8 .10 .30 .60 2 2 0 .750 2 2 0 1.500 2–3 2.200L 2.3200L 2.34 3 2.286R 3.892 2–5 3.889L 5.664	56 16 16 18 8 .20 .20 .60 .5 5 .500 3-4 3 2.000L 1.280 3-4 3 2.000L 2.253 2-4 3 1.333R 3.627 2-5 4 2.000R 5.264	56 16 16 8 .20 .30 .50 2 2 0 .750 2 2 0 1.500 1-2 2 3.200R 2.321 1-3 2 .396R 3.737 1-4 2 2.0751 5.556	60 16 18 8 .10 .20 .70 .70 .4 4 0 .585 3–4 4 1.996R 2.632 3–5 4 1.665L 4.020 3–5 4 1.665L 5.760	2.00 2.7 3.00 2.00 2.7 3.00 2.7 3.00 2.7 3.00 2.7 3.00 2.7 3.00 2.7 3.00 3.00 3.00 3.00 3.00 3.00 3.00 3.
Axi Spa Hitt Loa On Axi	a. Bass. le le le le le le le le le le le le le	E L X X Y C A A A A A A A A A A A A A A A A A A	68 12 24 8 .10 .20 .70 .70 .4 4 0 .585 3-4 1.996R 2.632 3-4 1.996R 3.785 3-5 4 2.6631 5.121 3-5	68 12 24 8 .10 .30 .60 2 2 0 .750 2 2 1.500 1-2 2 1.500R 2.430 1-2 2 1.500R 3.422 1-3 3.000L 4.608 1-4	68 12 24 8 .20 .20 .20 .60 5 5 0 .500 3 4 3 2.0001L 1.280 3 3 4 3 2.000L 3.240 2 4 3 2.667R 4.386 3 5 5	68 12 24 8 .20 .30 .50 2 2 0 .750 2 2 2 0 1.500 1-2 2 2.400R 3.872 1-3 2 1.206L 5.153 1-4	56 16 16 8 .10 .20 .70 4 4 0 .585 3-4 4 1.996R 1.496 3-4 4 1.996R 2.632 3-5 4 1.332L 4.235 2-5 4 6.102 2-5	56 16 16 8 .10 .30 .60 2 2 0 .750 2 2 2 3.200L 2.321 2.321 2.286R 3.892 2.5664 2.5664	56 16 16 16 16 18 2.20 .20 .50 .500 3-4 3 2.000L 2.253 2-4 3 1.333R 3.627 2-5 4 2.000R	56 16 16 8 20 .50 2 2 0 .750 2 2 0 1.500 1-2 2 3.200R 2.321 1-3 2 3.737 1-4 2.006 2.396R 3.737 1-4	60 16 18 8 .10 .20 .70 4 4 0 .585 3–4 4 1.996R 2.632 3–5 4 1.665L 4,020 3–5 4 1.656L 5,766 2–5	11 3 2.00 22 2.77 33 2.75 2.75
Axi Spa Hitt Loa On Axi	a. Bassale acing le acing such ad less 10 20 40	e L	68 12 24 8 .10 .20 .70 4 4 0 .585 3-4 4 1.996R 2.632 3-4 1.996R 3.785 3-5 4 2.663L 3-5 4 2.663L	68 12 24 8 .10 .30 .60 2 2 0 .750 2 2 0 1.500 1-2 2 1.500R 3.422 1-3 3.000L 4.608 1-4 2 6.250L	68 12 24 8 .20 .20 .20 .60 5 5 0 .500 3-4 3 2.000L 2.253 3-4 3 2.000L 3.240 2-4 4.386 3-5 4.386 3-5 4.667L	68 12 24 8 .20 .30 .50 .50 .50 .750 2 2 0 .750 1-2 2 2400R 2.646 1-2 2.400R 3.872 1-306L 5.153 1-4 2 4.1541,	56 16 16 8 .10 .20 .70 4 4 0 .585 3-4 4 1.996R 1.996R 2.632 3-5 4 1.332L 4.235 2-5 4 1.631R 6.102 2-5 4 1.631R	56 16 8 .10 .30 .60 .60 .2 2 0 .750 2 2 0 1.500 2-3 2.200L 2.321 2-4 3.200L 2.325 3.889L 5.664 2-5 3.889L	56 16 16 16 18 2.20 .20 .20 .50 5 5 0 .500 3–4 3 2.0001L 2.253 2–4 3 1.333R 3.627 2–5 4 2.000R 5.264 2–5 4 4 4 4 4 2.000R 4 4 4 4 4 4 4 4 4 6 6 6 6 6 6 6 6 6 6 6 6 6	56 16 16 8 20 .30 .50 2 2 0 .750 2 2 0 1.500 1-2 2 3.200R 2.321 1-3 2 .396R 3.737 1-4 2 2.075L 5.556 1-4 2 2.075L	60 16 18 8 .10 .20 .70 4 4 0 .585 3–4 4 1.996R 1.496 3–4 4 1.996R 2.632 3–5 4 1.020 3–5 4 1.0565L 5.760 2–5 4	2.00 2.7 3 2.7 3 2.7 5 5
Axi Spa Hitt Loa On Axi	a. Bass. le le le le le le le le le le le le le	E L XX X X C a1 a2 a3 G N B M G N B M G N B M G N B M G N B M G N B M G N B M B M G N B M B M M G N B M M G N B M M G N B M M M B M M M M B M M M M M M M M M	68 12 24 8 .10 .20 .70 .70 .4 4 0 .585 3-4 4 1.996R 2.632 3-4 4 1.996R 3.785 3-5 4 2.663L 5.121 3-5 4 6.683L 6.855	68 12 24 8 .10 .30 .60 2 2 0 .750 2 2 0 1.500 1-2 2 1.500R 2.430 1-2 2.430 1-3 2.430 1-4 6.050L 6.321	68 12 24 8 .20 .20 .60 5 5 0 .500 3 4 3 2.0001L 1.280 3 3 4 3 2.000L 3.240 2 -4 3 2.667R 4.386 3 3 5 4 6767L 5.871	68 12 24 8 .20 .30 .50 .50 2 2 0 .750 2 2 2 0 1.500 1-2 2.400R 2.646 1-2 2.400R 3.872 1-36 1.25.153 1-4 2 4.1541, 6.875	56 16 16 8 .10 .20 .70 4 4 0 .585 3-4 4 1.996R 1.496 3-4 4 1.996R 2.632 3-5 4 1.332L 4.235 2-5 4 1.6102 2-5 4 8.344	56 16 16 8 .10 .30 .60 2 2 0 .750 2 2 3 2 3 2 2 3 2 3 2 3 2 3 2 3 3 3 3 3 3 3 3 3 3 3 3 3	56 16 16 16 18 2.20 .20 .60 5 5 0 .500 3–4 3 2.000L 2.253 2-4 3 1.333R 3.627 2-5 4 2.000R 5.264 2.000R 5.264 2.000R	56 16 16 8 20 30 .50 2 2 0 .750 2 2 3.200R 2.321 1-3 2.396R 3.787 1-4 2.075L 5.556 1-4 2.075L	60 16 18 8 .10 .20 .70 4 4 0 .585 3–4 4 1.996R 2.632 3–5 4 4.020 3–5 4 1.665L 4.020 2–5 4 1.5760 2–5	2.00 2.77 33 2.77 55
Axi Spa Hitt Loa On Axi	a. Bass. le le le le le le le le le le le le le	E L XX X C A1 A2 A3 A3 G G N B M R M R M R M R M R M R M R M R M R M	68 12 24 8 .10 .20 .70 .4 4 0 .585 3-4 4 1.996R 3.75 4 2.6632 3-5 4 2.663L 5.121 3-5 4 6.855 1-5 3	68 12 24 8 .10 .30 .60 2 2 0 .750 2 2 0 1.500 1-2 2 1.500R 2.430 1-2 2.430 1-4 2.6.250L 6.321 1-5 8	68 12 24 8 .20 .20 .20 .60 5 5 0 .500 3-4 3 2.000L 2.253 3-4 3 2.000L 3.240 2-4 4.386 3-5 4 2.667L 5.871 1-5 3	68 12 24 8 .20 .30 .50 .50 2 2 0 .750 2 2 0 1.500 1-2 2.400R 2.646 1-2 2.400R 3.872 1-3 2 1.206L 5.153 1-4 2 4.154L 6.875	56 16 16 8 .10 .20 .70 4 4 0 .585 3-4 4 1.996R 2.632 3-5 4 1.332L 4.235 2-5 4 1.6102 2-5 4 1.611R 6.102 2-5 4 4.631R 8.344 1-5 3	56 16 8 .10 .30 .60 .60 .2 2 0 .750 2 2 0 1.500 2-3 2.200L 2.321 2-4 3.200L 2.321 2-5 3.889L 7.912 1-5 3.889L 7.912	56 16 16 16 18 2.20 .20 .20 .60 5 5 0 .500 3–4 3 2.000 L 2.253 2–4 3 3.627 2–5 4 2.000 R 5.264 2–5 4 4 2.000 R 5 5 6 7 8 8 8 8 8 8 8 8 8 8 8 8 8	56 16 16 8 20 .50 2 2 0 .750 2 2 0 1.500 1-2 2 3.200R 2.321 1-3 2 2.396R 3.737 1-4 2 2.075L 7.627 1-5 2	60 16 18 8 .10 .20 .70 4 4 0 .585 3–4 4 1.996R 1.496 3–4 4 1.996R 2.632 3–5 4 1.020 3–5 4 1.0565L 5.760 2–5 4	2.77 2.10 2.10 2.17 3.10 2.17 3.10 2.17 5.10 2.17 7.77
Axi Spa Hitt Loa On Axi	a. Bass. le accing chad less 10 20 30 40 60	E L XX C A1 A2 A3 G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M B M G N B M B M B M G N B M B M B M B M B M B M B M B M B M B	68 12 24 8 .10 .20 .70 .70 .4 4 0 .585 3-4 4 1.996R 3.785 3-4 4 1.996R 3.785 3-5 4 2.663L 5.125 6.855 1-5 3.464L	68 12 24 8 .10 .30 .60 2 2 0 .750 2 2 1.500 1-2 2.430 1-2 2.500R 3.422 1-3 2.000IL 4.608 1-4 2.6.250L 6.321 1-5 3.1.400R	68 12 24 8 .20 .20 .60 .5 5 0 .500 3-4 3 2.0001L 1.280 3-4 3 2.000L 2.253 3-4 3 2.000L 3.240 2-4 3 4.386 4.386 4.386 4.5871 1-5 3 2.000R	68 12 24 8 .20 .30 .50 2 2 0 .750 2 2 0 1.500 1-2 2.400R 3.872 1-3 2.406L 5.153 1-4 2.4154L 6.875 1-4 2,4,154L	56 16 16 8 .10 .20 .70 4 4 0 .585 3-4 4 1.996R 1.496 3-4 4 1.996R 2.632 3-5 4 1.631R 6.102 2-5 4 1.631R 8.344 1-5 3.532L 1.55	56 16 16 8 .10 .30 .60 2 2 0 .750 2 2 3 2 3 2 3 2 2 3 2 3 2 3 2 3 3 3 3 3 3 3 3 3 3 3 3 3	56 16 16 16 16 18 2.20 .20 .500 5 5 0 .500 3–4 3 2.000L 1.285 2-4 3 3-4 3 2.000L 2.253 2-4 3 3.627 2-5 4 2.000R 5-5 4 2.000R 5-5 4 2.000R 5-7 1.333R 5.200 6.200	56 16 16 8 20 30 .50 2 2 0 .750 2 2 3.200R 2.321 1-3 2.396R 3.737 1-4 2.075L 7.627 1-5 2.5068L	60 16 18 8 .10 .20 .70 4 4 0 .585 3–4 4 1.996R 2.632 3–5 4 1.020 3–5 4 1.665L 5.760 2–5 4 1.595R 7.909 1.570 3–4 4.020 3–5 4.020 3–6 4.020 3–7 4.020 4.000 4.000 4.000 4.000 4.000 4.000 4.000 4.000 4.	2.00 2.00 2.00 2.00 2.00 2.00 2.00 2.00
Axi Spa Hitt Loa On Axi	a. Bass. le accing chad less 10 20 30 40 60	E L XX X C A1 A2 A3 G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M M G N B M M M G N B M M M M M M M M M M M M M M M M M M	68 12 24 8 .10 .20 .70 4 4 0 .585 3-4 1.996R 1.496 3-4 1.996R 2.632 3-4 4 1.996R 2.663L 5.121 3-5 4 2.663L 6.855 1-5 3 464L 11.139	68 12 24 8 .10 .30 .60 2 2 0 .750 2 2 1.500R 1-2 2 1.500R 3.422 1-3 3.000L 4.608 1-4 2 6.2501 1-5 3.1400R 10.625	68 12 24 8 -20 -20 -20 -60 5 5 0 -500 3 4 3 2.0001 1.280 3 -4 3 2.0001 3.240 2-4 3 2.6667R 4.386 3-5 4 2.667R 1-5 8 2.000R 10.050	68 12 24 8 .20 .30 .50 2 2 0 .750 2 2 0 1.500 1-2 2 2.400R 3.872 1-3 2 1.206L 5.153 1-4 2 4.154L 6.875 1-4 2 4,154L 10.980	56 16 16 8 .10 .20 .70 4 4 0 .585 3-4 1.996R 1.496 8-4 1.9968 2.632 3-5 4 1.332L 4.235 2-5 4 1.631R 6.102 2-5 4 1.631R 8.344 1-5 3 5.532L 13.072	56 16 16 18 30 .30 .60 2 2 0 .750 2 2 0 1.500 2-3 2.201 2-4 3 2.286R 3.892 2-5 3.8891 5.664 2-5 3.8891 7.912 1-5 3 800R 12.808	56 16 16 18 8 .20 .20 .20 .50 .500 3-4 3 2.0001 1.280 3-4 3 2.0001 2.253 2-4 3 1.3338 3.627 2-5 4 2.000R 5.264 2-5 4 2.000R 7.254 1-5 3 1.600R	56 16 16 8 20 30 0 .50 2 2 0 .750 2 2 0 1.500 1-2 2 3.200R 2.321 1-3 2.396R 3.737 1-4 2 2.0751L 5.556 1-4 2 2.0751L 7.627 1-5 2 5.068L 12.053	60 16 18 8 .10 .20 .70 .4 4 0 .585 3-4 1.996R 1.496 3-4 1.996R 2.632 3-5 4 1.665L 5.760 2-5 4 1.595R 7.909 1-5 3 466L 1.538	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
Axi Spa Hitt Loa On Axi	a. Bass. le accing chad less 10 20 30 40 60	E L XX C A1 A2 A3 G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M B M G N B M B M B M G N B M B M B M B M B M B M B M B M B M B	68 12 24 8 .10 .20 .70 .70 .4 4 0 .585 3-4 4 1.996R 3.785 3-4 4 1.996R 3.785 3-5 4 2.663L 5.125 6.855 1-5 3.464L	68 12 24 8 .10 .30 .60 2 2 0 .750 2 2 1.500 1-2 2.430 1-2 2.500R 3.422 1-3 2.000IL 4.608 1-4 2.6.250L 6.321 1-5 3.1.400R	68 12 24 8 .20 .20 .60 .5 5 0 .500 3-4 3 2.0001L 1.280 3-4 3 2.000L 2.253 3-4 3 2.000L 3.240 2-4 3 4.386 4.386 4.386 4.5871 1-5 3 2.000R	68 12 24 8 .20 .30 .50 2 2 0 .750 2 2 0 1.500 1-2 2.400R 3.872 1-3 2.406L 5.153 1-4 2.4154L 6.875 1-4 2,4,154L	56 16 16 8 .10 .20 .70 4 4 0 .585 3-4 4 1.996R 1.496 3-4 4 1.996R 2.632 3-5 4 1.631R 6.102 2-5 4 1.631R 8.344 1-5 3.532L 1.55	56 16 16 8 .10 .30 .60 2 2 0 .750 2 2 3 2 3 2 3 2 2 3 2 3 2 3 2 3 3 3 3 3 3 3 3 3 3 3 3 3	56 16 16 16 16 18 2.20 .20 .500 5 5 0 .500 3–4 3 2.000L 1.285 2-4 3 3-4 3 2.000L 2.253 2-4 3 3.627 2-5 4 2.000R 5-5 4 2.000R 5-5 4 2.000R 5-5 4 5-7 6-7 6-7 6-7 6-7 6-7 6-7 6-7 6	56 16 16 8 20 30 .50 2 2 0 .750 2 2 3.200R 2.321 1-3 2.396R 3.737 1-4 2.075L 7.627 1-5 2.5068L	60 16 18 8 .10 .20 .70 4 4 0 .585 3–4 4 1.996R 2.632 3–5 4 1.020 3–5 4 1.665L 5.760 2–5 4 1.595R 7.909 1.570 3–4 4.020 3–5 4.020 3–6 4.020 3–7 4.020 4.000 4.000 4.000 4.000 4.000 4.000 4.000 4.000 4.	2.00 2.00 2.00 2.00 2.00 2.00 2.00 2.00

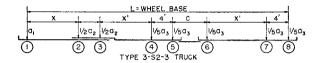
Tr	uck N	0,	71	72	73	74	75	76	77	78	79	80
	n. Base		60	60	64	64	64	64	68	68	68	68
Ax Sp:	le acing	$\mathbf{X}_{\mathbf{X'}}$	$\begin{array}{c} 16 \\ 18 \end{array}$	16 18	$\frac{16}{20}$	16 20	$\begin{array}{c} 16 \\ 20 \end{array}$	$\frac{16}{20}$	$\frac{16}{22}$	$\frac{16}{22}$	$\frac{16}{22}$	16 22
	tch	C	8	8	8	8	8	8	8	8	8	8
Lo		81	.20 .20	.20 .30	.10 .20	.10 .30	.20 .20	.20 .30	.10 .20	.10 .30	.20 .20	.20 .30
	les	a2 a3	.60	.50	.70	.60	.60	.50	.70	.60	.60	.50
-	10	G	5	2	4	2	5	2	4	2	5	2
	10	N B	5 0	2 0	4 0	$\frac{2}{0}$	5 0	2 0	4 0	2 0	5 0	2 0
		M	.500	.750	.585	.750	.500	.750	.585	.750	.500	.750
j	20	G N	3-4 3	2 2	3–4 4	2 2	$_3^{-4}$	$\frac{2}{2}$	3–4 4	$\frac{2}{2}$	3–4 3	2 2
		В М	2.000 L	0 1.500	1.996R 1.496	$^{0}_{1.500}$	2.000L	$0 \\ 1.500$	1.996R	$\substack{0\\1.500}$	2.000L 1.280	$^{0}_{1,500}$
		G	$\frac{1.280}{3-4}$	$\frac{1.500}{1-2}$	3-4	3-4	$\frac{1.280}{3-4}$	1-2	1.496 3-4	3-4	3-4	1-2
	30	N	3	2	4	3	3	2	4	3	3	2
		B M	$2.000L \\ 2.253$	$3.200 \mathbf{R} \\ 2.321$	$1.996\mathbf{R} \\ 2.632$	$2.000 L \\ 2.253$	$2.000L \\ 2.253$	3.200R 2.321	$1.996\mathbf{R} \\ 2.632$	$2.000L \\ 2.253$	$2.000L \\ 2.253$	3.200 R 2.321
		G	2-4	1-3	2-4	2-4	2-4	1–2	3-4	3-4	3-4	1-2
t.	40	N B	$^3_{1.667 m R}$	$^2_{.146 m R}$	$^3_{1.595 m R}$	3 3.143R	$^3_{2.000 m R}$	$^2_{3.200 m R}$	4 1.996R	$^{3}_{2.000L}$	3 2.000L	$\frac{2}{3.200\mathbf{R}}$
Span-Fect		М	3.442	3.567	3.877	3.373	3,260	3.528	3.785	3.240	3.240	3.528
pan	50	G N	$^{2-4}_{3}$	$^{1-4}_2$	$^{3-5}_4$	$\frac{2-4}{3}$	$\frac{2-4}{3}$	1~3 2	$_{4}^{3-5}$	$\frac{2-4}{3}$	$_{3}^{2-4}$	$^{1-3}_{2}$
εΣ	00	\mathbf{B}	1.667R	2.474L	1.997L	3.143R	$2.000\mathbf{R}$.105L	2.330L	3.572R	2.333R	.356L
		M	4.933 2-5	$\frac{5.253}{1-4}$	5.544 2-5	5.089 2-5	4.748 2-5	5.067 1-4	5.331 3-5	4.829 2-4	4.565 2-5	$\frac{4.902}{1-4}$
	60	G N	4	2	4	3	2-5 4	2	4	3	4	2
		B M	2.000R 6.854	$\frac{2.474L}{7.319}$	1.558R 7.474	667L 6.907	2.000R 6.454	2.874L 7.016	$\frac{2.330L}{7.068}$	$3.572\mathbf{R} \\ 6.549$	2.000R 6.054	3.274L 6.717
		G	1-5	1-5	1-5	1-5	1-5	1-4	2-5	1-5	1-5	1-4
	80	N B	$^{3}_{1.800 m R}$	$^2_{5.735L}$	3 .398L	3 1.200R	3	$^2_{2.874\mathrm{L}}$	$^{4}_{1.521R}$	3 1.400R	$^{3}_{2.200\mathrm{R}}$	2 3.274 L
		M	11.441	11.476	12.004	11.618	2.000R 10.850	11.152	11.531	11.025	10.261	10.844
	100	G	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5
	100	N B	$^{3}_{1.800\mathrm{R}}$	$^2_{5.735L}$.398L	3 $1.200R$	$^3_{2.000 m R}$	$\frac{2}{6.402}$ L	3 .331L	$^3_{1.400 m R}$	$^3_{2.200 m R}$	$^2_{7.069L}$
		M	16.432	16.394	17.004	16.614	15.840	15.808	16.470	16.020	15.248	15.231
			<u> -</u>									
	uck N		81	82	83	84	85	86	87	88	89	90
W	h. Bas	e L	72	72	72	72	76	76	76	76	80	80
Ax Sp:	h. Bas le acing	e L X X'	72 16 24	72 16 24	72 16 24	72 16 24	76 16 26	76 16 26	76 16 26	76 16 26	80 16 28	80 16 28
MI Ax Sp: Hi	h. Bas- le acing tch	e L X X' C	72 16 24 8	72 16 24 8	72 16 24 8	72 16 24 8	76 16 26 8	76 16 26 8	76 16 26 8	76 16 26 8	80 16 28 8	80 16 28 8
Ax Sp:	h. Bas- le acing tch ad	e L X X'	72 16 24	72 16 24	72 16 24	72 16 24	76 16 26	76 16 26	76 16 26	76 16 26	80 16 28	80 16 28
Ax Sp: Hi Lo	h. Bas- le acing tch ad	E L X X' C a ₁ a ₂ a ₃	72 16 24 8 .10 .20 .70	72 16 24 8 .10 .30 .60	72 16 24 8 .20 .20 .60	72 16 24 8 .20 .30 .50	76 16 26 8 .10 .20 .70	76 16 26 8 .10 .30 .60	76 16 26 8 .20 .20 .60	76 16 26 8 .20 .30 .50	80 16 28 8 .10 .20 .70	80 16 28 8 .10 .30 .60
Ax Sp: Hi Lo	h. Bas- le acing tch ad	e L X X' C a ₁ a ₂ a ₃ G	72 16 24 8 .10 .20 .70	72 16 24 8 .10 .30 .60	72 16 24 8 .20 .20	72 16 24 8 .20 .30	76 16 26 8 .10 .20	76 16 26 8 .10 .30 .60	76 16 26 8 .20 .20	76 16 26 8 .20 .30	80 16 28 8 .10 .20	80 16 28 8 .10 .30
Ax Sp: Hi Lo	h. Basele le acing tch ad les	e L X X' C a ₁ a ₂ a ₃ G N B	72 16 24 8 .10 .20 .70 4 4	72 16 24 8 .10 .30 .60	72 16 24 8 .20 .20 .60 5 5	72 16 24 8 .20 .30 .50 2 2	76 16 26 8 .10 .20 .70 4 4	76 16 26 8 .10 .30 .60	76 16 26 8 .20 .20 .60 5	76 16 26 8 .20 .30 .50	80 16 28 8 .10 .20 .70 4 4	80 16 28 8 .10 .30 .60 2 2
Ax Sp: Hi Lo	h. Basele le acing tch ad les	e L X X' C a ₁ a ₂ a ₃ G N B	72 16 24 8 .10 .20 .70 4 4 0 .585	72 16 24 8 .10 .30 .60 2 2 0	72 16 24 8 .20 .20 .60 5 5 0 .500	72 16 24 8 .20 .30 .50 2 2 0 .750	76 16 26 8 .10 .20 .70 4 4 0 .585	76 16 26 8 .10 .30 .60 2 2 0 .750	76 16 26 8 .20 .20 .60 5 5 0 .500	76 16 26 8 .20 .30 .50 2 2 0 .750	80 16 28 8 .10 .20 .70 4 4 0 .585	80 16 28 8 .10 .30 .60 2 2 0
Ax Sp: Hi Lo	h. Basele le acing tch ad les	e L X X X' C a1 a2 a3 G N B M G N	72 16 24 8 .10 .20 .70 4 4 0 .585 3-4	72 16 24 8 .10 .30 .60 2 2 0 .750	72 16 24 8 .20 .20 .60 5 5 0 .500 3–4	72 16 24 8 .20 .30 .50 2 2 0 .750	76 16 26 8 .10 .20 .70 4 4 0 .585	76 16 26 8 .10 .30 .60 2 2 0 .750	76 16 26 8 .20 .20 .60 5 5 0 .500	76 16 26 8 .20 .30 .50 2 2 0 .750	80 16 28 8 .10 .20 .70 4 4 0 .585	80 16 28 8 .10 .30 .60 2 2 0 .750
Ax Sp: Hi Lo	h. Basele acing tch ad les	e L X X' C a ₁ a ₂ a ₃ G N B M	72 16 24 8 .10 .20 .70 4 4 0 .585	72 16 24 8 .10 .30 .60 2 2 0 .750	72 16 24 8 .20 .20 .60 5 0 .500 3–4	72 16 24 8 .20 .30 .50 2 2 0 .750	76 16 26 8 .10 .20 .70 4 4 0 .585	76 16 26 8 .10 .30 .60 2 2 0 .750	76 16 26 8 .20 .20 .60 5 0 .500	76 16 26 8 .20 .30 .50 2 2 0 .750	80 16 28 8 .10 .20 .70 4 0 .585 3-4	80 16 28 8 .10 .30 .60 2 2 0 .750
Ax Sp: Hi Lo	h. Basele acing tech ad les 10	e L X X X' C a1 a2 a3 G N B B M G N B M G	72 16 24 8 .10 .20 .70 4 0 .585 3-4 4 1.996R 1.496 3-4	72 16 24 8 .10 .30 .60 2 2 0 .750 2 2 0 1.500 3-4	72 16 24 8 .20 .60 5 5 0 .500 3-4 3 2.000L 1.280 3-4	72 16 24 8 .20 .30 .50 2 2 0 .750 2 2 0 1.500 1-2	76 16 26 8 .10 .20 .70 4 4 0 .585 3-4 4 1.996 1.496	76 16 26 8 .10 .30 .60 2 2 0 .750 2 1.500 3-4	76 16 26 8 .20 .20 .60 5 5 0 .500 3-4 3 2.0001 1.280 3-4	76 16 26 8 .20 .30 .50 2 0 .750 2 0 1.500 1-2	80 16 28 8 .10 .20 .70 4 4 0 .585 3-4 4 1.996R 1.496 3-4	80 16 28 8 .10 .30 .60 2 2 0 .750 2 0 1.500 3-4
Ax Sp: Hi Lo	h. Basele acing tch ad les	E L X X C a1 a2 a3 G N B M G N B M G N B M	72 16 24 8 .10 .20 .70 4 4 0 .585 3-4 1.996R 1.496	72 16 24 8 .10 .30 .60 2 2 0 .750 2 1.500	72 16 24 8 .20 .60 5 0 .500 3–4 3 2.000L 1.280	72 16 24 8 .20 .30 .50 2 2 0 .750 2 0 1.500	76 16 26 8 .10 .20 .70 4 4 0 .585 3–4 4 1.996 R 1.496	76 16 26 8 .10 .30 .60 2 2 0 .750 2 2 0 1.500 3-4 3	76 16 26 8 .20 .20 .60 5 0 .500 3-4 3 2.000L 1.280 3-4 3	76 16 26 8 .20 .30 .50 2 2 0 .750 2 2 0	80 16 28 8 .10 .20 .70 4 4 0 .585 3-4 1.996R 1.496	80 16 28 8 .10 .30 .60 2 2 0 .750 2 2 0 1.500
Ax Sp: Hi Lo	h. Basele acing tech ad les 10	E L X X C A1 A2 A3 G N B M G N B M G N B M G N B M G N B M G N B M M G N B M M G N B M M M M M M M M M M M M M M M M M M	72 16 24 8 .10 .20 .70 4 4 0 .585 3-4 4 1.996R 1.496 4 1.996R 2.632	72 16 24 8 8 .10 .30 .60 2 2 0 .750 2 2 0 1.500 3-4 3 2.000L 2.253	72 16 24 8 .20 .20 .60 5 5 0 .500 3-4 3 2.000L 1.280 3-4 3 2.000L 2.253	72 16 24 8 .20 .30 .50 2 2 0 .750 2 2 0 1.500 1-2 2.3200R 2.321	76 16 26 8 .10 .20 .70 4 4 0 .585 3-4 4 1.996R 1.496 3-4 4 1.996R 2.632	76 16 26 8 .10 .30 .60 2 0 .750 2 2 0 1.500 3-4 3 2.0001L 2.253	76 16 26 8 8 .20 .60 .50 .500 3–4 3 2.000L 1.280 3–4 3 2.000L 2.253	76 16 26 8 20 30 .50 2 2 0 .750 2 2 0 1.500 1-2 2 3.200R 2.321	80 16 28 8 .10 .20 .70 4 4 0 .585 3-4 4 1.996R 1.496 3-4 4 1.996R 2.632	80 16 28 8 .10 .60 2 2 0 .750 2 2 0 1.500 3-4 3 2.000L 2.253
WI Axx Spp Hi Lo On Ax	h. Basele acing tech ad les 20	E L X X X C a1 a2 a3 G N B M G R M R M	72 16 24 8 .10 .20 .70 4 4 0 .585 3-4 1.996 R 1.496 2.632 3-4 1.996R 2.632 3-4	72 16 24 8 .10 .30 .60 2 2 0 .750 2 2 0 1.500 3-4 3 2.0001L 2.253 3-4	72 16 24 8 .20 .20 .60 5 5 0 .500 3-4 3 2.0001 1.280 3-4 3 2.0002 3-4 3 3-4 3 3-4 3 3-4 3 3-4 3 3-4 3 3-4	72 16 24 8 .20 .30 .50 2 2 0 .750 2 2 0 1.500 1-2 2 3.30 1-2 1.500 1-2 1.500	76 16 26 8 .10 .20 .70 .4 4 0 .585 3-4 4.1.996R 1.496 4.1.996R 2.632 3-4	76 16 26 8 .10 .30 .60 2 2 2 0 .750 2 2 2 0 1.500 3-4 3 2.00013 2-4 3 3-4	76 16 26 8 .20 .20 .20 .50 .500 3-4 3 2.000L 1.280 3-4 3 2.000L 3-3 3-4 3 3.3 3-4	76 16 26 8 20 30 50 2 2 0 750 2 2 0 1.500 1-2 3.200R 2.321 1-2	80 16 28 8 .10 .20 .70 .4 4 0 .585 3–4 4 1.996R 1.496 3–4 1.996R 2.632 3–4	80 16 28 8 .10 .30 .60 2 2 2 0 .750 2 2 2 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3
WI Axx Spp Hi Lo On Ax	h. Basele acing tech ad les 10	E L X X X C a1 a2 a3 G N B M G N B M G N B M G N B M G N B M G N B M B M G N B M B M B M G N B M B M B M G N B M B M B M B M B M B M B M B M B M B	72 16 24 8 .10 .20 .70 4 4 0 .585 3-4 1.996R 1.496 4 1.996R 2.632 3-4 4 1.996R	72 16 24 8 .10 .30 .60 2 2 0 .750 2 2 0 1.500 3-4 3 2.000L 2.253 3-4 3 2.000L	72 16 24 8 .20 .20 .60 5 5 0 .500 3-4 3 2.000L 1.280 3-4 3 2.000L 2.253 3-4 3 2.000L	72 16 24 8 .20 .30 .50 2 2 0 .750 2 2 0 1.500 1-2 2 3.200R 2.321 1-2 2.3220R	76 16 26 8 .10 .20 .70 4 4 0 .585 3-4 4.996R 1.496 4.996R 2.632 3-4 4.1996R	76 16 26 8 .10 .30 .60 2 2 0 .750 2 2 0 1.500 3-4 3 2.000L 2.253 3-4 3 2.000L	76 16 26 8 .20 .20 .60 .50 .500 3-4 3 2.000L 1.280 3-4 3 2.000L 2.253 3-4 3 2.000L	76 16 26 8 20 30 .50 2 2 0 .750 2 2 2 3.200R 2.321 1-2 2.3.200R	80 16 28 8 .10 .20 .70 4 4 0 .585 3-4 4 1.996R 2.632 3-4 4 1.996R 2.632 3-4 4	80 16 28 8 .10 .30 .60 .2 2 0 .750 2 2 0 1.500 3-4 3 2.000L 2.253 3-4 3 2.000L
Ax Spp. Hir Lo On Ax	h. Basele acing tech ad les 20	E L X X C a1 a2 a3 G N B M G N B M G N B M G N B M H H H H H H H H H H H H	72 16 24 8 .10 .20 .70 4 4 0 .585 3-4 1.996R 2.632 3-4 4 1.996R 3.785	72 16 24 8 .10 .30 .60 2 2 0 .750 2 2 0 1.500 3-4 3 2.0001 3.240	72 16 24 8 .20 .20 .60 -5 5 0 .500 3-4 3 2.000L 1.280 3-4 3.2.000L 2.253 3-4 3.2.000L 3.240	72 16 24 8 .20 .30 .50 2 2 0 .750 2 2 0 1.500 1-2 2 3.200R 2.321 1-2 2 3.200R	76 16 26 8 .10 .20 .70 .4 4 0 .585 3-4 4 1.996R 1.496 2.632 3-4 4 1.996R 3.785	76 16 26 8 .10 .30 .60 2 2 0 .750 2 2 0 .750 3-4 3 2.0001 2.253 3-4 3 2.0001 3.240	76 16 26 8 .20 .20 .60 5 5 0 .500 3-4 3 2.000L 1.280 3-4 3 2.000L 2.253 3-4 3 2.000L 3.240	76 16 26 8 20 30 .50 2 2 0 .750 2 2 0 1.500 1-2 2 3.200R 2.321 1-2 2 3.200R 3.528	80 16 28 8 .10 .20 .70 4 4 0 .585 3–4 4 1.996R 1.496 3–4 4 1.996R 2.632 3–4 4 1.996R	80 16 28 8 .10 .30 .60 2 2 0 .750 2 2 0 1.500 3-4 3 2.000L 2.253 3-4 3.240
Ax Spp. Hir Lo On Ax	h. Basele acing tech ad les 20	e L X X C a1 a2 a3 G N B M B M G N B M B M G N B M B M B M B M B M B M B M B M B M B	72 16 24 8 .10 .20 .70 4 4 0 .585 3-4 1.996R 1.496 4 1.996R 2.632 3-4 4 1.996R 3.785 3-4	72 16 24 8 .10 .30 .60 2 2 0 .750 2 2 0 1.500 3-4 3 2.000L 2.253 3-4 3 2.000L 3.240 2-4 3	72 16 24 8 .20 .20 .20 .60 5 5 0 .500 3-4 3 2.000L 1.280 3-4 3 2.000L 3.240 2.253 3-4 3 2.000L 3.240	72 16 24 8 .20 .30 .50 2 2 0 .750 2 2 3 0 1.500 1-2 2 3.200R 3.200R 3.528 1-2 2	76 16 26 8 .10 .20 .70 4 4 0 .585 3-4 4.996R 1.996R 2.632 3-4 4.996R 3.785 3-4 4 4.996R 3.785	76 16 26 8 .10 .30 .60 2 2 0 .750 2 2 0 1.500 3-4 3 2.000L 2.253 3-4 3 2.000L 3.240 2-4 3	76 16 26 8 .20 .20 .20 .50 .500 .500 3-4 3 2.000L 1.220 3-4 3 2.000L 2.253 3-4 3 2.000L 3.240 3.244	76 16 26 8 20 30 50 2 2 0 750 2 2 2 3 10 1-2 2 3.200R 2.321 1-2 2 3.200R 3.528 1-2 2	80 16 28 8 .10 .20 .70 4 4 0 .585 3-4 4 1.996R 1.496 2.632 3-4 4 1.996R 3.785 3-4 4	80 16 28 8 .10 .30 .60 2 2 0 .750 2 2 0 1.500 3-4 3 2.000L 2.253 3-4 3 2.000L 3.240 3.240
WI Axx Spp Hi Lo On Ax	h. Bassle acing tech ad les 20 30 40	e L X X Y C A1 A2 A3 G N B M G N B M G N B M G N B M G N B M G N B M G N B M R M G N B M R M R M R M R M R M R M R M R M R M	72 16 24 8 .10 .20 .70 4 4 0 .585 3-4 1.996R 1.496 2.632 4 1.996R 3.785 3-4 4 1.996R 2.663L	72 16 24 8 .10 .30 .60 2 2 0 .750 2 2 0 1.500 3-4 3 2.000L 2.253 3-4 3.240 2-4 4.000R	72 16 24 8 .20 .20 .60 5 5 0 .500 3-4 3 2.0000L 1.280 3-4 3 2.0001L 2.253 3-4 3 3-4 3 2.0567 3.240	72 16 24 8 .20 .30 .50 2 2 0 .750 2 2 0 1.500 1-2 2 3.200R 2.321 1-2 2 3.200R 2.321 2.321 2.321 2.320 3.50	76 16 26 8 .10 .20 .70 .70 4 4 0 .585 3-4 4 1.996R 2.632 3-4 4 1.996R 3.785 3-4 4 1.996R 3.785	76 16 26 8 .10 .30 .60 2 2 0 .750 2 2 0 1.500 3-4 3 2.0001L 2.253 3.240 2-4 3 4.429R	76 16 26 8 .20 .20 .20 .5 5 5 0 .500 3-4 3 2.0001 1.280 3-4 3 2.0001 2.253 3-4 3 2.0001 3.240 3.240 3-4 3 2.0001 3.240	76 16 26 8 20 30 50 2 2 0 750 2 2 0 1.500 1-2 2 3.200R 3.528 1-2 2 3.200R	80 16 28 8 .10 .20 .70 4 4 0 .585 3–4 4 1.996R 2.632 3–4 4 1.996R 2.632 3–4 4 1.996R 2.632 3–4 4 1.996R 2.632 3–4 4 1.996R 2.632 3–4 4 1.996R 2.632 3–4 4 1.996R 2.632 3–4 4 1.996R 2.632 3–4 4 1.996R 2.632 3–4 4 1.996R 1.996R 2.632 3–4 4 1.996R 1.996R 2.632 3–4 4 1.996R 1.99	80 16 28 8 .10 .30 .60 2 2 2 0 .750 2 2 2 0 1.500 3-4 3 2.000L 3.240 3 2.000L
Ax Spp. Hir Lo On Ax	h. Bassle acing tech ad les 20 30 40	e L X X C a1 a2 a3 G N B M B M G N B M B M G N B M B M B M B M B M B M B M B M B M B	72 16 24 8 .10 .20 .70 4 4 0 .585 3-4 1.996R 1.496 4 1.996R 2.632 3-4 4 1.996R 3.785 3-4	72 16 24 8 .10 .30 .60 2 2 0 .750 2 2 0 1.500 3-4 3 2.000L 2.253 3-4 3 2.000L 3.240 2-4	72 16 24 8 .20 .20 .20 .60 5 5 0 .500 3-4 3 2.000L 1.280 3-4 3 2.000L 3.240 2.253 3-4 3 2.000L 3.240	72 16 24 8 .20 .30 .50 2 2 0 .750 2 2 3 0 1.500 1-2 2 3.200R 3.200R 3.528 1-2 2	76 16 26 8 .10 .20 .70 4 4 0 .585 3-4 4.996R 1.996R 2.632 3-4 4.996R 3.785 3-4 4 4.996R 3.785	76 16 26 8 .10 .30 .60 2 2 0 .750 2 2 0 1.500 3-4 3 2.000L 2.253 3-4 3 2.000L 3.240 2-4 3	76 16 26 8 .20 .20 .20 .50 .500 .500 3-4 3 2.000L 1.220 3-4 3 2.000L 2.253 3-4 3 2.000L 3.240 3.244	76 16 26 8 20 30 50 2 2 0 750 2 2 2 3 10 1-2 2 3.200R 2.321 1-2 2 3.200R 3.528 1-2 2	80 16 28 8 .10 .20 .70 4 4 0 .585 3-4 4 1.996R 1.496 2.632 3-4 4 1.996R 3.785 3-4 4	80 16 28 8 .10 .30 .60 2 2 0 .750 2 2 0 1.500 3-4 3 2.000L 2.253 3-4 3 2.000L 3.240 3.240
Ax Spp. Hir Lo On Ax	h. Bassle acing tech ad les 20 30 40	e L XX XY C C C C C C C C C C C C C C C C C	72 16 24 8 .10 .20 .70 4 4 0 .585 3-4 1.996R 1.496 2.632 3-4 4.1.996R 3.785 3-5 4 2.663L 5.121 3-5 4	72 16 24 8 .10 .30 .60 2 2 0 .750 2 0 1.500 3-4 3 2.000L 2.253 3-4 4.000R 4.574 2-4 3	72 16 24 8 .20 .20 .60 5 5 0 .500 3-4 3 2.0000L 1.280 3-4 3 2.0000L 3.240 2.253 3-4 3 2.000L 3.240 2.4 3 2.667R 4.386	72 16 24 8 .20 .30 .50 2 2 0 .750 2 2 0 1.500 1-2 2 3.200R 2.321 1-2 2 3.200R 4.753 1-4 2	76 16 26 8 .10 .20 .70 .4 4 0 .585 3-4 4 1.996R 1.496 2.632 3-4 4 1.996R 3.785 3-4 4 1.996R 4.943 3-5 4	76 16 26 8 .10 .30 .60 2 2 0 .750 2 2 0 .750 3-4 3 2.000L 2.253 3.240 2-4 3.240 4.429R 4.325 2-4 3	76 16 26 8 .20 .20 .60 5 5 0 .500 3-4 3 2.0001 1.280 3-4 3 2.0001 3.240 3.240 3.240 3.240 4.232 3-5 4	76 16 26 8 20 30 50 2 2 0 750 2 2 0 1.500 1-2 2 3.200R 3.528 1-2 2 3.200R 4.753 1-3 2	80 16 28 8 .10 .20 .70 4 4 0 .585 3-4 4 1.996R 1.496 3-4 4 1.996R 2.632 3-4 4 1.996R 4 1.996R 3.785 3-4 4 4 1.996R 3.785 3-4 4 4 1.996R 3.785 3-4 4 4 4 1.996R 3.785 3-4 4 4 4 1.996R 3.785 3-4 4 4 4 1.996R 3.785 3-4 4 4 4 1.996R 3.785 3-4 4 4 4 1.996R 3.785 3-4 4 4 4 1.996R 3.785 3-4 4 4 4 1.996R 3.785 3-4 4 4 4 1.996R 3.785 4.985	80 16 28 8 .10 .30 .60 .60 .750 2 2 0 .750 3-4 3 2.000L 3.240 3-4 3 2.000L 4.232 2-4 3
Ax Spp. Hir Lo On Ax	h. Bass le acing tech ad less 10 20 30 40	e L X X C a1 a2 a3 G N B M G R M G	72 16 24 8 .10 .20 .70 4 4 0 .585 3-4 1.996R 1.496 2.632 8-4 4.996R 3.785 3-5 4 2.663L 5.121 3-5 4 6.855	72 16 24 8 .10 .30 .60 2 2 0 .750 2 2 0 1.500 3-4 3 2.000L 2.253 3-4 3 2.000L 3.240 2-4 3 4.000R 4.574 2-4	72 16 24 8 .20 .20 .20 .60 5 5 0 .500 3-4 3 2.000L 1.280 3-4 3 2.000L 3.240 2-4 3 2.667R 4.386 4.386	72 16 24 8 .20 .30 .50 2 2 0 .750 2 2 3.200R 1-2 2.3200R 3.528 1-2 2.3200R 4.753	76 16 26 8 .10 .20 .70 4 4 0 .585 3-4 4 1.996R 3.785 3-4 4 1.996R 3.785 4 1.996R 4 1.996R 3.785 3-4 4 1.996R 3.785	76 16 26 8 .10 .30 .60 2 2 0 .750 2 2 0 1.500 3-4 3 2.000L 3.240 2-4 4.429R 4.325 2-4	76 16 26 8 .20 .20 .20 .50 .500 .500 3-4 3 2.000L 1.280 3-4 3 2.000L 3.240 3-4 3 2.000L 4.232 3-5	76 16 26 8 20 30 .50 2 2 0 .750 2 2 2 3.200R 2.321 1-2 2.3.200R 3.528 1-2 2.3.200R 4.753 1-3	80 16 28 8 .10 .20 .4 4 0 .585 3-4 4 1.996R 2.632 3-4 4 1.996R 3.785 3-4 4 1.996R 3.785 3-4 4 3.785 3-4 4 3.785 3-4 4 3.785 3-4 4 3.785	80 16 28 8 .10 .30 .60 .2 2 0 .750 2 2 0 1.500 3-4 3 2.000L 2.253 3-4 3 2.000L 4.232 2-4 3 4.857R 5.775
Ax Spp. Hir Lo On Ax	h. Bass. le acing teh acing teh acing ad les acing ad les acing 50	e L XX X' C a1 a2 G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G G R G R G R G R G R G R G R G R G R	72 16 24 8 .10 .20 .70 4 4 0 .585 3-4 1.996R 1.496 3-4 1.996R 3.785 3-5 4 2.663L 5.121 3-5 4 2.663L 6.855 2-5	72 16 24 8 .10 .30 .60 2 2 0 .750 2 0 1.500 3-4 3 2.000L 2.253 3-4 3.240 2-4 34.000R 4.574 2-4 34.000R 6.287 1-5	72 16 24 8 .20 .20 .60 -5 5 0 .500 3-4 3 2.0001L 1.280 3-4 3.20001L 2.253 3-4 3 2.0001L 3.240 2-4 3 2.667R 4.386 2-4 3 2.667R 5.871 1-5	72 16 24 8 .20 .30 .50 2 2 0 .750 2 0 1.500 1-2 2 3.200R 2.321 1-2 2 3.200R 4.753 1-4 2 3.6742 6.422 1-4	76 16 26 8 .10 .20 .70 4 4 0 .585 3-4 4 1.996R 1.496 3-4 1.996R 3.785 3-4 4 1.996R 4.943 3-5 4 2.996R 4.6644 2-5	76 16 26 8 .10 .30 .60 2 2 0 .750 2 2 0 .750 3-4 3 2.0001 2.2233 3-4 3.240 2-4 3 4.429R 4.325 2-4 3 4.429R 6.029	76 16 26 8 .20 .20 .60 .5 5 5 0 .500 3-4 3 2.000L 1.280 3-4 3 2.000L 3.240 3-4 3 2.000L 4.232 3-5 4 3.000L 4.232	76 16 26 8 20 30 50 2 2 0 .750 2 2 0 1.500 1-2 2 3.200R 2.321 1-2 2 3.200R 4.753 1-3 2 8.56L 6.242 1-4	80 16 28 8 .10 .20 .70 4 4 0 .585 3–4 4 1.996R 1.496 3–4 4 1.996R 4.996R 4.943 3–4 4 1.996R 4.996R 3.785 3–4 4 1.996R 4.996R 3.785 3–4 4 4 1.996R 4 4 1.996R 4 4 1.996R 3.785 3–4 4 4 1.996R 4 4 1.996R 3.785 3–4 4 4 1.996R 3.785 3–4 4 4 1.996R 3.785 3–4 4 4 1.996R 4 4 1.996R 3.785 3–4 4 4 1.996R 4 4 1.996R 4 4 1.996R 4 4 1.996R 4 4 1.996R 4 4 1.996R 4 4 1.996R 4 4 1.996R 4 4 1.996R 4 4 1.996R 4 4 1.996R 4 4 1.996R 4 4 1.996R 4 4.994 4 1.996R 4.943 3.785 4 4 4.943 3.785 4 4 4.943 3.785 4 4 4.943 3.785 4 4 4.943 3.785 4 4 4.945 4 4.945 4 4.945 4 4.945 4 4.945 4 4.945 4 4.945 4 4.945 4 4.945 4 4.945 4 4.945 4 4.945 4 4.945 4 4.945 4 4.945 4 4.945 4 4.945 4 4.945 4.9	80 16 28 8 .10 .30 .60 2 2 0 .750 2 2 0 1.500 3-4 3 2.0001 2.253 3-4 3 2.0001 4.232 2-4 3 4.837 8-577 5.775 2-5
Ax Spp. Hir Lo On Ax	h. Bass le acing tech ad less 10 20 30 40	e L XX X' C C C C C C C C C C C C C C C C C	72 16 24 8 .10 .20 .70 4 4 0 .585 3-4 1.996R 1.496 2.632 8-4 4.996R 3.785 3-5 4 2.663L 5.121 3-5 4 6.855	72 16 24 8 .10 .30 .60 2 2 0 .750 2 2 0 1.500 3-4 3 2.000L 3.240 2-4 3 4.000R 4.574 3 4.000R 6.287	72 16 24 8 .20 .20 .60 5 5 0 .500 3-4 3 2.000L 1.280 3-4 3 2.000L 3.240 2-4 3 2.667R 4.386 4.386 3.667R 5.871	72 16 24 8 .20 .30 .50 2 2 0 .750 2 2 3.200R 1-2 2 3.200R 3.528 1-2 2 3.200R 4.753 1-4 2 3.6741 6.422	76 16 26 8 .10 .20 .70 4 4 0 .585 3-4 4.996R 1.496 3.785 3-4 4.1.996R 3.785 3-4 4.996R 4.943 3.785 4.996R 4.946 4.943 3.785 6.644	76 16 26 8 .10 .30 .60 2 2 0 .750 2 2 0 1.500 3-4 3 2.0001 2.253 3-4 3 4.429R 4.325 2-4 3 4.429R 6.029 2-5 3	76 16 26 8 .20 .20 .20 .50 .500 .500 3-4 3 2.000L 1.280 3-4 3 2.000L 3.240 3-4 3 2.000L 4.232 3-5 4 3.000L 5.690	76 16 26 8 20 30 .50 2 2 0 .750 2 2 0 1.500 1-2 2 3.200R 2.321 1-2 2 3.200R 4.753 1-3 2 8.561L 6.242	80 16 28 8 .10 .20 .70 4 4 0 .585 3–4 1.996R 2.632 3–4 4 1.996R 3.785 3–4 4 1.996R 3.785 3–4 4 1.996R 3.785 3–4 4 1.996R 3.785 3–4 4 1.996R 3.785 3–4 4 1.996R 3.785 3–4 4 1.996R 3.785 3.785 3.785 3.785 3.785 3.785 3.785 4.785	80 16 28 8 .10 .30 .60 .2 2 0 .750 2 2 0 1.500 3-4 3 2.000L 2.253 3-4 3 2.000L 4.232 2-4 3 4.857R 5.775
Ax Spp. Hir Lo On Ax	h. Bass. le acing teh acing teh acing ad les acing ad les acing 50	e L XX XY C a1 a2 G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M M G N B M M M M M M M M M M M M M M M M M M	72 16 24 8 .10 .20 .70 4 4 0 .585 3-4 1.996R 1.496 3-4 1.996R 2.6632 3-4 4 2.663L 5.121 3-5 4 2.663L 6.855 4 2.663L 6.855 11.097	72 16 24 8 .10 .30 .60 2 2 0 .750 2 0 1.500 3-4 3 2.000L 2.253 3-4 3.240 2-4 34.000R 4.574 2-4 34.000R 6.287 1-5 3 1.600R 10.432	72 16 24 8 .20 .20 .60 -5 5 0 .500 3-4 3 2.0001L 1.280 3-4 3.2001L 2.253 3-4 3.210 2-4 3 2.667R 4.386 2-4 3 2.667R 4.386 2-4 3 2.667R 1-5 3 2.400R	72 16 24 8 .20 .30 .50 2 2 0 .750 2 1 2 0 1.500 1-2 3.200R 2.321 1-2 2 3.200R 4.753 1-4 2 3.6741 6.422 1-4 2 3.6741 10.540	76 16 26 8 .10 .20 .70 4 4 0 .585 3-4 4 1.996R 1.496 3-4 4 1.996R 3.785 3-4 4 1.996R 4.943 3-5 4 2.996R 4.6644 2-5 4.448R 10.662	76 16 26 8 .10 .30 .60 2 2 0 .750 2 2 0 .750 3-4 3 2.0001 2.2233 3-4 3.240 2-4 3 4.429R 4.325 2-4 3 4.429R 6.029 3.3331 9.901	76 16 26 8 .20 .20 .20 .60 .5 5 5 0 .500 3-4 3 2.000L 1.280 3-4 3 2.000L 3.240 3-4 3 2.000L 4.232 3-5 4 3.000L 4.232 3-5 4 2.000L 4.232 3-5 4 2.000L 9.240	76 16 26 8 20 30 50 2 2 0 .750 2 2 0 1.500 1-2 2 3.200R 2.321 1-2 2 3.200R 4.753 1-3 2 8.561 6.242 1-4 2 4.073L	80 16 28 8 .10 .20 .70 4 4 0 .585 3–4 4 1.996R 1.496 3-785 3–4 4 1.996R 4.943 3-585 3-4 4 1.996R 4.996	80 16 28 8 .10 .30 .60 2 2 0 .750 2 2 0 1.500 3-4 3 2.0000L 2.253 3-4 3 2.000L 4.232 2-4 3 4.857R 5.775 2-5 3 .222L 9.401
Ax Spp. Hir Lo On Ax	h. Bas- le acing teh ad les all les acing to the ad les acing to the ad les ad les acing to the ad les acing teh ad les acing teh ad les acing teh ad les acing teh ad les acing teh acing	e L XX X' C a1 a2 a3 G N B M G R G N B M G R G N B M G R G N B M G R G N B M G R G N B M G R G R G R G R G R G R G R G R G R G	72 16 24 8 .10 .20 .70 4 4 0 .585 3-4 1.996R 3.785 4-4 1.996R 3.785 4-4 2.663L 5.121 3-5 4 1.485R 1.485R 1.495R	72 16 24 8 .10 .30 .60 2 2 0 .750 2 2 0 1.500 3-4 3 2.000L 2.253 3-4 3 4.000R 4.574 2-4 4.000R 6.287 1-5 3 1.600R 10.432 1-5	72 16 24 8 .20 .20 .20 .60 .5 5 5 0 .500 3-4 3 2.000L 1.280 3-4 3 2.000L 3.240 3.240 3.240 4.386 2-4 3 2.667R 5.871 1-5 3 2.400R 9.672 1-5	72 16 24 8 .20 .30 .50 2 2 0 .750 2 2 0 1.500 1-2 2 3.200R 2.321 1-2 2 3.200R 3.528 1-2 2 3.200R 3.528 1-2 2 3.200R 4.753 1-4 2 3.674L 6.422 1-4 2 3.674L 10.540 1-4	76 16 26 8 .10 .20 .70 4 4 0 .585 3-4 1.996R 2.632 3-4 4 1.996R 3.785 3-4 4 1.996R 4.043 3-5 4 1.996R 4.0443 3-5 4 1.446R 1.446R 1.468R 1.6644	76 16 26 8 .10 .30 .60 2 2 0 .750 2 2 0 1.500 3-4 3 2.0001 2.253 3-4 3.240 4.429R 4.325 2-4 3 4.429R 6.029 2-5 3 3.3314 9.901 1-5	76 16 26 8 20 20 20 20 60 5 5 5 0 .500 3-4 3 2.000L 2.253 3-4 3 2.000L 3.240 3-4 3 2.000L 5.690 2-5 4 2.000R 9.240 1-5	76 16 26 8 20 30 .50 2 2 0 .750 2 2 0 1.500 1-2 2 3.200R 2.321 1-2 2 3.200R 3.528 1-2 2 3.200R 4.753 1-3 2 6.242 1-4 4.0734 1-0.240 1-4	80 16 28 8 .10 .20 4 4 4 0 .585 3-4 1.996R 3.74 4 1.996R 4.1996R 4.4943 3-5 4 1.996R 4.1496 3-4 1.996R 4.1996R	80 16 28 8 .10 .30 .60 2 2 0 .750 2 2 0 1.500 3-4 3 2.000L 3.24 3 2.000L 3.24 3 2.000L 3.24 3 2.000L 3.24 3 2.000L 3.24 3 2.000L 3.24 3 3.24 3.25 3.24 3.20 3.24 3.24 3.20 3.24 3.24 3.20 3.24 3.20 3.24 3.20 3.24 3.20 3.24 3.20 3.24 3.20 3.24 3.20 3.24 3.20 3.24 3.20 3.24 3.20 3.00 3.0
Ax Spp. Hir Lo On Ax	h. Bass. le acing teh acing teh acing ad les acing ad les acing 50	e L XX XY C a1 a2 G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M M G N B M M M M M M M M M M M M M M M M M M	72 16 24 8 .10 .20 .70 4 4 0 .585 3-4 1.996R 1.496 3-4 1.996R 2.6632 3-4 4 2.663L 5.121 3-5 4 2.663L 6.855 4 2.663L 6.855 11.097	72 16 24 8 .10 .30 .60 2 2 0 .750 2 0 1.500 3-4 3 2.000L 2.253 3-4 3.240 2-4 34.000R 4.574 2-4 34.000R 6.287 1-5 3 1.600R 10.432	72 16 24 8 .20 .20 .60 -5 5 0 .500 3-4 3 2.0001L 1.280 3-4 3.2001L 2.253 3-4 3.210 2-4 3 2.667R 4.386 2-4 3 2.667R 4.386 2-4 3 2.667R 1-5 3 2.400R	72 16 24 8 .20 .30 .50 2 2 0 .750 2 1 2 0 1.500 1-2 3.200R 2.321 1-2 2 3.200R 4.753 1-4 2 3.6741 6.422 1-4 2 3.6741 10.540	76 16 26 8 .10 .20 .70 4 4 0 .585 3-4 4 1.996R 1.496 3-4 4 1.996R 3.785 3-4 4 1.996R 4.943 3-5 4 2.996R 4.6644 2-5 4.448R 10.662	76 16 26 8 .10 .30 .60 2 2 0 .750 2 2 0 .750 3-4 3 2.0001 2.2233 3-4 3.240 2-4 3 4.429R 4.325 2-4 3 4.429R 6.029 3.3331 9.901	76 16 26 8 .20 .20 .20 .60 .5 5 5 0 .500 3-4 3 2.000L 1.280 3-4 3 2.000L 3.240 3-4 3 2.000L 4.232 3-5 4 3.000L 4.232 3-5 4 2.000L 4.232 3-5 4 2.000L 9.240	76 16 26 8 20 30 50 2 2 0 .750 2 2 0 1.500 1-2 2 3.200R 2.321 1-2 2 3.200R 4.753 1-3 2 8.561 6.242 1-4 2 4.073L	80 16 28 8 .10 .20 .70 4 4 0 .585 3–4 4 1.996R 1.496 3-785 3–4 4 1.996R 4.943 3-585 3-4 4 1.996R 4.996	80 16 28 8 .10 .30 .60 .60 .2 2 0 .750 2 2 0 1.500 3-4 3 2.0000L 2.253 3-4 3 2.000L 4.232 2-4 3 4.857R 5.775 2-5 3 .222L 9.401

TABLE 7.13 (Continued)

Tru	ick N	э.	91	92	93	94	95	96	
Wh	. Base	e L	80	80	84	84	84	84	
AxI	le	X	16	16	16	16	16	16	
	cing	X'	28	28	30	30	30	30	
Hite	ch	C	8	8	8	- 8	8	8	
Loa	ıd	aı	.20	.20	.10	.10	.20	.20	
On		\mathbf{a}_2	.20	.30	.20	.30	.20	.30	
Axl	les	a ₃	.60	.50	.70	.60	.60	.50	The second of th
1		G	5	2	4	2	5	2	
	10	N B	5 0	2	4	2 0	5	2	
		M	.500	$\begin{matrix} 0 \\ .750 \end{matrix}$	$\frac{0}{.585}$.750	0 .500	$\frac{0}{.750}$	
-									
- 1	20	G N	$_{3-4}^{3-4}$	2 2	$_{4}^{3-4}$	2 2	$_{3-4}^{3-4}$	2 2	
	20	B	2.000L	0	1.996R	ő	2.000L	0	
		M	1.280	1.500	1.496	1.500	1.280	1.500	
-		G	3-4	1-2	3-4	3-4	3-4	1-2	
	30	N	3-4 3	$\frac{1-z}{2}$	3…4 4	3–4 3	3-4 3	1z 2	
ı	50	B	2.000L	3.200R	1.996R	2.000L	2.900 L	3.200R	
		M	2.253	2.321	2.632	2.253	2.253	2.321	
-		G	3-4	1-2	3-4	3-4	3-4	1-2	
	40	N	3	2	4	3	3	2	
1 25	••	B	2.000L	3.200R	1.996R	2.000L	2.000L	3.200R	
54		M	3.240	3.528	3.785	3.240	3.240	3,528	
Span-Feet		G	3-4	1-2	3-4	3-4	3-4	1-2	
E.	50	N	3	2	4	3	3	2	
S		\mathbf{B}	2.000L	3.200R	1.996R	2.000L	2.000L	$3.200\mathbf{R}$	
		M	4.232	4.753	4.943	4.232	4.232	4.753	
-		G	2-4	1-3	3-5	2-4	2-4	1-2	
	60	N	3	2	4	3	3	2	
		В	$3.333\mathbf{R}$	1.107L	$3.662 \mathbf{L}$	5.286R	$3.667\mathrm{R}$	$3.200\mathrm{R}$	
- 1_		M	5.511	6.081	6.229	5.526	5.335	5.986	
- 1		G	2-5	1-4	2-5	14	2-5	1-4	
	80	N	4	2	4	2	4	2	
- 1		В	$2.000\mathbf{R}$	4.473L	1.375R	7.500L	2.000R	4.873L	
_		M	8,840	9.942	9.794	8.962	8.440	9.648	
İ		G	1–5	1-4	1-5	1-5	1-5	14	
	100	Ñ	3	2	3	3	3	2	
		В	2.800R	4.473L	.063L	2.200R	3.000R	4.873L	
		M	13.478	14.066	14.337	13.648	12.890	13.764	

Table 7.14

CONTROLLING CONDITIONS AND MAXIMUM MOMENTS IN SIMPLE SPANS PRODUCED BY THE TYPE 3-S2-3 TRUCKS WEIGHING ONE KIP EACH



Eighty-four variations in the Type 3-S2-3 truck are given in this Table. Each truck number, from 1 to 84, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

Tr	ick No	o.	1	2	3	4	5	6	7	8	9	10
Wh	ı. Base	e L	44	44	44	44	48	48	48	48	52	52
$\overline{\mathbf{A}}\mathbf{x}$	le	X	8	8	8	8	8	8	8	8	8	8
Spa	acing	$\mathbf{X'}$	8	8	8	8	10	10	10	10	12	12
Hi	tch	C	8	8	8	8	8	8	8	8	8	8
Lo	ad	a ₁	.05	.05	.10	.10	.05	.05	.10	.10	.05	.05
On		\mathbf{a}_2	.20	.30	.20	.30	.20	.30	.20	.30	.20	.30
Ax	les	a 3	.75	.65	.70	.60	.75	.65	.70	.60	.75	.65_
		G	7-8	2-3	7–8	2-3	7–8	2-3	7-8	2-3	7-8	2-3
	10	N	8	3	8	3	8	3	8	3	8	3
		В	1.000R	1.000R	1.000R	1.000R	1.000R	1.000R	1.000R	1.000R	1.000R	1.000R
ł		M	.480	.480	.448	.480	.480	.480	.448	.480	.480	.480
- 1	00	G	4-6	$^{2-4}$	4-6	$^{2-4}$	4-6	1-3	4-6	1-3	4-6	1-3
Ì	20	N	$_{.667L}^{5}$	$^3_{.512 m L}$	5	3	5	2	5	2	5	2
		B M	1.360	1.336	1.270	1.324	1.360	1.286L 1.252	1.270	1.301	$\frac{.667L}{1.360}$	1.286L 1.252
	30	G	2-6	1-5	2-6	1-5	36	1–5	3-6	1-5	$^{4-6}$	1–5
	30	N B	$^{-4}_{.308L}$	3 1.148L	4 .194L	$^3_{.469L}$	$_{.728\mathrm{R}}^{5}$	$^{3}_{1.574 m L}$	$^{5}_{.808 m R}$	$^{3}_{.844L}$	5 .667L	3 2.000L
		M	2.677	2.702	2.531	2.704	2.535	2.465	2.371	2.475	2.482	2.236
			28	1-6	2-8	1-6	4-8	2-6	4-8	1-5	4-8	2-6
	40	N	5	4	5	3	6	4	6	3	6	4
ᇴ		$\hat{\mathbf{B}}$	1.684L	1.298R	1.556L	1.974L	.400L	1.102R	.400L	.844L	.800L	1.536R
Ĕ.		M	4.568	4.391	4.295	4.374	4.203	4.081	3.923	4.071	3.912	3.801
Span-Feet		G	2-8	1-8	1–8	1–8	2-8	2-8	2-8	1-6	2-8	1-6
ã	50	N	5	5	5	4	5	5	5	3	5	4
02		\mathbf{B}	1.684L	.100R	.200 L	1.100L	1.790L	.484L	1.645L	2.448L	1.895L	$2.243\mathbf{R}$
		M	6,929	6.680	6.541	6.424	6.436	6.100	6.059	5.931	5.943	5.585
		\mathbf{G}	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8
	60	N	5	5	5	4	5	5 _	5	4 _	5	5
		В	1.000L	.100R	.200L	1.100L	1.050L	.190R	.180L	.940L	1.100L	.280R
		M	9.417	9.180	9.041	8.920	8.868	8.571	8.461	8.275	8.320	7.961
		G	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8
	80	N	5	5	5	4	5	5	5	4	5	5
		В	1.000L	.100R	.200L	1.100L	1.050L	.190R	.180L	.940L	1.100L	.280R
		M	14.413	14.180	14.041	13.915	13.864	13.570	13.460	13.271	13.315	12.961
	100	G	1-8	1-8	1-8	1-8	1-8	1–8	1–8	1-8	1-8	1_8
	100	N	5	5 100D	5	4	5	5	5	4	5 1 100T	5
		В	1.000L	.100R	.200L	1.100L	1.050L	.190R	.180L	.940L	1.100L	.280R
		M	19.410	19.180	19.040	18.912	18.861	18.570	18.460	18.269	18.312	17.961

a₁, a₂, and a₃-Represent the ratio of gross vehicle weight on axles.

 $G\mathrm{--Axle}$ group causing maximum moment, thus, 1-3 means axles 1, 2, and 3.

N-Number of critical axle under which maximum moment occurs.

B-Distance to right or left of mid-span to point of maximum moment.

M-Maximum moment.

	ick No		11	12	13	14	15	16	17	18	19	20
Wh	. Base	X	52 8	52 8	56 8	56 8	56 8	56 8	8	60 8	60 8	60 8
Spa	cing	X'	12	12	14	14	14	14	16	16	16	16
Hit		Caı	.10	.10	.05	.05	.10	.10	.05	.05	.10	.10
On Ax		a ₂ a ₃	.20 .70	.30 .60	.20 .75	.30 .65	.20 .70	.30	.20 .75	.30 .65	.20 .70	.30 .60
1		G	7–8	2-3	7–8	2-3	7-8	2–3	7-8	23	7-8	2-3
	10	N B M	1.000R .448	3 1.000R .480	1.000R .480	3 1.000R .480	8 1.000R .448	3 1.000R .480	8 1.000R .480	3 1.000R .480	8 1.000R .448	3 1.000R .480
	20	G N	4–6 5	$^{1-3}_{2}$	4-6 5	$^{1\!-\!3}_2$	$^{4-6}_{5}$	$^{1-3}_{2}$	4–6 5	$^{1-3}_{2}$	4-6 5	$^{1-3}_2$
		B M	.667L 1.270	.250R 1.301	.667L 1.360	.286L 1.252	.667L 1.270	.250R 1.301	.667L 1.360	.286L 1.252	.667L 1.270	.250R 1.301
	30	G N	$^{\mathbf{4-6}}_{5}$	1-3 2	$^{4-6}_{5}$	4-6 5	4–6 5	$^{1-3}_2$	$^{4-6}_{5}$	$^{4-6}_{5}$	$^{4-6}_{5}$	$^{1-3}_2$
		B M	0.667L 2.316	250R 2.301	$\frac{.667L}{2.482}$	0.667L 0.151	2.316	2.30R	$\frac{.667L}{2.482}$	2.151	$^{.667}_{2.316}$	2.50R 2.301
		G	2-6	1-5	3-6	2-6	2-6	1-5	3-6	1-5	36	1-5
+	40	N B	$^{4}_{.452 m R}$	3 1.219 $f L$	$_{1.091\mathrm{R}}^{5}$	4 1.971R	4 .774R	$^{3}_{1.594L}$	$_{1.273\mathrm{R}}^{5}$	$^{\color{red}3}_{2.853L}$	$_{1.385\mathrm{R}}^{5}$	3 1.969L
Span-Feet		M	3.683	3.844	3.716	3.527	3.489	3.621	3.622	3.284	3.385	3.402
ban	50	G N	2-8 5	$^{1-6}_{3}$	$^{\mathbf{4-8}}_{6}$	$^{1-6}_{4}$	$^{4-8}_{6}$	$^{1-6}_{3}$	4-8 6	2-6 4	4-8 6	$^{1-5}_{3}$
S	•	В	1.734L	2.921L	1.200L	2.716R	1.200L	3.395L	1.600L	2.406R	1.600L	1.969L
		- M - G	5.584 1–8	5.610 1-8	5.497 2-8	5.270 2-8	5.130 2-8	5.295 1–6	$\frac{5.213}{2-8}$	4.965 1-7	4.866 2–8	4.990 1-6
	60	N	5	4	5	5	5	3	5	4	5	3
		B M	0.160 m L $0.7.880$.780 L 7.630	2.000L 7.814	7.353	1.822L 7.350	3.395L 7.166	$\frac{2.106L}{7.320}$.621R 6.796	1.911L 6.875	3.869L 6.850
		G	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1_8	1-8	1-8
	80	N B	.160 L	.780L	$_{1.150}^{5}$	5 .370R	5 ,140L	$^{4}_{.620L}$	$_{1.200 m L}^{5}$	$^{5}_{.460 m R}$	5 .120L	4 .460L
		M	12.880	12.628	12,767	12.352	12.300	11.985	12.218	11.743	11.720	11.343
	100	G N	1–8 5	1–8 4	$^{\mathbf{1-8}}_{5}$	1–8 5	1–8 5	1-8 4	1–8 5	1–8 5	1–8 5	1–8 4
		B M	.160L 17.880	.780L 17.626	1.150L 17.763	.370R 17.351	.140L 17.300	.620L 16.984	1.200L 17.214	.460R 16.742	120L 16.720	.460L 16.342
Tr	uck No		21	22	23	24	25	26	27	28	29	
TX71								20				30
	ı. Base		64	64	64	64	68	68	68	68	48	30 48
Ax	le	X	64 8	64 8	64 8	64 8	68 8	68 8	68 8	68 8	48 12	48 12
Ax	le acing		64	64	64	64	68	68	68	68	48	48
Ax Spa Hit Los	le acing tch ad	X X' C a ₁	8 18 8 .05	8 18 8 .05	8 18 8 .10	8 18 8 .10	68 8 20 8	68 8 20 8 .05	68 8 20 8 .10	68 8 20 8 .10	48 12 8 8	48 12 8 8 .05
Ax Spa Hit	le acing tch ad	X X' C	8 18 8	64 8 18 8	64 8 18 8	8 18 8	68 8 20 8	68 8 20 8	68 8 20 8	68 8 20 8	48 12 8 8	48 12 8 8
Ax Spa Hit Loa On	le acing tch ad les	X X' C a ₁ a ₂ a ₃ G	64 8 18 8 .05 .20 .75 7-8	64 8 18 8 .05 .30 .65 2-3	64 8 18 8 .10 .20 .70	8 18 8 .10 .30 .60 2-3	68 8 20 8 .05 .20 .75 7–8	68 8 20 8 .05 .30 .65 2–3	68 8 20 8 .10 .20 .70 7–8	68 8 20 8 .10 .30 .60 2-3	48 12 8 8 .05 .20 .75 7–8	48 12 8 8 .05 .30 .65
Ax Spa Hit Loa On	le acing tch ad	X X' C a ₁ a ₂ a ₃ G N B	8 18 8 .05 .20 .75 7-8 8 1.000R	64 8 18 8 .05 .30 .65 2-3 3 1.000R	8 18 8 .10 .20 .70 7–8 8 1.000R	8 18 8 .10 .30 .60 2-3 3 1,000R	68 8 20 8 .05 .20 .75 7–8 8 1.000R	68 8 20 8 .05 .30 .65 2-3 3 1.000R	68 8 20 8 .10 .20 .70 7–8 8 1.000R	68 8 20 8 .10 .30 .60 2–3 3 1.000R	48 12 8 8 .05 .20 .75 7-8 8 1.000R	48 12 8 .05 .30 .65 2-3 3 1.000R
Ax Spa Hit Loa On	le acing tch ad les	X X' C a ₁ a ₂ a ₃ G N B M	64 8 18 8 .05 .20 .75 7–8 8	64 8 18 8 .05 .30 .65 2-3	64 8 18 8 .10 .20 .70 7–8	8 18 8 .10 .30 .60 2-3 3	68 8 20 8 .05 .20 .75 7–8 8	68 8 20 8 .05 .30 .65 2–3 3	68 8 20 8 .10 .20 .70 7–8 8 1.000R	68 8 20 8 .10 .30 .60 2-3 3 1.000R .480	48 12 8 8 .05 .20 .75 7–8 8 1.000R	48 12 8 8 .05 .30 .65 2-3 3 1.000R .480
Ax Spa Hit Loa On	le acing tch ad les	X X' C a ₁ a ₂ a ₃ G N B M	8 18 8 .05 .20 .75 7-8 8 1.000R .480 4-6 5	64 8 18 8 .05 .30 .65 2-3 3 1.000R .480	64 8 18 8 .10 .20 .70 7–8 8 1.000R .448 4–6	8 18 8 .10 .30 .60 2-3 3 1.000R .480 1-3 2	68 8 20 8 .05 .20 .75 7–8 8 1.000R .480 4–6 5	68 8 20 8 .05 .30 .65 2–3 3 1.000R .480	68 8 20 8 .10 .20 .70 7–8 1.000R .448	68 8 20 8 .10 .30 .60 2-3 3 1.000R .480 1-3 2	48 12 8 8 .05 .20 .75 7–8 8 1.000R .480 4–6 5	48 12 8 8 .05 .30 .65 2-3 3 1.000R .480 2-4 3
Ax Spa Hit Loa On	le acing tch ad les	X X' C a ₁ a ₂ a ₃ G N B M	8 18 8 .05 .20 .75 7–8 1.000R .480 4–6	64 8 18 8 .05 .30 .65 2-3 1.000R .480	64 8 18 8 .10 .20 .70 7–8 8 1.000R .448 4–6	8 18 8 .10 .30 .60 2-3 1.000R .480	68 8 20 8 .05 .20 .75 7–8 8 1.000R .480 4–6	68 8 20 8 .05 .30 .65 2–3 1.000R .480	68 8 20 8 .10 .20 .70 7–8 8 1.000R .448	68 8 20 8 .10 .30 .60 2-3 3 1.000R .480 1-3	48 12 8 8 .05 .20 .75 7–8 8 1.000R .480 4–6	48 12 8 8 .05 .30 .65 2-3 1.000R .480 2-4
Ax Spa Hit Loa On	le acing tch all les 10	X X' C a ₁ a ₂ a ₃ G N B M G N B M	8 18 8 .05 .20 .75 7-8 8 1.000R .480 4-6 5 .667L 1.360 4-6	64 8 18 8 .05 .30 .65 2-3 1.000R .480 1-3 2 .286L 1.252 4-6	64 8 18 8 .10 .20 .70 7–8 8 800R .448 4–6 5 .667L 1.270 4–6	64 8 18 8 .10 .30 .60 2-3 1.000R .480 1-3 2 .250R 1.301 1-3	68 8 20 8 .05 .20 .75 7–8 8 1.000R .480 4–6 5 .667L 1.360 4–6	68 8 20 8 .05 .30 .65 2-3 1.000R .480 1-3 2 .286L 1.252 4-6	68 8 20 8 .10 .20 .70 7–8 8 1.000R .448 4–6 5 .667L 1.270 4–6	68 8 20 8 .10 .30 .60 2-3 3 1.000R .480 1-3 2 .250R 1.301	48 12 8 8 .05 .20 .75 7–8 8 1.000R .480 4–6 5 .667L 1.360 2–6	48 12 8 8 .05 .30 .65 2-3 1.000R .480 2-4 3 .512L 1.336 2-5
Ax Spa Hit Loa On	le acing tch ad les	X X' C a ₁ a ₂ a ₃ G N B M G N B M	8 8 8 .05 .20 .75 7–8 8 1.000R .480 4–6 5 .667L 1.360	64 8 8 .05 .30 .65 2-3 3 1.000R .480 1-3 2.286L 1.252 4-6 5.667L	64 8 18 8 .10 .20 .70 7-8 8 1.000R .448 4-6 5.667L 1.270 4-6 5.667L	64 8 18 8 .10 .30 .60 2-3 3 1.000R .480 1-3 2 .250R 1.301 1-3 2 .250R	68 8 20 8 .05 .20 .75 7-8 1.000R .480 4-6 5.667L 1.360 4-6 5.667L	68 8 20 8 .05 .30 .65 2-3 3 1.000R .480 1-3 2 .286L 1.252 4-6 5	68 8 20 8 .10 .20 .70 7-8 1.000R .448 4-6 5 .667L 1.270 4-6 5	68 8 20 8 .10 .30 .60 .60 2-3 3 1.000R .480 1-3 2 .250R 1.301 1-3 2 .250R	48 12 8 8 .05 .20 .75 7–8 1.000R .480 4–6 5 .667L 1.360 2–6 4	48 12 8 8 .05 .30 .65 2-3 1.000R .480 2-4 3 .512L 1.336 2-5 3 1.786L
Ax Spa Hit Loa On	le acing tch all les 10	X X' C a ₁ a ₂ a ₃ G N B M G N B M	64 8 18 .05 .20 .75 7–8 8 1.000R .480 4–6 5 .667L 1.360 4–6 5 .667L 2.482	64 8 18 8 .05 .30 .65 2-3 3 1.000R .480 1-3 2 .286L 1.252 4-6 5 .667L 2.151	64 8 18 8 .10 .20 .70 7-8 8 1.000R .448 5 .667L 1.270 4-6 5 .667L 2.316	64 8 18 8 .10 .30 .60 2-3 3 1.000R .480 1-3 2 .250R 1.301 1-3 2 .250R 2.301	68 8 20 8 .05 .20 .75 7–8 8 1.000R .480 4–6 5.667L 1.360 4–6 5.667L 2.482	68 8 20 8 .05 .30 .65 2-3 3 1.000R .480 1-3 2 .286L 1.252 4-6 5 .667L 2.151	68 8 20 8 8 1.10 .20 .70 7-8 8 1.000R .448 4-6 5.667L 1.270 4-6 5.667L 2.316	68 8 20 8 .10 .30 .60 2-3 3 1.0000R .480 1-3 2 .250R 1.301 1-3 2 .250R 2.350R	48 12 8 8 .05 .20 .75 7–8 8 1.000R .480 4–6 5.667L 1.360 2–6 4.308L 2.677	48 12 8 8 .05 .30 .65 2–3 3 1.000R0 .480 2–4 3 .512L 1.336 2–5 3 1.786L 2.660
Ax Spa Hit Loo On Ax	le acing tch all les 10	X X' C a ₁ a ₂ a ₃ G N B M G N B M G N B M	64 8 18 8 .05 .20 .75 7-8 8 1.000R .480 4-6 5 .667L 2.482 4-6 5	64 8 8 .05 .30 .65 2-3 3 1.000R .480 1-3 2.286L 1.252 4-6 5 .667L 2.151 4-6 5	64 8 18 8 .10 .20 .70 7–8 8 1.000R .448 4–6 5 .667L 1.270 4–6 5 .667L 2.316 4–6 5	64 8 18 8 .10 .30 .60 2-3 1.000R .480 1-3 2 .250R 1.301 1-3 2 .250R 2.301 1-3 2	68 8 20 8 .05 .20 .75 7–8 8 1.000R .480 4–6 5 .667L 1.360 4–6 5 .667L 2.482 4–6 5	68 8 20 8 .05 .30 .65 2-3 3 1.000R .480 1-3 2.286L 1.252 4-6 5 .667L 2.151 4-6 5	68 8 20 8 .10 .20 .70 .7-8 1.000R .448 4-6 5 .667L 1.270 4-6 5 .667L 2.316	68 8 20 8 .10 .30 .60 2-3 3 1.000R .480 1-3 2.250R 1.301 1-3 2 2.250R 2.301	48 12 8 8 .05 .20 .75 7–8 1.000R .480 4–6 5 .667L 1.360 2–6 4 308L 2.677 2–8 5	48 12 8 8 .05 .30 .65 2-3 1.000R 2-4 3 .512L 1.336 2-5 3 1.786L 2.660 2-7 4
Ax Spa Hit Loo On Ax	le acing tch ad les 10 20	X X' C a ₁ a ₂ a ₃ G N B M G N B B M G N B B M B B B B B B B B B B B B B B B B	64 8 18 8 .05 .20 .75 7–8 8 1.000R .480 4–6 5 .667L 2.482 4–6 5 .667L	64 8 18 8 .05 .65 2-3 1.000R .480 1-3 2 .286I 1.252 4-6 5 .667L 2.151 4-6 5	64 8 18 8 .10 .20 .70 7–8 8 1.000R .448 4–6 5 .6671L 1.270 4–6 5 .667L 2.316	64 8 18 8 .10 .60 2-3 1.000R .480 1-3 2.250R 1.301 1-3 2.250R 2.301 1-3 2.250R	68 8 20 8 .05 .20 .75 7–8 8 1.000R .480 4–6 .6671L 1.360 4–6 .6671L 2.482 4–6 .6671L	68 8 20 8 .05 .05 .65 2-3 3 1.000R .480 1-3 2 .286L 1.252 4-6 5 .667L 2.151 4-6 5 .667L	68 8 20 8 .10 .20 .70 7-8 8 .000R .448 4-6 5 .667L 2.316 4-6 5 .667L 2.316	68 8 20 8 .10 .80 .60 2-3 3 1.000R .480 1-3 2 .250R 1.301 1-3 2 .250R 1.301 1-3 2 .250R 1.300 1-3 2 .250R 1.300 1.3	48 12 8 8 .05 .20 .75 7–8 8 1.000R .480 4–6 .667L 1.360 2–6 4.308L 2.677 2–8 1.684L	48 12 8 8 .05 .30 .65 2-3 1.000R .480 2-4 3 .512L 1.336 2-5 3 1.786L 2.660 2-7 4 1.025L
Ax Spa Hit Loo On Ax	le acing tch ad les 10 20	X X' C a ₁ a ₂ a ₃ G N B M G N B M G N B M	64 8 18 8 .05 .20 .75 7-8 8 1.000R .480 4-6 5 .667L 2.482 4-6 5	64 8 8 .05 .30 .65 2-3 3 1.000R .480 1-3 2.286L 1.252 4-6 5 .667L 2.151 4-6 5	64 8 18 8 .10 .20 .70 7–8 8 1.000R .448 4–6 5 .667L 1.270 4–6 5 .667L 2.316 4–6 5	64 8 18 8 .10 .30 .60 2-3 1.000R .480 1-3 2 .250R 1.301 1-3 2 .250R 2.301 1-3 2	68 8 20 8 .05 .20 .75 7–8 8 1.000R .480 4–6 5 .667L 1.360 4–6 5 .667L 2.482 4–6 5	68 8 20 8 .05 .30 .65 2-3 3 1.000R .480 1-3 2.286L 1.252 4-6 5 .667L 2.151 4-6 5	68 8 20 8 .10 .20 .70 .7-8 1.000R .448 4-6 5 .667L 1.270 4-6 5 .667L 2.316	68 8 20 8 .10 .30 .60 2-3 3 1.000R .480 1-3 2.250R 1.301 1-3 2 2.250R 2.301	48 12 8 8 .05 .20 .75 7–8 1.000R .480 4–6 5 .667L 1.360 2–6 4 308L 2.677 2–8 5	48 12 8 8 .05 .30 .65 2-3 1.000R 2-4 3 .512L 1.336 2-5 3 1.786L 2.660 2-7 4
Ax Spa Hit Loa On	le acing tch ad les 10 20	X X X C a1 a2 a3 G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M G N B M M M G N B M M M G N M B M M M M M M M M M M M M M M M M M	64 8 18 8 .05 .20 .75 7–8 8 8.000R .480 4–6 5 .667L 2.482 4–6 5 .667L 3.605 2-64 4	64 8 18 8 .05 .65 2-3 3 1.000R .480 1-3 2 .286IL 1.252 4-6 5 .667L 2.151 4-6 5 .667L 3.125 2-6 4	64 8 18 8 .10 .20 .70 7–8 8 1.000R .448 4–6 5 .6671L 1.270 4–6 5 .667L 3.365 2–6 4	64 8 18 8 .10 .60 2-3 1.000R .480 1-3 2 .250R 1.301 1-3 2 .250R 2.301 1-3 2 .250R 3.301 1-3 2 .301 1-3 2 .300 1-3 2 .300 1-3 1.000 1-3 1.000 1-3 1.000 1-3 1.000	68 8 20 8 .05 .20 .75 7–8 1.000R .480 4–6 5 .6671L 2.482 4–6 5 .6671L 3.605 3–6 5	68 8 20 8 .05 .65 .65 2-3 1.000R .480 1-3 2.286L 1.252 4-6 5.667L 2.151 4-6 5.667L 3.125 2-6 4	68 8 20 8 .10 .20 7-8 8 1.000R .448 4-6 5 .667L 2.316 4-6 5 .667L 3.365 3-6 5	68 8 20 8 .10 .80 .60 2-3 3 1.000R .480 1-3 2 .250R 1.301 1-3 2 .250R 1.301 1-3 2 .250R 1.301 1-3 2 .250R 1.300 1-3 .250R 1.300 1-3 .250R 1.300 1-3 .250R 1.300	48 12 8 8 .05 .20 .75 7–8 8 1.000R .480 4–6 5 .667L 1.360 2–6 4.308L 2.677 2–8 1.684L 4.568 2–8 5	48 12 8 8 .05 .30 .65 2-3 3 1.000R .480 2-4 3 .512L 1.336 2-5 3 1.786L 2.660 2-7 4.382 2-8 5
Ax Spa Hit Loo On Ax	le acing teh ad les 10 20 40	X X X C a1 a2 a3 G N B M G G N B B M G G N B B M G G N B B M G G N B G G N B G G N B G G N B G G N G G G G	64 8 18 8 .05 .20 .75 8 1.000R .480 4–6 5 .667L 2.482 4–6 5 .667L 2.482 4–6 5 .667L 2.482	64 8 18 .05 .30 .65 2-3 3 1.000R .480 1-3 2 2.286L 1.252 4-6 5 .667L 2.151 4-6 5 .667L 2.125 2-6	64 8 18 8 .10 .20 .70 7–8 8 1.000R .448 4-6 5 .667L 2.316 4-6 5 .667L 2.316 4-6 5 .667L 2.316 2.667L 2.316 2.667L 2.316 2.667L 2.316 2.667L 2.316 2.667L 2.316 2.667L 2.316 2.667L 2.316 2.667L 2.316 2.667L 2.316 2.667L 2.316 2.667L 2.316 2.667L 2.316 2.667L 2.316 2.667L 2.316 2.667L 2.316 2.667L 2.316 2.667L 2.316 2.667L 2.316 3.667L 2.316 3.667L 2.316 3.667L 2.316 3.667L 2.316 3.667L 2.316 3.667L 2.316 3.667L 3.67L 3.7CL 3	64 8 18 8 .10 .30 .60 .2-3 1.000R .480 1-3 2.250R 1.301 1-3 2.250R 2.301 1-3 2.301 1-3 2.301 1-3	68 8 20 8 .05 .20 .75 7–8 8 1.000R .480 4–6 5 .667L 2.482 4–6 5 .667L 2.482 3.667L 3.605	68 8 20 8 .05 .30 .65 2-3 1.000R .480 1-3 2 .286L 1.252 4-6 5 .667L 2.151 4-6 5 .657L 3.125	68 8 20 8 .10 .20 .70 .7-8 8 1.000R .448 4-6 .5 .667L 1.270 4-6 5 .667L 2.316 4-6 5 .667L 3.365 3-6	68 8 20 8 .10 .30 .60 2-3 3 1.000R .480 1-3 2 .250R 2.350R 2.301 1-3 2 .250R 3.301 1-3	48 12 8 8 .05 .20 .75 7–8 8 1.000R .480 4–6 5 .667L 1.360 2–6 4 .308L 2.67 2–8 5 1.684L 4.568 2–8	48 12 8 8 .05 .30 .65 2-3 3 1.000R .480 2-4 3 .512L 1.336 2-5 3 1.786L 2.660 2-7 4 1.025L 4.322 2-8
Ax Sps Hit Los On Ax	le acing cheh acing cheh acing cheh ad les 10 20 30 40 50	X X X C a1 a2 a3 G N B B M C M B M B M B M C M B M B M B M B	64 8 18 8 .05 .20 .75 7–8 8 1.000R .480 4–6 5 .667L 2.482 4–6 5 .667L 3.605 2–6 4 1.231R 4.934 4.934	64 8 18 8 .05 .30 .65 2-3 1.000R .480 1-3 2 .286IL 1.252 4-6 5.667L 3.125 2-6 4 2.841R 4.696 1-6	64 8 18 10 20 20 70 7–8 1.000R .448 4–6 5 .667L 1.270 4–6 5 .667L 3.365 2–6 4 1.420R 4.655 2–8	64 8 18 8 .10 .30 .60 2-3 1.000R .480 1-3 2.250R 1.301 1-3 2.301 1-3 2.301 1-3 2.250R 3.301 1-4 4.770 1-6	68 8 20 8 .05 .20 .75 7–8 8 1.000R .480 4–6 .667L 1.360 4–6 .667L 3.605 3–6 5 1.637R 4.804 4.805 6.671L 6.771L 6.	68 8 20 8 .05 .65 .2-3 1.000 R .480 1-3 2 .286 L 1.252 4-6 5 .667 L 2.151 4-6 5 .637 L 3.125 2-6 4 3.275 R 4.434	68 8 20 8 .10 .20 7-8 8 1.000R .448 4-6 5 .667L 2.316 4-6 5 .667L 2.316 3.365 3-6 5 1.769R 4.493 4.493 4.493 4.493 4.493 4.493 4.493 4.493 4.493 4.493 4.493 4.493 4.494 4.493 4.493 4.493 4.494 4.493 4	68 8 20 8 .10 .80 .60 2-3 3 1.000R .480 1-3 2 .250R 1.301 1-3 2 .250R 1.301 1-3 2 .250R 2.301 1-3 2 .250R 2.301 1-3 2 .250R 1.301 1-3 2 .250R 1.301 1-3 2 .250R 1.301 1-3 2 .250R 1.301 1-3 2 .250R 1.301 1-3 2 .250R 1.301 1-3 2 .250R 1.301 1-3 2 .250R 1.301 1-3 2 .250R 1.301 1-3 2 .250R 1.301 1-3 2 .250R 1.301 1-3 2 .250R 1.301 1-3 2 .250R 1.301 1-3 2 .250R 1.301 1-3 2 .250R 1.301 1-3 2 .250R 1.301 1-4 .250R 1.301 1-5 .250R 1.301 1-5 .250R 1.301 1-5 .250R 1.301 1-5 .250R 1.301 1-5 .250R 1.301 1-5 .250R 1.301 1-5 .250R 1.301 1-5 .250R 1.301 1-5 .250R 1.301 1-5 .250R 1.301 1-5 .250R 1.301 1-5 .250R 1.301 1-5 .250R 1.301 1-5 .250R 1.301 1-5 .250R 1.301 1-5 .250R 1.301 1.508	48 12 8 8 8 .05 .20 .75 7–8 8 1.000R .480 4–6 5 .667L 1.360 2–6 4.308L 2.677 2–8 5 1.684L 4.568 2–8 1.684L 6.929 1–8	48 12 8 8 .05 .30 .65 2-3 1.000R .480 2-4 3 .512L 1.336 2-5 3 1.786L 2.660 2-7 4.382 2-8 5.527L 6.660 1-8
Ax Sps Hit Los On Ax	le acing teh ad les 10 20 40	X X X Y C a 1 a 2 a 2 a 3 a 3 G N B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M C N B M C	64 8 18 8 .05 .20 .75 7–8 1.000R .480 4–6 5 .667L 2.482 4–6 5 .667L 2.482 4–1 2.482 4–2 4–3 4.2314 4.3444 2–8 5 5 5 5 5 5 6 6 7 8 8 8 8 8 8 8 8 8 8 8 8 8	64 8 18 8 .05 .30 .65 2-3 3 1.000R .480 1-3 2 2.286L 1.252 4-6 5 .667L 2.151 4-6 5 .667L 2.125 2-6 4 4.696 1-6 4.696	64 8 18 10 20 70 7-8 1.000R .448 4-6 5 .667L 1.270 4-6 5 .667L 3.365 2-6 4 1.420R 4.655 2-8 5 2.000L	64 8 18 10 30 60 2-3 3 1.000R .480 1-3 2.250R 2.301 1-3 2.250R 2.301 1-3 2.250R 2.341L 4.770 1-6 3 4.342L	68 8 20 8 .05 .20 .75 7-8 1.000R .480 4-6 5 .667L 1.360 4-6 5 .667L 2.482 4-6 5 .667L 3.665 1.667L 3.480 4-8 6 5 1.667L 2.480 4-8 5 6.67L 4.800 4-8 6.800 4-8 6.800 4-8 6.800	68 8 20 8 20 8 .05 .65 2-3 3 1.000R .480 1-3 2 2.86L 1.252 4-6 5.667L 2.151 4-6 4 3.275R 4.434 1-6 4 4.135R	68 8 20 8 .10 .20 7-8 8 1.000R .448 4-6 5 .667L 1.270 4-6 5 .667L 2.316 4-6 5 .667L 3.365 3-6 5 1.769R 4.493 4-8 6 2.400L	68 8 20 8 .10 .60 2-3 3 1.000R .480 1-3 2.250R 1.301 1-3 2.250R 2.301 1-3 2.50R 3.301 1-5 3 2.719L 4.555 1-6 3	48 12 8 8 8 .05 .75 7–8 8 1.000R .480 4–6 5 .667L 1.360 2–6 4 308L 2.677 2–8 5 1.684L 4.568 2–8 5 1.684L 6.929 1–8 5 1–8 5 1–8 1–8 1–8 1–8 1–8 1–8 1–8 1–8	48 12 8 8 .05 .30 .65 2-3 3 1.000R .480 2-4 3 .512L 1.336 2-5 3 1.786L 2.660 2-7 4 1.025L 4.382 2-8 5 .527L 6.660 1-8 5
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Ax Spa Hit Loo On Ax	le acing tech and les 10 20 30 40 50 60 80	XXX C C C C C C C C C C C C C C C C C C	64 8 18 8 .05 .20 .75 .78 1.000R .480 4–6 5 .667L 2.482 4–6 5 .667L 2.482 4–6 4 1.2318 4.944 2–8 5 1.2511L 6.827 1–8 1.2501 1.2501 1.2501	64 8 18 8 .05 .30 .65 2-3 3 1.000R .480 1-3 2 2.86L 1.252 4-6 5 .667L 2.125 2-6 4 4.696 1-6 4 3.662R 6.476 1-8 5.550R 11.134 11.134	64 8 18 18 20 20 70 7-8 1.000R .448 4-6 5 .667L 1.270 4-6 5 .667L 3.365 2-6 4 1.420R 4.655 2-8 5 1.000L 1.270	64 8 18 18 10 .30 .60 2-3 1.000R .480 1-3 2 .250R 1.301 1-3 2 .250R 2.301 1-3 3 4.770 1-6 3 4.344L 4.770 1-6 3 4.342L 6.539 1-8 4 .3001 1-8	68 8 20 8 .05 .20 .75 7-8 1.000R .480 4-6 5 .667L 1.360 4-6 5 .667L 2.482 4-6 5 .667L 2.482 4-8 5 1.667L 3.66 5 1.667L 3.66 5 1.667L 3.66 5 1.667L 3.66 5 1.667L 3.66 5 1.667L 3.66 5 1.667L 3.66 5 1.667L 3.66 5 1.667L 3.66 5 1.667L 3.66 5 1.667L 3.66 5 1.667L 3.66 5 1.667L 3.66 5 1.667L 3.66 5 1.667L 3.66 5 1.667L 3.66 5 1.667L 3.66 5 1.667L 3.66 5 1.667L 3.66 5 1.667L 4.80 4-8 5 1.667L 4.80 4-8 5 1.667L 4.80 4-8 5 1.667L 4.80 4-8 5 1.667L 4.80 4-8 5 1.667L 4.80 4-8 5 1.667L 4.80 4-8 5 1.667L 4.80 4-8 5 1.667L 4.80 4-8 5 1.667L 4.80 4-8 5 1.667L 4.80 4-8 5 1.667L 4.80 4-8 5 1.667L 4.80 4-8 5 1.667L 4.80 4-8 5 1.667L 4.80 4.80 4.80 4.80 4.80 4.80 4.80 4.80 4.80 4.80 4.80 4.80 5 4.80	68 8 20 8 .05 .30 .65 2-3 3 1.000R .480 1-3 2 2.2861 1.252 4-6 5.6671L 2.151 4-6 4 3.275R 4-4 4.3275R 4.434 1-6 4.135R 6.171 1-8 5.640R 10.525 1-8	68 8 20 8 10 20 7-8 8 1.000R .448 4-6 5 .667L 2.316 4-6 5 .667L 2.316 3-6 5 1.769R 4.493 4-8 6.087 1-8 5 .0861 10.008 10.0	68 8 20 8 .10 .60 2-3 3 1.000R .480 1-3 2.250R 1.301 1-3 2.250R 2.301 1-3 2.250R 3.301 1-5 3 2.719L 4.816L 6.234 1.4816L 6.234 1.40L 10.060	48 12 8 8 8 .05 .75 7-8 8 1.000R .480 4-6 5 .667L 1.360 2-6 4 .308L 2.677 2-8 5 1.684L 4.568 2-8 5 1.684L 4.929 1-8 5 .900L 9.314 1-8 5 .900L 1.310 1.480	48 12 8 8 .05 .30 .65 2-3 3 1.000R .480 2-4 3 .512L 1.336 2-5 3 1.786L 2.660 2-7 4 1.025L 4.382 2-8 5.527L 6.660 1-8 5.200R 9.081 1-8 5.200R 1.28 1.
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On Ax		a ₂	.20 .70	.30 .60	.20 .75	$\begin{array}{c} .30 \\ .65 \end{array}$.20 .70	.30 .60	.20 .75	.30 .65	.20 .70	.30 .60
1111		G	7–8	2-3	7-8	2-3	7-8	2-3	7-8	2-3	7–8	2-3
	10	N B	8 1.000R	3 $1.000R$	8 1.000R	3 1.000R	$^{8}_{1.000R}$	3 1.000R	8 1.000R	$^3_{1.000 m R}$	8 1.000R	$3 \\ 1.000 R$
		M	.448	.480	.480	.480	.448_	.480	.480	.480	.448	.480
	20	G N	4-6 5	$\frac{2-4}{3}$	$^{4-6}_{5}$	$\substack{2-3\\3}$	$^{4-6}_{5}$	$^{2-3}_{3}$	$^{4-6}_{5}$	$^{2-3}_3$	$\begin{array}{c} 4-6 \\ 5 \end{array}$	2–3 3
		B M	.667L 1.270	.429L 1.324	1.360	1.000R 1.215	1.270	1.000R 1.215	$\frac{.667L}{1.360}$	1.000R 1.215	0.667L 1.270	$1.000\mathbf{R} \\ 1.215$
		G	2-6	2-5	3-6	2-5	3-6	2-5	4-6	2-5	4-6	2-5
İ	30	N B	4 .194L	3 $1.667L$	$^{5}_{.728\mathbf{R}}$	$^{3}_{2.250\mathbf{L}}$	$_{.808 m R}^{5}$	3 2.111L	$^{5}_{.667} { m L}$	3 2.715 L	.667L	$^{3}_{2.556}$ L
		M	2.531	2.600	2.535	2.435	2.371	2.391	2.482	2.217	2.316	2.187
	40	G N	$^{\mathbf{2-8}}_{5}$	1–6 3	4–8 6	$^{2-6}_{4}$	4–8 6	2-6 4	4-8 6	$^{2-6}_{4}$	$^{2-6}_{4}$	15 3
ee t		B M	1.556L 4.295	1.711L 4.156	4.203	1.102R 4.081	3.923	1.273R 3.867	.800L 3.912	1.536R 3.801	3.683	.907L 3.633
Span-Feet		G	2-8	2-8	2-8	2-8	2-8	2-8	2-8	2-7	2-8	1-6
Spa	50	N B	$^{5}_{1.556L}$	$^{5}_{.333\mathbf{L}}$	$_{1.790 \mathbf{L}}^{5}$	$_{.484L}^{5}$	5 1.645L	$^{5}_{.267L}$	5 1.895L	.610L	$^{5}_{1.734L}$	$^3_{2.658 \mathrm{L}}$
		M	6.534	6.272	6.436	6.100	6.059	5.732	5.943	5.556	5.584	5.387
	60	G N	1–8 5	1–8 4	2-8 5	2-8 5	2-8 5	18 4	2-8 5	2-8 5	2–8 5	2-8 5
		B M	0 8.840	.900L 8.714	1.790L 8.801	.484L 8.474	1.645L 8.301	.740L 8.069	1.895L 8.307	$\frac{.442L}{7.913}$	1.734L 7.825	.200L 7.441
		G	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8
	80	N B	5 0	.900L	5 .950L	5 .290R	$^{5}_{.020 m R}$.740L	$_{1.000L}^{5}$	$_{ m .380R}^{ m 5}$	$_{.040 m R}$.580 L
		M	13.840	13.710	13.761	13.471	13.260	13.067	13.213	12.862	12.680	12.424
	100	G N	1-8 5	1–8 4	18 5	1–8 5	18 5	1–8 4	1–8 5	1–8 5	1-8 5	1–8 4
		B M	0 18.840	.900L 18.708	.950L 18.759	.290R 18,471	.020R 18.260	.740L 18.065	1.000L 18.210	.380R 17.861	.040R 17.680	.580L 17.423
-	uck N		41	42	43	44	45	46	47	48	49	50
W	n. Bas	e L	60	42 60	60	60	45 64	46 64	47 64	48 64	68	68
Wi	n. Bas	e L X X'	60 12 14	42 60 12 14	60 12 14	60 12 14	45 64 12 16	46 64 12 16	47 64 12 16	48 64 12 16	68 12 18	68 12 18
MI Ax Sp:	n. Base le acing tch	e L X X' C	60 12 14 8	42 60 12 14 8	60 12 14 8	60 12 14 8	45 64 12 16 8	46 64 12 16 8	47 64 12 16 8	48 64 12 16 8	68 12 18 8	68 12 18 8
Ax Sp: Hi- Lo. On	n. Base le acing tch ad	E L X X' C a ₁ a ₂	60 12 14 8 .05 .20	42 60 12 14 8 .05 .30	60 12 14 8 .10 .20	60 12 14 8 .10	45 64 12 16 8 .05 .20	46 64 12 16 8 .05 .30	47 64 12 16 8 .10 .20	48 64 12 16 8 • .10 .30	68 12 18 8 .05 .20	68 12 18 8 .05 .30
Ax Sp: Hi- Lo	n. Base le acing tch ad	e L X X' C a ₁ a ₂ a ₃	60 12 14 8 .05 .20 .75	42 60 12 14 8 .05 .30 .65	60 12 14 8 .10 .20 .70	60 12 14 8 .10 .30 .60	45 64 12 16 8 .05 .20	46 64 12 16 8 .05 .30	47 64 12 16 8 .10 .20 .70	48 64 12 16 8 • .10 .30 .60	68 12 18 8 .05 .20 .75	68 12 18 8 .05 .30 .65
Ax Sp: Hi- Lo. On	n. Base le acing tch ad	E L X X' C a ₁ a ₂ a ₃ G N	60 12 14 8 .05 .20 .75 7–8 8	42 60 12 14 8 .05 .30 .65 2–3	60 12 14 8 .10 .20 .70 7-8 8	60 12 14 8 .10 .30 .60 2-3 3	45 64 12 16 8 .05 .20 .75 7–8 8	46 64 12 16 8 .05 .30 .65 2-3 3	47 64 12 16 8 .10 .20 .70 7-8 8	48 64 12 16 8 • .10 .30 .60 2-3 3	68 12 18 8 .05 .20 .75 7–8	68 12 18 8 .05 .30 .65 2-3
Ax Sp: Hi- Lo	n. Base le acing tch ad les	e L X X' C a ₁ a ₂ a ₃ G	60 12 14 8 .05 .20 .75 7-8	42 60 12 14 8 .05 .30 .65 2-3 1.000R .480	60 12 14 8 .10 .20 .70 7-8 8 1.000R .448	60 12 14 8 .10 .30 .60 2-3 3 1.000R .480	45 64 12 16 8 .05 .20 .75 7–8 8 1.000R .480	46 64 12 16 8 .05 .30 .65 2-3 3 1.000R .480	47 64 12 16 8 .10 .20 .70 7-8 8 1.000R .448	48 64 12 16 8 • .10 .30 .60 2-3 3 1.000R .480	68 12 18 8 .05 .20 .75	68 12 18 8 .05 .30 .65 2-3 1.000R .480
Ax Sp: Hi- Lo. On	n. Basele acing tech ad les	e L X X' C a ₁ a ₂ a ₃ G N B M	60 12 14 8 .05 .20 .75 7–8 8 1.000R .480	42 60 12 14 8 .05 .30 .65 2-3 1.000R .480 2-3	60 12 14 8 .10 .20 .70 7–8 8 1.000R .448	60 12 14 8 .10 .30 .60 2-3 1.000R .480 2-3	45 64 12 16 8 .05 .20 .75 7–8 8 1.000R .480	46 64 12 16 8 .05 .30 .65 2-3 3 1.000R .480 2-3	47 64 12 16 8 .10 .20 .70 7–8 8 1.000R .448	48 64 12 16 8 • .10 .30 .60 2-3 3 1.000R .480 2-3	68 12 18 8 .05 .20 .75 7–8 8 1.000R .480 4–6	68 12 18 8 .05 .30 .65 2-3 1.000R .480 2-3
Ax Sp: Hi- Lo. On	n. Base le acing tch ad les	e L X X' C a ₁ a ₂ a ₃ G N B M G N B	60 12 14 8 .05 .20 .75 7-8 8 1.000R .480 4-6 5	42 60 12 14 8 .05 .30 .65 2-8 1.000R .480 2-3 1.000R	60 12 14 8 .10 .20 .70 7-8 8 1.000R .448 4-6 5	60 12 14 8 .10 .30 .60 2-3 3 1.000R .480 2-3 1.000R	45 64 12 16 8 .05 .20 .75 7–8 8 1.000R .480 4–6 5	46 64 12 16 8 .05 .30 .65 2-3 3 1.000R .480 2-3 3	47 64 12 16 8 .10 .20 .70 7-8 8 1.000R .448 4-6 5	48 64 12 16 8 • .10 .30 .60 2-3 3 1.000R .480 2-3 1.000R	68 12 18 8 .05 .20 .75 7–8 8 1.000R .480 4–6 5	68 12 18 8 .05 .30 .65 2-3 3 1.000R .480 2-3 3
Ax Sp: Hi- Lo. On	n. Basele acing tech ad les	e L X X' C a ₁ a ₂ a ₃ G N B M	60 12 14 8 .05 .20 .75 7-8 8 1.000R .480 4-6 .667L 1.360	42 60 12 14 8 .05 .30 .65 2-3 3 1.000R .480 2-3 3	60 12 14 8 .10 .20 .70 7–8 8 1.000R .448 4–6 5	60 12 14 8 .10 .30 .60 2-3 3 1.000R .480 2-3 3	45 64 12 16 8 .05 .20 .75 7–8 8 1.000R .480	46 64 12 16 8 .05 .30 .65 2-3 3 1.000R .480 2-3	47 64 12 16 8 .10 .20 .70 7-8 8 1.000R .448	48 64 12 16 8 • .10 .30 .60 2-3 3 1.000R .480 2-3 3	68 12 18 8 .05 .20 .75 7–8 8 1.000R .480 4–6 5	68 12 18 8 .05 .30 .65 2-3 1.000R .480 2-3 3 1.000R
Ax Sp: Hi- Lo. On	n. Basele acing tech ad les	E L X X C B1 B2 B3 G N B M G N B M G N	60 12 14 8 .05 .20 .75 7-8 8 1.000R .480 4-6 5 .667L 1.360	42 60 12 14 8 .05 .30 .65 2-8 3 1.000R .480 2-3 1.000R 1.215	60 12 14 8 .10 .20 .70 7–8 8 1.000R .448 4–6 5 .667L 1.270 4–6 5	60 12 14 8 .10 .30 .60 2-3 3 1.000R .480 2-3 3 1.000R 1.215	45 64 12 16 8 .05 .20 .75 7–8 8 1.000R .480 4–6 5 667L 1.360 4–6 5	46 64 12 16 8 .05 .30 .65 2-3 1.000R .480 2-3 1.000R 1.215 4-6 5	47 64 12 16 8 .10 .20 .70 7–8 8 1.000R .448 4–6 5 .556L 1.270 4–6 5	48 64 12 16 8 • .10 .30 .60 2-3 3 1.000R .480 2-3 3 1.000R 1.215	68 12 18 8 .05 .20 .75 7–8 8 1.000R .480 4–6 5 .667L 1.360 4–6 5	68 12 18 8 .05 .30 .65 2-3 3 1.000R .480 2-3 3 1.000R 1.215 4-6 5
Ax Sp: Hi- Lo. On	n. Bass le acing tch ad les 20	e L X X' C a ₁ a ₂ a ₃ G N B M G N B	60 12 14 8 .05 .20 .75 7-8 8 1.000R .480 4-6 5 .667L 1.360 4-6	42 60 12 14 8 .05 .30 .65 2-3 1.000R .480 2-3 1.000R 1.215 4-6 5 .667L 2.151	60 12 14 8 .10 .20 .70 7–8 8 1.000R .448 4–6 5.667L 1.270 4–6 5.667L 2.316	60 12 14 8 .10 .30 .60 2-3 3 1.000R .480 2-3 3 1.000R 1.215 1-3	45 64 12 16 8 .05 .20 .75 7–8 8 1.000R .480 4–6 5 .667L 1.360 4–6 5	46 64 12 16 8 .05 .30 .65 2-3 1.000R .480 2-3 1.000R 1.215 4-6 5.667L 2.151	47 64 12 16 8 .10 .20 .70 7-8 1.000R .448 4-6 5.556L 1.270 4-6 5.556L 2.316	48 64 12 16 8 • .10 .30 .60 2-3 3 1.000R .480 2-3 3 1.000R 1.215	68 12 18 8 .05 .20 .75 7-8 8 1.000R .480 4-6 5 .667L 1.360 4-6	68 12 18 8 .05 .30 .65 2-3 \$ 1.000R 2-3 3 1.000R 1.215 4-6
WI Axx Spo Hir Lo On Axx	n. Bass le acing tch ad les 10 20	E L X X C B1 B2 B3 G N B M G N B M G N B M G O O O O O O O O O O O O O O O O O O	60 12 14 8 .05 .20 .75 7–8 8 1.000R .480 4–6 5 .667L 2.482 3–6	42 60 12 14 8 .05 .30 .65 2-3 3 1.000R 1.215 4-6 5 .667L 2.151 2-6	60 12 14 8 .10 .20 .70 7–8 8 1.000R .448 4–6 5 .667L 1.270 4–6 5 .667L 2.316	60 12 14 8 .10 .30 .60 2-3 3 1.000R .480 2-3 1.215 1-3 2.750R 2.108	45 64 12 16 8 .05 .20 .75 7–8 8 1.000R .480 4–6 5 .667L 1.360 4–6 5 .462 2.482	46 64 12 16 8 .05 .30 .65 2-3 3 1.000R .480 2-3 3 1.000R 1.215 4-6 5 .667L 2.151	47 64 12 16 8 .10 .20 .70 7-8 8 1.000R .448 4-6 5 .556L 1.270 4-6 5 .556L 2.316 3-6	48 64 12 16 8 • .10 .30 .60 2-3 3 1.000R .480 2-3 3 1.000R 1.215 1-2 .750R 2.108	68 12 18 8 .05 .20 .75 7–8 8 1.000R .480 4–6 5 .667L 1.360 4–6 5 .667L 2.482	68 12 18 8 .05 .30 .65 2-3 3 1.000R 1.215 4-6 5 .667L 2.151 4-6
WI Axx Spp Hir Loo On Axx	n. Bass le acing tch ad les 20	E L X X Y C a1 a2 a3 G N B M G N B M G N B M G N B M B M G N B M G N B M M G N B M M G N B M M B M M G N B M M B M M G N B M M B M M G N B M M M M B M M M M M M M M M M M M M	60 12 14 8 .05 .20 7-8 8 1.000R .480 4-6 5 .667L 2.482 3-6 5 1.091R	42 60 12 14 8 .05 .30 .65 2-3 1.000R 1.215 4-6 5 .667L 2.151 2-6 4	60 12 14 8 .10 .20 .70 7-8 8 1.000R .448 4-6 5 .667L 1.270 4-6 5 .667L 2.316 2-6 4 744R	60 12 14 8 .10 .60 2-3 3 1.000R 1.215 1-3 2.108 1-5 3 1.2821	45 64 12 16 8 .05 .20 .75 7–8 8 .000R .480 4–6 5 .667L 2.482 3–6 5	46 64 12 16 8 .05 .30 .65 2-3 3 1.000R 1.215 4-6 5.667L 2.151 2-6 4 2.406R	47 64 12 16 8 .10 .20 .70 7-8 1.000R .448 4-6 5.556L 1.2270 4-6 5.556L 2.316 3-6 5 1.385R	48 64 12 16 8 • .10 .60 2-3 1.000R .480 2-3 1.000R 1.215 1-3 2.750R 2.108 1.55	68 12 18 8 .05 .20 .75 7–8 8 1.000R .480 4–6 5 .667L 2.482 4–6 5 .667L 2.482	68 12 18 8 .05 .65 2-3 3 1.000R 1.215 4-6 5667L 2.151 4-6 5667L
WI Axx Spp Hir Loo On Axx	n. Bass le acing tch ad les 10 20	e L	60 12 14 8 .05 .20 .75 7–8 8 1.000R .480 4–6 5 .667L 1.360 4–6 5 .667L 2.482 3–6 5 1.091R 3–716	42 60 12 14 8 .05 .30 .65 2-3 3 1.000R .480 2-3 3 1.000R 1.215 4-6 5 .667L 2.151 2-6 4 1.971R 3.527	60 12 14 8 .10 .20 .70 7–8 8 1.000R .448 4–6 5 .667L 1.270 4–6 5 .667L 2.316 2–6 4 .744R 3.489	60 12 14 8 .10 .30 .60 2-3 3 1.000R .480 2-3 1.215 1-3 2.750R 2.108 1.25 3 1.282IJ 3.3406	45 64 12 16 8 .05 .20 .75 7–8 8 1.000R .480 4–6 5 .667L 1.360 4–6 5 .667L 1.2482 3–6 5 1.273R	46 64 12 16 8 .05 .30 .65 2-3 3 1.000R 1.215 4-6 5 6.667L 2.151 2-6 4.406R 3.260	47 64 12 16 8 .10 .20 .70 7-8 8 1.000R .448 4-6 5 .556L 1.270 4-6 5 .556L 1.2316 3-6 5 1.385R 3.385	48 64 12 16 8 • .10 .30 .60 2-3 3 1.000R .480 2-3 3 1.000R 1.215 1-3 2.750R 2.108 1.550R 2.108 3 1.657L 3.184	68 12 18 8 .05 .20 .75 7–8 8 1.000R .480 4–6 5 .667L 2.482 4–6 5 .667L 2.482 4–6 5 .667L 3.605	68 12 18 8 .05 .30 .65 2-3 3 1.000R 1.215 4-6 5 .667L 2.151 4-6 5 .667L 3.125
WI Axx Spp Hii Loo On Ax	n. Bass le acing tch ad les 10 20	E L X X Y C a1 a2 a2 a3 B M G N B M G N B M G N B M G N B M G N B M C G N B M M G N B M M G N B M M C G N B M M M C G N B M M M C G N B M M M C G N B M M M M M M M M M M M M M M M M M M	60 12 14 8 .05 .20 .75 7-8 8 1.000R .480 4-6 5 .667L 2.482 3-6 5 1.091R 3.716 4-8	42 60 12 14 8 .05 .30 .65 2-3 1.000R .480 2-3 1.000R 1.215 4-6 5 .667L 2.151 2-6 4 1.971R 3.527 2-6 4	60 12 14 8 .10 .20 .70 7-8 8 1.000R .448 4-6 5 .6671L 1.270 2-6 4 7,744R 3.489 4-8 6	60 12 14 8 .10 .30 .60 2-3 3 1.000R 480 2-3 2.750R 2.108 1-5 3 3.406 1-6 3	45 64 12 16 8 .05 .20 .75 7–8 1.000R .480 4–6 5 .667L 1.360 4–6 5 .667L 2.482 3–6 5 1.278R 3.622 4–8	46 64 12 16 8 .05 .30 .65 2-3 1.000R .480 2-3 1.000R 1.215 4-6 5.667L 2.151 2-6 4 2.406R 3.260 2-6 4	47 64 12 16 8 .10 .20 .70 7-8 8 1.000R .448 4-6 5.556L 1.270 4-6 5.556L 2.316 3-6 5.385R 3.385 4-8 6	48 64 12 16 8 • .10 .60 2-3 1.000R .480 2-3 1.000R 1.215 1-3 2.750R 2.108 1-5 3 1.657L 3.184 1-5 3	68 12 18 8 .05 .20 .75 7–8 8 1.000R .480 4–6 5 .667L 2.482 4–6 5 .667L 2.482 4–6 5 .667L 2.482 4–6 5 .667L 2.482 4–6 5 .667L 3.605 6.607L 3.607	68 12 18 8 .05 .65 2-3 3 1.000R 1.215 4-6 5 .667L 2.151 4-6 5 .667L 3.125 2-6 4
WI Axx Sphill Loo On Axx	n. Bassand n. Bassand	e L	60 12 14 8 .05 .20 .75 7–8 8 1.000R .480 4–6 5 .667L 1.360 4–6 5 .667L 2.482 3–6 5 1.091R 3.716	42 60 12 14 8 .05 .30 .65 2-8 3 1.000R .480 2-3 3 1.000R 1.215 4-6 5 .667L 2.151 2-6 4 1.971R 3.527 2-6	60 12 14 8 .10 .20 .70 7-8 8 1.000R .448 4-6 5.667L 1.270 4-6 5 .667L 2.316 2-6 4 .744R 3.489 4-8	60 12 14 8 .10 .30 .60 2-3 3 .480 2-3 1.000R 1.215 1-3 2 .750R 2.108 1-5 3 1.282 3 1.282 1.384 1.3	45 64 12 16 8 .05 .20 .75 7–8 8 1.000R .480 4–6 5.667L 1.360 4–6 5.667L 2.482 3–6 51.273R 3.627L	46 64 12 16 8 .05 .30 .65 2-3 3 1.000R 480 2-3 3 1.000R 1.215 4-6 5 .667L 2.151 2-6 4 2.406R 3.260 2-6	47 64 12 16 8 .10 .20 .70 7–8 8 1.000R .448 4–6 5 .556L 1.270 4–6 5 .556L 1.270 3–6 5 1.385R 3.385R	48 64 12 16 8 * .10 .30 .60 2-3 3 1.000R .480 2-3 3 1.000R 1.215 1-3 2 .750R 2.108 1.571 3.184 1.571 3.184	68 12 18 8 .05 .20 .75 7-8 8 1.000R .480 4-6 5.667L 1.360 4-6 5 .667L 2.482 4-6 5 .667L 2.482	68 12 18 8 .05 .30 .65 2-3 3 1.000R 1.215 4-6 5 .667L 2.151 4-6 5 .667L 2.151 2-6
WI Axx Sphill Loo On Axx	n. Basile leacing tech ad les 10 30 40 50	e L	60 12 14 8 .05 .20 7-8 8 1.000R .480 4-6 5 .667L 2.482 3-6 5 1.091R 3.716 4-8 6 1.200L 5.497 2-8	42 60 12 14 8 .05 .30 .65 2-3 1.000R .480 2-3 1.000R 1.215 4-6 5.667L 2.151 2-6 4 1.971R 3.527 2-6 4.1.971R 3.527 2-6 4.1.971R 3.527 2-7 2-8	60 12 14 8 .10 .20 .70 7-8 8 1.000R .448 4-6 5 .6667L 1.270 2-6 4 3.489 4-8 6 1.204 5.130 2-8	60 12 14 8 .10 .30 .60 2-3 3 1.000R .480 2-3 2.750R 2.108 1-5 3 1.2821 3.406 1-6 3 3.1321 5.069 1-6	45 64 12 16 8 .05 .20 .75 7–8 1.000R .480 4–6 5 .667L 1.360 4–6 5 .667L 2.482 3–6 5 1.273R 3.622 4–8 6 1.6021 5 2–8	46 64 12 16 8 .05 .30 .65 2-3 1.000R .480 2-3 1.000R 1.215 4-6 5.667L 2.151 2-6 4 2.406R 3.260 2-6 4.406R 4.906R	47 64 12 16 8 .10 .20 .70 7-8 1.000R .448 4-6 5.556L 1.2270 4-6 5 5.556L 2.316 3-6 5 1.385R 3.385 4-8 6 1.600L 4.866 2-8	48 64 12 16 8 • .10 .60 2-3 1.000R .480 2-3 1.000R 1.215 1-3 2.750R 2.108 1-5 3 1.657L 3.184 1-5 3 1.657L 4.775	68 12 18 8 .05 .20 .75 7-8 8 1.000R .480 4-6 5 .667L 1.360 4-6 5 .667L 2.482 4-6 1.231R 4.944 4.948 4.948	68 12 18 8 .05 .65 2-3 3 1.000R 1.215 4-6 5 .667L 2.151 4-6 5 .667L 2.146 4.667L 3.125 2-4 4.694 4.
WI Axx Sphill Loo On Axx	n. Bassand n. Bassand	e L	60 12 14 8 .05 .20 .75 7-8 8 1.000R .480 4-6 5 .667L 1.360 4-6 5 1.091R 3.716 4-8 6 1.200L 5.497 2-8 5 2.000L	42 60 12 14 8 .05 .30 .65 2-8 3 1.000R .480 2-3 1.000R .480 2-3 1.000R .481 2-6 5-667L 2.151 2-6 4 1.971R 3.527 2-7 2-8 1.971R 3.527 3-9 1.971R 3.527 3-9 1.971R 3.527 3-9 1.971R 3.527 3-9 4-9 1.971R 3.527 3-9 1.971R 3.527 3-9 1.971R 3.527 3-9 1.971R 3.527 3-9 1.971R 3.527 3-9 1.971R 3.527 3-9 1.971R 3.527 3-9 1.971R 3.527 3-9 1.971R 3.527 3-9 1.971R 3.527 3-9 1.971R 3.527 3-9 1.971R 3.527 3-9 1.971R	60 12 14 8 .10 .20 .70 7-8 8 1.000R .448 4-6 5.667L 1.270 4-6 5.667L 2.316 2-6 4 .744R 3.489 4-8 1.200L 5.130 2-8 5 1.822L	60 12 14 8 .10 .30 .60 2-3 1.000 R .480 2-3 1.000 R 1.215 1-3 2.750 R 2.108 1-5 3 1.282 L 3.406 1-6 3 3.132 L 5.069	45 64 12 16 8 .05 .20 .75 7-8 1.000R .480 4-6 5.667L 2.482 3-6 5 1.278R 3.667L 2.482 4-6 5 1.278R 3.620 4-6 5 2.667L 2.482	46 64 12 16 8 .05 .30 .65 2-3 1.000R .480 2-3 1.000R 1.215 4-6 5.667L 2.151 2-6 4 2.406R 3.260 2-8 5.358L	47 64 12 16 8 .10 .20 7-8 8 1.000R .448 4-6 5 .556L 1.270 4-6 5 1.385R 3.385R 3.385R 4.866 2-8 5 1.911L	48 64 12 16 8 • .10 .30 .60 2-3 1.000R .480 2-3 1.000R 1.215 1-3 2.750R 2.108 1-5 3 1.657L 3.184 1-5 4.775 1-6 3 3.606L	68 12 18 8 .05 .20 .75 7-8 8 1.000 R .480 4-6 5.667 L 2.482 4-6 5.667 L 2.482 4-6 4.231 R 4.944 2-8 5.2211 L	68 12 18 8 .05 .30 .65 2-3 3 1.000R .480 2-3 1.215 4-6 5 .667L 2.151 4-6 4 2.841R 4.696 2-6 4 2.841R
WI Axx Sphill Loo On Axx	n. Basile leacing tech ad les 10 30 40 50	e L XX X' C Ba1 Ba2 BG NB M GN BM GN BM GN BM GN BM GN BM GN BM BM MB MB MB MB MB MB MB MB MB MB MB	60 12 14 8 .05 .20 .75 7-8 8 1.000R .480 4-6 5 .667L 2.482 3-6 5 1.091R 3.716 4-8 1.200L 5.497 2-8 5 2.000L 7.814	42 60 12 14 8 .05 .30 .65 2-3 3 1.000R .480 2-3 3 1.000R 1.215 4-6 5 .667L 2.151 2-6 4 1.971R 3.527 2-6 4 1.971R 5.239 2-8 5	60 12 14 8 .10 .20 .70 7-8 8 .000R .448 4-6 5 .6671L 1.270 2-6 4 7,744R 3.489 4-8 6 1.200L 5.130 2-8 5 1.822L 7.350	60 12 14 8 .10 .30 .60 2-3 3 1.000R .480 2-3 2 1.000R 1.215 1-3 2 7508 2.108 1-5 3 1.282I 3.406 1-6 3 3.132L 5.669	45 64 12 16 8 .05 .20 .75 7–8 8 1.000R .480 4–6 5 .667L 1.360 4–6 5 .482 3–6 5 1.278R 3.622 4–8 6 1.600L 5.213 2–8 5	46 64 12 16 8 .05 .30 .65 2-3 3 1.000R .480 2-3 3 1.000R 1.215 4-6 5.667L 2.151 2-6 4 4.406R 4.965 2-8 5	47 64 12 16 8 .10 .20 .70 7-8 8 1.000R .448 4-6 5 .556L 1.270 4-6 5 .386R 3.385 4-8 6 1.600L 4.866 2-8	48 64 12 16 8 * .10 .30 .60 2-3 3 1.000R .480 2-3 3 1.000R 1.215 1-5 3 1.657L 4.775 1-6 3	68 12 18 8 .05 .20 .75 7-8 8 1.000R .480 4-6 5 .6671L 2.482 4-6 5 .6671L 2.482 4-6 1.231R 4.944 2-8 5	68 12 18 8 .05 .30 .65 2-3 3 1.000R 1.215 4-6 5 .667L 2.151 4-6 5 .667L 2.841R 4.696 2-6 4
WI Axx Spp Hir Loo On Ax	n. Basile leacing tech ad les 10 30 40 50	e L XX X' C a1 a2 G N B M B M G N B M B M B M B M B M B M B M B M B M B	60 12 14 8 .05 .20 .75 7-8 8 1.000R .480 4-6 5 .667L 1.360 4-6 5 .667L 2.482 3-6 1.091R 3.716 4-8 6 1.200L 5.497 2-8 5 2.000L 7.814 1-8	42 60 12 14 8 .05 .30 .65 2-8 3 1.000R .480 2-3 1.000R .480 2-3 1.000R .481 2-6 5-667L 2.151 2-6 4 1.971R 3.527 2-8 5-400L 7.353 1.400L 7.353	60 12 14 8 .10 .20 .70 7-8 8 1.000R .448 4-6 5.667L 1.270 4-6 5.667L 2.316 2-6 4 .744R 3.489 4-8 1.200L 5.130 2-8 5 1.822L 7.350 1-8	60 12 14 8 .10 .30 .60 2-3 1.000 R .480 2-3 1.000 R 1.215 1-3 2.750 R 2.108 1-5 3 1.282 I 3.406 1-6 3 3.132 L 6.944 1-8 4	45 64 12 16 8 .05 .20 .75 7–8 8 1.000R .480 4–6 5.667L 1.360 4–6 5 1.273R 3.622 4–8 1.603L 5.213 2–8 5 1.601L 5.213 5.2106L 7.320	46 64 12 16 8 .05 .30 .65 2-3 1.000R .480 2-3 1.000R 1.215 4-6 5.667L 2.151 2-6 4 2.406R 3.260 2-6 4 2.406R 3.581 6.792 1-8 5	47 64 12 16 8 .10 .20 .70 7-8 8 1.000R .448 4-6 5 .556L 1.270 4-6 5 1.385R 3.385R 3.385R 4.86 6 1.600L 4.866 2-8 5 1.911L 6.875 1-8	48 64 12 16 8 • .10 .30 .60 2-3 1.000R .480 2-3 1.000R 1.215 1-3 2 7.750R 2.108 1-5 3 1.657L 3.184 1-5 3 1.657L 4.775 1-6 3 3.606L 6.624 1-8 4	68 12 18 8 .05 .20 .75 7-8 8 1.000 R .480 4-6 5.667 L 2.482 4-6 5.667 L 2.482 4-6 4.231 R 4.944 2-8 5 2.211 L 6.827 1-8 5	68 12 18 8 .05 .30 .65 2-3 3 1.000R .480 2-3 1.000R 1.215 4-6 5.667L 2.151 4-6 4 2.841R 4.696 2-6 4 2.841R 6.403 1-8 5
WI Axx Spp Hir Loo On Ax	n. Basile acing tech acing to the acing and ad less 10 20 30 40 60	e L XX X' C a1 a2 G N B M B M G N B M B M G N B M B M G N B M B M G N B M B M G N B M B M G N B M B M G N B M B M B M B M G N B M B M B M B M B M B M B M B M B M B	60 12 14 8 .05 .20 .75 7-8 8 1.000R .480 4-6 5 .667L 1.360 4-6 5 .667L 2.482 3-6 5 1.091R 3.716 4-8 6 1.200L 5.497 2-8 5 2.000L 7.814 1-8 5 1.050L 12.664	42 60 12 14 8 .05 .30 .65 2-3 1.000R 1.215 4-6 5 .667L 2.151 2-6 4 1.971R 3.527 2-6 4 1.971R 5.239 2-8 5 .400 4.800 2-151 2-6 4 1.971R 5.239 2-8 5 .400 4.971R 5.239 2-8 5 .400 4.971R 5.239 2-8 5 .400 4.971R 5.239 2-8 5 .400 4.971R 5.239 2-8 5 .400 4.971R 5.239 2-8 5 .400 4.971R 5.239 2-8 5 .400 4.971R 5.239 2-8 5 .400 4.971R 5.239 2-8 5 .400 4.971R 5.239 2-8 5 .400 4 1.971R 5.239 2-8 5 .400 4 1.971R 5.239 2-8 5 .400 1.971R 5.239 2-8 .400 1.971R 5.239 2-8 .400 1.971R 5.239 2-8 .400 1.971R 5.239 2-8 .400 1.971R 5.239 2-8 .400 1.971R 5.239 2-8 .400 1.971R 5.239 2-8 .400 1.971R 5.249 1.971R 5.249 1.971R 5.249 1.971R 5.249 1.971R 5.249 1.971R 5.249 1.971R 5.249 1.971R 5.249 1.971R 5.240 1.	60 12 14 8 .10 .20 .70 7-8 8 1.000R .448 4-6 5 .667L 1.270 4-6 5 .667L 2.316 2-6 4 744R 3.489 4-8 6 1.200L 5.130 2-8 5 1.822L 7.350 1-8 5 060R 12.100	60 12 14 8 .10 .30 .60 .60 .2-3 3 1.000R .480 2-3 3 1.000R 1.215 1-3 2 7.750R 2.108 1-5 3 3.406 1-6 3 3.132L 5.069 1-6 3 3.132L 6.944 4.20L 11.782	45 64 12 16 8 .05 .20 .75 7-8 8 1.000R .480 4-6 5 .667L 1.380 4-6 5 .1.273R 3-6 1.273R 2-8 2.106L 7.320 1-8 5 1.100L 1.381	46 64 12 16 8 .05 .30 .65 2-3 3 1.000R 1.215 4-6 5 .667L 2.151 2-6 4.406R 4.965 2-8 5 358L 5 6.792 1-8 5 560R 11.644	47 64 12 16 8 .10 .20 .70 7-8 8 1.000R .448 4-6 5 .556L 1.270 4-6 5 .556L 2.316 3-6 5 1.385R 3.385 4-8 6 1.600L 4.866 2-8 1.911L 5 5 .080R 11.520	48 64 12 16 8 * .10 .30 .60 2-3 3 1.000R .480 2-3 3 1.000R 1.215 1-3 2 .750R 2.108 1-5 3 1.657L 4.775 1-6 3 3.606L 4.775 1-8 4.260L 11.141	68 12 18 8 .05 .20 .75 7-8 8 1.000R .480 4-6 5 .667L 1.360 4-6 5 .667L 2.482 4-6 5 .667L 2.482 4-6 5 .667L 1.231R 4.944 2-8 5 2.211L 6.827 1-8 5 1.150L	68 12 18 8 .05 .30 .65 2-3 3 1.000R 1.215 4-6 5 .667L 2.151 4-6 5 .667L 2.841R 4.696 2.841R 4.696 5 5 6.650R 11.035
WI Axx Spp Hir Loo On Ax	n. Basile acing teh acing teh acing teh acing teh ad les 10 30 40 60 80	e L XX C a1 a2 G N B M	60 12 14 8 .05 .20 .75 7-8 8 1.000R .480 4-6 5 .667L 1.360 4-6 5 .667L 2.482 3-6 1.200L 4-8 5 1.200L 7.814 1-8 5 1.050L 12.660L	42 60 12 14 8 .05 .30 .65 2-8 3 1.000R .480 2-3 1.000R .480 2-3 1.000R .490 1.2151 2-6 4 1.971R 3.527 4.971R 3.527 2-8 5.400L 7.353 1.8	60 12 14 8 .10 .20 .70 7-8 8 1.000R .448 4-6 5 .6667L 1.270 4-6 5 .667L 2.316 2-6 4 .744R 3.489 4-8 6 1.200L 5.130 2-8 5 1.822L 7.350 1-8 0.600R 1-8	60 12 14 8 .10 .30 .60 2-3 1.000R .480 2-3 1.000R 1.215 1-3 2.750R 2.108 1-5 3 1.282I 3.406 1-6 3 3.132L 6.944 1-8 4 4.20L 11.782 1-8	45 64 12 16 8 .05 .20 .75 7-8 1.000R .480 4-6 5.667L 2.482 3-6 5 1.278R 3.622 4-8 6 1.600L 5.213 2-8 5 1.100L 7.320 1-8 5 1.101L	46 64 12 16 8 .05 .30 .65 2-3 1.000R .480 2-3 1.000R 1.215 4-6 5.667L 2.151 2-6 4 2.406R 3.260 4 2.406R 3.266 5 6.792 1-8 5 5.566R 11.644 1-8	47 64 12 16 8 .10 .20 .70 7-8 8 1.000R .448 4-6 5 .556L 1.270 4-6 5 1.385R 3.385R 6 1.600L 4.866 2-8 5 1.911L 6.875 1-8 5.080R 11.520 1-8	48 64 12 16 8 • .10 .30 .60 2-3 1.000R .480 2-3 1.000R 1.215 1-3 2.750R 2.108 1-5 3 1.657L 4.775 1-6 3.666L 6.624 1-8 4.266L 11.141 1-8	68 12 18 8 .05 .20 .75 7-8 8 1.000R .480 4-6 5 .6671L 1.360 4-6 5 .6671L 2.482 4-6 5 2.482 4-6 2.482 1.231R 4.944 2-8 5 2.2111L 6.827 1-8 5 1.15067 1-8	68 12 18 8 .05 .30 .65 2-3 3 1.000R .480 2-3 3 3 1.000R 1.215 4-6 5 .667L 2.151 4-6 4 4.696 2-841R 6.403 1-8 5 .650R 11.035
WI Axx Spp Hii Loo On Ax	n. Basile acing tech acing to the acing and ad less 10 20 30 40 60	e L XX X' C a1 a2 G N B M B M G N B M B M G N B M B M G N B M B M G N B M B M G N B M B M G N B M B M G N B M B M B M B M G N B M B M B M B M B M B M B M B M B M B	60 12 14 8 .05 .20 .75 7-8 8 1.000R .480 4-6 5 .667L 1.360 4-6 5 .667L 2.482 3-6 5 1.091R 3.716 4-8 6 1.200L 5.497 2-8 5 2.000L 7.814 1-8 5 1.050L 12.664	42 60 12 14 8 .05 .30 .65 2-3 1.000R 1.215 4-6 5 .667L 2.151 2-6 4 1.971R 3.527 2-6 4 1.971R 5.239 2-8 5 .400 4.800 2-151 2-6 4 1.971R 5.239 2-8 5 .400 4.971R 5.239 2-8 5 .400 4.971R 5.239 2-8 5 .400 4.971R 5.239 2-8 5 .400 4.971R 5.239 2-8 5 .400 4.971R 5.239 2-8 5 .400 4.971R 5.239 2-8 5 .400 4.971R 5.239 2-8 5 .400 4.971R 5.239 2-8 5 .400 4.971R 5.239 2-8 5 .400 4 1.971R 5.239 2-8 5 .400 4 1.971R 5.239 2-8 5 .400 1.971R 5.239 2-8 .400 1.971R 5.239 2-8 .400 1.971R 5.239 2-8 .400 1.971R 5.239 2-8 .400 1.971R 5.239 2-8 .400 1.971R 5.239 2-8 .400 1.971R 5.239 2-8 .400 1.971R 5.249 1.971R 5.249 1.971R 5.249 1.971R 5.249 1.971R 5.249 1.971R 5.249 1.971R 5.249 1.971R 5.249 1.971R 5.240 1.	60 12 14 8 .10 .20 .70 7-8 8 1.000R .448 4-6 5 .667L 1.270 4-6 5 .667L 2.316 2-6 4 744R 3.489 4-8 6 1.200L 5.130 2-8 5 1.822L 7.350 1-8 5 060R 12.100	60 12 14 8 .10 .30 .60 .60 .2-3 3 1.000R .480 2-3 3 1.000R 1.215 1-3 2 7.750R 2.108 1-5 3 3.406 1-6 3 3.132L 5.069 1-6 3 3.132L 6.944 4.20L 11.782	45 64 12 16 8 .05 .20 .75 7-8 8 1.000R .480 4-6 5 .667L 1.380 4-6 5 .1.273R 3-6 1.273R 2-8 2.106L 7.320 1-8 5 1.100L 1.381	46 64 12 16 8 .05 .30 .65 2-3 3 1.000R 1.215 4-6 5 .667L 2.151 2-6 4.406R 4.965 2-8 5 358L 5 6.792 1-8 5 560R 11.644	47 64 12 16 8 .10 .20 .70 7-8 8 1.000R .448 4-6 5 .556L 1.270 4-6 5 .556L 2.316 3-6 5 1.385R 3.385 4-8 6 1.600L 4.866 2-8 1.911L 5 5 .080R 11.520	48 64 12 16 8 * .10 .30 .60 2-3 3 1.000R .480 2-3 3 1.000R 1.215 1-3 2 .750R 2.108 1-5 3 1.657L 4.775 1-6 3 3.606L 4.775 1-8 4.260L 11.141	68 12 18 8 .05 .20 .75 7-8 8 1.000R .480 4-6 5 .667L 1.360 4-6 5 .667L 2.482 4-6 5 .667L 2.482 4-6 5 .667L 1.231R 4.944 2-8 5 2.211L 6.827 1-8 5 1.150L	68 12 18 8 .05 .30 .65 2-3 3 1.000R 1.215 4-6 5 .667L 2.151 4-6 5 .667L 2.841R 4.696 2.841R 4.696 5 5 6.650R 11.035

	uck No		51	52	53	54	55	56	57	58	59	60
Ax	h. Base le	X	68 12	12	$\frac{72}{12}$	$-\frac{72}{12}$	72 12	$\frac{72}{12}$	60 16	16	16	- 60 16
Sp	acing	X'	18	18	20	20	20	20	12	12	12	12
Hi		С	.10	8	8	88	8	8	8	8	8	8
Lo		$\mathbf{a_1}$ $\mathbf{a_2}$.20	.10 .30	.05 .20	.05 .30	.10 .20	.10 .30	$.05 \\ .20$.05 .30	$.10 \\ .20$.10 .30
Ax	les	a ₃	.70	.60	.75	.65	.70	.60	.75	.65	.70	.60
	10	G N	$\substack{7-8\\8}$	2-3 3	7–8 8	$\substack{2-3\\3}$	7–8 8	$\frac{2-3}{3}$	7–8 8	$_{3}^{2-3}$	7–8 8	2-3
		B M	1.000R	1.000R	1.000R	1.000R	1.000R	1.000R	1.000R	1.000R	1.000R	1.000R
		G	.448 4–6	.480 2-3	.480 4-6	$\frac{.480}{2-3}$.448 4-6	$\frac{.480}{2-3}$.480 4-6	.480 2-3	.448 4–6	2-3
	20	N	5	3	5	3	5	3	5	3	5	3
		B M	$\begin{array}{c} .667 L \\ 1.270 \end{array}$	$1.000 { m R} \ 1.215$	1.360	1.000R 1.215	1.270	1.000R 1.215	1.360	1.000R 1.215	1.270	$1.000\mathbf{R} \\ 1.215$
		G	4-6	1-3	4-6	46	4-6	1-3	4-6	2-5	4-6	2–5
,	30	N B	5 .667L	$^2_{.750 m R}$	5 .667L	5 .667L	5 .667L	$^2_{.750 m R}$	5 .667L	$^{3}_{2.715 m L}$	$^{5}_{.667L}$	$3 \\ 2.556 \mathbf{L}$
		M	2.316	2.108	2.482	2.151	2.316	2.108	2.482	2.217	2.316	2.187
	40	G N	46 5	$^{1-3}_2$	$^{4-6}_{5}$	$^{4-6}_{5}$	$^{4-6}_{5}$	$^{1-3}_2$	4-8 6	$^{2-6}_{4}$	$^{2-6}_{4}$	$^{2-6}_{4}$
8		В	.667L	.750R	.667L	.667L	.667L	.750R	.800L	1.536R	.452R	1.728R
Span-Feet		<u>М</u> G	$\frac{3.365}{2-6}$	$\frac{3.106}{1-5}$	3.605	3,125	$\frac{3.365}{3-6}$	$\frac{3.106}{1-5}$	$\frac{3.912}{2-8}$	$-\frac{3.801}{2-7}$	$\frac{3.683}{2-8}$	$\frac{3.589}{2-7}$
Spa	50	N	4	3	5	4	5	3	5	4	5	4
0,1		B M	1.420R 4.655	$^{2.031}_{4.553}$	1.637R 4.804	$^{3.275 m R}_{4.434}$	1.769R 4.493	$\frac{2.406L}{4.334}$	1.895L 5.943	$\begin{array}{c} .610 L \\ 5.556 \end{array}$	1.734L 5.584	385L 5.252
		G	2–8	1-6	4-8	26	48	1-6	2-8	2-8	28	2-8
	60	N B	$_{2.000 L}^{5}$	3 4.079L	$^{6}_{2.400L}$	$^4_{3.275 m R}$	$^{6}_{2.400 L}$	3 4.553L	5 1.895L	5 .442L	$_{1.734L}^{5}$	5 .200L
		M	6,400	6.310	6.522	6.134	6.087	6.003	8.307	7.913	7.825	7.441
	80	G N	$^{1-8}_{5}$	18 4	28 5	$_{f 5}^{1-8}$	2-8 5	1-8 4	$_{5}^{1-8}$	$_{f 5}^{1-8}$	1–8 5	1-8 4
	00	В	.100R	.100L	2.316L	.740R	2.089L	.060R	.900L	.480R	.240R	.380L
		M G	$\frac{10.940}{1-8}$	10.500	11.063	10.427	10.409 1-8	9.860 1-8	$\frac{13.110}{1-8}$	12.763	12.481	12.222
	100	N	5	4	5	5	5	4	5	5	5	4
		B M	.100R 15.940	100L 15.500	1.200L 16.014	.740R 15.425	.120 m R 15.360	060R 14.860	.900L 18.108	$.480\mathbf{R}$ 17.762	.240R 17.481	17.221
		41.4										
Tr	uck No).	61	62	63	64		·- ·- · · ·	67	68	69	70
	uck No		61 64	62 64	63 64	64 64	65 68	66 68	67 68	68 68	69 72	70 72
$\frac{\overline{\mathbf{W}}}{\mathbf{A}\mathbf{x}}$	n. Base le	e L X	64 16	64 16	64 16	64 16	65 68 16	66 68 16	68 16	68	72	72 16
MI Ax Sp	n. Base le acing	X X X'	64 16 14	64 16 14	64 16 14	64 16 14	65 68 16 16	66 68 16 16	68 16 16	68 16 16	72 16 18	72 16 18
MI Ax Sp Hi	n. Base le acing tch ad	E L X X' C a ₁	64 16 14 8 .05	64 16 14 8	64 16 14 8	64 16 14 8 .10	65 68 16 16 8 .05	66 68 16 16 8	68 16 16 8 .10	68 16 16 8	72 16 18 8 .05	72 16 18 8 .05
MI Ax Sp Hi Lo On	n. Base le acing tch ad	E L X X' C a ₁ a ₂	64 16 14 8 .05 .20	64 16 14 8 .05 .30	64 16 14 8 .10 .20	64 16 14 8 .10 .30	65 68 16 16 8 .05 .20	66 68 16 16 8 .05 .30	68 16 16 8 .10 .20	68 16 16 8 .10 .30	72 16 18 8 .05 .20	72 16 18 8 .05 .30
MI Ax Sp Hi Lo On	n. Base le acing tch ad les	E L X X' C a ₁ a ₂ a ₃ G	64 16 14 8 .05 .20 .75 7–8	64 16 14 8 2 .05 .30 .65 2-3	64 16 14 8 .10 .20 .70	64 16 14 8 .10 .30 .60 2–3	65 68 16 16 8 .05 .20 .75	66 68 16 16 8 .05 .30 .65	68 16 16 8 .10 .20 .70	68 16 16 8 .10 .30 .60 2-3	72 16 18 8 .05 .20 .75 7–8	72 16 18 8 .05 .30 .65
MI Ax Sp Hi Lo On	n. Base le acing tch ad	X X' C a ₁ a ₂ a ₃ G	64 16 14 8 .05 .20 .75 7-8	64 16 14 8 05 30 65 2-3 3	64 16 14 8 .10 .20 .70 7–8 8	64 16 14 8 .10 .30 .60 2–3 3	65 68 16 16 8 .05 .20 .75	66 68 16 16 8 .05 .30 .65 2-3 3	68 16 16 8 .10 .20 .70 7-8 8	68 16 16 8 .10 .30 .60 2-3 3	72 16 18 8 .05 .20 .75 7-8	72 16 18 8 .05 .30 .65 2–3
MI Ax Sp Hi Lo On	n. Base le acing tch ad les	E L X X' C a ₁ a ₂ a ₃ G N B M	64 16 14 8 .05 .20 .75 7–8 8 1.000R	64 16 14 8 .05 .30 .65 2-3 3 1.000R .480	64 16 14 8 .10 .20 .70 7-8 8 1.000R .448	64 16 14 8 .10 .30 .60 2-3 3 1.000R .480	65 68 16 16 8 .05 .20 .75 7-8 8 1.000R	66 68 16 16 8 .05 .30 .65 2–3 3 1.000R .480	68 16 16 8 .10 .20 .70 7-8 8 1.000R	68 16 16 8 .10 .30 .60 2-3 3 1.000R .480	72 16 18 8 .05 .20 .75 7–8 8 1.000R	72 16 18 8 .05 .30 .65 2–3 3 1.000R .480
MI Ax Sp Hi Lo On	n. Base le acing tch ad les	E L X X X C a ₁ a ₂ a ₃ G N B M G	64 16 14 8 .05 .20 .75 7-8 8 1.000R .480 4-6	64 16 14 8 05 .30 .65 2-3 1.000R .480 2-3	64 16 14 8 .10 .20 .70 7–8 8 1.000R .448 4–6	64 16 14 8 .10 .30 .60 2-3 1.000R .480 2-3	65 68 16 16 8 .05 .20 .75 7-8 8 1.000R .480	66 68 16 16 8 .05 .30 .65 2-3 1.000R .480	68 16 16 8 .10 .20 .70 7–8 8 1.000R .448 4–6	68 16 16 8 .10 .30 .60 2-3 1.000R .480 2-3	72 16 18 8 .05 .20 .75 7–8 8 1.000R .480 4–6	72 16 18 8 .05 .30 .65 2–3 1.000R .480 2–3
MI Ax Sp Hi Lo On	n. Base le acing tch ad les	X X' C a ₁ a ₂ a ₃ G N B M G N B	64 16 14 8 .05 .20 .75 7-8 8 1.000R .480 4-6 5 .667L	64 16 14 8 05 .30 .65 2-3 3 1.000R .480 2-3 3 1.000R	64 16 14 8 .10 .20 .70 7–8 8 1.000R .448 4–6 5 .667L	64 16 14 8 .10 .30 .60 2-3 3 1.000R .480 2-3 1.000R	65 68 16 16 8 .05 .20 .75 7 8 1.000R .480 4-6 5	66 68 16 16 8 .05 .30 .65 2–3 1.000R .480 2–3 3	68 16 16 8 .10 .20 .70 7-8 8 1.000R .448 4-6 5 .667L	68 16 16 8 .10 .30 .60 2-3 3 1.000R .480 2-3 3 1.000R	72 16 18 8 .05 .20 .75 7–8 8 1.000R .480 4–6 5	72 16 18 8 .05 .30 .65 2–3 3 1.000R .480 2–3 3 1.000R
MI Ax Sp Hi Lo On	n. Base le acing tch ad les	X X' C a ₁ a ₂ a ₃ G N B M G N B	64 16 14 8 .05 .20 .75 7–8 1.000R .480 4–6 5 .667L 1.360	64 16 14 8 .05 .30 .65 2-3 1.000R .480 2-3 3 1.000R 1.215	64 16 14 8 .10 .20 .70 7-8 8 1.000R .448 4-6 5 .667L 1.270	64 16 14 8 .10 .30 .60 2-3 1.000R .480 2-3 3 1.000R 1.215	65 68 16 16 8 .05 .20 .75 7-8 8 1.000R .480 4-6 5 .667L 1.360	66 68 16 16 8 .05 .30 .65 2-3 1.000R .480 2-3 3 1.000R 1.215	68 16 16 8 .10 .20 .70 7-8 8 1.000R .448 4-6 5 .667L 1.270	68 16 16 8 .10 .30 .60 2-3 3 1.000R .480 2-3 3 1.000R 1.215	72 16 18 8 .05 .20 .75 7–8 8 1.000R .480 4–6 5 .667L 1.360	72 16 18 8 .05 .30 .65 2–3 1.000R .480 2–3 1.000R 1.215
MI Ax Sp Hi Lo On	n. Base le acing tch ad les	X X X' C a ₁ a ₂ a ₃ G N B M G N B M	64 16 14 8 .05 .20 .75 7–8 8 1.000R .480 4–6 5 .667L 1.360 4–6 5	64 16 14 8 05 .30 .65 2-3 3 1.000R .480 2-3 3 1.000R 1.215 4-6 5	64 16 14 8 .10 .20 .70 7–8 8 1.000R .448 4–6 5 .667L 1.270 4–6 5	64 16 14 8 .10 .30 .60 2-3 3 1.000R .480 2-3 3 1.000R 1.215 2-4	65 68 16 16 8 .05 .20 .75 7 8 8 1.000R .480 4-6 5 .667L 1.360 4-6 5	66 68 16 16 8 .05 .30 .65 2-3 3 1.000R .480 2-3 3 1.000R 1.215 4-6 5	68 16 16 8 .10 .20 .70 7–8 8 1.000R .448 4–6 5 .667L 1.270 4–6 5	68 16 16 8 .10 .30 .60 2-3 1.000R .480 2-3 1.000R 1.215 4-6 5	72 16 18 8 .05 .20 .75 7–8 8 1.000R .480 4–6 5 .667L 1.360 4–6 5	72 16 18 8 .05 .30 .65 2-3 3 1.000R .480 2-3 3 1.000R 1.215 4-6 5
MI Ax Sp Hi Lo On	n. Base le acing tch ad les 10	X X X' C a ₁ a ₂ a ₃ G N B M G N B B M	64 16 14 8 .05 .20 .75 7–8 8 1.000R .480 4–6 5 .667L 1.360 4–6 5	64 16 14 8 05 .30 .65 2-3 3 1.000R .480 2-3 3 1.000R 1.215 4-6 5.667L	64 16 14 8 .10 .20 .70 7-8 3 1.000R .448 4-6 5.667L 1.270 4-6 5.667L	64 16 14 8 .10 .30 .60 2-3 3 1.000R .480 2-3 3 1.000R 1.215 2-4 3 1.286L	65 68 16 16 8 .05 .20 .75 7 8 8 1.000R .480 4-6 5.667L 1.360 4-6 5.667L	66 68 16 16 8 .05 .30 .65 2-3 3 1.000R .480 2-3 3 1.000R 1.215 4-6 5	68 16 16 8 .10 .20 .70 7-8 8 1.000R .448 4-6 5 .667L 1.270 4-6 5	68 16 16 8 .10 .30 .60 2-3 3 1.000R .480 2-3 3 1.000R 1.215 4-6 5	72 16 18 8 .05 .20 .75 7–8 8 1.0000R .480 4–6 5 .667L 1.360 4 6 5	72 16 18 8 .05 .30 .5 .30 .480 2-3 3 1.000R 1.215 4-6 5 .667L
MI Ax Sp Hi Lo On	n. Base le acing tch ad les 10	X X X' C a ₁ a ₂ a ₃ G N B M G N B M	64 16 14 8 .05 .20 .75 7–8 8 1.000R .480 4–6 5 .667L 1.360 4–6 5	64 16 14 8 05 .30 .65 2-3 3 1.000R .480 2-3 3 1.000R 1.215 4-6 5	64 16 14 8 .10 .20 .70 7–8 8 1.000R .448 4–6 5 .667L 1.270 4–6 5	64 16 14 8 .10 .30 .60 2-3 3 1.000R .480 2-3 3 1.000R 1.215 2-4	65 68 16 16 8 .05 .20 .75 7 8 8 1.000R .480 4-6 5 .667L 1.360 4-6 5	66 68 16 16 8 .05 .30 .65 2-3 3 1.000R .480 2-3 3 1.000R 1.215 4-6 5	68 16 16 8 .10 .20 .70 7–8 8 1.000R .448 4–6 5 .667L 1.270 4–6 5	68 16 16 8 .10 .30 .60 2-3 1.000R .480 2-3 1.000R 1.215 4-6 5	72 16 18 8 .05 .20 .75 7–8 8 1.000R .480 4–6 5 .667L 1.360 4–6 5	72 16 18 8 .05 .30 .65 2-3 3 1.000R .480 2-3 3 1.000R 1.215 4-6 5
WI Axx Sp Hir Lo On Axx	n. Base le acing tch ad les 10	X X X' C a ₁ a ₂ a ₃ G N B M G N B B M	64 16 18 8 .05 .20 .75 7-8 8 1.000R .480 4-6 5 .667L 2.482 3-6 5	64 16 14 8 05 .30 .65 2-3 3 1.000R .215 4-6 5.667L 2.151 2-6 4	64 16 14 8 .10 .20 .70 7-8 8 1.000R .448 4-6 5 .667L 1.270 4-6 5 .667L 2.316 2-6 4	64 16 14 8 8 .10 .30 .60 2-3 3 1.000R .480 2-3 3 1.000R .215 2-4 3 1.286L 2.033 2-6 4	65 68 16 16 8 .05 .20 .75 7 8 8 1.000R .480 4-6 5 .667L 2.482 3 6 5	66 68 16 8 .05 .30 .65 2-3 1.000R .480 2-3 1.000R 1.215 4-6 5 .667L 2.151 2-6 4	68 16 8 .10 .20 .70 7-8 8 1.000R .448 4-6 .667L 1.270 4-6 .5 .667L 2.316 3-6 5	68 16 16 8 .10 .30 .60 2-3 3 1.000R .480 2-3 3 1.000R 1.215 4-6 5 .667L 1.985 2-5 3	72 16 18 8 .05 .20 .75 7–8 8 1.000R .480 4–6 5 .667L 1.360 4–6 5 .667L 2.482 4–6 5	72 16 18 8 .05 .30 .65 2-3 3 1.0000R .480 2-3 3 1.000R 1.215 4-6 5 .667L 2.151 4-6 5
Wilder Axx Sp Hi-Lo On Ax	n. Base le acing tch ad les 10 20	X X' C a ₁ a ₂ a ₃ G N B M G N B B M	64 16 14 8 .05 .20 .75 .75 .78 8 1.000R .480 4-6 5 .667L 1.360 4-6 5 .667L 2.482 3-6	64 16 14 8 05 .30 .65 2-3 3 1.000R 1.215 4-6 5 .667L 2.151 2-6	64 16 14 8 .10 .20 .70 7–8 8 1.000R .448 4–6 5 .667L 1.270 4–6 5 .667L 2.316 2–6	64 16 14 8 .10 .30 .60 2-3 3 1.000R .480 2-3 3 1.000R 1.215 2-4 3 1.286 2.30 .60 2-3 3 2.30 .480 2-3 3 2.30 .480 2-3 3 2.30 .480 2.30 .480 2.30 .480 .480 .290 .480 .480 .290	65 68 16 16 8 .05 .20 .75 7 8 8 1.000R .480 4-6 5 .667L 1.360 4-6 5 .667L 2.482	66 68 16 16 8 .05 .30 .65 2–3 3 1.000R 1.215 4–6 5 .667L 2.151 2–6	68 16 16 8 .10 .20 .70 .7-8 8 1.000R .448 4-6 .667L 1.270 4-6 .667L 2.316 3-6	68 16 16 8 .10 .30 .60 .2-3 3 1.000R .480 2-3 3 1.000R 1.215 4-6 5 .667L 1.985 2-5	72 16 18 8 .05 .20 .75 7–8 8 1.000R .480 4–6 5 .667L 1.360 4 6 5 .667L 2.482 4–6	72 16 18 8 .05 .30 .65 2-3 3 1.000R 1.215 4-6 567L 2.151 4-6
Wilder Axx Sp Hi-Lo On Ax	n. Base le acing tech ad les 10 20 30	E L X X X' C a1 a2 a3 G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N G G N B M G G N G G N G G N G G N G G N G G N G G N G G N G G N G G G N G G G N G G G N G G G N G G G N G G G N G	64 16 14 8 .05 .20 .75 7-8 8 1.000R .480 4-6 5 .667L 1.360 4-6 5 .667L 2.482 3-6 5 1.091R 3.716 4-8	64 16 14 8 2.05 .30 .65 2-3 3 1.000R .480 2-3 3 1.000R 1.215 4-6 5 .667L 2.151 2-6 4 1.971R 3.527 2-6	64 16 14 8 .10 .20 .70 7-8 8 1.000 R .448 4-6 5 .667 L 1.270 4-6 5 .667 L 2.316 2-6 4 .774 R 3.489 4-8	64 16 14 8 .10 .30 .60 2-3 3 1.000R .480 2-3 3 1.000R 1.215 2-4 3 1.286L 2.033 2-6	65 68 16 16 8 .05 .20 .75 .7 8 8 1.000R .480 4-6 .5667L 1.2482 3 6 5 1.273R 3.622 4 8	66 68 16 16 8 .05 .30 .65 2-3 3 1.000R 1.215 4-6 5 .667L 2.366R 2.366R 3.260 2-6	68 16 16 8 .10 .20 .70 .70 .70 .448 4-6 .5 .667L 1.270 4-6 .5 .667L 2.316 3-6 .5 .385R 3.385 4-8	68 16 16 8 .10 .30 .60 2-3 3 1.000R .480 2-3 3 1.000R 1.215 4-6 5 .667L 1.985 2-5 3 3.445L 3.100 2-6	72 16 18 8 .05 .20 .7-8 8 1.000R .480 4-6 5 .667L 2.482 4-6 5 .667L 2.482 4-6 5 .667L 2.482 4-6 5	72 16 18 8 .05 .30 .65 2-3 3 1.000R 2-3 3 1.000R 1.215 4-6 5 .667L 2.151 4-6 5 .667L 2.155
WI Axx Sp Hir Lo On Axx	n. Base le acing tch ad les 10 20	E L X X X' C a1 a2 a3 a3 G N B M G N B M G G N B M M G N B M M M B M M M B M M M B M	64 16 14 8 .05 .20 .75 7–8 8 1.000R .480 4–6 5 .667L 1.360 4–6 5 .667L 2.482 3–6 5 1.091R 3.716	64 16 14 8 05 .30 .65 2-3 3 1.000R .480 2-3 1.000R 1.215 4-6 5 .667L 2.151 2-6 4 1.971R 3.527 2-6 4 1.971R	64 16 14 8 .10 .20 .70 7–8 8 1.000R .448 4–6 5 .667L 1.270 4–6 5 .667L 2.316 2–6 4 774R 3.489	64 16 14 8 .10 .30 .60 2-3 3 1.000R 1.215 2-4 3 1.286 2.33 2-6 4 2.182R 3.318	65 68 16 16 18 8 .05 .20 .75 7-8 8 8 1.000R .480 4-6 5 .667L 1.360 4-6 5 .667L 2.482 3-6 5 1.273R 3.622	66 68 16 16 8 .05 .30 .65 2-3 3 1.000R 1.215 4-6 5 5.667L 2.151 2-6 4 2.306R 3.260	68 16 16 18 8 .10 .20 7-8 8 1.000R .448 4-6 .5 .667L 1.270 4-6 .5 .667L 2.316 3-6 5 1.385R 3.385	68 16 16 8 .10 .30 .60 2-3 3 1.000R .480 2-3 3 1.000R 1.215 4-6 5 .667L 1.985 2-5 3 3.445L 3.100	72 16 18 8 .05 .20 .75 7–8 8 1.000R .480 4–6 5 .667L 1.360 4–6 5 .667L 2.482 4–6 5 .667L 3.605	72 16 18 8 .05 .30 .65 2-3 3 1.000R .480 2-3 3 1.000R 1.215 4-6 5.667L 2.151 4-6 5.667L 3.125
Wilder Axx Sp Hi-Lo On Ax	n. Base le acing tech ad les 10 20 30	E L X X X Y C C a1 a2 a2 a3 G N B M G G N B B M G G N B B M G G N B B M M G G N B B M M G G N B B M M G G N B B M M G G N B B M M M G G N B B M M M G G N B B M M M G G N B B M M M M M M M M M M M M M M M M M	64 16 14 8 .05 .20 .75 7-8 8 1.000R .480 4-6 5.667L 1.360 4-6 5 .667L 2.482 3-6 5 1.091R 3.716 4-8 6 1.200L 5.497	64 16 14 8 .05 .30 .65 2-3 3 1.000R .480 2-3 3 1.000R 1.215 4-6 5 .667L 2.151 2-6 4 1.971R 3.527 2-6 4 1.971R 5.239	64 16 16 17 8 .10 .20 .70 7-8 8 1.000R .448 4-6 5.667L 1.270 4-6 5 .667L 2.316 2-6 4 .774R 3.489 4-8 6 1.200L 5.130	64 16 14 8 .10 .30 .60 2-3 3 1.000R .480 2-3 3 1.000R 1.215 2-4 3 1.286L 2.033 2-6 4 2.182R 4.953	65 68 16 16 16 16 8 .05 .20 .75 7 8 8 1.000R .480 4-6 5 .667L 1.360 4-6 5 1.273R 3.62 4.63 6.657L 2.482 4.607L 2.482 4.88	66 68 16 16 16 8 .05 .30 .65 2-3 1.000R .480 2-3 1.000R 1.215 4-6 5 .667L 2.151 2-6 4 2.306R 3.267 4.2151 2-6 4.2406R 4.965	68 16 16 18 8 .10 .20 .70 .7-8 8 1.000R .448 4-6 .5 .667L 1.270 4-6 .5 .667L 2.316 3-6 .5 .385R 6 6 .385R 6	68 16 16 8 .10 .30 .60 2-3 3 1.000R .480 2-3 3 1.000R 1.215 4-6 5 .667L 1.985 3 3.445L 2.637R 4.682	72 16 18 8 .05 .20 .75 7–8 8 1.000R .480 4–6 5 .667L 1.360 4–6 5 .667L 2.482 4–6 5 .667L 2.482 4–6 4–6 4–6 4–6 4–6 4–6 4–6 4–6	72 16 18 8 .05 .30 .65 2-3 3 1.000R .480 2-3 1.000R 1.215 4-6 5 .667L 2.151 4-6 5 .667L 2.184 4.696
Wilder Axx Sp Hi-Lo On Ax	n. Base le acing tech ad les 10 20 30	E L X X X Y C C a1 a2 a2 a3 G N B M G N B M G G N B M G G N B M G G N B M M M G G N B M M M M M M M M M M M M M M M M M M	64 16 14 8 .05 .20 .75 7-8 8 1.000R .480 4-6 5 .667L 1.360 4-6 5 1.091R 3.716 4-8 6 1.200L	64 16 14 8 05 .30 .65 2-3 3 1.000R .480 2-3 1.000R 1.215 4-6 5 .667L 2.151 2-6 4 1.971R 3.527 2-6 4 1.971R	64 16 14 8 .10 .20 .70 7–8 8 .000 R .448 4–6 .5 .667 L 1.270 4–6 .5 .667 L 2.316 2–6 4 .774 R 3.489 4–8 6 1.200 L	64 16 14 8 .10 .30 .60 2-3 3 1.000R .480 2-3 3 1.000R 1.215 2-4 3 1.286 4 2.182R 3.318 2-6 4 2.182R	65 68 16 16 18 8 .05 .20 .75 7 8 8 1.000R .480 4-6 5 .667L 1.360 4-6 5 .667L 2.482 3 6 5 1.273R 3.622 4 8 6 1.600L	66 68 16 16 16 18 .05 .30 .65 2-3 3 1.000R 1.215 4-6 5 .667L 2.151 2-6 4 2.306R 3.260 2-6 4 2.406R	68 16 16 18 .10 .20 .70 7-8 8 1.000R .448 4-6 .5 .667L 1.270 4-6 .5 .667L 2.316 3-6 5 1.385R 3.385 4-8 6 1.600L	68 16 16 8 .10 .30 .60 2-3 3 1.000R .480 2-3 3 1.000R 1.215 4-6 5 .667L 1.985 2-5 3 3.445L 3.100 2-6 4 4.637R	72 16 18 8 .05 .20 .75 7–8 8 1.000R .480 4–6 5 .667L 2.482 4–6 5 .667L 2.482 4–6 5 .667L 2.482 4–6 4–6 5 .667L 1.3605 2–6 4 1.231R	72 16 18 8 .05 .30 .65 2-3 3 1.000R .480 2-3 3 1.000R 1.215 4-6 5 .667L 2.151 4-6 5 .667L 3.125 2-6 4 2.841R
Wilder Axx Sp Hi-Lo On Ax	10. Basele acing technical less 10 20 40 50	E L X X X Y C C a1 a2 a3 G N B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M B M G N B B M B M G N B B M B B B M B B M B B M B B M B B M B B M B B M B B B M B B B M B B M B B B M B B B M B B B M B B B M B B B M B B B M B B B M B B B M B B B B M B B B B M B	64 16 14 8 .05 .20 .75 7-8 1.000R .480 4-6 5.667L 1.360 4-6 5 1.091R 3.716 4-8 1.200L 5.497 2.8 5 5.000L	64 16 14 8053065 2-3 3 1.000R .480 2-3 1.000R 1.215 4-6 5.667L 2.151 2-6 4 1.971R 3.527 2-6 4 1.971R 5.230 2-8 5 4.406L	64 16 14 8 .10 .20 .70 7–8 1.000 R .448 4–6 5 .667L 1.270 4–6 5 .667L 2.316 2–6 4.774R 3.489 4–8 6.200L 5.130 2–8 5 1.822L	64 16 14 8 .10 .30 .60 2-3 3 1.000R .480 2-3 1.000R 1.215 2-4 3 1.286L 2.033 2-6 4 2.182R 4.953 2-8 5 1.33L	65 68 16 16 16 18 .05 .20 .75 .78 8 1.000R .480 4-6 5 .6671L 2.482 3 6 5 1.273R 3.62 4.600L 5.213 2-8 5.21061,	66 68 16 8 .05 .30 .65 2-3 1.000R .480 2.3 1.000R 1.215 4-6 5 .667L 2.151 2-6 4 2.366R 3.266 4.2406R 4.965 2-8 5 5 5 5 5 5 6 5 6 5 6 6 7 8 8 8 8 8 8 8 8 8 8 8 8 8	68 16 16 16 18 .10 .20 .70 7-8 8 1.000R .448 4-6 5 .667L 2.316 3-6 5 1.385R 3.385 4-8 6 1.600L 4.866 2-8 5 1.911L	68 16 16 8 .10 .30 .60 2-3 3 1.000R .480 2-3 3 1.000R 1.215 4-6 5 .667L 1.985 2-5 3 3.445L 2.637R 4.682 1-6 3 3.342L	72 16 18 8 .05 .20 .75 7-8 8 1.000R .480 4-6 5.667L 2.482 4-6 5.667L 2.482 4-6 4 1.231R 4.944 2-8 5.211L	72 16 18 8 .05 .30 .65 2-3 3 1.000R .480 2-3 1.000R 1.215 4-6 5 .667L 2.151 4-6 5 2-6 4 2.841R 4.696 2-6 4 2.841R
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Color	Ax Spa Hit	le acing tch	X X' C	16 24 8	16 24 8	84 16 24 8	16 24 8						
10	Ax Spa Hit Loa On	le acing tch ad	X X' C a ₁	16 24 8 .05	16 24 8 .05	84 16 24 8 .10 .20	16 24 8						
M .480 .480 .448 .480 G 4-6 2-3 4-6 2-3 B .667L 1.000R .667L 1.000R M 1.360 1.215 1.270 1.215 G 4-6 4-6 4-6 4-6 4-6 30 N 5 5 5 5 B .667L .667L .667L .667L M 2.482 2.151 2.316 1.985 G 4-6 4-6 4-6 1-3 5 5 5 2 B .667L .667L .667L 1.250R M 3.605 3.125 3.365 2.916 G 4-6 4-6 4-6 1-3 50 N 5 5 5 2 B .667L .667L .667L 1.250R M 3.605 3.125 3.365 2.916 G 4-6 4-6 4-6 1-3 50 N 5 5 5 2 B .667L .667L 1.250R M 4.729 4.098 4.414 3.912 G 2-6 2-6 2-6 1-5 60 N 4 4 4 4 3 B 2.154R 4.145R 2.387R 2.844L M 6.000 5.607 5.639 5.266 G 2-8 2-8 2-8 1-6 80 N 5 5 5 5 3 B 2.527L .190L 2.267L 5.237L M 10.075 9.300 9.458 8.881 G 1-8 1-8 1-8 1-8 1-8 1.200L 1.000R	Ax Spa Hit Loa On	le acing tch ad	X X' C a ₁ a ₂ a ₃	16 24 8 .05 .20 .75	16 24 8 .05 .30 .65	84 16 24 8 .10 .20 .70	16 24 8 .16 .30 .60						
G 4-6 2-3 4-6 2-3 3 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	Ax Spa Hit Loa On	le acing tch ad les	X X' C a ₁ a ₂ a ₃ G	16 24 8 .05 .20 .75 7–8 8	16 24 8 .05 .30 .65 2-3 3	84 16 24 8 .10 .20 .70 7-8 8	16 24 8 .16 .30 .60 2-3 3						
B .667L 1.000R 1.215 G 4-6 4-6 4-6 4-6 .667L M 2.482 2.151 2.316 1.985 G 4-6 4-6 4-6 1-3 B .667L .667L .667L 1.250R M 3.605 3.125 3.365 2.916 G 4-6 4-6 4-6 1-3 5 5 5 2 B .667L .667L .667L 1.250R M 3.605 3.125 3.365 2.916 G 4-6 4-6 4-6 1-3 50 N 5 5 5 2 B .667L .667L .667L 1.250R M 4.729 4.098 4.414 3.912 G 2-6 2-6 2-6 2-6 1-5 60 N 4 4 4 3 3 4 3 4 3 4 3 4 3 4 3 4 3 4 3	Ax Spa Hit Loa On	le acing tch ad les	X X' C a ₁ a ₂ a ₃ G N B	16 24 8 .05 .20 .75 7–8 8 1.000R	16 24 8 .05 .30 .65 2-3 3 1.000R	84 16 24 8 .10 .20 .70 7-8 8 1.000R	16 24 8 .16 .30 .60 2-3 3 1.000R						
M 1.360 1.215 1.270 1.215 G 4-6 4-6 4-6 4-6 30 N 5 5 5 5 B .667L .667L .667L M 2.482 2.151 2.316 1.985 G 4-6 4-6 4-6 1-3 40 N 5 5 5 5 B .667L .667L 1.250R M 3.605 3.125 3.365 2.916 G 4-6 4-6 4-6 1-3 50 N 5 5 5 2 B .667L .667L .667L 1.250R M 4.729 4.098 4.414 3.912 G 2-6 2-6 2-6 1-5 B .667L .667L .387R 2.844L M 6.000 5.607 5.639 5.266 G 2-8 2-8 2-8 1-6 80 N 5 5 5 5 3 B 2.527L .190L 2.267L 5.237L M 10.075 9.300 9.458 8.881 G 1-8	Ax Spa Hit Loa On	le acing tch ad les	X X' C a ₁ a ₂ a ₃ G N B M	16 24 8 .05 .20 .75 7–8 1.000R .480	16 24 8 .05 .30 .65 2-3 3 1.000R .480 2-3	84 16 24 8 .10 .20 .70 7–8 8 1.000R .448 4–6	16 24 8 .16 .30 .60 2–3 3 1.000R .480						
30 N 5 5 5 5 5 5 2 B .667L .667L .667L .667L M .2.482 2.151 2.316 1.985 G .4-6 4-6 4-6 1-3 40 N 5 5 5 2 B .667L .667L .1.250R M 3.605 3.125 3.365 2.916 G .4-6 4-6 4-6 1-3 50 N 5 5 5 5 2 B .667L .667L .667L 1.250R M 4.729 4.098 4.414 3.912 G .2-6 2-6 2-6 1-5 60 N 4 4 4 4 3 B 2.154R 4.145R 2.387R 2.844L M 6.000 5.607 5.639 5.266 G .2-8 2-8 2-8 1-6 80 N 5 5 5 5 3 B 2.527L .190L 2.267L 5.237L M 10.075 9.300 9.458 8.881 G .1-8 1-8 1-8 1-8 G .1-8 1-8 1-8 1-8 B 1.200L 1.002R .360R	Ax Spa Hit Loa On	le acing tch ad les	X X' C a ₁ a ₂ a ₃ G N B M	16 24 8 .05 .20 .75 7-8 8 1.000R .480 4-6 5	16 24 8 .05 .30 .65 2-3 3 1.000R .480 2-3 3	84 16 24 8 .10 .20 .70 7–8 8 1.000R .448 4–6 5	16 24 8 .16 .30 .60 2-3 3 1.000R .480 2-3 3						
B .667L .667	Ax Spa Hit Loa On	le acing tch ad les	X X' C a ₁ a ₂ a ₃ G N B M	16 24 8 .05 .20 .75 7-8 8 1.000R .480 4-6 5 .667L 1.360	16 24 8 .05 .30 .65 2-3 3 1.000R .480 2-3 3 1.000R 1.215	84 16 24 8 .10 .20 .70 7–8 1.000R .448 4–6 .667L 1.270	16 24 8 .16 .30 .60 2-3 3 1.000R .480 2-3 3 1.000R 1.215						
G 4-6 4-6 4-6 1-3 B .667L .667L 1.250R M 3.605 3.125 3.365 2.916 G 4-6 4-6 4-6 1-3 50 N 5 5 5 2 B .667L .667L 1.250R M 4.729 4.098 4.414 3.912 G 2-6 2-6 2-6 1-5 60 N 4 4 4 4 3 B 2.154R 4.145R 2.387R 2.844L M 6.000 5.607 5.639 5.266 G 2-8 2-8 2-8 1-6 80 N 5 5 5 3 B 2.527L .190L 2.267L 5.237L M 10.075 9.300 9.458 8.881 G 1-8 1-8 1-8 1-8 B 1.200L 1.020R .360R	Ax Spa Hit Loa On	le acing tch ad les 10	X X' C a ₁ a ₂ a ₃ G N B M G N B M	16 24 8 .05 .20 .75 7-8 8 1.0000R .480 4-6 5 .667L 1.360	16 24 8 .05 .30 .65 2-3 3 1.000R .480 2-3 3 1.000R 1.215	84 16 24 8 .10 .20 .70 7–8 8 8 .448 4–6 5 .667L 1.270 4–6	16 24 9 .16 .30 .60 2-3 3 1.000R .480 2-3 3 1.000R 1.215						
## 40 N	Ax Spa Hit Loa On	le acing tch ad les 10	X X' C a ₁ a ₂ a ₃ G N B M G N B M	16 24 8 .05 .20 .75 7-8 8 1.000R .480 4-6 5 .667L 1.360 4-6 5	16 24 8 .05 .30 .65 2-3 1.000R .480 2-3 1.000R 1.215 4-6 5	84 16 24 8 .10 .20 .70 7-8 8 1.000R .448 4-6 5.667L 1.270 4-6 5.667L	16 24 8 .10 .30 .60 2-3 3 1.000 R .480 2-3 3 1.000 R 1.215 4-6 5						
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Ax Spa Hit Loa On	le acing tch ad les 10	X X' C a ₁ a ₂ a ₃ G N B M G N B M	16 24 8 .05 .20 .75 7–8 8 1.000R .480 4–6 5 .667L 1.360 4–6 5 .667L 2.482	16 24 8 .05 .30 .65 2-3 3 1.000R .480 1.215 4-6 5.667L 2.151	84 16 24 8 .10 .20 .70 7–8 8 1.000R .448 4–6 5 .667L 1.270 4–6 5 .667L 2.316	16 24 8 .16 .30 .60 2-3 3 1.000R .480 2-3 3 1.000R 1.215 4-6 5.667L 1.985						
B	Ax Spar Hit Los On Ax	le acing ch ad les 10	X X' C a ₁ a ₂ a ₃ G N B M G N B M G N B M	16 24 8 .05 .20 .75 7–8 8 1.000R .480 4–6 5 .667L 1.360 4–6 5 .667L 2.482 4–6 5	16 24 8 .05 .30 .65 2-3 3 1.000R .480 2-3 3 1.000R 1.215 4-6 5 667L 2.151 4-6 5	84 16 24 8 .10 .20 .70 7-8 8 1.000R .448 4-6 5.667L 1.270 4-6 5 .667L 2.316 4-6 5	16 24 8 .16 .30 .60 2-3 3 1.000R .480 2-3 3 1.000R 1.215 4-6 5 .667L 1.985						
B	Ax Span Hit Los On Ax	le acing ch ad les 10	X X' C a1 a2 a3 G N B M G N B M G N B M G N B M	16 24 8 .05 .20 .75 7-8 8 1.000R .480 4-6 5 .667L 1.360 4-6 5 .667L 2.482 4-6 5	16 24 8 .05 .30 .65 2-3 3 1.000R 1.215 4-6 5 667L 2.151 4-6 5	84 16 24 8 .10 .20 .70 7–8 1.000R .448 4–6 5 .667L 1.276 4–6 5 .667L 2.316 4–6 5	16 24 8 .16 .30 .60 .60 2-3 3 1.000R 1.215 4-6 .667L 1.985 1-3 2 2.250R						
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	Ax Span Hit Los On Ax	le acing teh ad les 10 20 30 40	X X' C a1 a2 a3 G N B M G N B M G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M G G N B M M M G G N M M M M M M M M M M M M M M	16 24 8 .05 .20 .75 7–8 8 1.0000R .480 4–6 5 .667L 1.360 4–5 .667L 2.482 4–6 5 .667L 3.605 4–6	16 24 8 .05 .30 .65 2-3 3 1.000R 1.215 4-6 5 .667L 2.151 4-6 5 .667L 2.155 4-6 5	84 16 24 8 .10 .20 .70 .70 .70 .70 .8 8 1.000R .448 4-6 5 .667L 1.270 4-6 5 .667L 2.316 4-6 5 .667L 3.365 4-65 5	16 24 8 .16 .30 .60 2-3 3 1.000R 480 2-3 3 1.000R 1.215 4-6 5 .667L 1.985 1-3 2 1.250R 2.916						
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	Ax Span Hit Los On Ax	le acing teh ad les 10 20 30 40	X X' C a1 a2 a3 G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M M G N B M M G N B M M G N B M M G N B M M G N M B M M G N M B M M G N M B M M G N M B M M G N M B M M G N M B M M G N M B M M M M M M M M M M M M M M M M M	16 24 8 .05 .20 .75 8 1.000R .480 4–6 5 .667L 1.360 4–6 5 .667L 2.482 4–6 5 .667L 3.605 4–6 5	16 24 8 .05 .30 .65 2-3 3 1.000R 1.215 4-6 5 .667L 2.151 4-6 5 5 667L 3.125	84 16 24 8 .10 .20 .70 .70 .70 .448 4-6 .667L 1.270 4-6 .667L 2.316 5 .667L 3.365 4-6 .667L	16 24 8 .16 .30 .60 .60 2-3 3 1.000R 1.215 4-6 .667L 1.985 1-3 2.250R 2.916						
M 6.000 5.607 5.639 5.266 G 2-8 2-8 1-6 80 N 5 5 5 3 B 2.527L 1.190L 2.267L 5.237L M 10.075 9.300 9.458 8.881 G 1-8 1-8 1-8 1-8 100 N 5 5 5 5 4 B 1.200L 1.020R .360R	Ax Span Hit Los On Ax	le acing teh ad les 10 20 30 40	X X' C a1 a2 a3 G N B M G N B M G N B M M G N B M M G N B M M M B M M M B M M M M M M M M M M	16 24 8	16 24 8 .05 .30 .65 2-3 3 1.000R 1.215 4-6 5.667L 2.151 4-6 5.667L 3.125 4-6 5.667L 4.098	84 16 24 8 .10 .20 .70 .7-8 8 1.000R .448 4-6 5 .667L 2.316 4-6 5 .667L 2.316 4-6 5 .667L 4.444 4-6 5 .667L 4.446 4.446 5 .667L 4.446 5 .667L 4.446 5 .667L 4.446 5 .667L 4.446 4.446 5 .667L 4.446 4.446 5 .667L 4.446	16 24 8 .16 .30 .60 2-3 3 1.000R 480 2-3 3 1.000R 1.215 4-6 5 .667L 1.985 1-3 2 1.250R 2.916 1-3 2 1.250R 3.912						
G 2-8 2-8 1-6 80 N 5 5 5 3 B 2.527L 1.90L 2.267L 5.237L M 10.075 9.300 9.458 8.881 G 1-8 1-8 1-8 1-8 100 N 5 5 5 4 B 1.200L 1.020R .360R .580R	Ax Span Hit Los On Ax	solution in the second	X X' C a1 a2 a3 G N B M G N B B M M G M S N B B M M G M S N B B M M G M S N B B M M G M S N B B M M G M S N B B M M G M S N B B M M G M S N B B M M M M M M M M M M M M M M M M M	16 24 8 8 .05 .20 .75 .8 8 1.000R .480 4-6 .5 .667L 2.482 4-6 .5 .667L 3.605 4-6 .5 .667L 4.729 2-6	16 24 8 .05 .30 .65 2-3 3 1.000R 1.215 4-6 5.667L 2.151 4-6 5 .667L 3.125 4-6 5 .667L 4.098 2-6	84 16 24 8 .10 .20 .70 7–8 1.000R .448 4–6 5 .667L 1.270 4–6 5 .667L 2.316 4–6 5 .667L 4.441	16 24 8 .16 .30 .60 .60 2-3 3 1.000R 1.215 4-6 .667L 1.985 1-3 2.250R 2.916 1-3 2.250R 3.912 1.550R						
80 N 5 5 5 3 B 2.527L .190L 2.267L 5.237L M 10.075 9.300 9.458 8.881 G 1-8 1-8 1-8 1-8 100 N 5 5 5 4 B 1.200L 1.020R .360R .580R	Ax Span Hit Los On Ax	solution in the second	X X X C a1 a2 a2 a3 G N B M G N B B M G G N B B M G G N B B M G G N B B M B M B M B M B M B M B M B M B M	16 24 8 8 .05 .20 .75 7-8 8 1.000R .480 4-6 5 .667L 1.360 4-6 5 .667L 2.482 4-6 5 .667L 4.729 2-6 4 2.154R	16 24 8 .05 .30 .65 2-3 3 1.000R 1.215 4-6 5 .667L 2.151 4-6 5 .667L 4.098 2-6 4 4.145R	84 16 24 8 .10 .20 .70 7–8 1.000R .448 4–6 5 .667L 1.270 4–6 5 .667L 2.316 4–6 5 .667L 2.346 4–6 5 .667L 2.346 4–6 5 .667L 2.346 4–6 5 .667L 2.346 4–6 5 .667L 2.346 4–6 5 .667L 2.346 4–6 5 .667L 2.346 4–6 5 .667L 2.346 4–6 5 .667L 2.346 4–6 5 .667L 2.346 4–6 4–6 5 .667L 2.346 4–6 5 .667L 2.346 4–6 5 .667L 2.346 4–6 5 .667L 2.346 4–6 5 .667L 2.346 4–6 5 .667L 2.346 4–6 5 .667L 2.346 4–6 5 .667L 2.346 4–6 5 .667L 4–6 5 .667L 4–6 5 .667L 4–6 5 .667L 4–6 5 .667L 4–7 4–7 4–7 4–7 4–7 4–7 4–7 4–7	16 24 8 .16 .30 .60 2-3 3 1.000R 1.215 4-6 5 .667L 1.985 1-3 2 1.250R 2.2916 1-3 2 1.250R 2.316 1-3 2 2.316 1.250R 2.316 1.250R 2.316 2.316 2.316 3.31						
M 10.075 9.300 9.458 8.881 G 1-8 1-8 1-8 1-8 100 N 5 5 5 4 B 1.200L 1.020R .360R .580R	Ax Span Hit Los On Ax	solution in the second	X X' C a1 a2 a2 a3 G N B M G N B B M G N B B M G N B B M G N B B M G N B B M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M G N B B M M M G N B B M M M M M M M M M M M M M M M M M	16 24 8	16 24 8 .05 .30 .65 2-3 3 1.000R 1.215 4-6 5.667L 2.151 4-6 5 5.667L 4.098 2-6 4 4.145R 5.607	84 16 24 8 .10 .20 .70 7–8 1.000R .448 4–6 5 .667L 1.270 4–6 5 .667L 3.365 4–6 5 .667L 4.3365 4–2 3.365 4–4 5 .667L 3.365 4–6 5 .667L 3.365 4–6 5 .667L 3.365 4–6 5 .667L 3.365 4–6 5 .667L 3.365 4.667L 3.365 4.667L 3.365 4.667L 5.667L 3.365 4.667L 5.6	16 24 8 .16 .30 .60 .60 2-3 3 1.000R 1.215 4-6 5.667L 1.985 1-3 2.250R 2.916 1-3 2.250R 3.912 1-5 3 2.844L 5.266						
100 N 5 5 5 4 B 1.200L 1.020R .360R .580R	Ax Span Hit Los On Ax	le le acing beh ad les 10 20 30 40 60	X X' C a1 a2 a3 G N B M B M G N B M G N B M B M G N B M B M G N B M B M G R D R D R D R D R D R D R D R D R D R	16 24 8	16 24 8 .05 .30 .65 2-3 3 1.000R 1.215 4-6 5 .667L 2.151 4-6 5 .667L 4.098 2-6 4.145R 5.607	84 16 24 8 .10 .20 .70 7–8 1.000R .448 4–6 5 .667L 2.316 4–6 5 .667L 3.365 4–6 5 .667L 2.387R 2.387R 5.639 2–8 5	16 24 8 .16 .30 .60 2-3 3 1.000R 1.215 4-6 5 .667L 1.985 1-3 2 1.250R 2.2916 1-3 2 2.250R 2.8144L 5.266 1-6 3						
B 1.200L 1.020R .360R .580R	Ax Span Hit Los On Ax	le le acing beh ad les 10 20 30 40 60	XXX' C a1 a2 a3 G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M G N B M B M G N B M G N B M B M B M G N B M B M B M G N B M B M B M G N B B M B M B M B M B M B M B M B M B M	16 24 8 8	16 24 8 .05 .30 .65 .2-3 3 1.000R 1.215 4-6 5 .667L 2.151 4-6 5 .667L 4.098 2-6 4 4.145R 5.607 2-8 5	84 16 24 8 .10 .20 .70 7–8 8 1.000R .448 4–6 5 .667L 2.316 4–6 5 .667L 3.365 4–6 5 .667L 4.3865 4–6 5 .667L 3.365 4–6 5 .667L 3.365 4–6 5 .667L 3.365 4–6 5 .667L 3.365 4–6 5 .667L 3.365 4–6 5 .667L 3.365 4–6 5 .667L 3.365 4.67L 4.	16 24 8 1.16						
M 14.814 14.110 14.001 13.383	Ax Span Hit Los On Ax	le le acing beh ad les 10 20 30 40 50 60 80	XXX C C C C C C C C C C C C C C C C C C	16 24 8 8	16 24 8 .05 .30 .65 2-3 3 1.000R 1.215 4-6 5 .667L 2.151 4-6 5 .667L 4.098 2-6 4 4.145R 5.607 2-8 5.190L 9.300 1-8	84 16 24 8 .10 .20 .70 7–8 1.000R .448 4–6 5 .667L 2.316 4–6 5 .667L 2.316 4–6 5 .667L 2.3865 4–6 4–4 4–4 4–4 4–4 4–4 4–4 4–4	16 24						
	Ax Span Hit Los On Ax	le le acing beh ad les 10 20 30 40 50 60 80	XXXC a1 a2 a3 G NB G NB M M G NB M M G NB M M M M M M M M M M M M M	16 24 8 8	16 24 8 .05 .30 .65 .30 .65 2-3 3 1.000R 1.215 4-6 5 .667L 2.151 4-6 5 .667L 4.098 2-6 4 4.145R 5.667L 4.998 2-6 4 1.909 1-8 5 1.9000 1-8 1.9000 1-8 1.9000 1-8 1.9000 1-8 1.9000 1-8 1.9000 1-90000 1-9000 1-9000 1-90000 1-90000 1-90000 1-90000 1-90000 1-9	84 16 24 8 .10 .20 .70 7-8 8 1.000R .448 4-6 .5 .667L 2.316 4-6 5 .667L 4.414 2-6 4 2.387R 5.667L 4.414 2-6 5 .667L 4.414 2-6 5 .667L 3.365 4-6 5 .667L 4.414 2-6 4 2.387R 5 6.667L 4.484 2.387R 5.667L 4.494 2.387R 5.667L 3.365 4-6 5 3.365 4-7 5 6.69 4-8 5 5 6.69 4-8 5 6.69 4-8 5 6.69 4-8 5 6.69 4-8 5 6.69 4-8 5 6.69 4-8 5 6.69 4-8 5 6.69 4-8 5 6.69 4-8 5 6 6 6 7 8 8 8 8 8 8 8 8 8 8 8 8 8	16 24						

8. SUMMARY OF MAXIMUM MOMENTS PRODUCED BY VEHICLES OF UNIT WEIGHT ON SIMPLE SPAN BRIDGES

Tables 8.1-8.14 give the maximum moments produced by the 1303 variations of the 14 heavy vehicle types shown in the identification Tables 6.1-6.14 on simple spans of 10, 20, 30, 40, 50, 60, 80, and 100 feet in length. The maximum moments produced by each of the 1303 heavy vehicle types and loadings on 8 different span lengths makes a total of 10,424 maximum moments recorded in the 14 Tables 8.1-8.14 The table number corresponding to each of the 14 heavy vehicle types is as follows:

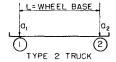
Table No.	Vehicle Type	Table No.	Vehicle Type
8.1	2	8.8	3-S3
8.2	3	8.9	2-2
8.3	2-S1	8.10	2-3
8.4	2-S2	8.11	3-2
8.5	2-S3	8.12	3-3
8.6	3-S1	8.13	2-S1-2
8.7	3-S2	8.14	3-S2-3

The maximum moments given in these tables represent a summary of the maximum moments shown in Tables 7.1-7.14. This summary should prove to be convenient in those cases when one is only concerned with the comparison or determination of maximum moments since these tables (Tables 8.1-8.14) do not include the controlling conditions given in Tables 7.1-7.14.

A description of these tables and how they are used is given in Article 5.

Table 8.1

SUMMARY OF MAXIMUM MOMENTS IN SIMPLE SPANS
PRODUCED BY TYPE 2 TRUCKS WEIGHING ONE KIP EACH



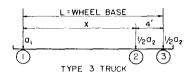
Thirty-six variations in the Type 2 truck are given in this Table. Each truck number, from 1 to 36, represents a different combination of wheel base length, and ratios of gross vehicle weight on each axle.

All dimensions are in feet and moments are in kip-feet. a₁ and a₂—Represent the ratio of gross vehicle weight on axles.

Wheel Base	Truck No.	Load Ax Ki	les				Span	-Feet			
Feet	F.	a ₁	a ₂	10	20	30	40	50	60	80	100
	1	.45	.55	1.375	3.003	5.419	7.877	10.35	12.83	17.81	22.80
	$\tilde{2}$.40	.60	1.500	3.200	5.633	8.100	10.58	13.07	18.05	23.04
L = 10	3	.35	.65	1.625	3.403	5.852	8.327	10.81	13.30	18.29	23.28
	4	.30	.70	1.750	3.613	6.075	8,556	11.05	13.54	18.53	23.52
	5	.25	.75	1.875	3,828	6.302	8.789	11.28	13.78	18.77	23.77
	6	.20	.80	2.000	4.050	6.533	9.025	11.52	14.02	19.01	24.01
	7	.45	.55	1.375	2.750	5.043	7.482	9.946	12.42	17.39	22.37
	8	.40	.60	1.500	3.000	5.292	7.744	10.22	12.70	17.67	22,66
L = 12	9	.35	.65	1.625	3.250	5.547	8.010	10.49	12.97	17.96	22.94
	10	.30	.70	1.750	3.500	5.808	8.281	10.76	13.25	18.24	23.23
	11	.25	.75	1.875	3.750	6.075	8.556	11.05	13.54	18.53	23.52
	12	.20	.80	2.000	4.000	6.348	8.836	11.33	13.82	18.82	23.81
	13	.45	.55	1.375	2.750	4.681	7.098	9.548	12.02	16.97	21.95
	14	.40	.60	1.500	3.000	4.961	7.396	9.857	12,33	17.30	22.28
L = 14	15	.35	.65	1.625	3.250	5.250	7.700	10.17	12.65	17.63	22.61
	16	.30	.70	1.750	3.500	5.547	8.010	10.49	12.97	17.96	22.94
	17	.25	.75	1.875	3.750	5.852	8.327	10.81	13,30	18.29	23.28
	18	.20	.80	2.000	4.000	6.165	8.649	11.14	13.63	18.62	23.62
	19	.45	.55	1.375	2.750	4.332	6.724	9.159	11.62	16.56	21.53
	20	.40	.60	1.500	3.000	4.641	7.056	9.505	11.97	16.93	21.90
L = 16	21	.35	.65	1.625	3.250	4.961	7.396	9.857	12.33	17.30	22.28
	22	.30	.70	1.750	3.500	5.292	7.744	10.22	12.70	17.67	22.66
	23	.25	.75	1.875	3.750	5.633	8.100	10.58	13.07	18.05	23.04
	24	.20	.80	2.000	4.000	6.000	8.464	10.95	13.44	18.43	23.43
	25	.45	.55	1.375	2.750	4.125	6.360	8.778	11.22	16.16	21.11
	26	.40	.60	1.500	3.000	4.500	6.724	9.159	11.62	16.56	21.53
L = 18	27	.35	.65	1.625	3.250	4.875	7.098	9.548	12.02	16.97	21.95
	28	.30	.70	1.750	3.500	5.250	7.482	9.946	12.42	17.39	22.37
	29	.25	.75	1.875	3.750	5.625	7.877	10.35	12.83	17.81	22.80
	30	.20	.80	2.000	4.000	6.000	8.281	10.76	13.25	18.24	23.23
	31	.45	.55	1.375	2.750	4.125	6.006	8,405	10.84	15.75	20.70
	32	.40	.60	1.500	3.000	4.500	6.400	8.820	11.27	16.20	21.16
L = 20	33	.35	.65	1.625	3.250	4.875	6.806	9.245	11.70	16.65	21.62
	34	.30	.70	1.750	3.500	5.250	7.225	9.680	12.15	17.11	22.09
	35	.25	.75	1.875	3.750	5.625	7.656	10.13	12.60	17.58	22.56
	36	.20	.80	2.000	4.000	6.000	8.100	10.58	13.07	18.05	23.04

SUMMARY OF MAXIMUM MOMENTS IN SIMPLE SPANS
PRODUCED BY TYPE 3 TRUCKS WEIGHING ONE KIP EACH

Table 8.2



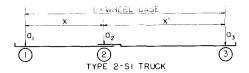
Forty-two variations in the Type 3 truck are given in this Table. Each truck number, from 1 to 42, represents a different combination of wheel base length, axle spacings, and ratios of Gross vehicle weight on each axle.

All dimensions are in feet and moments are in kip-feet. a_1 and a_2 —Represent the ratio of gross vehicle weight on axles.

Wheel Base and Axle Spacing	Truck No.	Ax	d On cles				Span-	Feet			
Feet	Ė	aı	\mathbf{a}_2	10	20	30	40	50	60	80	100
reco	1	.40	.60	1.000	2.498	4.965	7.449	9.939	12,43	17.43	22.42
	$\hat{2}$.35	.65	1.040	2.661	5.140	7.630	10.12	12.62	17.62	22.61
L = 14	3	.30	.70	11120	2.835	5.321	7.816	10.31	12.81	17.81	22.81
	4	.25	.75	1.200	3.038	5.508	8.006	10.51	13.00	18.00	23.00
$X \equiv 10$	5	.20	.80	1.280	3,240	5.701	8.201	10.70	13.20	18.20	23.20
	6	.15	.85	1.360	3.443	5.900	8.400	10.90	13.40	18.40	23.40
	7	.10	.90	1.440	3.645	6.105	8.604	11.10	13.60	18.60	23.60
	8	.40	.60	1.000	2.430	4.608	7.081	9.565	12.05	17.04	22.03
	9	.35	.65	1.040	2.663	4.820	7.303	9.792	12.29	17.28	22.27
L = 16	10	.30	.70	1.120	2.835	5.040	7.530	10.02	12.52	17.52	22.51
	11	.25	.75	1.200	3.038	5.269	7.764	10.26	12.76	17.76	$\frac{22.76}{23.00}$
X = 12	12	.20	.80	$\frac{1.280}{1.360}$	$\frac{3.240}{3.443}$	5.505 5.750	$8.004 \\ 8.250$	$10.50 \\ 10.75$	$13.00 \\ 13.25$	$18.00 \\ 18.25$	23.00
	13	.15	.85	1.440	3.645	6.003	8.502	11.00	13.50	18.50	23.50
	14_	.10	.90								
	15	.40	.60	1.000	2.430	4.261	6.721	9.197	11.68	16.66	21.65
	16	.35	.65	1.040	2.633	4.508 4.765	$6.981 \\ 7.249$	9.465 9.739	11.95	$16.94 \\ 17.23$	$21.93 \\ 22.22$
L = 18	17	.30	.70	1.120	$\frac{2.835}{3.038}$	5.033	7.525	10.02	$12.23 \\ 12.52$	17.23	$\frac{22.22}{22.51}$
	18	.25	.75 .80	$\frac{1.200}{1.280}$	3.240	5.312	7.809	10.02	12.82	17.81	22.80
X = 14	19	.20	.85	1.360	3,443	5.601	8.101	10.60	13.10	18.10	23.10
	$\frac{20}{21}$.15 .10	.90	1.440	3.645	5.901	8.401	10.90	13.40	18.40	23.40
			.60	1.000	2,430	3.925	6.369	8.835	11.31	16.29	21.27
	22 23	.35	.65	1.040	2.633	4.246	6.666	9.142	11.63	16.61	21.60
L = 20	24	.30	.70	1.120	2.835	4.573	6.972	9.458	11.95	16.94	21.93
L == 20	25	.25	.75	1.200	3.038	4.900	7.289	9.781	12.28	17.27	22.27
X = 16	$\frac{25}{26}$.20	.80	1.280	3.240	5.226	7.616	10.11	12.61	17.61	22.61
A 10	27	.15	.85	1.360	3.443	5.553	7.953	10.45	12.95	17.95	22,95
	28	.10	.90	1.440	3.645	5.880	8.300	10.80	13.30	18.30	23.30
	29	.40	.60	1.000	2.430	3.920	6.025	8.480	10.95	15.91	20.89
	30	.35	.65	1.040	2.633	4.246	6.356	8.825	11.30	16.28	21.26
L = 22	31	.30	.70	1.120	2.835	4.573	6.700	9.180	11.67	16.65	21.64
	32	.25	.75	1.200	3.038	4.900	7.056	9.545	12.04	17.03	22.02
X = 18	33	.20	.80	1.280	3.240	5.226	7.425	9.920	12.42	17.41	22.41
	34	.15	.85	1.360	3.443	5.553	7.806	10.31	12.80	17.80	22.80
	35	.10	.90	1.440	3.645	5.880	8.200	10.70	13.20	18.20	23.20
	36	.40	.60	1.000	2.430	3.920	5.689	8.131	10.59	15.55	20.52
	37	.35	.65	1.040	2.633	4.246	6.053	8.512	10.99	15.95	20.93
L = 24	38	.30	.70	1.120	2.835	4.573	6.432	8.906	11.39	16.37	21.35
	39	.25	.75	1.200	3.038	4.900	6.827	9.311	11.80	16.79	21.78
X = 20	40	.20	.80	1.280	3.240	5.226	7.236	9.729	12.22	17.22	22.21
	41	.15	.85	1.360	3.443	5.553	7.671	10.16	12.66	17.66	22.65
	42	.10	.90	1.440	3.645	5.880	8.123	10.60	13.10	18.10	23.10

Table 8.3

SUMMARY OF MAXIMUM MOMENTS IN SIMPLE SPANS PRODUCED BY TYPE 2-S1 TRUCKS WEIGHING ONE KIP EACH



One hundred twenty-six variations in the Type 2-S1 truck are given in this Table. Each truck number, from 1 to 126, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

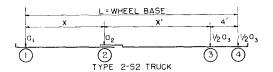
a1, a2, and a3-Represent the ratio of gross vehicle weight on axles.

a1, a2, a	inu a	3 K	epreser	it the	ratio or	gross v	emicie w	eight of	i axies.			
Wheel Base and Axle	Truck No.		Load Axle Kip	es				Spa	an-Feet			
Spacing Feet	Ŧ	aı	a 2	a 3	1	0	30	40	50	60	80	100
	1	.10	.30	.60	1.500	3.000	5.070	7.396	9.857	12.331	17.298	22.278
	2	.10	.40	.50	1.250	2.500	4.565	6.889	9.331	11.793	16.745	21.716
$ \begin{array}{c} L \equiv 20 \\ X \equiv 8 \end{array} $	3	.10	.45	.45	1.125	2.363	4.576	7.032	9.506	11.988	16.966	21.953
X = 8	4	.10	.50	.40	1.250	2.614	4.833	7.300	9.780	12.267	17.250	22.240
X' == 12	5	.20	.30	.50	1.250	2.500	4.335	6.561	8.989	11.441	16.381	21.344
	6 7	.20 .20	$.40 \\ .50$.30	$\frac{1.000}{1.250}$	$\frac{2.252}{2.745}$	$\frac{4.385}{4.933}$	$6.864 \\ 7.425$	$9.351 \\ 9.920$	$\frac{11.843}{12.417}$	$16.832 \\ 17.413$	21.826 22.410
									1.00			
	8 9	.10	.30 .40	.60 .50	$\frac{1.500}{1.250}$	$\frac{3.000}{2.500}$	$\frac{4.565}{3.929}$	$6.762 \\ 6.085$	$9.159 \\ 8.487$	$\frac{11.616}{10.923}$	$16.562 \\ 15.842$	$21.530 \\ 20.794$
L=24	10	.10	.45	.45	1.125	$\frac{2.360}{2.363}$	3.841	6.256	8.705	11.171	16.128	21.102
X = 8	11	.10	.50	.40	1.250	2.614	4.161	6.596	9.057	11.531	16.498	21.478
X' = 16	12	.20	.30	.50	1.250	2.500	3.840	5.780	8.161	10.584	15.488	20.430
11 = 10	13	.20	.40	.40	1.000	2.252	3.734	6.144	8.615	11.096	16.072	21.058
	14	.20	.50	.30	1.250	2.745	4.479	6.864	9.351	11.843	16.832	21.826
	15	.10	.30	.60	1.500	3.000	4.500	6.249	8.487	10.923	15.842	20.794
	16	.10	.40	.50	1.250	2.500	3.750	5.444	7.683	10.086	14.965	19.892
L = 28	17	.10	.45	.45	1.125	2.363	3.733	5.520	7.936	10.380	15.310	20.268
$egin{array}{c} X \equiv 8 \ X' \equiv 20 \end{array}$	18	.10	.50	.40	1.250	2.614	4.110	5.924	8.359	10.816	15.762	20.730
X' = 20	$\frac{19}{20}$.20	.30 .40	.50 .40	$\frac{1.250}{1.000}$	$\frac{2.500}{2.252}$	$\frac{3.750}{3.734}$	$5.282 \\ 5.456$	$\frac{7.373}{7.905}$	$9.761 \\ 10.371$	$14.621 \\ 15.328$	19.536 20.302
	21	.20	.50	.30	1.250	$\frac{2.252}{2.745}$	4.479	6.321	8.797	11.281	16.261	21.248
	22	.10	.30	.60	1.500	3.000	4.500	6.000	7.938	10.251	15.138	20.070
	23	.10	.40	.50	1.250	2.500	3.750	5.000	6.961	9.283	14.112	19.010
L = 32	24	.10	,45	.45	1.125	2.363	3.733	5.106	7.200	9.617	14.513	19.450
X = 8 $X' = 24$	25	.10	.50	.40	1.250	2.614	4.110	5.608	7.687	10.123	15.042	19.994
X' = 24	26	.20	.30	.50	1.250	2.500	3'750	5.000	6.724	8.971	13.778	18.662
	27	.20	.40	.40	1.000	2.252	3.734	5.226	7.220	9.667	14.600	19.560
	28	.20	.50	30	1.250	2.745	4.479	6.222	8.257	10.731	15.698	20.678
	29	.10	.30	.60	1.500	3.000	4.500	6.000	7.500	9.628	14.450	19.360
T 02	30	.10	.40	.50	$\frac{1.250}{1.125}$	$\frac{2.500}{2.363}$	$\frac{3.750}{3.733}$	5.000	$6.349 \\ 6.496$	8.513	13.285	18.148
L = 36	$\frac{31}{32}$.10 .10	.45 $.50$.45 $.40$	1.125 1.250	$\frac{2.505}{2.614}$	4.110	$5.106 \\ 5.608$	7.106	$8.880 \\ 9.451$	$13.735 \\ 14.338$	$18.648 \\ 19.270$
X = 8 $X' = 28$	33	.20	.30	.50	1.250	2.500	3.750	5.000	6.250	8.214	12.961	17.808
A 20	34	.20	.40	.40	1.000	2.252	3.734	5.226	6.721	8.984	13.888	18.830
	35	.20	.50	.30	1.250	2.745	4.479	6.222	7.967	10.193	15.145	20.116
	36	.10	.30	.60	1.500	3.379	5.602	7.921	10.397	12.881	17.861	22.848
	37	.10	.40	.50	1.250	3.040	5.243	7.569	10.035	12.513	17.485	22.468
L = 20	38	.10	.45	.45	1.125	2.880	5.148	7.636	10.129	12.624	17.618	22.614
X = 12 $X' = 8$	39	.10	.50	.40	1.250	3.040	5.333	7.825	10.320	12.817	17.813	22.810
X' = 8	40	.20	.30	.50	1.250	2.890	4.860	7.056	9.505	11.971	16.928	21.902
	41	.20	.40	.40	1.000	2.560	4.705	7.204	9.703	12.203	17.202	22.202
	42	.20	.50	.30	1.250	2.890	5.100	7.600	10.100	12.600	17.600	22.600
	43	.10	.30	.60	1.500	3.000	5.070	7.290	9.680	12.150	17.113	22.090
T - 24	44 45	.10	$.40 \\ .45$.50	1.250	$\frac{2.500}{2.250}$	$\frac{4.565}{4.347}$	$6.762 \\ 6.810$	9.159	11.616	16.562	21.530
$egin{array}{c} L=24 \ X=12 \end{array}$	45 46	.10	.50	.45 $.40$	$1.125 \\ 1.250$	$\frac{2.250}{2.500}$	4.608	$\frac{6.810}{7.081}$	$9.288 \\ 9.565$	$11.774 \\ 12.054$	$16.755 \\ 17.041$	21.744 22.032
X' = 12	47	.20	.30	.50	1.250	2.500	4.335	6.302	8.653	11.094	16.021	20.976
	48	.20	.40	.40	1.000	2.000	3.948	6.436	8.929	11.424	16.418	21.414
	49	.20	.50	.30	1.250	2.500	4.512	7.009	9.507	12.006	17.005	22.004

T	٨	DI	T.	Q	9	(Continued)	

TABLE 8.3 (Continued)												
L = 28 X = 12 X'= 16	50 51 52 53 54 55 56	.10 .10 .10 .10 .20 .20	.30 .40 .45 .50 .30 .40	.60 .50 .45 .40 .50 .40 .30	1.500 1.250 1.125 1.250 1.250 1.000 1.250	3.000 2.500 2.250 2.500 2.500 2.000 2.500	4.565 3.929 3.630 3.929 3.840 3.380 4.118	6.762 6.085 6.025 6.369 5.780 5.700 6.436	8.989 8.323 8.480 8.835 7.841 8.180 8.929	11.441 10.753 10.951 11.313 10.251 10.667 11.424	16.381 15.665 15.913 16.285 15.138 15.650 16.418	21.344 20.612 20.890 21.267 20.070 20.640 21.414
L = 32 $X = 12$ $X' = 20$	57 58 59 60 61 62 63	.10 .10 .10 .10 .20 .20	.30 .40 .45 .50 .30 .40	.60 .50 .45 .40 .50 .40 .30	1.500 1.250 1.125 1.250 1.250 1.000 1.250	3.000 2.500 2.250 2.500 2.500 2.000 2.500	4.500 3.750 3.548 3.920 3.750 3.380 4.118	6.249 5.444 5.280 5.689 5.282 4.996 5.881	8.448 7.605 7.704 8.131 7.225 7.457 8.365	10.753 9.923 10.154 10.593 9.441 9.931 10.854	15.665 14.792 15.090 15.545 14.281 14.898 15.841	20.612 19.714 20.052 20.516 19.184 19.878 20.832
L = 36 X = 12 X'= 24	64 65 66 67 68 69 70	.10 .10 .10 .10 .20 .20	.30 .40 .45 .50 .30 .40	.60 .50 .45 .40 .50 .40	1.500 1.250 1.125 1.250 1.250 1.000 1.250	3.000 2.500 2.250 2.500 2.500 2.000 2.500	4.500 3.750 3.548 3.920 3.750 3.380 4.118	6.000 5.000 4.917 5.415 5.000 4.860 5.851	7.938 6.961 6.961 7.453 6.724 6.759 7.815	10.140 9.126 9.384 9.894 8.670 9.216 10.296	14.965 13.945 14.288 14.821 13.448 14.162 15.272	19.892 18.836 19.230 19.776 18.318 19.130 20.258
L = 40 $X = 12$ $X' = 28$	71 72 73 74 75 76 77	.10 .10 .10 .10 .20 .20	.30 .40 .45 .50 .30 .40	.60 .50 .45 .40 .50 .40	1.500 1.250 1.125 1.250 1.250 1.000 1.250	3.000 2.500 2.250 2.500 2.500 2.000 2.500	4.500 3.750 3.548 3.920 3.750 3.380 4.118	6.000 5.000 4.917 5.415 5.000 4.860 5.851	7.500 6.349 6.289 6.912 6.250 6.348 7.591	9.628 8.483 8.642 9.217 8.167 8.523 9.750	14.281 13.122 13.506 14.113 12.641 13.442 14.173	19.184 17.978 18.425 19.050 17.472 18.394 19.690
$L = 44 \ X = 12 \ X' = 32$	78 79 80 81 82 83	.10 .10 .10 .10 .20 .20	.30 .40 .45 .50 .30 .40	.60 .50 .45 .40 .50 .40	1.500 1.250 1.125 1.250 1.250 1.000 1.250	3.000 2.500 2.250 2.500 2.500 2.000 2.500	4.500 3.750 3.548 3.920 3.750 3.380 4.118	6.000 5.000 4.917 5.415 5.000 4.860 5.851	7.500 6.250 6.289 6.912 6.250 6.348 7.591	9.129 7.860 7.926 8.561 7.680 7.851 9.334	13.613 12.325 12.745 13.421 11.858 12.738 14.162	18.491 17.140 17.636 18.336 16.646 17.670 19.130
L = 24 $X = 16$ $X' = 8$	85 86 87 88 89 90	.10 .10 .10 .10 .20 .20	.30 .40 .45 .50 .30 .40	.60 .50 .45 .40 .50 .40	1.500 1.250 1.125 1.250 1.250 1.000 1.250	3.379 3.040 2.880 3.040 2.890 2.560 2.890	5.602 5.243 5.070 5.243 4.860 4.506 4.860	7.839 7.469 7.425 7.616 6.845 6.800 7.204	10.215 9.857 9.920 10.113 9.159 9.300 9.703	12.696 12.331 12.417 12.611 11.616 11.800 12.203	17.672 17.298 17.413 17.608 16.562 16.800 17.202	22.658 22.278 22.410 22.606 21.530 21.800 22.202
L = 28 X = 16 X'= 12	92 93 94 95 96 97 98	.10 .10 .10 .10 .20 .20	.30 .40 .45 .50 .30 .40	.60 .50 .45 .40 .50 .40	1.500 1.250 1.125 1.250 1.250 1.000 1.250	3.000 2.500 2.250 2.500 2.500 2.000 2.500	5.070 4.565 4.320 4.565 4.335 3.840 4.335	7.290 6.762 6.590 6.864 6.302 6.016 6.601	9.522 8.989 9.072 9.351 8.323 8.513 9.101	11.971 11.441 11.560 11.843 10.753 11.011 11.601	16.928 16.381 16.545 16.832 15.665 16.008 16.601	21.902 21.344 21.536 21.826 20.612 21.006 21.600
$L = 32 \ X = 16 \ X' = 16$	99 100 101 102 103 104 105	.10 .10 .10 .10 .20 .20	.30 .40 .45 .50 .30 .40	.60 .50 .45 .40 .50 .40	1.500 1.250 1.125 1.250 1.250 1.000 1.250	3.000 2.500 2.250 2.500 2.500 2.000 2.500	4.565 3.929 3.630 3.929 3.840 3.226 3.840	6.762 6.085 5.796 6.144 5.780 5.264 6.016	8.979 8.278 8.257 8.615 7.744 7.751 8.513	11.267 10.584 10.731 11.096 9.923 10.243 11.011	16.200 15.488 15.698 16.072 14.792 15.232 16.008	21.160 20.430 20.678 21.058 19.714 20.226 21.006
L = 36 X = 16 X'= 20	106 107 108 109 110 111 112	.10 .10 .10 .10 .20 .20	.30 .40 .45 .50 .30 .40	.60 .50 .45 .40 .50 .40	1.500 1.250 1.125 1.250 1.250 1.000 1.250	3.000 2.500 2.250 2.500 2.500 2.000 2.500	4.500 3.750 3.375 3.750 3.750 3.043 3.772	6.249 5.444 5.063 5.456 5.282 4.544 5.492	8.448 7.605 7.474 7.905 7.225 7.015 7.939	10.665 9.796 9.928 10.371 9.187 9.496 10.433	15.488 14.621 14.871 15.328 13.945 14.472 15.425	20.430 19.536 19.837 20.302 18.836 19.458 20.42
L = 40 X = 16 X'= 24	116 117 118 119	.10 .10 .10 .10 .20 .20	.30 .40 .45 .50 .30 .40	.60 .50 .45 .40 .50 .40	1.500 1.250 1.125 1.250 1.250 1.000 1.250	3.000 2.500 2.250 2.500 2.500 2.000 2.500	4.500 3.750 3.375 3.750 3.750 3.043 3.772	6.000 5.000 4.729 5.226 5.000 4.508 5.492	7.938 6.961 6.723 7.220 6.724 6.305 7.380	10.140 9.125 9.153 9.667 8.670 8.771 9.867	14.792 13.778 14.065 14.600 13.122 13.728 14.850	19.714 18.662 19.012 19.560 17.978 18.702 19.840
I. = 44 X = 16 X'= 28	123	.10 .10 .10 .10 .20 .20	.30 .40 .45 .50 .30 .40	.60 .50 .45 .40 .50 .40	1.500 1.250 1.125 1.250 1.250 1.000 1.250	3.000 2.500 2.250 2.500 2.500 2.000 2.500	4.500 3.750 3.375 3.750 3.750 3.043 3.772	6.000 5.000 4.729 5.226 5.000 4.508 5.492	7.500 6.349 6.098 6.721 6.250 5.986 7.223	9.628 8.483 8.404 8.984 8.167 8.067 9.313	14.112 12.961 13.278 13.888 12.325 13.000 14.285	19.010 17.808 18.203 18.830 17.140 17.960 19.268

Table 8.4
SUMMARY OF MAXIMUM MOMENTS IN SIMPLE SPANS
PRODUCED BY TYPE 2-S2 TRUCKS WEIGHING ONE KIP EACH



One hundred eight variations in the Type 2-S2 truck are given in this Table. Each truck number, from 1 to 108, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

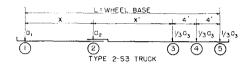
Wheel Base and Axle Spacing	Truck No.		Load (Axle Kips	S				Spa	n-Feet			
Feet	=	aı	\mathbf{a}_2	\mathbf{a}_3	10	20	30	40	50	60	80	100
L = 20 X = 8 X'= 8	1 2 3 4 5 6	.10 .10 .10 .20 .20	.30 .40 .50 .30 .40	.60 .50 .40 .50 .40	.960 1.000 1.250 .800 1.000 1.250	2.721 2.469 2.810 2.331 2.400 2.853	4.965 4.747 5.186 4.376 4.748 5.216	7.449 7.210 7.664 6.832 7.236 7.712	9.939 9.688 10.151 9.306 9.729 10.210	12.433 12.174 12.643 11.788 12.224 12.708	17.425 17.155 17.632 16.766 17.218 17.706	22.420 22.144 22.626 21.753 22.214 22.705
L = 24 $X = 8$ $X' = 12$	7 8 9 10 11 12	.10 .10 .10 .20 .20	.30 .40 .50 .30 .40	.60 .50 .40 .50 .40	.960 1.000 1.250 .800 1.000 1.250	2.430 2.116 2.614 2.025 2.252 2.745	4.402 3.985 4.492 3.770 4.033 4.673	6.721 6.340 6.944 5.972 6.500 7.142	9.197 8.792 9.415 8.418 8.980 9.634	11.681 11.260 11.896 10.882 11.467 12.128	16.661 16.220 16.872 15.836 16.450 17.121	21.648 21.196 21.858 20.809 21.440 22.117
L = 28 $X = 8$ $X' = 16$	13 14 15 16 17 18	.10 .10 .10 .20 .20	.30 .40 .50 .30 .40	.60 .50 .40 .50 .40	.960 1.000 1.250 .800 1.000 1.250	2.430 2.116 2.614 2.025 2.252 2.745	3.920 3.361 4.110 3.267 3.734 4.480	6.090 5.520 6.256 5.212 5.796 6.590	8.480 7.936 8.705 7.570 8.257 9.072	10.950 10.380 11.171 10.008 10.731 11.560	15.913 15.310 16.128 14.931 15.698 16.545	20.890 20.268 21.102 19.885 20.678 21.536
L = 32 $X = 8$ $X' = 20$	19 20 21 22 23 24	.10 .10 .10 .20 .20 .20	.30 .40 .50 .30 .40 .50	.60 .50 .40 .50 .40	.960 1.000 1.250 .800 1.000 1.250	2.430 2.116 2.614 2.025 2.252 2.745	3.920 3.361 4.110 3.267 3.734 4.480	5.561 4.889 5.680 4.695 5.245 6.222	7.789 7.120 8.020 6.762 7.559 8.525	10.241 9.534 10.467 9.168 10.016 11.004	15.181 14.425 15.400 14.051 14.962 15.978	20.144 19.360 20.360 18.981 19.930 20.963
L = 36 $X = 8$ $X' = 24$	25 26 27 28 29 30	.10 .10 .10 .20 .20	.30 .40 .50 .30 .40 .50	.60 .50 .40 .50 .40	.960 1.000 1.250 .800 1.000 1.250	2.430 2.116 2.614 2.025 2.252 2.745	3.920 3.361 4.110 3.267 3.734 4.480	5.415 4.608 5.608 4.513 5.226 6.222	7.249 6.359 7.361 6.140 6.887 8.050	9.553 8.720 9.784 8.361 9.323 10.460	14.465 13.565 14.688 13.196 14.242 15.420	19.412 18.472 19.630 18.097 19.194 20.396
L = 40 $X = 8$ $X' = 28$	31 32 33 34 35 36	.10 .10 .10 .20 .20	.30 .40 .50 .30 .40	.60 .50 .40 .50 .40	.960 1.000 1.250 .800 1.000 1.250	2.430 2.116 2.614 2.025 2.252 2.745	3.920 3.361 4.110 3.267 3.734 4.480	5.415 4.608 5.608 4.513 5.226 6.222	6.912 5.857 7.106 5.760 6.721 7.967	8.940 7.940 9.123 7.588 8.651 9.928	13.765 12.730 13.992 12.366 13.538 14.871	18.692 17.604 18.914 17.233 18.470 19.837
L = 24 $X = 12$ $X' = 8$	37 38 39 40 41 42	.10 .10 .10 .20 .20 .20	.30 .40 .50 .30 .40 .50	.60 .50 .40 .50 .40 .30	.960 1.000 1.250 .800 1.000 1.250	2.721 2.469 2.745 2.331 2.252 2.677	4.965 4.697 4.965 4.320 4.321 4.803	7.264 7.010 7.449 6.482 6.816 7.302	9.751 9.488 9.939 8.946 9.313 9.802	12.243 11.974 12.433 11.422 11.811 12.302	17.232 16.955 17.425 16.391 16.808 17.301	22.226 21.944 22.420 21.373 21.806 22.301

TABLE 8.4 (Continued)

TABLE	8.4 (1	Contin	ued)							_		
L = 28 $X = 12$ $X' = 12$	43 44 45 46 47 48	.10 .10 .10 .20 .20	.30 .40 .50 .30 .40	.60 .50 .40 .50 .40 .30	.960 1.000 1,250 .800 1.000 1.250	2.430 2.025 2.500 2.025 2.000 2.500	$\begin{array}{c} 4.402 \\ 3.985 \\ 4.261 \\ 3.770 \\ 3.600 \\ 4.277 \end{array}$	6.639 6.201 6.721 5.753 6.064 6.720	9.015 8.592 9.197 8.074 8.551 9.216	11.496 11.060 11.681 10.528 11.043 11.714	16.472 16.020 16.661 15.471 16.032 16.710	21.458 20.996 21.648 20.437 21.026 21.708
L = 32 X = 12 X'= 16	49 50 51 52 53 54	.10 .10 .10 .20 .20	.30 .40 .50 .30 .40 .50	.60 .50 .40 .50 .40 .30	.960 1.000 1.250 .800 1.000 1.250	$\begin{array}{c} 2.430 \\ 2.025 \\ 2.500 \\ 2.025 \\ 2.000 \\ 2.500 \\ \end{array}$	3.920 3.320 3.920 3.267 3.380 4.118	6.090 5.503 6.025 5.212 5.344 6.156	8.322 7.736 8.480 7.242 7.815 8.645	$10.771 \\ 10.180 \\ 10.950 \\ 9.668 \\ 10.296 \\ 11.138$	15.728 15.110 15.913 14.576 15.272 16.128	$\begin{array}{c} 20.702 \\ 20.068 \\ 20.890 \\ 19.521 \\ 20.258 \\ 21.123 \end{array}$
$L = 36 \ X = 12 \ X' = 20$	55 56 57 58 59 60	.10 .10 .10 .20 .20 .20	.30 .40 .50 .30 .40 .50	.60 .50 .40 .50 .40	.960 1.000 1.250 .800 1.000 1.250	$\begin{array}{c} 2.430 \\ 2.025 \\ 2.500 \\ 2.025 \\ 2.000 \\ 2.500 \end{array}$	3.920 3.267 3.920 3.267 3.380 4.118	5.561 4.839 5.462 4.695 4.860 5.851	7.779 7.021 7.789 6.656 7.105 8.088	$\begin{array}{c} 10.067 \\ 9.334 \\ 10.241 \\ 8.842 \\ 9.571 \\ 10.574 \end{array}$	15.000 14.225 15.181 13.706 14.528 15.555	$\begin{array}{c} 19.960 \\ 19.160 \\ 20.144 \\ 18.625 \\ 19.502 \\ 20.544 \end{array}$
L = 40 $X = 12$ $X' = 24$	61 62 63 64 65 66	.10 .10 .10 .20 .20 .20	.30 .40 .50 .30 .40 .50	.60 .50 .40 .50 .40	$\begin{array}{c} .960 \\ 1.000 \\ 1.250 \\ .800 \\ 1.000 \\ 1.250 \end{array}$	2.430 2.025 2.500 2.025 2.000 2.500	3.920 3.267 3.920 3.267 3.380 4.118	5.415 4.513 5.415 4.513 4.860 5.851	$\begin{array}{c} 7.249 \\ 6.359 \\ 7.081 \\ 6.140 \\ 6.436 \\ 7.634 \end{array}$	$\begin{array}{c} 9.465 \\ 8.541 \\ 9.553 \\ 8.100 \\ 8.867 \\ 10.022 \end{array}$	14.288 13.365 14.465 12.861 13.800 14.991	19.230 18.272 19.412 17.749 18.760 19.973
$L = 44 \ X = 12 \ X' = 28$	67 68 69 70 71 72	.10 .10 .10 .20 .20	.30 .40 .50 .30 .40	.60 .50 .40 .50 .40 .30	.960 1.000 1.250 .800 1.000 1.250	2.430 2.025 2.500 2.025 2.000 2.500	3.920 3.267 3.920 3.267 3.380 4.118	5.415 4.513 5.415 4.513 4.860 5.851	6.912 5.760 6.912 5.760 6.348 7.591	8.940 7.883 8.886 7.586 8.184 9.482	13.592 12.530 13.765 12.041 13.088 14.436	18.514 17.404 18.692 16.893 18.030 19.409
L = 28 X = 16 X'= 8	73 74 75 76 77 78	.10 .10 .10 .20 .20 .20	.30 .40 .50 .30 .40 .50	.60 .50 .40 .50 .40 .30	.960 1.000 1.250 .800 1.000 1.250	2.721 2.469 2.745 2.331 2.252 2.677	4.965 4.697 4.960 4.320 4.167 4.594	7.211 6.935 7.236 6.315 6.404 6.700	9.565 9.306 9.729 8.592 8.903 9.200	12.054 11.788 12.224 11.060 11.403 11.700	17.041 16.766 17.218 16.020 16.402 16.700	22.032 21.753 22.214 20.996 21.402 21.700
L = 32 X = 16 X'= 12	79 80 81 82 83 84	.10 .10 .10 .20 .20	.30 .40 .50 .30 .40 .50	.60 .50 .40 .50 .40	.960 1.000 1.250 .800 1.000 1.250	2.430 2.025 2.500 2.025 2.000 2.500	4.402 3.985 4.241 3.770 3.527 4.084	6.639 6.201 6.500 5.753 5.636 6.306	8.881 8.431 8.980 7.742 8.129 8.805	11.313 10.882 11.467 10.180 10.624 11.304	16.285 15.836 16.450 15.110 15.618 16.303	21.268 20.809 21.440 20.068 20.614 21.303
L = 36 X = 16 X'= 16	85 86 87 88 89 90	.10 .10 .10 .20 .20 .20	.30 .40 .50 .30 .40 .50	.60 .50 .40 .50 .40	.960 1.000 1.250 .800 1.000 1.250	$\begin{array}{c} 2.430 \\ 2.025 \\ 2.500 \\ 2.025 \\ 2.000 \\ 2.500 \end{array}$	3.920 3.326 3.772 3.267 3.043 3.772	$\begin{array}{c} 6.090 \\ 5.503 \\ 5.796 \\ 5.212 \\ 4.900 \\ 5.730 \end{array}$	8.322 7.712 8.257 7.190 7.380 8.224	10.593 10.008 10.731 9.334 9.867 10.720	15.545 14.931 15.698 14.225 14.850 15.715	20.516 19.885 20.678 19.160 19.840 20.712
L = 40 X = 16 X'= 20	91 92 93 94 95 96	.10 .10 .10 .20 .20 .20	.30 .40 .50 .30 .40	.60 .50 .40 .50 .40	.960 1.000 1.250 .800 1.000 1.250	$\begin{array}{c} 2.430 \\ 2.025 \\ 2.500 \\ 2.025 \\ 2.000 \\ 2.500 \end{array}$	3.920 3.267 3.750 3.267 3.043 3.772	5.561 4.839 5.245 4.695 4.508 5.492	7.779 7.021 7.559 6.656 6.657 7.658	10.008 9.226 10.016 8.630 9.131 10.148	14.821 14.051 14.962 13.365 14.098 15.136	19.776 18.981 19.930 18.272 19.078 20.129
L = 44 X = 16 X'= 24	97 98 99 100 101 102	.10 .10 .10 .20 .20	.30 .40 .50 .30 .40	.60 .50 .40 .50 .40 .30	.960 1.000 1.250 .800 1.000 1.250	2.430 2.025 2.500 2.025 2.000 2.500	3.920 3.267 3.750 3.267 3.043 3.772	5.415 4.513 5.226 4.513 4.508 5.492	7.249 6.359 6.887 6.140 6.016 7.226	9.465 8.541 9.323 8.100 8.416 9.588	14.113 13.196 14.242 12.530 13.362 14.566	19.050 18.097 19.194 17.404 18.330 19.553
L = 48 $X = 16$ $X' = 28$	103 104 105 106 107 108	.10 .10 .10 .20 .20 .20	.30 .40 .50 .30 .40	.60 .50 .40 .50 .40	.960 1.000 1.250 .800 1.000 1.250	2.430 2.025 2.500 2.025 2.000 2.500	3.920 3.267 3.750 3.267 3.043 3.772	5.415 4.513 5.226 4.513 4.508 5.492	6.912 5.760 6.721 5.760 5.986 7.223	8.940 7.883 8.651 7.586 7.723 9.045	13.421 12.366 13.538 11.720 12.642 14.005	18.336 17.233 18.470 16.556 17.594 18.984

SUMMARY OF MAXIMUM MOMENTS IN SIMPLE SPANS PRODUCED BY TYPE 2-S3 TRUCKS WEIGHING ONE KIP EACH

Table 8.5



Ninety variations in the Type 2-S3 truck are given in this Table. Each truck number, from 1 to 90, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

All dimensions are in feet and moments are in kip-feet. a_1 , a_2 , and a_3 —Represent the ratio of gross vehicle weight on axles.

Wheel Base and Axle Spacing	Truck No.		Load C Axles Kips					Spa	n-Feet			
Feet_	F	a ₁	\mathbf{a}_2	a ₃	10	20	30	40	50	60	80	100
L = 24 $X = 8$ $X' = 8$	1 2 3 4 5 6	.10 .10 .10 .20 .20	.225 .30 .40 .20 .30 .40	.675 .60 .50 .60 .50	.788 .750 1.000 .700 .750 1.000	2.475 2.200 2.272 2.200 1.868 2.338	4.568 4.350 4.322 4.060 3.858 4.389	6.953 6.816 6.766 6.436 6.317 6.868	9.452 9.313 9.232 8.929 8.793 9.355	11.952 11.811 11.709 11.424 11.277 11.847	16.952 16.808 16.681 16.418 16.257 16.836	21.951 21.806 21.664 21.414 21.245 21.830
L = 28 X = 8 X'= 12	7 8 9 10 11 12	.10 .10 .10 .20 .20 .20	.225 .30 .40 .20 .30 .40	.675 .60 .50 .60 .50	.788 .750 1.000 .700 .750 1.000	2.475 2.200 2.116 2.200 1.832 2.253	4.170 3.763 3.662 3.706 3.226 3.900	6.390 6.064 5.920 5.700 5.452 6.149	8.820 8.551 8.355 8.180 7.900 8.620	11.317 11.043 10.812 10.667 10.366 11.101	16.313 16.032 15.758 15.650 15.323 16.077	21.310 21.026 20.725 20.640 20.298 21.063
L = 32 X = 8 X'= 16	13 14 15 16 17	.10 .10 .10 .20 .20	.225 .30 .40 .20 .30 .40	.675 .60 .50 .60 .50	.788 .750 1.000 .700 .750 1.000	2.475 2.200 2.116 2.200 1.832 2.253	4.163 3.700 3.361 3.700 3.082 3.736	5.990 5.440 5.131 5.325 4.672 5.539	8.213 7.815 7.519 7.457 7.048 7.911	10.695 10.296 9.948 9.931 9.489 10.377	15.684 15.272 14.860 14.898 14.415 15.334	20.677 20.258 19.807 19.878 19.371 20.309
L = 36 $X = 8$ $X' = 20$	19 20 21 22 23 24	.10 .10 .10 .20 .20 .20	.225 .30 .40 .20 .30 .40	.675 .60 .50 .60 .50	.788 .750 1.000 .700 .750 1.000	2.475 2.200 2.116 2.200 1.832 2.253	4.163 3.700 3.361 3.700 3.082 3.736	5.850 5.200 4.661 5.200 4.332 5.227	7.812 7.122 6.722 6.944 6.235 7.227	10.088 9.571 9.117 9.216 8.645 9.674	15.066 14.528 13.986 14.162 13.532 14.607	20.053 19.502 18.908 19.130 18.464 19.567
L = 40 X = 8 X'= 24	25 26 27 28 29 30	.10 .10 .10 .20 .20 .20	.225 .30 .40 .20 .30 .40	.675 .60 .50 .60 .50	.788 .750 1.000 .700 .750 1.000	2.475 2.200 2.116 2.200 1.832 2.253	4.163 3.700 3.361 3.700 3.082 3.736	5.850 5.200 4.608 5.200 4.332 5.227	7.538 6.700 6.047 6.700 5.582 6.784	9.634 8.867 8.320 8.563 7.834 8.992	14.459 13.800 13.138 13.442 12.674 13.896	19,437 18,760 18,029 18,394 17,577 18,839
L = 28 $X = 12$ $X' = 8$	31 32 33 34 35 36	.10 .10 .10 .20 .20 .20	.225 .30 .40 .20 .30 .40	.675 .60 .50 .60 .50	.788 .750 1.600 .700 .750 1.000	2.475 2.200 2.206 2.200 1.832 2.160	4.568 4.350 4.162 4.060 3.800 3.966	6.800 6.625 6.541 6.064 5.921 6.441	9.256 9.120 9.012 8.551 8.396 8.934	11.755 11.617 11.493 11.043 10.880 11.429	16.754 16.613 16.469 16.032 15.860 16.423	21.753 21.610 21.454 21.026 20.848 21.419
L = 32 X = 12 X' = 12	37 38 39 40 41 42	.10 .10 .10 .20 .20	.225 .30 .40 .20 .30 .40	.675 .60 .50 .60 .50	.788 .750 1.000 .700 .750 1.000	2.475 2.200 2.000 2.200 1.832 2.000	4.170 3.763 3.432 3.706 3.226 3.507	6.390 6.011 5.685 5.680 5.218 5.705	8.629 8.365 8.127 7.815 7.505 8.186	11.124 10.854 10.589 10.296 9.971 10.672	16.118 15.841 15.540 15.272 14.929 15.656	21.114 20.832 20.511 20.258 19.903 20.646

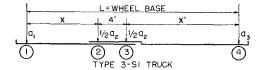
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T	v	U

TABLE 8.5 (Continued)

TABLE	8.5 (Contin	ued)									
	43	.10	.225	.675	.788	2.475	4.163	5.990	8.213	10.507	15.493	20,484
L = 36	44	.10	.30	.60	.750	2.200	3.700	5.440	7.682	10.113	15.085	20.068
$\frac{1}{x} - \frac{10}{12}$	45	.10	.40	.50	1.000	2.000	3.174	4.934	7.283	9.718	14.637	19.589
X = 12 $X' = 16$	46	.20	.20	.60	.700	2.200	3.700	5.325	7.300	9.571	14.528	19.502
A 10	47	.20	.30	.50	.750	1.832	3.082	4.661	6.654	9.095	14.022	
	48	.20	.40	.40								18.978
					1.000	2.000	3.380	5.107	7.463	9.937	14.905	19.885
	49	.10	.225	.675	.788	2.475	4.163	5.850	7.812	10.035	14.878	19.863
L = 40	50	.10	.30	.60	.750	2.200	3.700	5.200	7.122	9.393	14.345	19.316
X = 12	51	.10	.40	.50	1.000	2.000	3.174	4.443	6.478	8.881	13.759	18.686
X'=20	52	.20	.20	.60	.700	2.200	3.700	5.200	6.944	8.920	13.800	18.760
	53	.20	.30	.50	.750	1.832	3.082	4.332	6.100	8.252	13.140	18.073
	54	.20	.40	.40	1.000	2.000	3.380	4.860	6.767	9.223	14.170	19.137
	55	.10	.225	.675	.788	2.475	4.163	5.850	7.538	9.634	14,274	19,249
L = 44	56	.10	.30	.60	.750	2.200	3.700	5.200	6.700	8.807	13.621	18.576
X = 12	57	.10	.40	.50	1.000	2,000	3.174	4.418	5.811	8.077	12,906	17.803
X = 12 $X' = 24$	58	.20	.20	.60	.700	2.200	3.700	5.200	6.700	8.563	13.088	18.030
	59	.20	.30	.50	.750	1.832	3.082	4.332	5.582	7.542	12.283	17.187
	60	.20	.40	.40	1.000	2.000	3.380	4.860	6.371	8.531	13.450	18.402
	61	.10	.225	.675	.788	2.475						
L = 32	62	.10	.30				4.568	6.800	9.061	11.559	16.557	21.556
V = 16	63			.60	.750	2.200	4.350	6.600	8.929	11.424	16.418	21.414
X = 16 $X' = 8$.10	.40	.50	1.000	2.206	4.162	6.409	8.793	11.277	16.257	21.245
$\Lambda = \delta$	64	.20	.20	.60	.700	2.200	4.060	6.045	8.180	10.667	15.650	20,640
	65	.20	.30	.50	.750	1.832	3.800	5.800	8.035	10.513	15.485	20.468
	66	.20	.40_	.40	1.000	2.160	3.842	6.021	8.518	11.016	16.013	21.011
	67	.10	.225	.675	.788	2.475	4.170	6.390	8.622	10.933	15.925	20.920
L = 36	68	.10	.30	.60	.750	2.200	3.763	6.011	8.258	10.667	15.650	20.640
X = 16 $X' = 12$	69	.10	.40	.50	1.000	2.000	3.422	5.654	7.900	10.366	15.323	20,298
X'=12	70	.20	.20	.60	.700	2.200	3.706	5.680	7.664	9.931	14.898	19.878
	71	.20	.30	.50	.750	1.832	3.226	5.218	7.214	9.617	14.563	19.531
	72_	.20	.40	.40	1.000	2.000	3.312	5.270	7.757	10.249	15.238	20.232
	73	.10	.225	.675	.788	2,475	4.163	5.990	8.213	10.444	15.303	20,292
L = 40	74	10	.30	.60	.750	2.200	3.700	5.440	7.682	9,931	14.898	19.878
X = 16 $X' = 16$	75	.10	.40	.50	1.000	2.000	3.082	4.934	7.158	9.489	14.415	19.371
X' = 16	76	.20	.20	.60	.700	2.200	3.700	5.325	7.300	9.283	14.162	19,130
	77	.20	.30	.50	.750	1.832	3.082	4.661	6.648	8.754	13.666	18,614
	78	.20	.40	.40	1.000	2.000	3.043	4.684	7.022	9.503	14.479	19.465
	79	.10	.225	.675	.788	2.475	4.163	5.850	7.812	10.035	14.691	19.673
L = 44	80	.10	.30	.60	.750	2.200	3.700	5.200	7.122	9.360		
Y — 16	81	.10	.40	.50	1.000	2.000	3.082	4.332	6.451		14.162	19.130
X = 16 $X' = 20$	82	.20	.20	.60	.700	2.200	3.700	$\frac{4.332}{5.200}$	6.451 6.944	8.667	13.532	18.464
A 20	83	.20	.30	.50	.750	1.832	3.082			8.920	13.442	18.394
	84	.20	.40	.40	1.000			4.332	6.100	8.083	12.794	17.716
						2.000	3.043	4.507	6.340	8.779	13.736	18.711
L = 48	85	.10	.225	.675	.788	2.475	4.163	5.850	7.538	9.634	14.090	19.062
L = 48	86	.10	.30	.60	.750	2.200	3.700	5.200	6.700	8.807	13.442	18.394
X = 16 $X' = 24$	87	.10	.40	.50	1.000	2.000	3.082	4.332	5.772	7.969	12.674	17.577
$\Lambda = 24$	88	.20	.20	.60	.700	2.200	3.700	5.200	6.700	8.563	12.738	17.670
	89	.20	.30	.50	.750	1.832	3.082	4.332	5.582	7.542	11.948	16.839
	90	.20_	.40	.40	1.000	2.000	3.043	4.507	5.986	8.075	13.009	$_{-17.969}$

Table 8.6

SUMMARY OF MAXIMUM MOMENTS IN SIMPLE SPANS
PRODUCED BY TYPE 3-S1 TRUCKS WEIGHING ONE KIP EACH



Ninety variations in the Type of 3-S1 truck are given in this Table. Each truck number, from 1 to 90, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

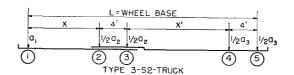
Wheel Base and Axle Spacing	Truck No.		Load C Axles Kips	;				Spa	n-Feet			
Feet	F-	a ₁	\mathbf{a}_2	\mathbf{a}_3	10	20	30	40	50	60	80	100
L = 24 $X = 8$ $X' = 12$	1 2 3 4 5 6	.10 .10 .10 .20 .20	.40 .50 .60 .40 .50	.50 .40 .30 .40 .30 .266	1.250 1.000 .960 1.000 .800 .854	2.500 2.101 2.503 2.000 2.207 2.341	4.241 4.056 4.512 3.526 4.000 4.174	6.418 6.542 7.009 6.016 6.500 6.664	8.820 9.034 9.507 8.513 9.000 9.164	11.267 11.528 12.006 11.011 11.500 11.664	16.200 16.521 17.005 16.008 16.500 16.664	21.160 21.517 22.004 21.006 21.500 21.664
L = 28 X = 8 X'= 16	7 8 9 10 11 12	.10 .10 .10 .20 .20	.40 .50 .60 .40 .50 .534	.50 .40 .30 .40 .30 .266	1.250 1.000 .960 1.000 .800 .854	2.500 2.101 2.503 2.000 2.207 2.341	3.772 3.600 4.252 3.309 3.955 4.174	5.760 5.810 6.436 5.264 5.912 6.135	8.000 8.288 8.929 7.751 8.410 8.634	10.417 10.774 11.424 10.243 10.908 11.133	15.313 15.755 16.418 15.232 15.906 16.133	20.250 20.744 21.414 20.226 20.905 21.132
L = 32 $X = 8$ $X' = 20$	13 14 15 16 17 18	.10 .10 .10 .20 .20	.40 .50 .60 .40 .50	.50 .40 .30 .40 .30 .266	1.250 1.600 .960 1.000 .800 .854	2.500 2.101 2.503 2.000 2.207 2.341	3.750 3.600 4.252 3.309 3.955 4.174	5.143 5.110 6.002 4.807 5.703 6.008	7.280 7.568 8.365 7.015 7.834 8.115	9.600 10.040 10.854 9.496 10.328 10.612	14.450 15.005 15.841 14.472 15.321 15.608	19.360 19.984 20.832 19.458 20.317 20.606
L = 36 $X = 8$ $X' = 24$	19 20 21 22 23 24	.10 .10 .10 .20 .20	.40 .50 .60 .40 .50	.50 .40 .30 .40 .30 .266	1.250 1.000 .960 1.000 .800 .854	2.500 2.101 2.503 2.000 2.207 2.341	3.750 3.600 4.252 3.309 3.955 4.174	5.000 5.100 6.002 4.807 5.703 6.008	6.651 6.874 7.815 6.305 7.453 7.843	8.817 9.328 10.296 8.771 9.760 10.099	13.613 14.271 15.272 13.728 14.745 15.090	18.490 19.237 20.258 18.702 19.736 20.085
L = 40 $X = 8$ $X' = 28$	25 26 27 28 29 30	.10 .10 .10 .20 .20	.40 .50 .60 .40 .50	.50 .40 .30 .40 .30 .266	1.250 1.000 .960 1.000 .800 .854	2.500 2.101 2.503 2.000 2.207 2.341	3.750 3.600 4.252 3.309 3.955 4.174	5.000 5.100 6.002 4.807 5.703 6.008	6.250 6.600 7.751 6.305 7.453 7.843	8.167 8.638 9.750 8.067 9.204 9.678	12.800 13.553 14.713 13.000 14.178 14.580	17.640 18.503 19.690 17.960 19.163 19.570
$L = 28 \\ X = 12 \\ X' = 12$	31 32 33 34 35 36	.10 .10 .10 .20 .20	.40 .50 .60 .40 .50	.50 .40 .30 .40 .30 .266	1.250 1.000 .960 1.000 .800 .854	2.500 2.025 2.430 2.000 2.025 2.163	4.241 3.984 4.403 3.526 3.770 3.913	6.418 6.330 6.804 5.604 6.102 6.272	8.653 8.824 9.303 8.103 8.602 8.770	11.094 11.320 11.803 10.603 11.102 11.269	16.021 16.315 16.802 15.602 16.101 16.268	20.976 21.312 21.802 20.602 21.101 21.267
L = 32 X = 12 X'= 16	37 38 39 40 41 42	.10 .10 .10 .20 .20	.40 .50 .60 .40 .50	.50 .40 .30 .40 .30 .266	1.250 1.000 .960 1.000 .800 .854	2.500 2.025 2.430 2.000 2.025 2.163	3.772 3.400 4.050 3.043 3.573 3.791	5.760 5.590 6.225 4.836 5.502 5.730	7.938 8.072 8.720 7.329 8.002 8.230	10.251 10.560 11.217 9.824 10.502 10.730	15.138 15.545 16.213 14.818 15.501 15.730	20.070 20.536 21.210 19.814 20.501 20.730
L = 36 X = 12 X'= 20	43 44 45 46 47 48	.10 .10 .10 .20 .20	.40 .50 .60 .40 .50	.50 .40 .30 .40 .30 .266	1.250 1.000 .960 1.000 .800 .854	2.500 2.025 2.430 2.000 2.025 2.163	3.750 3.400 4.050 3.000 3.573 3.791	5.143 4.900 5.800 4.427 5.318 5.621	7.280 7.346 8.151 6.580 7.416 7.702	9.458 9.822 10.643 9.067 9.914 10.201	14.281 14.791 15.632 14.050 14.910 15.200	19.184 19.773 20.626 19.040 19.908 20.199

TABLE 8.6 (C	ontinued)
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IABLE	U.U (0011011	ucu,									
	49	.10	.40	.50	1.250	2.500	3.750	5.000	6.651	8.800	13.448	18.318
L = 40	50	.10	.50	.40	1.000	2.025	3,400	4.900	6.645	9.104	14.053	19.023
$\overline{\mathrm{X}}=12$	51	.10	.60	.30	.960	2.430	4.050	5.800	7.597	10.081	15.061	20.048
X' = 24	52	.20	.40	.40	1.000	2.000	3.000	4.427	5.921	8.331	13.298	18.278
	53	.20	.50	.30	.800	2.025	3.573	5.318	7.064	9.338	14,328	19.323
	54	.20	.534	.266	.854	2.163	3.791	5.621	7.453	9.682	14.677	19.674
	55	.10	.40	.50	1.250	2.500	3.750	5.000	6.250	8.167	12,641	17,472
L = 44	56	.10	.50	.40	1.000	2.025	3,400	4.900	6.400	8.408	13.331	18.285
	57	.10	.60	.30	.960	2.430	4.050	5.800	7.550	9.531	14.498	19.478
X = 12 $X' = 28$	58	.20	.40	.40	1.000	2.000	3.000	4.427	5.921	7.616	12.562	17.530
	59	.20	.50	.30	.800	2.025	3,573	5.318	7.064	8.812	13.755	18.744
	60	.20	.534	.266	.854	2.163	3.791	5.621	7.453	9.286	14.162	19.155
	61	.10	.40	.50	1.250	2.500	4,241	6.418	8.625	10.923	15.842	20,794
L = 32	62	.10	.50	.40	1.000	2.025	3.984	6.200	8.616	11.114	16.110	21.108
$\ddot{X} = 16$	63	.10	.60	.30	.960	2.430	4.403	6.640	9.101	11.601	16.601	21.600
X' = 10 X' = 12	64	.20	.40	.40	1.000	2.000	3.526	5.445	7.700	10.200	15.200	20.200
11 14	65	.20	.50	.30	.800	2.025	3.770	5.753	8.210	10.708	15.706	20.705
	66	.20	.534	.266	.854	2.163	3.913	5.901	8.382	10.879	15.876	20.874
	67	.10	.40	.50	1.250	2.500	3.772	5.760	7.938	10.140	14.965	19.892
L = 36	68	.10	.50	.40	1.000	2.025	3.320	5.503	7.858	10.140	15.336	20.329
Y 16	69	.10	.60	.30	.960	$\frac{2.025}{2.430}$	3.920	6.090	8.513	11.011	16.008	21.006
$egin{array}{l} \mathbf{X} = 16 \\ \mathbf{X'} = 16 \end{array}$	70	.20	.40	.40	1.000	2.000	3.043	4.805	6.913	9.411	14.408	19.406
A 10	71	.20	.50	.30	.800	2.025	3,267	5.213	7.600	10.100	15,100	20.100
	$7\hat{2}$.20	.534	.266	.854	2.163	3.489	5.412	7.834	10.333	15.332	20.332
	73	.10	.40	.50	1.250	2.500	3.750	5.143	7.280	9.458	14.112	19.010
L = 40	74	.10	.50	.40	1.230 1.000	$\frac{2.500}{2.025}$	3.267	4.840	7.125	9.458 9.604	14.112	19.563
X = 16	75	.10	.60	.30	.960	2.430	3.920	5.602	7.123	10.433	15.425	20.420
$\mathbf{X}' = 10$	76	.20	.40	.40	1.000	2.000	3,000	4.205	6.151	8.643	13.632	18.626
A _ 20	77	.20	.50	.30	.800	2.025	3.267	4.943	7.005	9.504	14.503	19.503
	78	.20	.534	.266	.854	2.163	3.489	5.244	7.297	9.796	14.796	19.796
T 44	79	.10	.40	.50	1.250	$\frac{2.500}{2.025}$	$\frac{3.750}{3.267}$	5.000	6.651	8.800	13.285	18.148
L = 44	80	.10	.50	.40	$\frac{1.000}{.960}$	2.025 2.430	$\frac{3.267}{3.920}$	4.704	6.418	8.882	13.836	18.809
$egin{array}{l} X=16 \ X'=24 \end{array}$	81 82	.10 .20	$.60 \\ .40$.30 .40	1.000	2.430	$\frac{3.920}{3.000}$	$\frac{5.602}{4.060}$	$\frac{7.380}{5.548}$	$\frac{9.867}{7.896}$	$14.850 \\ 12.872$	19.840 17.858
$\Lambda = 24$							$\frac{3.000}{3.267}$					
	83 84	.20 .20	.50 $.534$.30 $.266$.800	2.025		4.943	6.685	8.920	13.915	18.912
		_			.854	2.163	3.489	5.244	7.072	9.270	14.268	19.267
T 40	85	.10	.40	.50	1.250	2.500	3.750	5.000	6.250	8.167	12.500	17.306
L = 48	86	.10	.50	.40	1.000	2.025	3.267	4.704	6.203	8.180	13.110	18.068
X = 16	87	.10	.60	.30	.960	2.430	3.920	5.602	7.351	9.313	14.285	19.268
X'=28	88	.20	.40	.40	1.000	2.000	3.600	4.060	5.548	7.171	12.128	17.102
	89	.20	.50	.30	.803	2.025	3.267	4.943	6.685	8.429	13.336	18.329
	90	.20	.534	.266	.854	2.163	3.489	5.244	7.072	8.902	13.747	18.743

Table 8.7

SUMMARY OF MAXIMUM MOMENTS IN SIMPLE SPANS PRODUCED BY TYPE 3-S2 TRUCKS WEIGHING ONE KIP EACH



One hundred twelve variations in the Type 3-S2 truck are given in this Table. Each truck number, from 1 to 112, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

Wheel Base and Axle Spacing	Truck No.		Load (Axle Kips	S				Spa	n-Feet			
Feet	ΙĒ	aı	\mathbf{a}_2	\mathbf{a}_3	10	20	30	40	50	60	80	100
L = 28 X = 8 X'= 12	1 2 3 4 5 6 7	.10 .10 .10 .10 .20 .20	.30 .40 .45 .50 .30 .40	.60 .50 .45 .40 .50 .40	.960 .800 .720 .800 .800 .640	2.430 2.025 1.901 2.102 2.025 1.814 2.205	4.134 3.647 3.447 3.701 3.506 3.310 3.953	6.364 5.847 5.910 6.172 5.480 5.636 6.204	8.746 8.245 8.388 8.658 7.820 8.129 8.703	11.222 10.704 10.874 11.148 10.267 10.624 11.203	16.191 15.653 15.855 16.136 15.200 15.618 16.202	21.173 20.623 20.844 21.129 20.160 20.614 21.202
$L = 32 \ X = 8 \ X' = 16$	8 9 10 11 12 13 14	.10 .10 .10 .10 .20 .20 .20	.30 .40 .45 .50 .30 .40	.60 .50 .45 .40 .50 .40	.960 .800 .720 .800 .800 .640	2.430 2.025 1.901 2.102 2.025 1.814 2.205	3.920 3.267 3.276 3.602 3.267 3.310 3.953	5.821 5.167 5.125 5.456 4.951 4.900 5.744	8.047 7.405 7.580 7.925 7.000 7.380 8.120	10.504 9.838 10.050 10.404 9.417 9.867 10.617	15.453 14.753 15.013 15.378 14.313 14.850 15.613	20.423 19.703 19.990 20.363 19.250 19.840 20.610
$L = 36 \ X = 8 \ X' = 20$	15 16 17 18 19 20 21	.10 .10 .10 .10 .20 .20	.30 .40 .45 .50 .30 .40	.60 .50 .45 .40 .50 .40	.960 .800 .720 .800 .800 .640	2.430 2.025 1.901 2.102 2.025 1.814 2.205	3.920 3.267 3.276 3.602 3.267 3.310 3.953	5.427 4.579 4.651 5.102 4.537 4.808 5.703	7.512 6.687 6.804 7.218 6.396 6.657 7.577	9.808 9.004 9.254 9.682 8.600 9.131 10.043	14.731 13.878 14.190 14.636 13.450 14.098 15.032	19.685 18.803 19.152 19.609 18.360 19.078 20.026
L = 40 X = 8 X'= 24	22 23 24 25 26 27 28	.10 .10 .10 .10 .20 .20	.30 .40 .45 .50 .30 .40	.60 .50 .45 .40 .50 .40	.960 .800 .720 .800 .800 .640	2.430 2.025 1.901 2.102 2.025 1.814 2.205	3.920 3.267 3.276 3.602 3.267 3.310 3.953	5.415 4.513 4.651 5.102 4.513 4.808 5.703	7.013 6.043 6.061 6.602 5.889 6.306 7.452	9.203 8.211 8.484 8.980 7.841 8.416 9.481	14.025 13.028 13.388 13.910 12.613 13.362 14.461	18.960 17.923 18.330 18.868 17.490 18.330 19.448
L = 44 X = 8 X'= 28	29 30 31 32 33 34 35	.10 .10 .10 .10 .20 .20	.30 .40 .45 .50 .30 .40	.60 .50 .45 .40 .50 .40	.960 .800 .720 .800 .800 .640	2.430 2.025 1.901 2.102 2.025 1.814 2.205	3.920 3.267 3.276 3.602 3.267 3.310 3.953	5.415 4.513 4.651 5.102 4.513 4.808 5.703	6.912 5.760 6.026 6.602 5.760 6.306 7.452	8.680 7.561 7.742 8.300 7.334 7.805 9.201	13.335 12.203 12.606 13.200 11.800 12.642 13.898	18.248 17.063 17.525 18.140 16.640 17.594 18.878
L = 28 X = 12 X'= 8	36 37 38 39 40 41 42	.10 .10 .10 .10 .20 .20	.30 .40 .45 .50 .30 .40	.60 .50 .45 .40 .50 .40	.960 .800 .720 .800 .800 .640	2.550 2.205 2.063 2.205 2.150 1.814 2.150	4.680 4.334 4.170 4.334 4.042 3.706 4.042	6.923 6.564 6.525 6.712 6.031 6.000 6.409	9.288 8.946 9.020 9.210 8.331 8.500 8.907	11.774 11.442 11.517 11.708 10.793 11.000 11.406	16.755 16.391 16.513 16.706 15.745 16.000 16.405	21.744 21.373 21.510 21.705 20.716 21.000 21.404

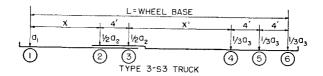
TABLE 8.7 (Continued)

IADDE	0.1 (Contin	ucu									
	43	.10	.30	.60	.960	2.430	4.134	6.364	8.601	11.040	16.005	20.984
	44	.10	.40	.50	.800	2.025	3.647	5.847	8.074	10.599	15.471	20.437
L = 32	$\hat{45}$.10	.45	.45	.720	1.823	3.420	5.690	8.172	10.528 10.660	15.645	20.636
V = 12	46		.50	.40	.800	2.025	3.647			10.000	15.040	20.030
$X \equiv 12$ $X' \equiv 12$.10						5.956	8.445	10.938	15.928	20.923
$\Lambda = 12$	47	.20	.30	.50	.800	2.025	3.506	5.480	7.487	9.923	14.842	19.794
	48	.20	.40	.40	.640	1.620	3.040	5.216	7.713	10.211	15.208	20.206
	49	.20	.50	.30	.800	2.025	3.573	5.800	8.300	10.800	15.800	20.800
	50	.10	.30	.60	.960	2.430	3.920	5.821	8.047	10.328	15.271	20.237
	51	.10	.40		.800			5.021	0.047	0.028	10.271	
T 0.0		.10		.50		2.025	3.267	5.167	7.363	9.668	14.576	19.521
L = 36	52	.10	.45	.45	.720	1.823	3.075	4.896	7.357	9.831	14.798	19.778
X = 12 $X' = 16$	53	.10	.50	.40	.800	2.025	3.402	5.232	7.706	10.188	15.166	20.153
X'=16	54	.20	.30	.50	.800	2.025	3.267	4.951	6.921	9.086	13.965	18.892
	55	.20	.40	.40	.640	1.620	2.934	4.464	6.951	9.443	14.432	19.426
	56	.20	.50	.30	.800	2.025	3.573	5.320	7.707	10.206	15.205	20.204
	57	-	.30									
		.10		.60	.960	2.430	3.920	5.427	7.512	9.735	14.553	19.503
	58	.10	.40	.50	.800	2.025	3.267	4.579	6.687	8.880	13.706	18.625
L = 40	59	.10	.45	.45	.720	1.823	3.075	4.450	6.574	9.028	13.971	18.937
X = 12	60	.10	.50	.40	.800	2.025	3.402	4.902	6.992	9.460	13.971 14.420	19.396
X'=20	61	.20	.30	.50	.800	2.025	3.267	4.537	6.396	8.363	13.112	18.010
	62	.20	.40	.40	.640	1.620	2.934	4.426	6.215	8.696	13.672	18.658
	63	.20	.50	.30	.800	2.025	3.573	5.318	7.153	9.624	14.618	19.614
	64	.10	.30	.60	.960	2.430	3.920	5.415	7.013	9.203	13,851	18.781
	65	.10	.40	.50	.800	2.025	3.267	4.513	6.043	8.211	12.861	17.749
L = 44	66	.10	.45	.45	.720	1.823	3.075	4.450	5.825	8.253	13.165	18.112
X = 12	67	.10	.50	.40	.800	2.025	3.402	4.902	6.402	8.754	13.690	18.652
$egin{array}{l} L \equiv 44 \ X \equiv 12 \ X' \equiv 24 \ \end{array}$	68	.20	.30	.50	.800	2.025	3.267	4.513	5.889	7.841	12.285	17.148
	69	.20	.40	.40	.640	1.620	2.934	4.426		7.971	10.000	
	70	.20	.50	.30	.800	2.025			5.921	7.971	12.928	17.902
							3.573	5.318	7.064	9.054	14.041	19.032
	71	.10	.30	.60	.960	2.430	3.920	5.415	6.912	8.680	13.165	18.072
	72	.10	.40	.50	.800	2.025	3.267	4.513	5.760	7.561	12.041	16.893
L = 48	73	.10	.45	.45	.720	1.823	3.075	4.450	5.825	7.504	12.378	17.303
X = 12	74	.10	.50	.40	.800	2.025	3.402	4.902	6.402	8.068	12.976	17.921
$\hat{\mathbf{X}}' = \hat{2}\hat{8}$	7ŝ	.20	.30	.50	.800	2.025	3.267	4.513	5.760	7.334	11.482	16.306
21 — 20	76	.20	.40			7.02.0			5.700	1.554	11.482	10.500
	77			.40	.640	1.620	2.934	4.426	5.921	7.417	12.200	17.160
		.20	.50	.30	.800	2.025	3.573	5.318	7.064	8.812	13.472	18.458
	78	.10	.30	.60	.960	2.430	4.134	6.364	8.601	$\frac{10.860}{10.354}$	15.820	20.796
	79	.10	.40	.50	.800	2.025	3.647	5.847	8.068	10 354	15.290 15.436	20.252 20.429 20.717
L = 36	80	.10	.45	.45	.720	1.823	3.420	5.603	7.958	10.448	15.436	20.429
X = 16	81	.10	.50	.40	.800	2.025	3.647	5.847	0.004	10.440	15.701	20.428
L = 36 $ X = 16 $ $ X' = 12$	82	.20	.30	.50	.800	2.025	3.506	5.480	$8.234 \\ 7.464$	10.728	15.721	10.411
11 14	83	.20	.40			1.620			7.404	9.584	14.488	19.430
	84		-40	.40	.640	1.620	3.040	4.980	$7.303 \\ 7.903$	$9.803 \\ 10.403$	14.802	19.802
		.20	.50	.30	.800	2,025	3.506	5.480	7.903	10.403	15.402	20.402
	85	.10	.30	.60	.960	2.430	3.920	5.821	8.047	10.280	15.090	20.052
	86	.10	.40	.50	.800	2.025	3.267	5.167	7.363	9.578	14.400	19.340
$\begin{array}{c} L = 40 \\ X = 16 \\ X' = 16 \end{array}$	87	.10	.45	.45	.720	1.823	2.940	4.860	7.135	9.613	14.585	19.568
X = 16	88	.10	.50	.40	.800	2.025	3 267	5.167	7.488	9.974	14.955	19.944
X'- 16	89	.20	.30	.50	.800	2.025	$\frac{3.267}{3.267}$		C 001	0.014	19.001	10.044
	90	.20	.40	.40	.640		0.201	4.951	6.921	8.901	13.621	18.536
	91	.20		20		1.620	2.613	4.320	6.529	9.024	14.018	19.014
			.50	.30	.800	2.025	3.267	4.951	7.301	9.801	14.801	19.800
	92	.10	.30	.60	.960	2.430	3.920	5.427	7.512	9.735	14.376	19.321
	93	.10	.40	.50	.800	2.025	3.267	4.579	6.687	8.880	13.535	18.448
L = 44	94	.10	.45	.45	.720	1.823	2.940	4.256	6.345	8.804	13.753	18.723
X = 16	95	.10	.50	.40	.800	2.025	3.267	4.704	6.768	9.240	14.205	19.184
X' = 20	96	.20	.30	.50	.800	2,025	3.267	4.537	6.396	8.363	12.778	17.662
	97	.20	.40	.40	.640	1.620	2.613	4.060	5.780		12.110	10.002
	98	.20	.50				2.013		0.100	8.267	13.250	18.240
				.30	.800	2.025	3.267	4.944	6.736	9.211	14,208	19.206
	99	.10	.30	.60	.960	2.430	3.920	5.415	7.013	9.203	13.678	18.603
	100	.10	.40	.50	.800	2.025	3.267	4.513	6.043	8.211	12.695	17.576
$egin{array}{l} L \equiv 48 \ X \equiv 16 \ X' \equiv 24 \ \end{array}$	101	.10	.45	.45	.720	1.823	2.940	4.256	5.630	8.023	12.942	17.576 17.726
x = 16	102	.10	.50	.40	.800	2.025	3.267	4.704	6 202	0.020	19 471	10 497
Y'- 24	103	.20	.30	.50	.800	2.025 2.025	3.267	$\frac{4.704}{4.513}$	$\frac{6.203}{5.889}$	8.528	13.471	18.437
1 _ 24	100	.20	.00			2,020	3.207	4.010	9.889	7.841	11.961	16.808
	104	.20	.40	.40	.640	1.620	2.613	4.060	5.548	7.531	12.498	17.478
	105	20_	50	.30	.800	2.025	3.267	4.944	6.685	8.633	13.625	18.620
	106	.10	.30	.60	.960	2.430	3.920	5.415	6.912	8.680	13.110	17.897
	TOO					2.025	3.267	4.513	5.760	7.561	11.921	16.724
	100		.40	50								
ĭ. — 59	107	.10	.40	.50	.800	1 000	9.040	4.010	F C20	7.001	10.321	
L = 52	$\frac{107}{108}$.10 .10	.45	.45	.720	1.823	2.940	4.256	5.630	7.268	12.151	17.081
L = 52 $X = 16$	$107 \\ 108 \\ 109$.10 .10 .10	$.45 \\ .50$	$.45 \\ .40$	$.720 \\ .800$	$\frac{1.823}{2.025}$	$\frac{2.940}{3.267}$	$4.256 \\ 4.704$	$\frac{5.630}{6.203}$	$7.268 \\ 7.838$	12.151 12.753	17.081 17.703
L = 52 $X = 16$ $X' = 28$	107 108 109 110	.10 .10 .10 .20	.45 .50 .30	.45 .40 .50	.720 .800 .800	$\begin{array}{c} 1.823 \\ 2.025 \\ 2.025 \end{array}$	$\begin{array}{c} 2.940 \\ 3.267 \\ 3.267 \end{array}$	4.256 4.704 4.513	5.630 6.203 5.760	$7.268 \\ 7.838 \\ 7.334$	$12.151 \\ 12.753 \\ 11.250$	17.081 17.703 15.974
$L = 52 \ X = 16 \ X' = 28$	107 108 109 110 111	.10 .10 .10 .20 .20	.45 .50 .30 .40	.45 .40 .50 .40	.720 .800 .800 .640	1.823 2.025 2.025 1.620	2.940 3.267 3.267 2.613	$4.256 \\ 4.704$	$\frac{5.630}{6.203}$	$7.268 \\ 7.838$	12.151	17.081 17.703 15.974
$L = 52 \ X = 16 \ X' = 28$	107 108 109 110	.10 .10 .10 .20	.45 .50 .30	.45 .40 .50	.720 .800 .800	$\begin{array}{c} 1.823 \\ 2.025 \\ 2.025 \end{array}$	$\begin{array}{c} 2.940 \\ 3.267 \\ 3.267 \end{array}$	4.256 4.704 4.513	5.630 6.203 5.760	7.268 7.838 7.334	$12.151 \\ 12.753 \\ 11.250$	17.081 17.703

ADV OF MAVIMUM MOMENTS IN SIMPLE SDAN

SUMMARY OF MAXIMUM MOMENTS IN SIMPLE SPANS PRODUCED BY TYPE 3-S3 TRUCKS WEIGHING ONE KIP EACH

Table 8.8



One hundred five variations in the Type 3-S3 truck are given in this Table. Each truck number, from 1 to 105, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

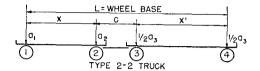
All dimensions are in feet and moments are in kip-feet. a1, a2, and a3—Represent the ratio of gross vehicle weight on axles.

and Axle Spacing	Truck No.]	Load C Axles Kips	3		Commission of the property of the commission of the property of the property of the commission of the		Spa	n-Feet			
Feet	E	a ₁	\mathbf{a}_2	as	10	20	30	40	50	60	80	100
L = 32	1 2 3	.10 .10 .10	.30 .36 .40	.60 .54 .50	.700 .630 .640	2.200 1.980 1.832	$3.700 \\ 3.336 \\ 3.082$	5.723 5.458 5.290	8.088 7.839 7.680	10.574 10.316 10.151	15.555 15.287 15.113	20.544 20.270 20.091
X = 8 $X' = 12$	4 5 6	.10 .20 .20	.50 .30 .40	.40 .50 .40	.800 .582 .640	2.101 1.832 1.814	$3.604 \\ 3.083 \\ 3.309$	5.816 4.937 5.270	8.294 7.246 7.757	10.779 9.705 10.249	15.761 14.654 15.238	$\begin{array}{c} 20.750 \\ 19.624 \\ 20.232 \end{array}$
	7	.20	.50	.30	.800	2.207	3.955	5.963	8.410	10.908	15.906	20.905
L = 36	8 9 10	.10 .10 .10	.30 .36 .40	.60 .54 .50	.700 .630 .640	$2.200 \\ 1.980 \\ 1.832$	$3.700 \\ 3.330 \\ 3.082$	5.275 4.810 4.588	$7.400 \\ 7.034 \\ 6.821$	9.840 9.491 9.268	$14.805 \\ 14.438 \\ 14.201$	$19.784 \\ 19.407 \\ 19.162$
X = 8 $X' = 16$	11 12 13	.10 .20 .20	.50 .30 .40	.40 .50 .40	.800 .582 .640	2.101 1.832 1.814	3.600 3.082 3.309	5.215 4.421 4.829	7.574 6.406 7.022	10.047 8.839 9.503	15.012 13.755 14.479	19.991 18.704 19.465 20.317
	14 15 16	.10 .10	.30 .36	.30 .60 .54	.800 .700 .630	$\frac{2.207}{2.200}$ $\frac{1.980}{1.980}$	$\frac{3.955}{3.700}$ $\frac{3.330}{3.330}$	5.715 5.200 4.680	7.834 6.861 6.395	9.128 8.695	$\frac{15.321}{14.071}\\13.611$	19.037 18.561
$ L \equiv 40 $ $ X \equiv 8 $ $ X' \equiv 20 $	17 18 19	.10 .10 .20	.40 .50 .30	.50 .40 .50	.640 .800 .582	1.832 2.101 1.832	$\frac{3.082}{3.600}$ $\frac{3.082}{3.082}$	4.332 5.101 4.332	$6.108 \\ 6.881 \\ 5.833$	$8.411 \\ 9.336 \\ 8.006$	13.315 14.279 12.881	$\begin{array}{c} 18.252 \\ 19.245 \\ 17.805 \end{array}$
	20 21 22	.20 .20 .10	$\frac{.40}{.50}$.40 .30	.640 .800	$\begin{array}{r} 1.814 \\ 2.207 \\ \hline 2.200 \end{array}$	3.309 3.955 3.700	4.807 5.703 5.200	6.406 8.556 6.700	8.779 9.760 8.535	$13.736 \\ 14.745 \\ 13.353$	18.711 19.736 18.303
L = 44	23 24 25	.10 .10 .10	.36 .40 .50	.54 .50	.630 .649	1.980 1.832 2.101	3.330 3.082 3.600	4.680 4.332 5.101	6.030 5.582 6.600	7.980 7.628 8.646	12.805 12.453 13.562	17.732 17.363 18.511
X = 8 $X' = 24$	26 27 28	.20 .20 .20	.30 .40 .50	.50 .40 .30	.582 .640 .800	1.832 1.814 2.207	3.082 3.309 3.955	4.332 4.807 5.703	5.582 6.305 7.453	7.276 8.075 10.415	12.031 13.009 14.178	16.926 17.969 19.163
L = 48	29 30 31	.10 .10	.30 .36 .40	.60 .54 .50	.700 .630 .640	2.209 1.980 1.832	3.700 3.330 3.082	5.200 4.680 4.332	6.700 6.030 5.582	8.200 7.392 6.965	12.651 12.019 11,616	17.581 16.919 16.494
$ \begin{array}{c} L = 48 \\ X = 8 \\ X' = 28 \end{array} $	32 33 34	.10 .10 .20	.50 .30 .40	.40 .50	.800 .582 .640	2.101 1.832 1.814	3.600 3.082 3.309	5.101 4.332 4.807	6.600 5.582 6.305	8.100 6.833 7.805	12.860 11.207 12.298	17.790 16.067 17.240
	35 36	.20	$\frac{.50}{.30}$.60	.800	$\frac{2.207}{2.200}$	$\frac{3.955}{3.700}$	6.703	$\frac{7.453}{7.968}$	9.203	$ \begin{array}{r} 12.298 \\ 13.620 \\ \hline 15.366 \end{array} $	18.596
L = 36 $X = 12$	$\frac{37}{38}$.10 .10 .10	.36 .40 .50	.54 .50 .40	.630 $.640$ $.800$	$\begin{array}{c} 1.980 \\ 1.832 \\ 2.025 \end{array}$	3.336 3.082 3.463	5.458 5.290 5.596	7.696 7.522 8.078	$10.134 \\ 9.971 \\ 10.566$	15.101 14.929 15.551	$\begin{array}{c} 20.081 \\ 19.903 \\ 20.542 \end{array}$
X'= 12	40 41 42	.20 .20 .20	.30 .40 .50	.50 .40 .30	.582 .640 .800	$\begin{array}{c} 1.832 \\ 1.620 \\ 2.025 \end{array}$	3.083 2.935 3.573	4.937 4.843 5.534	6.930 7.335 8.002	9.355 9.831 10.502	14.292 14.825 15.501	$19.254 \\ 19.821 \\ 20.501$

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TABLE												
	43	.10	.30 .36	.60 .54	.700 $.630$	$\frac{2.200}{1.980}$	$\frac{3.700}{3.330}$	$\frac{5.275}{4.810}$	$7.400 \\ 7.034$	$9.660 \\ 9.316$	$14.620 \\ 14.257$	$19.596 \\ 19.221$
L = 40	$\frac{44}{45}$.10 .10	.40	.50	.640	1.832	3.082	4.588	6.801	9.095	14.022	18.978
$\ddot{X} = 12$	46	.10	.50	.40	.800	2.025	3.401	5.000	7.353	9.828	14.798	19.780
$egin{array}{c} \mathbf{X} \equiv 12 \ \mathbf{X'} \equiv 16 \end{array}$	47	.20	.30	.50	.582	1.832	3.082	4.421	6.372	8.502	13.402	18.342
	48	.20	.40	.40	.640	1.620	2.935	4.427	6.587	9.074	14.058	19.048
	49	.20	.50	.30	.800	2.025	3.573	5.318	7.600	9.914	14.910	19.908
	50	.10	.30	.60	.700	2.200	3.700	5.200	6.861	9.081	13.890	18.852
T 44	51	.10	.36	.54	.630	1.980	3.330	4.680	6.395	8.614	12 994	17.939
L = 44	$\frac{52}{53}$.10 .10	.40 .50	.50 .40	$.640 \\ .800$	$\frac{1.832}{2.025}$	$\frac{3.082}{3.401}$	$\frac{4.332}{4.901}$	$6.105 \\ 6.660$	$8.312 \\ 9.112$	$\frac{13.133}{14.061}$	$\frac{18.065}{19.030}$
X = 12 $X' = 20$	54	.20	.30	.50	.582	1.832	3.082	4.332	5.832	7.810	12,530	17.442
	55	.20	.40	.40	.640	1.620	2.935	4.427	5.984	8.339	13.306	18.287
	56	.20	.50	.30	.800	2.025	3.573	5.318	7.106	9.338	14.328	19.323
	57	.10	.30	.60	.700	2.200	3.700	5.200	6.700	8.535	13.176	18.121
_	58	.10	.36	.54	.630	1.980	3.330	4.680	6.030	7.980	12.632	17.554
L = 48	59	.10	.40	.50	.640	1.832	3.082	4.332	5.582	7.624	12.275	17.178
X = 12 $X' = 24$	$\frac{60}{61}$	$.10 \\ .20$.50 .30	$.40 \\ .50$.800 $.582$	$\frac{2.025}{1.832}$	$\frac{3.401}{3.082}$	$\frac{4.901}{4.332}$	$\frac{6.400}{5.582}$	$8.416 \\ 7.274$	$13.340 \\ 11.688$	$18.294 \\ 16.569$
A - 24	62	.20	.40	.40	.640	1.620	2.935	4.427	5.921	7.625	12.572	17.539
	63	.20	.50	.30	.800	2.025	3.573	5.318	7.064	8.910	13.755	18.744
	64	.10	.30	.60	.700	2.200	3.700	5.200	6.700	8.200	12.478	17.403
	65	.10	.36	.54	.630	1.980	3.330	4.680	6.030	7.392	11.851	16.745
L = 52	66	.10	.40	.50	.640	1.832	3.082	4.332	5.582	6.959	11.441	16.311
X = 12 $X' = 28$	67	.10	.50 .30	.40	.860	2.025	3.401	4.901	6.400	7.900	12.635	17.570
$\Lambda = 28$	68 69	$.20 \\ .20$.40	$.50 \\ .40$.582 $.640$	$\frac{1.832}{1.620}$	$\frac{3.082}{2.935}$	$\frac{4.332}{4.427}$	$5.582 \\ 5.921$	$\frac{6.832}{7.418}$	$10.872 \\ 11.852$	15.715 16.804
	70	.20	.50	.30	.800	2,025	$\frac{2.535}{3.573}$	5.318	7.064	8.814	13.191	18.173
	71	.10	.30	.60	.700	2.200	3.700	5.723	7.968	10.215	15.178	20.163
	72	.10	.36	.54	.630	1.980	3.336	5.458	7.696	9.954	14.916	19.892
L = 40	73	.10	.40	.50	.640	1.832	3.082	5.291	7.523	9.791	14.742	19.713
X = 16	74	.10	.50	.40	.800	2.025	3.463	5.507	7.864	10.354	15.342	20.335
X'=12	75 76	.20 .20	.30 .40	.50 $.40$.582 $.640$	$\frac{1.832}{1.620}$	$\frac{3.082}{2.840}$	4.939	6.932	9.005	13.928	18.881
	77	.20	.50	.30	.860	$\frac{1.020}{2.025}$	3.400	$\frac{4.649}{5.213}$	$\frac{6.920}{7.400}$	9.418 9.900	$14.415 \\ 14.900$	19.413 19.900
	78	.10	.30	.60	.700	2.200	3.700	5.275	7.400	9.642	14.436	19.409
	79	.10	.36	.54	.630	1.980	3.330	4.810	7.034	9.266	14.076	19.037
L = 44	80	.10	.40	.50	.640	1.832	3.082	4.587	6.799	9.024	13.838	18.790
X = 16	81	.10	.50	.40	.800	2.025	3.267	4.914	7.132	9.611	14.585	19.570
X'=16	82 83	.20 .20	.30 $.40$.50 $.40$.582 $.640$	$\frac{1.832}{1.620}$	$\frac{3.082}{2.613}$	$\frac{4.418}{4.060}$	$6.373 \\ 6.159$	$8.361 \\ 8.651$	$13.047 \\ 13.640$	$17.976 \\ 18.634$
	84	.20	.50	.30	.800	$\frac{1.020}{2.025}$	$\frac{2.013}{3.267}$	4.943	7.005	9.564	$13.540 \\ 14.503$	18.634 19.503
	85	.10	.30	.60	.700	2,200	3.700	5.200	6.861	9.081	13.710	18.668
	86	.10	.36	.54	.630	1.980	3.330	4.680	6.395	8.614	13.258	18.198
L = 48	87	.10	.40	.50	.640	1.832	3.082	4.332	6.105	8.312	12.960	17.886
X = 16	88	.10	.50	.40	.800	2.025	3.267	4.704	6.446	8.889	13.844	18.817
X'=20	89 90	$.20 \\ .20$	$.30 \\ .40$.50 .40	.582 $.640$	$\frac{1.832}{1.620}$	$\frac{3.082}{2.613}$	$\frac{4.332}{4.060}$	$\frac{5.832}{5.571}$	$7.810 \\ 7.905$	$12.190 \\ 12.881$	$17.090 \\ 17.867$
	91	.20	.50	.30	.800	2.025	3.267	4.943	6.700	8.920	13.915	18.912
	92	.10	.30	.60	.700	2.200	3.700	5.200	6.700	8.535	13.002	17.940
	93	.10	.36	.54	.630	1.980	3.330	4.680	6.030	7.980	12.461	17.376
L = 52	94	.10	.40	.50	.640	1.832	3.082	4.332	5.582	7.624	12.106	17.003
X = 16	95	.10	.50	.40	.800	2.025	3.267	4.704	6.203	8.189	13.119	18.077
X'=24	96 97	$.20 \\ .20$.30 .40	$.50 \\ .40$.582 $.640$	$\frac{1.832}{1.620}$	$\frac{3.082}{2.613}$	$\frac{4.332}{4.060}$	5.582	7.274	11.359	16.225
	98	.20	.50	.30	.800	$\frac{1.020}{2.025}$	$\frac{2.613}{3.267}$	4.943	$\frac{5.548}{6.685}$	$7.181 \\ 8.502$	$12.138 \\ 13.336$	$17.113 \\ 18.329$
	99	.10	.30	.60	.700	2.200	3.700	5.200	6.700	8.200	12.452	17.225
	100	.10	.36	.54	.630	1.980	3.330	4.680	6.036	7.392	11.779	16.572
L = 56	101	.10	.40	.50	.640	1.832	3.982	4.332	5.582	6.959	11.342	16.139
X = 16 $X' = 28$	102	.10	.50	.40	.800	2.025	3.267	4.704	6.203	7.702	12.410	17.350
$\Lambda = 28$	$\frac{103}{104}$	$.20 \\ .20$.30	.50	.582	1.832	3.082	4.332	5.582	6.832	10.688	15.380
	104	.20	.40 .50	$.40 \\ .30$	$.640 \\ .800$	$\frac{1.620}{2.025}$	$\frac{2.613}{3.267}$	$\frac{4.060}{4.943}$	$\frac{5.548}{6.685}$	$7.040 \\ 8.429$	$11.411 \\ 12.766$	$16.371 \\ 17.753$
		20_	.00	.00	.000	2.020	3.201	4.546	0.000	0.449	12.700	11,100

Table 8.9

SUMMARY OF MAXIMUM MOMENTS IN SIMPLE SPANS PRODUCED BY TYPE 2-2 TRUCKS WEIGHING ONE KIP EACH



One hundred forty-four variations in the Type 2-2 truck are given in this Table. Each truck number, from 1 to 144, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

Wheel Base and Axle Spacing Feet	Truck No.		Load (Axle Kips	s				Spa	n-Feet			
	£	aı	a 2	as	10	20	30	40	50	60	80	100
L = 28 $X = 12$ $X' = 8$ $C = 8$	1 2 3 4 5	.10 .10 .10 .20	.20 .30 .40 .20	.70 .60 .50 .60	.875 .750 1.000 .750 .750	2.320 2.100 2.327 2.010 1.841	4.563 4.350 4.163 4.006 3.802	6.811 6.625 6.544 6.064 5.921	9.303 9.120 9.015 8.551 8.397	11.803 11.617 11.496 11.043 10.881	16.802 16.613 16.472 16.032 15.861	21.802 21.610 21.458 21.026 20.848
	6_	.20	.40	.40	1.000	2.253	4.006	6.436	8.929	11.424	16.418	21.414
L = 32 $X = 12$ $X' = 12$ $C = 8$	7 8 9 10 11 12	.10 .10 .20 .20 .20	.20 .30 .40 .20 .30 .40	.70 .60 .50 .60 .50	.875 .750 1.000 .750 .750 1.000	2.008 1.920 2.327 1.764 1.841 2.253	3.913 3.763 4.032 3.442 3.427 4.006	6.147 6.011 6.110 5.431 5.432 6.064	8.602 8.503 8.568 7.920 7.906 8.551	11.102 11.603 11.040 10.417 10.388 11.043	16.101 16.002 16.005 15.413 15.366 16.032	21.101 21.002 20.984 20.410 20.353 21.026
L = 36 X = 12 X' = 16 C = 8	13 14 15 16 17 18	.10 .10 .10 .20 .20	.20 .30 .40 .20 .30 .40	.70 .60 .50 .60 .50	.875 .750 1.000 .750 .750 1.600	2.008 1.920 2.327 1.764 1.841 2.253	3.364 3.467 4.032 2.993 3.427 4.006	5.511 5.440 5.906 4.880 5.301 6.005	7.920 7.901 8.131 7.303 7.457 8.180	10.417 10.401 10.593 9.803 9.931 10.667	15.413 15.401 15.545 14.802 14.898 15.650	20.410 20.400 20.516 19.802 19.878 20.640
L = 40 X = 12 X' = 20 C = 8	19 20 21 22 23 24	.10 .10 .10 .20 .20	.20 .30 .40 .20 .30 .40	.70 .60 .50 .60 .50	.875 .750 1.000 .750 .750 1.000	2.008 1.920 2.327 1.764 1.841 2.253	3.364 3.467 4.032 2.993 3.427 4.006	4.903 5.213 5.906 4.600 5.301 6.005	7.258 7.313 7.779 6.701 7.176 8.004	9.748 9.811 10.154 9.201 9.482 10.296	14.736 14.808 15.090 14.201 14.436 15.272	19.729 19.806 20.052 19.200 19.409 20.258
L = 32 $X = 12$ $X' = 8$ $C = 12$	25 26 27 28 29 30	.10 .10 .10 .20 .20	.20 .30 .40 .20 .30 .40	.70 .60 .50 .60 .50	.875 .750 1.000 .750 .750 1.000	2.240 1.920 2.000 1.920 1.600 2.000	4.152 3.763 3.561 3.600 3.226 3.600	6.401 6.011 5.689 5.600 5.220 5.700	8.720 8.365 8.131 7.815 7.505 8.180	11.217 10.854 10.593 10.296 9.971 10.667	16.213 15.841 15.545 15.272 14.928 15.650	21.210 20.832 20.516 20.258 19.902 20.640
L = 36 X = 12 X' = 12 C = 12	31 32 33 34 35 36	.10 .10 .10 .20 .20	.20 .30 .40 .20 .30 .40	.70 .60 .50 .60 .50	.875 .750 1.000 .750 .750 1.600	1.750 1.500 2.000 1.500 1.500 2.000	3.480 3.150 3.561 3.015 2.929 3.600	5.723 5.400 5.427 5.011 4.803 5.600	8.002 7.729 7.704 7.165 7.018 7.815	10.502 10.224 10.154 9.654 9.482 10.296	15.501 15.218 15.690 14.641 14.436 15.272	20.501 20.214 20.052 19.632 19.409 20.258
L = 40 $X = 12$ $X' = 16$ $C = 12$	37 38 39 40 41 42	.10 .10 .10 .20 .20	.20 .30 .40 .20 .30 .40	.70 .60 .50 .60 .50	.875 .750 1.000 .750 .750 1.000	1.750 1.500 2.000 1.500 1.500 2.000	3.012 2.918 3.561 2.646 2.929 3.600	5.071 4.811 5.427 4.445 4.803 5.600	7.303 7.107 7.297 6.529 6.677 7.600	9.803 9.606 9.723 9.024 9.041 9.931	14.802 14.605 14.642 14.018 13.981 14.898	19.802 19.604 19.594 19.014 18.944 19.878
L = 44 $X = 12$ $X' = 20$ $C = 12$	43 44 45 46 47 48	.10 .10 .10 .20 .20	.30 .30 .40 .20 .30 .40	.70 .60 .50 .60 .50	.875 .750 1.000 .750 .750 1.000	1.750 1.500 2.000 1.500 1.500 2.000	3.012 2.918 3.561 2.646 2.929 3.600	4.447 4.651 5.427 4.013 4.803 5.600	6.668 6.500 7.297 5.907 6.677 7.600	9.120 9.000 9.360 8.406 8.608 9.600	14.115 14.000 14.200 13.405 13.531 14.528	19.112 19.000 19.140 18.404 18.485 19.502

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TABLE	8.9 (Contir	ued)									
L = 32 X = 16 X'= 8 C'= 8	49 50 51 52 59 54	.10 .10 .10 .20 .20 .20	.20 .30 .40 .20 .30 .40	.70 .60 .50 .60 .50	.875 .750 1.000 .750 .750 1.000	2.320 2.100 2.327 2.010 1.841 2.253	4.563 4.350 4.163 4.006 3.802 3.840	6.811 6.600 6.411 6.005 5.802 6.016	9.107 8.929 8.797 8.180 8.035 8.513	11.606 11.424 11.281 10.667 10.513 11.011	16.605 16.418 16.261 15.650 15.485 16.008	21.604 21.414 21.248 20.640 20.468 21.006
L = 36 X = 16 X'= 12 X'= 8	55 56 57 58 59 60	.10 .10 .10 .20 .20	.20 .30 .40 .20 .30 .40	.70 .60 .50 .60 .50	.875 .750 1.000 .750 .750 1.000	2.068 1.920 2.327 1.764 1.841 2.253	3.913 3.763 3.926 3.442 3.304 3.736	6.147 6.011 5.900 5.431 5.303 5.636	8.400 8.307 8.346 7.539 7.488 8.129	10.900 10.806 10.822 10.033 9.974 10.624	15.900 15.805 15.791 15.025 14.955 15.618	20.900 20.804 20.773 20.020 19.944 20.614
L = 40 X = 16 X'= 16 C = 8	61 62 63 64 65 66	.10 .10 .10 .20 .20	.20 .30 .40 .20 .30 .40	.70 .60 .50 .60 .50	.875 .750 1.000 .750 750 1.000	2.008 1.920 2.327 1.764 1.841 2.253	3.364 3.380 3.926 2.993 3.186 3.736	5.511 5.440 5.701 4.880 4.912 5.620	7.739 7.700 7.905 6.913 7.015 7.751	$10.211 \\ 10.200 \\ 10.371 \\ 9.411 \\ 9.496 \\ 10.243$	15.208 15.200 15.328 14.408 14.472 15.232	20,206 20,200 20,302 19,406 19,458 20,226
$L = 44 \ X = 16 \ X' = 20 \ C = 8$	67 68 69 70 71 72	.10 .10 .20 .20 .20	.20 .30 .40 .20 .30 .40	.70 .60 .50 .60 .50 .40	.875 .750 1.000 .750 .750 1.000	2.008 1.920 2.327 1.764 1.841 2.253	3.364 3.380 3.926 2.993 3.186 3.736	4.903 5.006 5.701 4.351 4.912 5.620	7.112 7.122 7.576 6.321 6.785 7.616	9.538 9.606 9.928 8.861 9.040 9.867	14.528 14.605 14.871 13.801 14.005 14.850	19.523 19.604 19.837 18.800 18.984 19.840
$ \begin{array}{c} L = 36 \\ X = 16 \\ X' = 8 \\ C = 12 \end{array} $	73 74 75 76 77 78	.10 .10 .20 .20 .20	.20 .30 .40 .20 .30 .40	.70 .60 .50 .60 .50	.875 .750 1.000 .750 .750 1.000	2.240 1.920 2.000 1.920 1.600 2.000	4.152 3.763 3.491 3.600 3.226 3.380	6.401 6.011 5.655 5.600 5.220 5.264	8.651 8.258 7.905 7.600 7.216 7.751	11.024 10.667 10.371 9.931 9.616 10.243	16.018 15.650 15.328 14.898 14.562 15.232	21.014 20.640 20.302 19.878 19.530 20.226
L = 40 $X = 16$ $X' = 12$ $C = 12$	79 80 81 82 83 84	.10 .10 .10 .20 .20 .20	.20 .30 .40 .20 .30 .40	.70 .60 .50 .60 .50 .40	.875 .750 1.000 .750 .750 1.000	1.750 1.500 2.000 1.500 1.500 2.000	3.480 3.150 3.491 3.015 2.761 3.380	5.723 5.400 5.216 5.011 4.703 5.205	7.968 7.650 7.474 7.009 6.702 7.380	10.304 10.033 9.928 9.281 9.060 9.867	15.303 15.025 14.871 14.261 14.020 14.850	20,303 20,020 19,837 19,248 18,996 19,840
L = 44 $X = 16$ $X' = 16$ $C = 12$	85 86 87 88 89 90	.10 .10 .20 .20 .20	.20 .30 .40 .20 .30 .40	.70 .60 .50 .60 .50 .40	.875 .750 1.000 .750 .750 1.000	1.750 1.500 2.000 1.500 1.500 2.000	3.012 2.880 3.491 2.646 2.761 3.380	5.071 4.811 5.216 4.445 4.400 5.205	7.307 7.058 7.088 6.436 6.275 7.204	9.601 9.411 9.494 8.643 8.593 9.496	14.601 14.408 14.421 13.632 13.545 14.472	19.600 19.406 19.376 18.626 18.516 19.458
L = 48 $X = 16$ $X' = 20$ $C = 12$	91 92 93 94 95 96	.10 .10 .10 .20 .20	.20 ,30 .40 .20 .30 .40	.70 .60 .50 .60 .50 .40	.875 .750 1.000 .750 .750 1.000	1.750 1.500 2.000 1.500 1.500 2.000	3.012 2.880 3.491 2.646 2.761 3.380	4.447 4.436 5.216 3.902 4.400 5.205	6.668 6.482 7.088 5.881 6.275 7.204	8.914 8.801 9.068 8.017 8.154 9.203	13.910 13.801 13.976 13.013 13.090 14.098	18.908 18.809 18.921 18.010 18.052 19.078
L = 36 X = 20 X'= 8 C = 8	97 98 99 100 101 102	.10 .10 .10 .20 .20 .20	.20 .30 .40 .20 .30 .40	.70 .60 .50 .60 .50	.875 .750 1.000 .750 .750 1.000	2.240 2.100 2.327 2.010 1.841 2.253	4.563 4.350 4.163 4.006 3.802 3.840	6.811 6.600 6.411 6.005 5.802 5.780	9.058 8.850 8.658 8.004 7.801 8.103	11.411 11.233 11.067 10.296 10.150 10.603	16.408 16.225 16.050 15.272 15.113 15.602	21.406 21.220 21.040 20.258 20.090 20.602
L = 40 $X = 20$ $X' = 12$ $C = 8$	103 104 105 106 107 108	.10 .10 .10 .20 .20 .20	.20 .30 .40 .20 .30 .40	.70 .60 .50 .60 .50	.875 .750 1.000 .750 .750 1.000	2.008 1.920 2.327 1.764 1.841 2.253	3.913 3.763 3.926 3.442 3.304 3.736	6.147 6.611 5.900 5.431 5.303 5.445	8.387 8.258 8.150 7.425 7.302 7.713	10.700 10.611 10.604 9.654 9.604 10.211	15.700 15.608 15.578 14.641 14.578 15.208	20.700 20.606 20.563 19.632 19.563 20.206
L = 44 $X = 20$ $X' = 16$ $C = 8$	109 110 111 112 113 114	.10 .10 .10 .20 .20	.20 .30 .40 .20 .30 .40	.70 .60 .50 .60 .50	.875 .750 1.000 .750 .750 1.000	2.008 1.920 2.327 1.764 1.841 2.253	3.364 3.380 3.926 2.993 3.186 3.736	5.511 5.440 5.539 4.880 4.820 5.245	7.739 7.682 7.680 6.864 6.816 7.329	10.006 10.001 10.150 9.024 9.067 9.824	15.005 15.001 15.113 14.018 14.050 14.818	20.004 20.000 20.090 19.014 19.040 19.814
$ \begin{array}{c} L = 48 \\ X = 20 \\ X' = 20 \\ C = 8 \end{array} $	115 116 117 118 119 120	.10 .10 .10 .20 .20	.20 .30 .40 .20 .30 .40	.70 .60 .50 .60 .50	.875 .750 1.000 .750 .750 1.000	2.008 1.920 2.327 1.764 1.841 2.253	3.364 3.380 3.926 2.993 3.186 3.736	4.903 4.890 5.539 4.351 4.546 5.245	7.112 7.122 7.375 6.321 6.402 7.236	9.335 9.403 9.704 8.406 8.604 9.443	14.321 14.402 14.653 13.405 13.578 14.432	19.317 19.402 19.623 18.404 18.563 19.426
L = 40 $X = 20$ $X' = 8$ $C = 12$	121 122 123 124 125 126	.10 .10 .10 .20 .20	.20 .30 .40 .20 .30 .40	.70 .60 .50 .60 .50	.875 .750 1.000 .750 .750 1.000	2.240 1.920 2.000 1.920 1.600 2.060	4.152 3.763 3.491 3.600 3.226 3.380	6.401 6.011 5.655 5.600 5.220 5.120	8.651 8.258 7.894 7.600 7.216 7.329	10.901 10.507 10.150 9.600 9.267 9.824	15.825 15.461 15.113 14.528 14.200 14.818	20.820 20.448 20.090 19.502 19.160 19.814

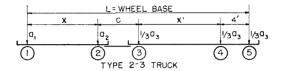
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	127	.10	.20	.70	.875	1.750	3.480	5.723	7.968	10.215	15.106	20.105
L = 44	128	.10	.30	.60	.750	1.500	3.150	5.400	7.650	9.900	14.832	19.826
X = 20	129	.10	.40	.50	1.000	2.000	3.491	5.123	7.368	9.704	14.653	19.623
X'=12	130	.20	.20	.60	.750	1.500	3.015	5.011	7.009	9.007	13.885	18.868
C = 12	131	.20	.30	.50	.750	1.500	2,761	4.703	6.703	8.704	13.653	18.623
	132	.20	.40	.40	1.000	2.000	3.380	4.860	6.951	9.443	14.432	19.426
	133	.10	.20	.70	.875	1.750	3,012	5.071	7.307	9.548	14.400	19.400
L = 48	134	.10	.30	.60	.750	1.500	2.880	4.811	7.058	9.307	14.213	19.210
X = 20	135	.10	.40	.50	1.600	2.000	3.491	5.087	6.882	9.267	14.200	19.160
X' = 16	136	.20	.20	.60	.750	1.500	2.646	4.445	6.436	8,430	13,250	18.240
C = 12	137	.20	.30	.50	.750	1.500	2.761	4.202	6.201	8.201	13.113	18.090
	138	.20	.40	.40	1.000	2.000	3.380	4.860	6.816	9.067	14.050	19.040
	139	.10	.20	.70	.875	1.750	3.012	4.447	6.668	8.898	13,706	18.705
L = 52	140	.10	.30	.60	.750	1.500	2.880	4.335	6.482	8.726	13.602	18.602
X = 20	141	.10	.40	.50	1.000	2.000	3.491	5.087	6.882	8,838	13.753	18.703
X' = 20	142	.20	.20	.60	.750	1.500	2.646	3.902	5.881	7.867	12.625	17.620
C = 12	143	.20	.30	.50	.750	1.500	2.761	4.102	5.882	7.756	12,653	17.623
	144	.20	.40	.40	1.000	2.000	3.380	4.860	6.816	8.814	13.672	18.658

Table 8.10

JMMARY OF MAXIMUM MOMENTS IN SIMPLE SPANS

SUMMARY OF MAXIMUM MOMENTS IN SIMPLE SPANS PRODUCED BY TYPE 2-3 TRUCKS WEIGHING ONE KIP EACH



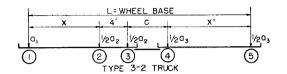
Ninety variations in the Type 2-3 truck are given in this Table. Each truck number, from 1 to 90, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

All dimensions are in feet and moments are in kip-feet. a₁, a₂, and a₃—Represent the ratio of gross vehicle weight on axles.

Wheel Base and Axle Spacing	Truck No.		Load (Axle Kips	S				Spa	n-Feet			
Feet	T	a ₁	\mathbf{a}_2	\mathbf{a}_3	10	20	30	40	50	60	80	100
L = 32 $X = 12$ $X' = 8$ $C = 8$	1 2 3 4 5	.10 .10 .10 .20 .20	.20 .30 .40 .20	.70 .60 .50 .60	.748 .750 1.000 .640 .750	2.118 1.814 2.206 1.814 1.715	3.910 3.573 3.734 3.366 3.149	6.120 5.818 5.969 5.325 5.286	8.372 8.301 8.422 7.713 7.756	10.871 10.801 10.891 10.211 10.235	15.870 15.801 15.852 15.208 15.210	20.869 20.800 20.828 20.206 20.195
L = 36 X = 12 X' = 12 C = 8	6 7 8 9 10	.10 .10 .10 .20 .20	.20 .30 .40 .20 .30	.70 .60 .50 .60	.748 .750 1.000 .640 .750	1.892 1.764 2.206 1.620 1.715	3.428 3.102 3.734 2.936 3.149	5.374 5.071 5.491 4.645 4.840	7.577 7.507 7.847 6.900 7.164	9.968 10.006 10.300 9.400 9.631	14.959 15.005 15.242 14.400 14.591	19.954 20.004 20.207 19.400 19.566
L = 40 X = 12 X' = 16 C = 8	11 12 13 14 15	.10 .10 .10 .20 .20	.20 .30 .40 .20 .30	.70 .60 .50 .60	.748 .750 1.000 .640 .750	1.892 1.764 2.206 1.620 1.715	3.052 3.102 3.734 2.613 3.149	4.740 4.601 5.402 4.060 4.812	6.840 6.739 7.289 6.113 6.604	9.094 9.233 9.724 8.611 9.042	14.070 14.225 14.644 13.608 13.982	19.056 19.220 19.595 18.606 18.946
$L = 36 \ X = 12 \ X' = 8 \ C = 12$	16 17 18 19 20	.10 .10 .10 .20 .20	.20 .30 .40 .20 .30	.70 .60 .50 .60	.748 .750 1.000 .640 .750	2.118 1.814 2.000 1.814 1.509	3.862 3.309 3.409 3.309 2.802	5.771 5.201 5.196 4.980 4.534	7.987 7.520 7.565 6.951 6.874	10.266 10.017 10.010 9.443 9.334	15.266 15.013 14.941 14.432 14.284	20.266 20.010 19.899 19.426 19.254
L = 40 $X = 12$ $X' = 12$ $C = 12$	21 22 23 24 25	.10 .10 .10 .20 .20	.20 .30 .40 .20 .30	.70 .60 .50 .60	.748 .750 1.000 .640 .750	1.892 1.620 2.000 1.620 1.500	3.428 2.936 3.409 2.936 2.802	5.167 4.428 5.074 4.427 4.469	7.233 6.701 7.016 6.256 6.309	9.441 9.201 9.441 8.611 8.753	14.341 14.201 14.348 13.608 13.681	19.340 19.200 19.292 18.606 18.639
L = 44 $X = 12$ $X' = 16$ $C = 12$	26 27 28 29 30	.10 .10 .10 .20 .20	.20 .30 .40 .20	.70 .60 .50 .60 .50	.748 .750 1.000 .640 .750	1.892 1.620 2.000 1.620 1.500	3.052 2.720 3.409 2.613 2.802	4.740 4.215 5.074 4.060 4.469	6.512 5.922 6.741 5.600 6.137	8.696 8.406 8.888 7.800 8.186	13.439 13.405 13.766 12.800 13.090	18.430 18.404 18.693 17.800 18.032
L = 36 $X = 16$ $X' = 8$ $C = 8$	31 32 33 34 35	.10 .10 .10 .20 .20	.20 .30 .40 .20 .30	.70 .60 .50 .60	.748 .750 1.000 .640 .750	2.118 1.814 2.206 1.814 1.715	3.910 3.573 3.683 3.366 3.143	6.120 5.818 5.739 5.325 5.141	8.347 8.103 8.198 7.329 7.319	10.668 10.603 10.671 9.824 9.805	15.667 15.602 15.637 14.818 14.787	20.667 20.602 20.616 19.814 19.777
L = 40 X = 16 X' = 12 C = 8	36 37 38 39 40	.10 .10 .10 .20 .20	.20 .30 .40 .20 .30	.70 .60 .50 .60	.748 .750 1.000 .640 .750	1.892 1.764 2.206 1.620 1.715	3.428 2.993 3.611 2.936 2.866	5.374 5.071 5.272 4.645 4.508	7.577 7.307 7.618 6.596 6.717	9.795 9.803 10.076 9.003 9.192	14.752 14.802 15.024 14.002 14.161	19.748 19.802 19.993 19.002 19.143
$L = 44 \ X = 16 \ X' = 16 \ C = 8$	41 42 43 44 45	.10 .10 .10 .20 .20	.20 .30 .40 .20 .30	.70 .60 .50 .60 .50	.748 .750 1.060 .640 .750	1.892 1.764 2.206 1.620 1.715	3.052 2.993 3.611 2.613 2.866	4.740 4.400 5.203 4.060 4.434	6.840 6.578 7.054 5.924 6.180	9.037 9.024 9.496 8.203 8.594	13.859 14.018 14.422 13.202 13.546	18.846 19.014 19.378 18.202 18.517

TABLE	8.10	(Conti	nued)									
	46	.10	.20	.70	.748	2.118	3.862	5.771	7.987	10.215	15.067	20.067
L = 40	47	.10	.30	.60	.750	1.814	3.309	5.201	7.451	9.824	14.818	19.814
X = 16	48	.10	.40	.50	1.000	2.000	3.310	4.972	7.333	9.783	14.721	19.683
X' = 8	49	.20	.20	.60	.640	1.814	3.309	4.980	6.944	9.067	14.050	19.040
C = 12	50	.20	.30	.50	.750	1.509	2.756	4.534	6.534	8.891	13.852	18.828
	51	.10	.20	.70	.748	1.892	3,428	5.167	7.233	9,441	14.138	19.136
L = 44	52	.10	.30	.60	.750	1.620	2,936	4.428	6.673	9.003	14.002	19.002
X = 16	53	.10	.40	.50	1.000	2.000	3.310	4.869	6.779	9.210	14.125	19.073
X' = 12	54	.20	.20	.60	.640	1.620	2.936	4.427	6.256	8.224	13.218	18.214
C = 12	55	.20	.30	.50	.750	1.500	2.572	4.082	5.875	8.300	13.242	18.207
	56	.10	.20	.70	.748	1.892	3.052	4.740	6.512	8.696	13,230	18.224
L = 48	57	.10	.30	.60	.750	1.620	2.646	4.060	5.922	8.203	13.202	18.202
$egin{array}{c} \mathbf{X} = 16 \\ \mathbf{X'} = 16 \end{array}$	58	.10	.40	.50	1.000	2.000	3.310	4.869	6.537	8.652	13.540	18.472
X' = 16	59	.20	.20	.60	.640	1.620	2.613	4.060	5.600	7.534	12.402	17.402
C = 12	60	.20	.30	.50	.750	1.500	2.572	4.082	5.747	7.724	12.644	17.595
	61	.10	.20	.70	.748	2.118	3.910	6.120	8.347	10.581	15,468	20.468
L = 40	62	.10	.30	.60	.750	1.814	3.573	5.818	8.064	10.406	15.405	20.404
X = 20	63	.10	.40	.50	1.000	2.266	3.683	5.734	7.984	10.452	15.423	20.405
X' = 8	64	.20	.20	.60	.64	1.814	3.366	5.325	7.360	9.443	14.432	19.426
$\mathbf{c} = 8$	65	.20	.30	.50	.750	1.715	3.143	5.141	7.139	9.425	14.402	19.388
	66	.10	.20	.70	.748	1.892	3.423	5.374	7.577	9.795	14.546	19.543
L = 44	67	.10	.30	.60	.759	1.764	2.993	5.071	7.307	9.601	14.601	19.600
X = 20	68	.10	.40	.50	1.000	2.206	3.611	5.187	7.390	9.853	14.807	19.779
X' = 12	69	.20	.20	.60	.640	1.620	2.935	4.645	6.596	8.611	13.608	18.606
$\mathbf{c} = 8$	70	.20	.30	.50	.759	1.715	2.866	4.508	6.500	8.759	13.736	18.722
	71	.10	.20	.70	.748	1.892	3.452	4.740	6.840	9.037	13.648	18.638
L = 48	72	.10	.30	.60	.750	1.764	2.993	4.300	6.578	8.817	13.813	18.810
X = 20	73	.10	.40	.50	1.000	2.206	3.611	5.022	6.822	9.268	14.202	19.162
X' = 16	74	.20	.20	.60	.640	1.620	2.612	4.060	5.924	7.870	12.800	17.800
C = 8	75	.20	.30	.50	.750	1.715	2.866	4.069	5.883	8.152	13.114	18.092
	76	.10	.20	.70	.748	2.118	3.862	5.771	7.987	10.215	14.869	19.868
L = 44	77	.10	.30	.60	.750	1.814	3.309	5.261	7.451	9.701	14,625	19.620
X = 20	78	.10	.40	.50	1.000	2.000	013.8	4.949	7.196	9.558	14.502	19.468
X'= 8	79	.20	.20	.60	.640	1.814	3.309	4.980	6.944	8.920	13.672	18.658
C = 12	80	.20	.30	.50	.750	1.509	2.756	4.534	6.534	8.534	13.473	18.445
	81	.10	.20	.70	.748	1.892	3.428	5.167	7.233	9.441	13.935	18.934
L = 48	82	.10	.30	.60	.750	1.620	2.936	4.428	6.673	8.919	13.805	18.804
X = 20	83	.10	.40	.50	1.000	2.000	3.310	4.712	6.543	8.981	13,903	18.856
X' = 12	84	.20	.20	.60	.640	1.620	2,936	4.427	6.256	8.214	12.832	17.826
C = 12	85	.20	.30	.50	.750	1.500	2.572	3.877	5.875	7.874	12.807	17.779
	86	.10	.20	.70	.748	1.892	3.052	4.740	6.512	8.696	13,114	18.018
L = 52	87	.10	.30	.60	.750	1.620	2.646	4.060	5,922	8.160	13.001	18,000
X = 20	88	.10	.40	.50	1.000	2.000	3.310	4.712	6.335	8.418	13.314	18.252
X' = 16	89	.20	.20	.60	.640	1.620	2.613	4.060	5.600	7.534	12.008	17.006
C = 12	90	.20	.30	.50	.750	1.500	2.572	3.722	5.365	7.268	12.202	17.162

Table 8.11
SUMMARY OF MAXIMUM MOMENTS IN SIMPLE SPANS
PRODUCED BY TYPE 3-2 TRUCKS WEIGHING ONE KIP EACH



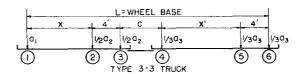
Ninety variations in the Type 3-2 truck are given in this Table. Each truck number, from 1 to 90, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

All dimensions are in feet and moments are in kip-feet. a_1 , a_2 , and a_3 —Represent the ratio of gross vehicle weight on axles.

Wheel Base and Axle Spacing	Truck No.		Load (Axle Kips	s				Spa	n-Feet			
Feet	H	aı	\mathbf{a}_2	as	10	20	30	40	50	60	80	100
	1	.10	.40	.50	.640	1.878	3.493	5.507	7.906	10.388	15,366	20.353
L = 36	$\tilde{2}$.10	.50	.40	.800	2.207	3.955	5.956	8.445	10.938	15.928	20.923
X = 12	$\frac{1}{2}$.10	.60	.30	.960	2.550	4.425	6.519	9.010	11.508	16.506	21.505
X' = 12	4	.20	.40	.40	.640	1.814	3.309	5.245	7.713	10.211	15.208	20.206
$\mathbf{c} = 8$	5	.20	.50	30	.800	2.151	3.776	5.901	8.300	10.800	15.800	20.800
_	6	.10	.40	.50	.640	1.878	3.493	5.301	7.457	9.931	14.898	19.878
$egin{array}{c} \mathbf{L} = 40 \\ \mathbf{X} \equiv 12 \end{array}$	7	.10	.50	.40	.800	2.207	3.955	5.908	8.072	10.560	15.545	20.536
$X = 12 \\ X' = 16$	8	.10	.60	.30	.960	2.550	4.425	6.519	8.720	11.217	16.213	21.210
C = 8	9 10	.20 .20	.40 .50	$.40 \\ .30$.640 $.800$	$\frac{1.814}{2.151}$	$\frac{3.309}{3.776}$	$5.245 \\ 5.901$	$7.329 \\ 8.026$	$9.824 \\ 10.502$	$14.818 \\ 15.501$	19.814 20.501
<u> </u>		.10	.40	.50	.640	1.878	3.493		7.176	9.482	14.436	19.409
L = 44	$\frac{11}{12}$.10	.50	.40	.800	$\frac{1.878}{2.207}$	$3.493 \\ 3.955$	$5.301 \\ 5.908$	7.176	9.482 10.188	14.436 15.166	20.153
$egin{array}{c} \mathbf{L} = 44 \ \mathbf{X} = 12 \end{array}$	13	.10	.60	.30	.960	2.550	4.425	6.519	8.640	10.100	$15.100 \\ 15.921$	20.133
$\mathbf{X}' = 20$	14	.20	.40	.40	.640	1.814	3.309	5.245	7.236	9.443	14.432	19.426
$X' \equiv 20$ $C \equiv 8$	15	.20	.50	.30	.800	2.151	3.776	5.901	8.026	10.206	15.205	20.204
	16	.10	.40	.50	.640	1.620	3.037	4.803	7.018	9.482	14.436	19.409
L = 40	17	.10	.50	.40	.800	2.025	3.573	5.500	7.706	10.188	15.166	20.153
$egin{array}{l} L=40 \ X=12 \end{array}$	18	.10	.60	.30	.960	2.430	4.129	6.208	8.434	10.928	15.921	20.917
$X' \equiv 12$ $C \equiv 12$	19	.20	.40	.40	.640	1.620	2.936	4.820	6.951	9.443	14.432	19.426
C = 12	20	.20	.50	.30	.800	2.025	3.573	5.608	7.731	10.206	15.205	20.204
	21	.10	.40	.50	.640	1.620	3.037	4.803	6.677	9.041	13.981	18.944
$\mathbf{L} = 44$	22	.10	.50	.40	.800	2.025	3.573	5.500	7.500	9.822	14.791	19.773
X = 12	23	.10	.60	.30	.960	2.430	4.129	6.208	8.331	10.643	15.632	20.626
	24	.20	.40	.40	.640	1.620	2.936	4.820	6.816	9.067	14.050	19.040
C = 12	25	.20	.50	.30	.800	2.025	3.573	5.608	7.731	9.914	14.910	19.908
T 40	26	.10	.40	.50	.640	1.620	3.037	4.803	6.677	8.608	13.531	18.485
L = 48	$\frac{27}{28}$.10 .10	.50 .60	.40 $.30$.800 $.960$	$\frac{2.025}{2.430}$	$\frac{3.573}{4.129}$	$\frac{5.500}{6.208}$	$7.500 \\ 8.331$	9.500	14.420	19.396
$\mathbf{\ddot{X}} = 12$ $\mathbf{\ddot{X}'} = 20$	$\frac{28}{29}$.20	.40	.40	.640	$\frac{2.430}{1.620}$	$\frac{4.129}{2.936}$	4.820	6.816	$10.455 \\ 8.814$	$15.345 \\ 13.672$	20.336 18.658
C = 12	30	.20	.50	.30	.800	2.025	$\frac{2.550}{3.573}$	5.608	7.731	9.855	14.618	19.614
	31	.10	.40	.50	.640	1.878	3.493	5.507	7.756	10.174	15.155	20.144
L = 40	32	.10	.50	.40	.800	2.207	3.955	5.847	8.234	10.728	15.721	20.717
$\mathbf{x} = 16$	33	.10	.60	.30	.960	2.550	4.425	6.363	8.805	11.304	16.303	21.303
X' = 12	34	.20	.40	.40	.640	1.814	3.309	4.980	7.303	9.803	14.802	19.802
C = 8	35	.20	.50	.30	.800	2.151	3.776	5.501	7.903	10.403	15.402	20.402
	36	.10	.40	.50	.640	1.878	3.493	5.114	7.250	9.713	14.685	19,668
L = 44	37	.10	.50	.40	.800	2.207	3.955	5.715	7.858	10.348	15.336	20.329
X = 16	38	.10	.60	.30	.960	2.550	4.425	6.329	8.513	11.011	16.008	21.006
X'=16	39	.20	.40	.40	.640	1.814	3.309	4.880	6.913	9.411	14.408	19.406
$\mathbf{c} = \mathbf{s}$	40	.20	.50	.30	.800	2.151	3.776	5.501	7.626	10.100	15.100	20.100
•	41	.10	.40	.50	.640	1.878	3.493	5.114	6.979	9.260	14.220	19.196
L = 48	42	.10	.50	.40	.800	2.207	3.955	5.715	7.712	9.974	14.955	19.944
X = 16	43	.10	.60	.30	.960	2.550	4.425	6.329	8.448	10.720	15.715	20.712
X' = 20	44	.20	.40	.40	.640	1.814	3.309	4.880	6.864	9.024	14.018	19.014
c = 8	45	.20	.50	.30	.800	2.151	3.776	5.501	7.626	9.801	14.801	19.800

TABLE	8.11	(Conti	nued)									
	46	.10	.40	.50	.640	1.620	3.037	4.747	6.987	9.260	14.220	19.196
L = 44	47	.10	.50	.40	.800	2.025	3.573	5.318	7.488	9.974	14.955	19.944
X = 16	48	.10	.60	.30	.960	2.430	4.129	6.014	8.224	10.720	15.715	20.712
X = 16 $X' = 12$	49	.20	.40	.40	.640	1.620	2.936	4.445	6.529	9.024	14.018	19.014
C = 12	50	.20	.50	.30	.800	2.025	3.483	5.106	7.301	9.801	14.801	19.800
	51	.10	.40	.50	.640	1.620	3.037	4.646	6.475	8.816	13.762	18.730
L = 48	52	.10	.50	.40	.800	2.025	3.573	5.318	7.302	9.604	14.578	19.563
X = 16	53	.10	.60	.30	.960	2.430	4.129	6.014	8.137	10.433	15.425	20.420
X' = 16	54	.20	.40	.40	.640	1.620	2.936	4.445	6.436	8.643	13.632	18.626
C = 12	55	.20	.50	.30	.800	2.025	3.483	5.106	7.126	9.504	14.503	19.503
	56	.10	.40	.50	.640	1.620	3.037	4.646	6.475	8.380	13.310	18.268
L = 52	57	.10	.50	.40	.800	2.025	3.573	5.318	7.302	9.302	14.205	19.184
X = 16	58	.10	.60	.30	.960	2.430	4.129	6.014	8.137	10.260	15.136	20.129
X'=20	59	.20	.40	.40	.640	1.620	2.936	4.445	6.436	8.430	13.250	18.240
C = 12	60	.20	.50	.30	.800	2.025	3.483	5.106	7.126	9.251	14.208	19.206
	61	.10	.40	.50	.640	1.878	3,493	5.507	7.756	10.005	14.955	19.944
L = 44	62	.10	.50	.40	.800	2.207	3.955	5.847	8.068	10.520	15.515	20.512
X = 20	63	.10	.60	.30	.960	2.550	4.425	6.363	8.602	11.102	16.101	21.101
X'=12	64	.20	.40	.40	.640	1.814	3.309	4.980	6.944	9.400	14.400	19.400
C = 8	65	.20	.50	.30	.800	2.151	3.776	5.480	7.513	10.011	15.008	20.006
	66	.10	.40	.50	.640	1.878	3.493	5.114	7.250	9.500	14.472	19.458
L = 48	67	.10	.50	.40	.800	2.207	3.955	5.703	7.712	10.138	15.128	20.123
X = 20	68	.10	.60	.30	.960	2.550	4.425	6.300	8.322	10.806	15.805	20.804
X' = 16	69	.20	.40	.40	.640	1.814	3.309	4.807	6.596	9.003	14.002	19.002
C = 8	70	.20	.50	30	.800	2.151	3.776	5.401	7.233	9.704	14.703	19.703
	71	.10	.40	.50	.640	1.878	3.493	5.114	6.785	9.040	14.005	18.984
L = 52	72	.10	.50	.40	.800	2.207	3.955	5.703	7.520	9.760	14.745	19.736
X = 20	73	.10	.60	.30	.960	2.550	4,425	6.300	8.259	10.514	15.510	20.508
X' = 20	74	.20	.40	.40	.640	1.814	3.309	4.807	6.500	8.611	13.608	18.606
C = 8	75	20	.50	.30	.800	2.151	3.776	5.401	7.233	9.401	14.401	19.400
	76	.10	.40	.50	.640	1.620	3.037	4.747	6.987	9.231	14.020	18.996
L = 48	77	.10	.50	.40	.800	2.025	3.573	5.318	7.364	9.760	14.745	19.736
X = 20	78	.10	.60	.30	.960	2.430	4.129	6.003	8.048	10.514	15.510	20.508
X' = 12	79	.20	.40	.40	.640	1.620	2.936	4.427	6.256	8.611	13.608	18.606
C = 12	80	.20	.50	30	.800	2.025	3.483	5.106	6.927	9.401	14.401	19.400
	81	.10	.40	.50	.640	1.620	3.037	4.646	6.464	8.712	13.545	18.516
$ \begin{array}{l} L = 52 \\ X = 20 \end{array} $	82	.10	.50	.40	.800	2.025	3.573	5.318	7.106	9.388	14.366	19.353
X = 20	83	.10	.60	.30	.960	2.430	4.129	6.003	7.944	10.224	15.218	20.214
X' = 16	84	.20	.40	.40	.640	1.620	2.936	4.427	6.064	8.224	13.218	18.214
C = 12	85	.20	.50	.30	.800	2.025	3.483	5.106	6.927	9.100	14.100	19.100
	86	.10	.40	.50	.640	1.620	3.037	4.646	6.275	8.201	13.090	18.052
$\mathbf{L} = 56$	87	.10	.50	.40	.800	2.025	3.573	5.318	7.106	9.106	13.991	18.973
X = 20	88	.10	.60	.30	.960	2.430	4.129	6.003	7.944	10.066	14.928	19.923
X' = 20	89	.20	.40	.40	.640	1.620	2.936	4.427	6.064	8.054	12.832	17.826
C = 12	90	.20	.50	.30	.800	2.025	3.483	5.106	6.927	9.052	13.802	18.802

Table 8.12
SUMMARY OF MAXIMUM MOMENTS IN SIMPLE SPANS
PRODUCED BY TYPE 3-3 TRUCKS WEIGHING ONE KIP EACH



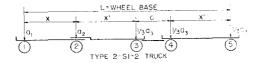
Ninety variations in the Type 3-3 truck are given in this Table. Each truck number, from 1 to 90, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

Wheel Base and Axle	Truck No.	Load On. Axles Kips a ₁ a ₂ a ₃					Spa	n-Feet				
Spacing Feet	Ē	aı	\mathbf{a}_2	\mathbf{a}_3	10	20	30	40	50	60	80	100
L = 40 $X = 12$ $X' = 8$ $C = 12$	1 2 3 4 5	.10 .10 .10 .20	.30 .40 .50 .30	.60 .50 .40 .50	.640 .640 .800 .533 .640	1.814 1.620 2.025 1.509 1.620	3.309 2.872 3.454 2.756 2.936	4.920 4.570 5.253 4.240 4.668	7.150 6.874 7.584 6.238 6.826	9.538 9.334 10.065 8.658 9.316	14.528 14.284 15.040 13.628 14.304	19.523 19.254 20.025 18.611 19.296
L = 44 $X = 12$ $X' = 12$ $C = 12$	6 7 8 9	.10 .10 .10 .20 .20	.30 .40 .50 .30 .40	.60 .50 .40 .50	.640 .640 .800 .533 .640	$\begin{array}{c} 1.620 \\ 1.620 \\ 2.025 \\ 1.350 \\ 1.620 \end{array}$	2.936 2.872 3.454 2.444 2.936	4.427 4.469 5.241 3.841 4.668	6.361 6.309 7.160 5.570 6.501	8.708 8.753 9.579 7.964 8.818	13.706 13.681 14.542 12.915 13.796	18.705 18.639 19.520 17.886 18.783
$L = 48 \\ X = 12 \\ X' = 16 \\ C = 12$	11 12 13 14 15	.10 .10 .10 .20 .20	.30 .40 .50 .30 .40	.60 .50 .40 .50	.640 .640 .800 .533 .649	1.620 1.620 2.025 1.350 1.620	2.613 2.872 3.454 2.304 2.936	4.060 4.469 5.241 3.841 4.668	5.600 6.137 7.071 5.507 6.501	7.700 8.186 9.102 7.382 8.340	12.700 13.090 14.051 12.312 13.296	17.700 18.032 19.021 17.270 18.277
$L = 44 \ X = 12 \ X' = 8 \ C = 16$	16 17 18 19 20	.10 .10 .10 .20	.30 .40 .50 .30 .40	.60 .50 .40 .50	.640 .640 .800 .533 .640	1.814 1.620 2.025 1.509 1.620	3.309 2.756 3.400 2.756 2.936	4.807 4.135 4.968 4.004 4.427	6.561 6.067 6.909 5.661 6.240	8.809 8.466 9.340 7.733 8.573	13.766 13.383 14.297 12.658 13.546	18.753 18.333 19.271 17.613 18.530
$egin{array}{l} L = 48 \ X = 12 \ X' = 12 \ C = 16 \ \end{array}$	21 22 23 24 25	.10 .10 .10 .20 .20	.30 .40 .50 .30 .40	.60 .50 .40 .50 .40	.640 .640 .800 .533 .640	1.620 1.620 2.025 1.350 1.620	2.936 2.753 3.400 2.444 2.936	4.427 4.135 4.968 3.687 4.427	5.921 5.802 6.800 5.185 6.240	8.000 7.907 8.869 7.095 8.089	12.928 12.797 13.809 12.014 13.050	17.923 17.731 18.774 16.964 18.026
$egin{array}{l} L = 52 \\ X = 12 \\ X' = 16 \\ C = 16 \\ \end{array}$	26 27 28 29 30	.10 .10 .10 .20	.30 .40 .50 .30	.60 .50 .40 .50 .40	.640 .640 .800 .533 .640	1.620 1.620 2.025 1.350 1.620	2.613 2.753 3.400 2.304 2.936	4.060 4.135 4.968 3.541 4.427	5.548 5.802 6.800 5.185 6.240	7.215 7.470 8.632 6.850 8.072	12.106 12.222 13.329 11.427 12.560	17.105 17.138 18.283 16.362 17.528
L = 44 $X = 16$ $X' = 8$ $C = 12$	31 32 33 34 35	.10 .10 .10 .20 .20	.30 .40 .50 .30 .40	.60 .50 .40 .50	.640 .640 .800 .533 .640	1.814 1.620 2.025 1.509 1.620	3.309 2.872 3.454 2.756 2.809	4.920 4.570 5.120 4.240 4.266	7.150 6.813 7.366 6.238 6.402	9.400 9.112 9.849 8.254 8.896	14.336 14.067 14.828 13.199 13.888	19.329 19.041 19.816 18.166 18.884
$L = 48 \ X = 16 \ X' = 12 \ C = 12$	36 37 38 39 40	.10 .10 .10 .20 .20	.30 .40 .50 .30 .40	.60 .50 .40 .50	.640 .640 .800 .533 .640	1.620 1.620 2.025 1.350 1.620	2.936 2.872 3.454 2.444 2.809	4.427 4.284 5.049 3.687 4.266	6.361 6.123 6.951 5.570 6.099	8.609 8.526 9.360 7.569 8.390	13.510 13.461 14.328 12.483 13.376	18.508 18.423 19.309 17.460 18.367
$L = 52 \\ X = 16 \\ X' = 16 \\ C = 12$	41 42 43 44 45	.10 .10 .10 .20 .20	.30 .40 .50 .30 .40	.60 .50 .40 .50	.640 .640 .800 .533 .640	1.620 1.620 2.025 1.350 1.620	2.613 2.872 3.454 2.236 2.809	4.060 4.284 5.049 3.434 4.266	5.600 5.941 6.878 5.101 6.099	7.842 7.954 8.880 6.930 7.933	12.700 12.866 13.834 11.873 12.870	17.700 17.813 18.807 16.839 17.856

TABLE	8.12	(Conti	inued)									
	46	.10	.30	.60	.640	1.814	3.309	4.807	6.561	8.809	13.578	18.563
L = 48	47	.10	.40	.50	.640	1.620	2.756	4.004	6.067	8.303	13.161	18.116
X = 16	48	.10	.50	.40	.800	2.025	3.267	4.779	6.697	9.119	14.081	19.058
X' = 8	49	.20	.30	.50	.533	1.509	2.756	4.064	5.661	7.656	12.302	17.249
C = 16	50	.20	.40	.40	.640	1.620	2.613	4.060	5.833	8.142	13.123	18.112
	51	.10	.30	.60	.640	1.620	2.936	4.427	5.921	8.000	12.736	17.729
L = 52	52	.10	.40	.50	.640	1.620	2.613	3.972	5.601	7.673	12.572	17.511
X = 16 $X' = 12$	53	.10	.50	.40	.800	2.025	3.267	4.779	6.603	$8.644 \\ 6.971$	$13.591 \\ 11.571$	$18.559 \\ 16.531$
X' = 12	54	.20	.30	.50	.533	1.350	2.444	3.687	$4.971 \\ 5.833$	7.670	12.621	17.603
C = 16	55	.20	.40	.40	.640	1.620	2.613	4.060				
	56	.10	.30	.60	.640	1.620	2.613	4.060	5.548	7.215	11.910	16.908
L = 56	57	.10	.40	.50	.640	1.620	2.613	3.972	5.601	$7.269 \\ 8.435$	$\frac{11.994}{13.108}$	16.915 18.066
X = 16	58	.10	.50	.40	.800	$\frac{2.025}{1.350}$	3.267	$\frac{4.779}{3.380}$	$\frac{6.603}{4.772}$	6.439	13.108 10.978	15.923
$X' \equiv 16$ $C \equiv 16$	59 60	.20 .20	.30 .40	.50 .40	.533 .640	1.620	$\frac{2.176}{2.613}$	4.060	5.833	7.665	12.126	17.101
C = 10										9.400	14.145	19.136
T 40	61	.10	.30	.60	.640	1.814	3.309	$\frac{4.920}{4.570}$	$7.150 \\ 6.813$	9.400 9.057	14.145 13.852	18.828
L = 48	$\frac{62}{63}$.10 .10	.40 .50	.50 .40	.640 $.800$	$\frac{1.620}{2.025}$	$\frac{2.872}{3.454}$	5.120	7.249	9.635	14.618	19.607
X = 20 X' = 8	64	.20	.30	.50	.533	1.509	2.756	4.240	6.238	8.238	12.837	17.797
$\overset{\Lambda}{C} = \overset{\circ}{12}$	65	.20	.40	.40	.640	1.620	2.809	4.245	6.144	8.481	13.477	18.475
	66	.10	.30	.60	.640	1.620	2.936	4.427	6.361	8.609	13.315	18.312
L = 52	67	.10	.40	.50	.640	1.620	$\frac{2.936}{2.872}$	4.284	6.123	8.373	13.242	18,207
X - 20	68	.10	.50	.40	.800	2.025	3.454	5.036	6.798	9.142	14.114	19.098
X = 20 $X' = 12$	69	.20	.30	.50	.533	1.350	2.444	3.687	5.570	7.569	12.110	17.081
$\ddot{c} = 12$	70	.20	.40	.40	.640	1.620	2.809	4.139	5.707	7.968	12.959	17.954
	71	.10	.30	.60	.640	1.620	2.613	4.060	5.600	7.842	12.501	17.501
L = 56	72	.10	.40	.50	.640	1.620	2.872	4.284	5.747	7.724	12.644	17.595
$\tilde{\mathbf{x}} = 20$	73	.10	.50	.40	.800	2.025	3.454	5.036	6.687	8.658	13.618	18.594
X' = 16	74	.20	.30	.50	.533	1.350	2.236	3.394	4.922	6.919	11.438	16.411
C = 12	75	.20	.40	.40	.640	1.620	2.809	4.139	5.707	7.538	12.448	17.438
	76	.10	.30	.60	.640	1.814	3.309	4.807	6.561	8.809	13.391	18.373
L = 52	77	.10	.40	.50	.640	1.620	2.756	4.004	6.067	8.303	12.941	17.899
$ \begin{array}{l} X = 20 \\ X' = 8 \end{array} $	78	.10	.50	.40	.800	2.025	3.267	4.779	6.578	8.900	13.866	18.846
X′= 8	79	.20	.30	.50	.533	1.509	2.756	4.004	5.661	7.656	11.951	16.887
C = 16	80	.20	.40	.40	.640	1.620	2.613	3.887	5.494	7.716	12.704	17.696
	81	.10	.30	.60	.640	1.620	2.936	4.427	5.921	8.000	12.545	17.536
L = 56	82	.10	.40	.50	.640	1.620	2.613	3.972	5.403	7.598	12.348	17.292
$\mathbf{X} = 20$	83	.10	.50	.40	.800	2.025	3.267	4.779	6.410	8.421	13.374	18.345
X' = 12	84	.20	.30	.50	.533	1.350	2.444	3.687	4.971	6.971	11.206	16.159
C = 16	85	.20	.40	.40	.640	1.620	2.613	3.887	5.434	7.267	12.196	17.183
•	86	.10	.30	.60	.640	1.620	2.613	4.060	5.548	7.215	11.715	16.712
L = 60	87	.10	.40	.50	.640	1.620	2.613	3.972	5.403	7.071	11.766	16,693
X = 20 $X' = 16$	88 89	.10	.50	.40	.800 .533	$\frac{2.025}{1.350}$	3.267	4.779	$6.410 \\ 4.620$	$8.240 \\ 6.304$	12.888	17.850
C = 16	90	.20	.30	.50 .40	.640	1.620	$\frac{2.176}{2.613}$	$\frac{3.380}{3.887}$	$\frac{4.620}{5.434}$	7.267	10.533	15.487
· ···· 10	30	.20	.40	.40	.040	1.040	4.010	0.001	0.404	1.201	11.696	16.677

Table 8.13

SUMMARY OF MAXIMUM MOMENTS IN SIMPLE SPANS
PRODUCED BY TYPE 2-S1-2 TRUCKS WEIGHING ONE KIP EACH



Ninety six variations in the Type 2-S1-2 truck are given in this Table. Each truck number, from 1 to 96, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

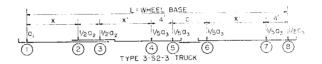
All dimensions are in feet and moments are in kip-feet. a₁, a₂, and a₃—Represent the ratio of gross vehicle weight on axles.

Wheel Base and Axle Spacing	Ax Ki		Load (Axle Kips	s				Spa	n-Feet			
Feet	Ĥ	a ₁	\mathbf{a}_2	as	10	20	30	40	50	60	80	100
L = 36	1	.10	.20	.70	.585	1.496	3.156	5.172	7.593	10.088	15.083	20.080
X = 8	$\frac{2}{3}$.10	.30	.60	.750	1.630	3.120	5.001	7.501	10.001	15.001	20.000
$\ddot{\mathbf{X}}' \equiv 10$.20	.20	.60	.500	1.280	2.702	4.601	7.101	9.601	$14.601 \\ 14.720$	$19.600 \\ 19.683$
C = 8	4	.20	.30	.50	.750	1.764	3.368	5.271	7.340	9.782		19.545
L = 40	5 6	.10 .10	.20 .30	.70 .60	.585 $.750$	1.496 1.620	$\frac{2.930}{2.936}$	4.735 4.645	7.057 6.900	9.553 9.400	14.548 14.400	19.545
$\begin{array}{c} X = 8 \\ X' = 12 \end{array}$	7	.20	.20	.60	.500	1.280	2.509	4.180	6.503	9.003	14.002	19.002
C = 8	8	.20	.30	.50	.750	1.764	3.202	4.972	7.033	9.209	14.123	19.072
$\overline{\mathrm{L}=44}$	9	.10	.20	.70	.585	1.496	2.711	4.454	6.537	9.018	14.013	19.011
X = 8	10	.10	.30	.60	.750	1.620	2.756	4.320	6.301	8.801	13.801	18.800
X' = 14	11	.20	.20	.60	.500	1.280	2.320	3.845	5.907	8.406	13.405	18.404
C = 8	12	.20	.30	.50	.750	1.764	3.040	4.706	6.733	8.797	13.537	18.470
L = 48	$\frac{13}{14}$.10 .10	.20 .30	.70	.585 $.750$	$1.496 \\ 1.620$	$2.632 \\ 2.613$	$\frac{4.235}{4.060}$	$6.102 \\ 5.924$	$8.482 \\ 8.203$	$13.479 \\ 13.202$	$18.477 \\ 18.202$
X = 8 $X' = 16$	15	.20	.20	.60 .60	.500	1.280	2.253	$\frac{4.060}{3.627}$	5.456	7.811	12.808	17.806
C = 8	16	.20	.30	.50	.750	1.764	2.993	4.545	6.438	8.495	12.962	17.876
L = 52	17	.10	.20	.70	.585	1.496	2.632	4.020	5.760	7.947	12.944	17.942
X = 8	18	.10	.30	.60	.750	1.620	2.613	3.882	5.600	7.606	12.605	17.604
X' = 18	19	.20	.20	.60	.500	1.280	2.253	3.442	5.124	7.217	12.213	17.210
C = 8	20	.20	30	.50	.750	1.764	2.993	4.386	6.148	8.198	12.399	17.292
L = 56	21	.10	.20	.70	.585	1.496	2.632	3.808	5.544	7.474	12.410	17.408
X = 8 $X' = 20$	$\frac{22}{23}$.10	.30	.60	.750	1.620	2.613	3.707	5.284 4.800	7.203	12.008	17.006
C = 8	24	.20 .20	.20 .30	.60 .50	.500 $.750$	$\frac{1.280}{1.764}$	$\frac{2.253}{2.993}$	$\frac{3.260}{4.232}$	5.890	$\frac{6.734}{7.905}$	$11.618 \\ 12.019$	16.614 16.717
$\frac{C = 60}{L = 60}$	25	.10	.20	.70	.585	1.496	2.632	3.785	5.331	7.068	11.876	16.874
$\ddot{\mathbf{x}} = \ddot{\mathbf{s}}$	$\frac{26}{26}$.10	.30	.60	.750	1.620	2.613	3.610	5.008	6.880	11.413	16.410
$\mathbf{\tilde{X}'} = 22$	27	.20	.20	.60	.500	1.280	2.253	3.240	4.565	6.403	11.025	16.020
C = 8	28	.20	.30	.50	.750	1.764	2.993	4.232	5.733	7.617	11.720	16.150
L = 64	29	.10	.20	.70	.585	1.496	2.632	3.785	5.121	6.855	11.342	16.340
X = 8	30	.10	.30	.60	.750	1.620	2.613	3.610	4.833	6.563	10.818	15.814
X'=24	31	.20	.20	.60	.500	1.280	2.253	3.240	4.386	6.080	10.432	15.426
C = 8	32	.20	.30	.50	.750	1.764	2.993	4.232	5.577	7.333	11.423	15.593
L = 40 $X = 12$	$\frac{33}{34}$.10	.20	.70	.585	1.496	3.156	5.172	7.408	9.882	14.878	19.876
X = 12 X' = 10	35	.10 .20	.30 .20	.60 .60	.750 .500	$\frac{1.600}{1.280}$	$\frac{2.973}{2.702}$	4.934 4.480	$7.300 \\ 6.707$	$9.800 \\ 9.206$	$14.800 \\ 14.205$	19.800 19.204
$\hat{\mathbf{C}} = 8$	36	.20	.30	.50	.750	1.575	$\frac{2.702}{2.974}$	4.839	6.914	9.333	14.283	19.253
L = 44	37	.10	.20	.70	.585	1.496	2.930	4.735	6.973	9.346	14.343	19.341
X = 12	38	.10	.30	.60	.750	1.500	2.720	4.436	6.701	9.201	14.201	19.200
X'=12	39	.20	.20	.60	.500	1.280	2.509	4.080	6.113	8.611	13.608	18.606
C = 8	40	.20	.30	.50	.750	1.500	2.802	4.532	6.602	8.751	13.680	18.637
L = 48 $X = 12$	41	.10	.20	.70	.585	1.496	2.711	4.454	6.537	8.778	12.841	17.833
X = 12	42	.10	.30	.60	.750	1.500	2.536	4.160	6.168	8.603	13.602	18.602
X' = 14 $C = 8$	43 44	.20 .20	.20 .30	.60	.500	1.280	2.320	3.815	5.664	8.017	13.013	18.010
<u> </u>	44	.40	.50	.50	.750	1.500	2.646	4.301	6.295	8.364	13.087	18.029

TABLE	8.13	(Conti	nued)									
L = 52	45	.10	.20	.70	.585	1.496	2.632	4.235	6.102	8.344	13.275	18.273
X = 12	46	.10	.30	.60	.750	1.500	2.430	3.892	5.689	8.006	13.005	$18.004 \\ 17.414$
$ \begin{array}{c} \overline{X}' \equiv \overline{16} \\ \overline{C} \equiv 8 \end{array} $	47 48	.20 .20	.20 .30	$.60 \\ .50$.500 ,750	$1.280 \\ 1.500$	$\frac{2.253}{2.646}$	$\frac{3.627}{4.135}$	$5.264 \\ 5.993$	$7.424 \\ 8.057$	$12.418 \\ 12.506$	17.431
$\frac{C = 8}{L = 56}$.20		.585	1.496	2.632	4.020	5.760	7,909	12.741	17.739
L = 56 X = 12	49 50	.10 $.10$.30	.70 .60	.750	1.500	2.430	3.660	5.361	7.411	12.408	17.406
X = 12 $X' = 18$	51	.20	.20	.60	.500	1.280	2.253	3.442	4.933	6.854	11.825	16.820
C = 8	52	.20	.30	.50	.750	1.500	2.646	3.971_{-}	5.697	7.755	11.935	16.841
L = 60	53	.10	.20	.70	.585	1.496	2.632	3.808	5.544	7.474	12.206	17.206
X = 12	54	.10	.30	.60	.750	1.500	2.430	3.482	5.089	6.967	11.813	16.810
X' = 20	55	.20	.20	.60	.500	1.280	2.253	3.260	$4.748 \\ 5.474$	$6.454 \\ 7.457$	$11.232 \\ 11.584$	$16.226 \\ 16.261$
$\frac{C=8}{T}$	56	.20	.30	.50	.750	1.500	2.646	3.872	5.331	7.068	11.673	16.672
$\begin{array}{c} L=64 \\ X=12 \end{array}$	57 58	.10	.20 .30	.70 .60	.585 .750	$\frac{1.496}{1.500}$	$\frac{2.632}{2.430}$	$\frac{3.785}{3.422}$	4.829	6.641	11.218	16.214
$\hat{\mathbf{X}}' = \hat{\mathbf{Z}}$	59	.20	.20	.60	.500	1.280	2.253	3.240	4.565	6.080	10.641	15.632
$\ddot{c} = \ddot{s}$	60	.20	.30	.50	.750	1.500	2.646	3.872	5.313	7.164	11.280	15.689
L = 68	61	.10	.20	.70	.585	1.496	2.632	3.785	5.121	6.855	11.139	16.138
X = 12	62	.10	.30	.60	.750	1.500	2.430	3.422	4.608	6.321	10.625	15.620
X' = 24	63	.20	.20	.60	.500	1.280	2.253	3.240	4.386	5.871	10.050	15.040
C = 8	64	.20	.30	.50	.750	1.500	2.646	3.872	5.153	6.875	10.980	15.126
L = 56	65	.10	.20	.70	.585	1.496	2.632	4.235	6.102	$8.344 \\ 7.912$	$13.072 \\ 12.808$	$18.071 \\ 17.806$
$egin{array}{l} X=16 \ X'=16 \end{array}$	66 67	$.10 \\ .20$.30 .20	$.60 \\ .60$.750 $.500$	$\frac{1.500}{1.280}$	$\frac{2.321}{2.253}$	$\frac{3.892}{3.627}$	$5.664 \\ 5.264$	7.254	12.808 12.032	17.026
C = 8	68	.20	.30	.50	.750	1.500	2.321	3.737	5.556	7.627	12.053	16.989
L = 60	69	.10	.20	.70	.585	1.496	2.632	4.020	5.760	7.909	12.538	17.537
X = 16	70	.10	.30	.60	.750	1.500	2.253	3.629	5,353	7.409	12.213	17.210
X' = 18	71	.20	.20	.60	.500	1.280	2.253	3.442	4.933	6.854	11.441	16.432
C = 8	72	.20	.30	.50	<u>.</u> 750	1.500	2.321	3.567	5.253	7.319	11.476	16.394
L = 64	73	.10	.20	.70	.585	1.496	2.632	3.877	5.544	7.474	12.004	17.004
$\begin{array}{c} X = 16 \\ X' = 20 \end{array}$	$\frac{74}{75}$.10	.30 .20	.60	.750 $.500$	$\frac{1.500}{1.280}$	$2.253 \\ 2.253$	$\frac{3.373}{3.260}$	$\frac{5.089}{4.748}$	$6.907 \\ 6.454$	$11.618 \\ 10.850$	$16.614 \\ 15.840$
$C = \frac{20}{8}$	76	.20	.30	.50	.759	1.500	2.321	3.528	5.067	7.016	11.152	15.808
L = 68	77	,10	.20	.70	.585	1.496	2,632	3.785	5.331	7.068	11.531	16.470
X = 16	78	.10	.30	.60	.750	1.500	2.253	3.240	4.829	6.549	11.025	16.020
X'=22	79	.20	.20	.60	.500	1.280	2.253	3.240	4.565	6.054	10.261	15.248
C = 8	80	.20	.30	.50_	750	1.500	2.321	3.528	4.902	6.717	10.844	15.231
L = 72	81	.10	.20	.70	.585	1.496	2.632	3.785	5.121	6.855	11.097	15.937
X = 16 $X' = 24$	82 83	.10	.30 .20	.60 .60	.750 $.500$	$\frac{1.500}{1.280}$	$\frac{2.253}{2.253}$	$\frac{3.240}{3.240}$	$\frac{4.574}{4.386}$	$6.287 \\ 5.871$	$\frac{10.432}{9.672}$	$15.426 \\ 14.658$
$C = \frac{14}{8}$	84	.20	.30	.50	.750	1.500	$\frac{2.233}{2.321}$	3.528	4.753	6.422	10.540	14.677
L = 76	85	.10	.20	.70	.585	1.496	2.632	3.785	4.943	6.644	10.662	15.403
	86	.10	.30	.60	.750	1.500	2.253	3,240	4,325	6.029	9.901	14.832
X = 16 $X' = 26$	87	.20	.20	.60	.500	1.280	2.253	3.240	4.232	5.690	9.240	14.068
C = 8	88	20	.30	.50	.750	1.500	2.321	3.528	4.753	6.242	10.240	14.370
L = 80	89	.10	.20	.70	.585	1.496	2.632	3.785	4.943	6.435	10.229	14.870
X = 16 $X' = 28$	$\frac{90}{91}$.10 .20	.30 .20	.60	.750 $.500$	$\frac{1.500}{1.280}$	$\frac{2.253}{2.253}$	$\frac{3.240}{3.240}$	$\frac{4.232}{4.232}$	$5.775 \\ 5.511$	$9.401 \\ 8.840$	$14.240 \\ 13.478$
$C = \frac{28}{8}$	92	.20	.30	.60 $.50$.750	1.280 1.500	$\frac{2.255}{2.321}$	$\frac{3.240}{3.528}$	$\frac{4.232}{4.753}$	6.081	9.942	14.066
L = 84	93	.10	.20	.70	.585	1.496	2.632	3.785	4.943	6.229	9.794	14.337
X = 16	94	.10	.30	.60	.750	1.500	2.253	3.240	4.232	5.526	8.962	13.648
X' = 30	95	.20	.20	.60	.500	1.280	2.253	3.240	4.232	5.335	8.440	12.890
C = 8	96	.20	.30	.50	.750	1.500	2.321	3.528	4.753	5.986	9.648	13.764

Table 8.14

SUMMARY OF MAXIMUM MOMENTS IN SIMPLE SPANS PRODUCED BY TYPE 3-S2-3 TRUCKS WEIGHING ONE KIP EACH



Eighty four variations in the Type 3-S2-3 truck are given in this Table. Each truck number, from 1 to 84, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

Wheel Base and Axie Spacing	Truck No.	Load On Axles Kips			Span-Feet							
Feet	1	aı	\mathbf{a}_2	\mathbf{a}_3	10	20	30	40	50	60	80	100
L = 44	1	.05	.20	.75	.480	1.360	2.677	4.568	6.929	9.417	14.413	19.410
X = 8	2	.05	.30	.65	.480	1.336	2.702	4.391	6.680	9.180	14.180	19.180
X' = 8	3	.10	.20	.70	.448	1.270	2.531	4.295	6.541	9.041	14.041	19.040
C = 8	4	.10	.30	.60	.480	1.324	2.704	4.374	6.424	8.920	13.915	18.912
L = 48 X = 8 X'= 10	5	.05	.20	.75	.480	1.360	2.535	4.203	6.436	8.868	13.864	18.861
X = 8	6 7	$.05 \\ .10$.30	.65	.480	$\frac{1.252}{1.270}$	$2.465 \\ 2.371$	$\frac{4.081}{3.923}$	$6.100 \\ 6.059$	$8.571 \\ 8.461$	$13.570 \\ 13.460$	$18.570 \\ 18.460$
C = 8	8	.10	$.20 \\ .30$.70 .60	.448 .480	1.301	$\frac{2.371}{2.475}$	4.071	5.931	8.275	13.271	18.269
$L \equiv 52$	9	.05	.20	.75	.480	1.360	2.482	3.912	5.943	8.320	13.315	18.312
$\ddot{\mathbf{x}} = \ddot{\mathbf{s}}$	10	.05	.30	.65	.480	1.252	2.236	3.801	5.585	7.961	12.961	17.961
X = 8 $X' = 12$	11	.10	.20	.70	.448	1.270	2.316	3.683	5.584	7.880	12.880	17.880
C = 8	12	.10	.30	.60	.480	1.301	2.301	3.844	5.610	7.630	12.628	17.626
L = 56	13	.05	.20	.75	.480	1.360	2.482	3.716	5.497	7.814	12.767	17.763
	14	.05	.30	.65	.480	1.252	2.151	3.527	5.270	7.353	12.352	17.351
X'=14	15	.10	.20	.70	.448	1.270	2.316	3.489	5.130	7.350	12.300	17.300
C = 8	16	.10	.30	.60	.480	1.301	2.301	3.621	5.295	7.166	11.985	16.984
L = 60	17	.05	.20	.75	.480	1.360	2.482	3.622	5.213	7.320	12.218	17.214
X = 8 $X' = 16$	18	.05	.30	.65	.480	$\frac{1.252}{1.270}$	$2.151 \\ 2.316$	$\frac{3.284}{3.385}$	$\frac{4.965}{4.866}$	6.796	$11.743 \\ 11.720$	$16.742 \\ 16.720$
C = 8	$\frac{19}{20}$.10 .10	.20 .30	.70 .60	.448 $.480$	1.301	$\frac{2.316}{2.301}$	3.402	4.866 4.990	$6.875 \\ 6.850$	11.720	16.342
$\frac{C=64}{L=64}$	21	.05	.20	.75	.480	1.360	2.482	3.605	4.944	6.827	11.670	16.666
X = 84	22	.05	.30	.65	.480	1.350 1.252	$\frac{2.482}{2.151}$	3.125	4.696	6.476	11.134	16.133
$\ddot{\mathbf{X}}' = 18$	23	.10	.20	.70	.448	1.270	2.316	3.365	4.655	6.400	11.140	16.140
$\hat{c} = \hat{s}$	24	.10	.30	.60	.480	1.301	2.301	3.301	4.770	6.539	10.701	15.701
L = 68	25	.05	.20	.75	.480	1.360	2.482	3.605	4.804	6.522	11.121	16.117
X 8	26	.05	.30	.65	.480	1.252	2.151	3.125	4.434	6.171	10.525	15.524
X' = 20 C = 8	27	.10	.20	.70	.448	1.270	2.316	3.365	4.493	6.087	10.560	15.560
	28	.10	.30	.60	.480	1.301	2.301	3.301	4.555	6.234	10.060	15.060
L = 48	29	.05	.20	.75	.480	1.360	2.677	4.568	6.929	9.314	14.310	19.308
$\ddot{X} = 12$	30	.05	.30	.65	.480	1.336	2.660	4.382	6.660	9.081	14.081	19.080
X' = 8	31	.10	.20	.70	.448	1.270	2.531	4.295	6.534	8.840	13.840	18.840
C = 8	32	.10	.30	.60	.480	1.324	2.600	4.156	6.272	8.714	13.710	18.708
$egin{array}{c} L \equiv 52 \\ X \equiv 12 \end{array}$	33	.05	.20	.75	.480	1.360	2.535	4.203	6.436	8.801	13.761	18.759
$X \equiv 12$ $X' \equiv 10$	$\frac{34}{35}$	$.05 \\ .10$	$.30 \\ .20$.65 $.70$	$.480 \\ .448$	$\frac{1.215}{1.270}$	$2.435 \\ 2.371$	$\frac{4.081}{3.923}$	$6.100 \\ 6.059$	$8.474 \\ 8.301$	$13.471 \\ 13.260$	$18.471 \\ 18.260$
$\hat{C} = \frac{10}{8}$	36	.10	.30	.60	.480	1.215	2.391	3.867	5.732	8.069	13.067	18.065
	37	.05	.20	.75	.480	1.360	2.482	3.912	5.943	8.307	13.213	18.210
$egin{array}{l} \mathbf{L} \equiv 56 \\ \mathbf{X} \equiv 12 \\ \mathbf{X'} \equiv 12 \end{array}$	38	.05	.30	.65	.480	1.215	2.217	3.801	5.556	7.913	12.862	17.861
$\hat{\mathbf{X}}' = \hat{1}\hat{2}$	39	.10	.20	.70	.448	1.270	2.316	3.683	5.584	7.825	12.680	17.680
C = 8	40	.10	.30	.60	.480	1.215	2.187	3.633	5.387	7.441	12.424	17.423
	41	.05	.20	.75	.480	1.360	2.482	3.716	5.497	7.814	12.664	17.661
$egin{array}{c} L=60 \ X=12 \end{array}$	42	.05	.30	.65	.480	1.215	2.151	3.527	5.239	7.353	12.253	17.252
X' = 14	43	.10	.20	.70	.448	1.270	2.316	3.489	5.130	7.350	12.100	17.100
C = 8	44	.10	.30	.60	.480	1.215	2.108	3.406	5.069	6.944	11.782	16.782

TABLE 8.14 (Continued)												
L = 64	45	.05	.20	.75	.480	1.360	2.482	3.622	5.213	7.320	12.115	17.112
X = 12	46	.05	.30	.65	.480	1.215	2.151	3.260	4.965	6.792	11.644	16.643
X'=16	47	.10	.20	.70	.448	1.270	2.316	3.385	4.866	6.875	11.520	16.520
C = 8	48	.10	.30	.60	.480	1.215	2.108	3.184	4.775	6.624	11.141	16.141
L = 68	49	.05	.20	.75	.480	1.360	2.482	3.605	4.944	6.827	11.567	16.563
X = 12	50	.05	.30	.65	.480	1.215	2.151	3.125	4.696	6.403	11.035	16.034
X' = 18	51	.10	.20	.70	.448	1.270	2.316	3.365	4.655	6.400	10.940	15.940
C = 8	52	.10	.30	.60	.480	1.215	2.108	3.106	4.553	6.310	10.500	15.500
L=72	53	.05	.20	.75	.480	1.360	2.482	3.605	4.804	6.522	11.063	16.014
X = 12	54	.05	.30	.65	.480	1.215	2.151	3.125	4.434	6.134	10.427	15.425
X' = 20	55	.10	.20	.70	.448	1.270	2.316	3.365	4.493	6.087	10.409	15.360
C = 8	56	.10	.30	.60	.430	1.215	2.108	3.106	4.334	6.003	9.860	14.860
L = 60	57	.05	.20	.75	.480	1.360	2.482	3.912	5.943	8.307	13.110	18.108
X = 16	58	.05	.30	.65	.480	1.215	2.217	3.801	5.556	7.913	12.763	17.762
X'=12	59	.10	.20	.70	.448	1.270	2.316	3.683	5.584	7.825	12.481	17.481
C = 8	60	.10	.30	.60	.480	1.215	2.187	3.589	5.252	7.441	12.222	17.221
L = 64	61	.05	.20	.75	.480	1.360	2.482	3.716	5.497	7.814	12.561	17.559
X = 16	62	.05	.30	.65	.480	1.215	2.151	3.527	5.239	7.353	12.154	17.153
X' = 14	63	.10	.20	.70	.448	1.270	2.316	3.489	5.130	7.350	11.901	16.901
C = 8	64	.10	.30	.60	.480	1.215	2.033	3.318	4.953	6.900	11.581	16.580
L = 68	65	.05	.20	.75	.480	1.360	2.482	3.622	5.213	7.320	12.053	17.010
X = 16	66	.05	.30	.65	.480	1,215	2.151	3.260	4.965	6.792	11.545	16.544
X' = 16	68	.10	.20	.70	.448	1.270	2.316	3.385	4.866	6.875	11.362	16.321
C = 8	68	.10	.30	.60	.480	1.215	1.985	3.100	4.682	6.401	10.940	15.940
$L \equiv 72$	69	.05	.20	.75	.480	1.360	2.482	3.605	4.944	6.827	11,558	16.461
X = 16	70	.05	.30	.65	.480	1.215	2.151	3.125	4.696	6.403	10.981	15.936
X'=18	71	.10	.20	.70	.448	1.270	2.316	3.365	4.658	6.400	10.885	15.741
C = 8	72	.10	.30	.60	.480	1.215	1.985	2.916	4.416	6.085	10.320	15.300
L = 76	73	.05	.20	.75	.480	1.360	2.482	3.605	4.804	6.522	11.063	15.912
X = 16	74	.05	.30	.65	.480	1.215	2.151	3.125	4.434	6.134	10.421	15.327
X' = 20	75	.10	.20	.70	.448	1.270	2.316	3.365	4.493	6.087	10.409	15.161
C = 8	76	.10	.30	.60	.480	1.215	1.985	2.916	4.156	5.842	9.781	14.661
L = 80	77	.05	.20	.75	.480	1.360	2.482	3.605	4.729	6.248	10.569	15.363
X = 16	78	.05	.30	.65	.480	1.215	2.151	3.125	4.175	5.868	9.861	14.719
X'=22	79	.10	.20	.70	.448	1.270	2.316	3.365	4.414	5.832	9.933	14.581
C = 8	80	.10	30	.60	.480	1.215	1.985	2.916	3.912	5.516	9.240	14.022
L = 84	81	.05	.20	.75	.480	1.360	2.482	3.605	4.729	6.000	10.075	14.814
X = 16	82	.05	.30	.65	.480	1.215	2.151	3.125	4.098	5.607	9.300	14.110
X' = 24	83	.10	.20	.70	.448	1.270	2.316	3.365	4.414	5.639	9.458	14.001
C = 8	84	.10	.30	.60	.480	1.215	1.985	2.916	3.912	5.266	8.881	13.383

9. MAXIMUM MOMENTS AND EQUIVALENT H TRUCK LOADINGS FOR VEHICLES OF UNIT WEIGHT ON SIMPLE SPAN BRIDGES

Figures 9.1-9.14 provide a graphical means for the determination of maximum moments and equivalent H truck loadings which result from a wide range of wheel-base lengths and loadings for each of the 14 heavy vehicle types, shown in Figure 6.1, on simple spans up to 100 feet in length. The moments given by these charts are those produced by vehicles weighing one kip each, or the moments produced per kip of gross vehicle weight. The equivalent H truck loading for a given vehicle may be determined by comparing the moment produced by it with the moment produced by an H truck of unit weight on the same span. The figure number corresponding to each of the 14 heavy vehicle types is as follows:

Figure Numbers	Vehicle Type	No. of Charts	Figure Numbers	Vehicle Type	No. of Charts
9.1	2	1	9.8 (a)-9.8(i)	3-S3	9
9.2	3	1	9.9 (a) - 9.9(1)	2-2	12
9.3(a)-9.3(1)	2-S1	12	9.10(a)-9.10(l)	2-3	12
9.4(a)-9.4(i)	2-S2	9	9.11(a)-9.11(l)	3-2	12
9.5(a)-9.5(i)	2-S3	9	9.12(a)-9.12(l)	3-3	12
9.6(a)-9.6(i)	3-S1	9	9.13(a)-9.13(c)	2-S1-2	3
9.7(a)-9.7(i)	3-S2	9	9.14(a)-9.14(f)	3-S2-3	6

Total Number of Charts = 116

The use of these charts for determining maximum moments and equivalent H truck loadings will now be illustrated by two typical examples.

Example 9.1. Use of Charts for Determining Maximum Moments

Given: A Type 3-S2 truck has a gross weight of 60,000 pounds with axle spacings, front to rear, of 12 feet, 4 feet, 20 feet, and 4 feet, respectively making an over-all wheel base length of 40 feet, and is loaded in such a way that each axle carries 12,000 pounds. Suppose it is desired to know the maximum moments produced by this vehicle on span lengths of 20, 40, and 60 feet, respectively.

In Figure 9.7(h) it will be found on the dashed line for L-40 that this vehicle causes maximum moments of:

```
1.62 kip-feet on a 20-foot span
4.43 kip-feet on a 40-foot span
8.70 kip-feet on a 60-foot span
```

for each kip of gross load carried by the given vehicle. Therefore, the maximum moments produced on these spans by the given vehicle would be:

```
1.62 \times 60 = 97.2 kip-feet on a 20-foot span 4.43 \times 60 = 265.8 kip-feet on a 40-foot span 8.70 \times 60 = 522.0 kip-feet on a 60-foot span
```

Example 9.2 Use of Charts for Determining Equivalent H Truck Loadings

For the same vehicle described in Example 9.1, it is desired to know its equivalent H truck loadings on span lengths of 20, 40, and 60 feet, respectively.

In Figure 9.7(h) it will be found that an H truck of unit weight causes maximum moments of:

```
4.00 kip-feet on a 20-foot span
8.65 kip-feet on a 40-foot span
13.63 kip-feet on a 60-foot span
```

By comparing these moments with those produced by the given vehicle, it will be seen that the given vehicle per kip of gross weight causes:

```
1.62/ 4.00=.405 or 40.5\% of an H1.0 truck moment on a 20-foot span 4.43/ 8.65=.512 or 51.2\% of an H1.0 truck moment on a 40-foot span 8.70/13.63=.638 or 63.8\% of an H1.0 truck moment on a 60-foot span
```

These values may also be obtained by interpolation between the percent of H truck moment lines shown in Figure 9.7(h) which, when applied to the given Type 3-S2 truck weighing 60.0 kips, converts it into an equivalent H truck loading of:

```
.405 \times 60.0 = 24.3 kips on a 20-foot span .512 \times 60.0 = 30.7 kips on a 40-foot span .638 \times 60.0 = 38.3 kips on a 60-foot span
```

The maximum moments and equivalent H truck loadings for other vehicle types and loadings may be determined from Figures 9.1-9.14 in a manner similar to that outlined in these two examples for the above described Type 3-S2 truck weighing 60.0 kips on spans of 20, 40, and 60 feet in length.

In addition to furnishing the maximum moments and equivalent H truck loadings for a wide variety of heavy vehicle types and loadings on simple spans up to 100 feet in length, the graphical representation of these data as shown in Figures 9.1-9.14 provides a convenient means for demonstrating the effects of variations in wheel-base length, number and spacing of axles, and the distribution of load among the axles on the bending moments produced by a given vehicle type on a given span and also for comparing the variations in these moments from one span to another. These charts not only provide a convenient means for comparing the moments produced by one vehicle type and loading with those of another on the same span but also for visually comparing the effects of variations in span length on the moments produced in each case.

EQUIVALENT H TRUCK LOADINGS FOR TYPE 2 TRUCKS

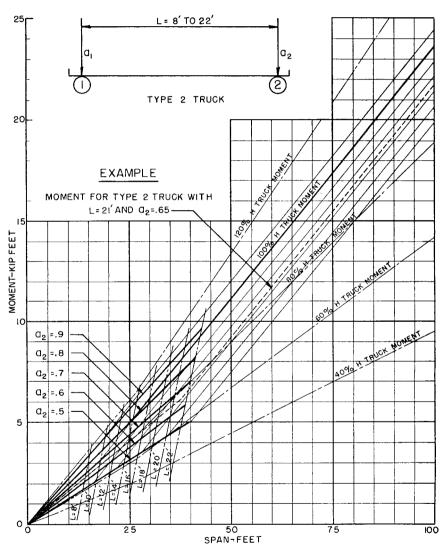


Figure 9.1

EQUIVALENT H TRUCK LOADINGS FOR TYPE 3 TRUCKS

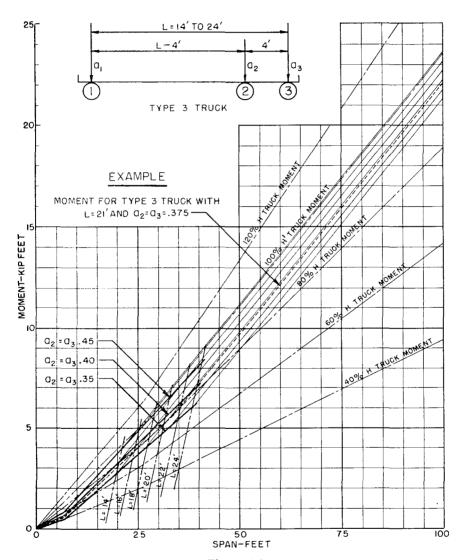


Figure 9.2

EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-SI TRUCKS WITH 8 TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER

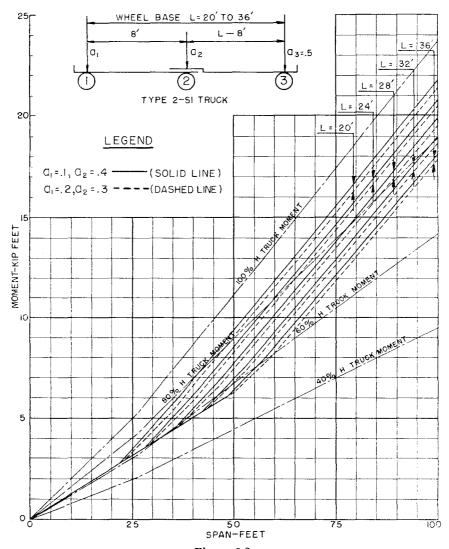


Figure 9.3a

EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-SI TRUCKS WITH 12 TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER

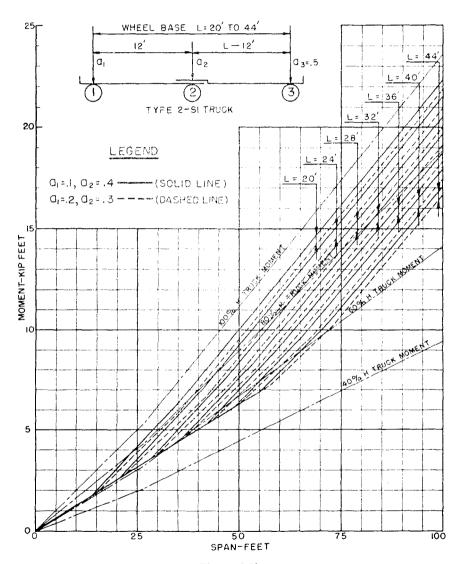


Figure 9.3b

EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-SI TRUCKS
WITH 16' TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER
BASED ON BENDING MOMENTS PRODUCED BY A GROSS VEHICLE WEIGHT

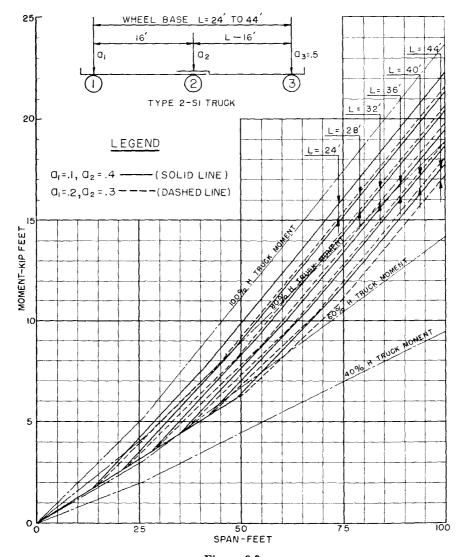


Figure 9.3c

EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-SI TRUCKS WITH 8'TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER

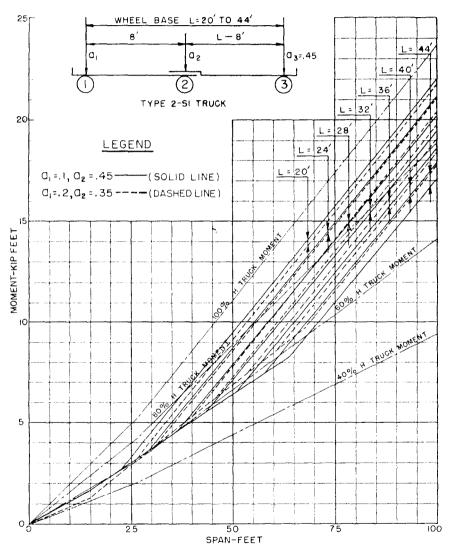


Figure 9.3d

EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-SI TRUCKS WITH 12' TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER

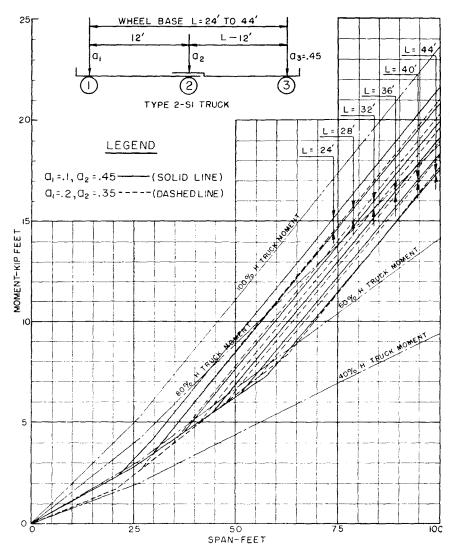


Figure 9.3e

EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-SI TRUCKS WITH 16^{\prime} TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER

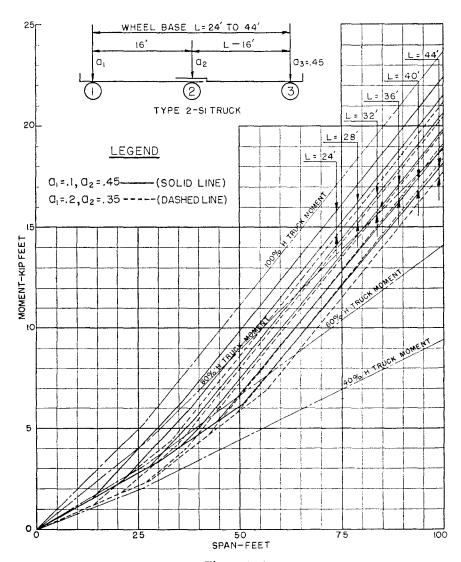


Figure 9.3f

EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-SI TRUCKS WITH 8' TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER

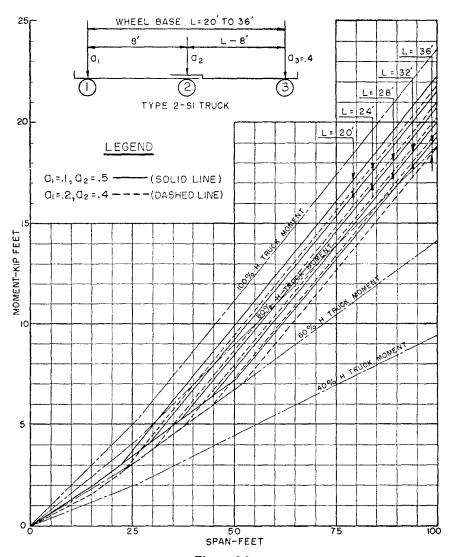


Figure 9.3g

EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-SI TRUCKS WITH 12 TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER

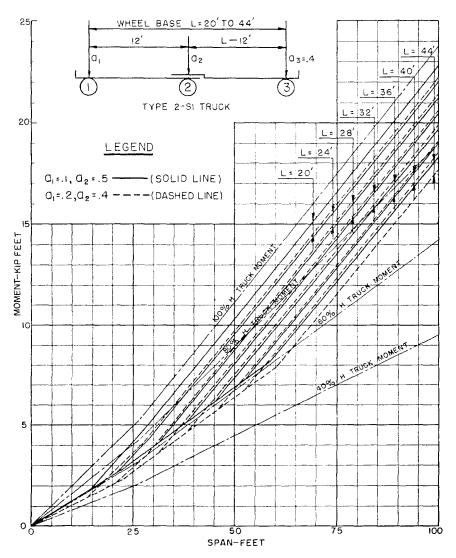


Figure 9.3h

EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-SI TRUCKS WITH $16^{'}$ TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER

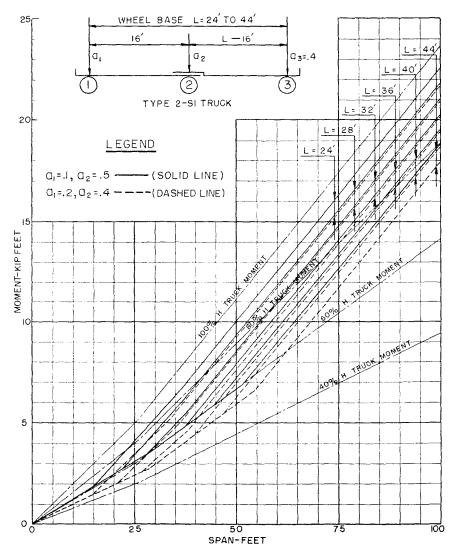


Figure 9.3i

EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-SI TRUCKS WITH 8' TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER

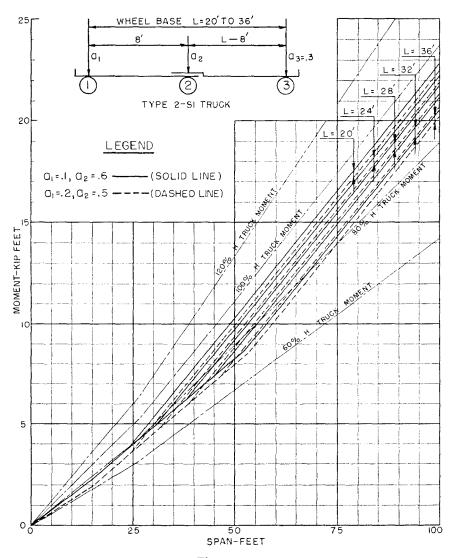


Figure 9.3j

EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-SI TRUCKS WITH 12' TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER

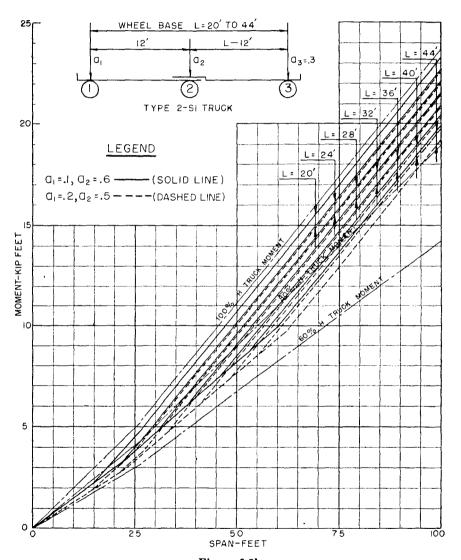


Figure 9.3k

EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-SI TRUCKS WITH 16 TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER

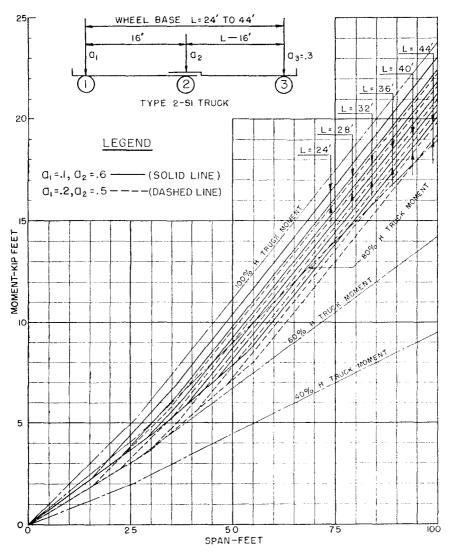


Figure 9.31

EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-S2 TRUCKS WITH $8^{'}$ TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER

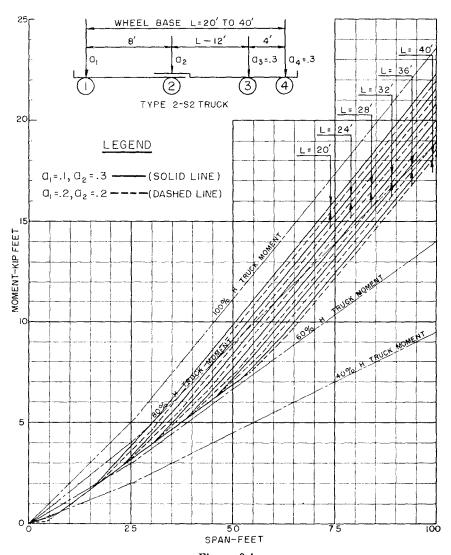


Figure 9.4a

EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-S2 TRUCKS WITH 12 TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER

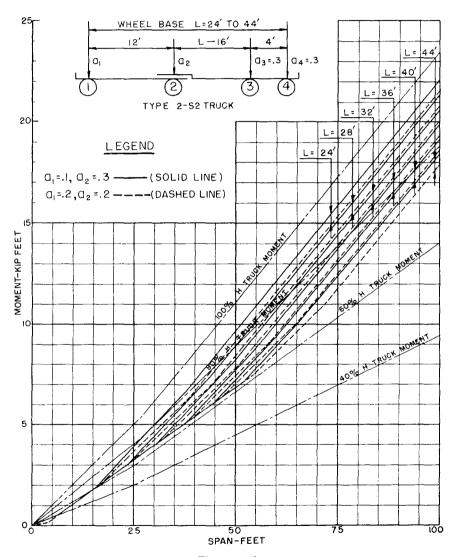


Figure 9.4b

EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-S2 TRUCKS WITH 16 TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER

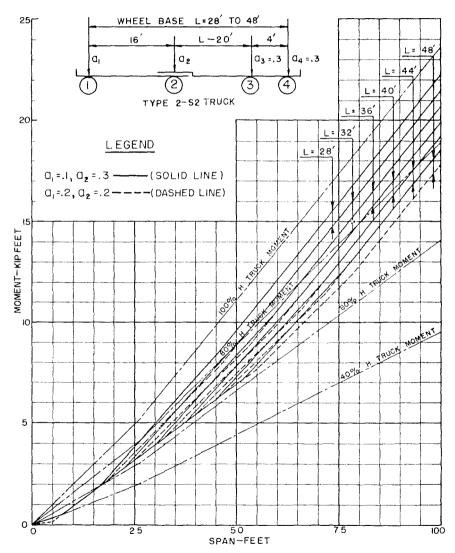


Figure 9.4c

EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-S2 TRUCKS WITH 8' TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER

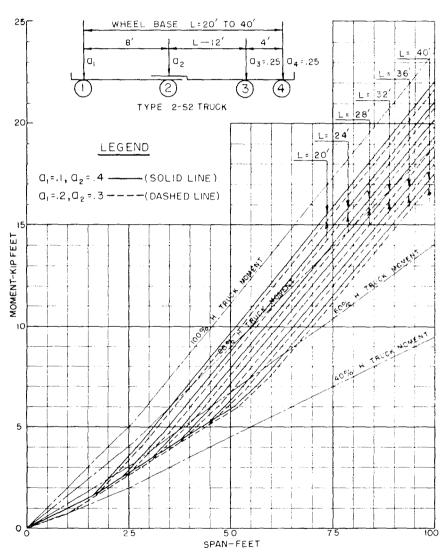


Figure 9.4d

EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-S2 TRUCKS
WITH 12 TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER

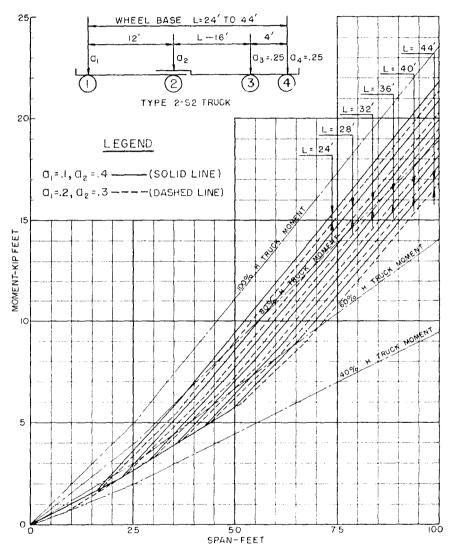


Figure 9.4e

EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-S2 TRUCKS WITH 16 TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER

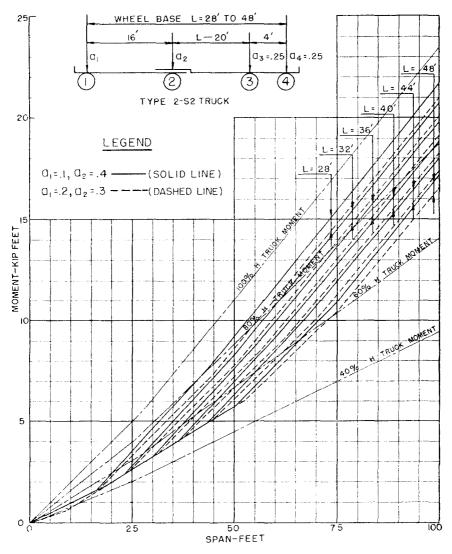


Figure 9.4f

EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-S2 TRUCKS WITH 8' TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER

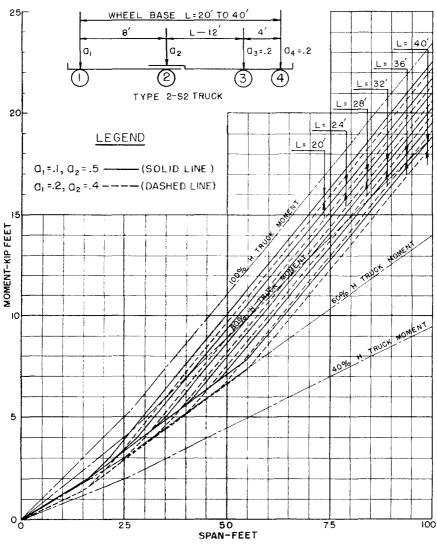


Figure 9.4g

EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-S2 TRUCKS WITH $12^{'}$ TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER

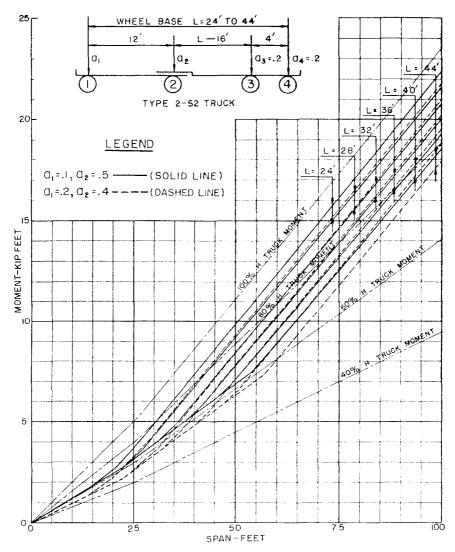


Figure 9.4h

EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-S2 TRUCKS WITH $16^{'}$ TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER

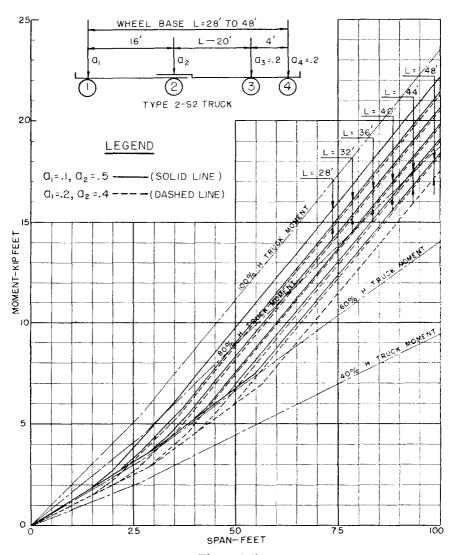


Figure 9.4i

EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-S3 TRUCKS WITH 8' TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER

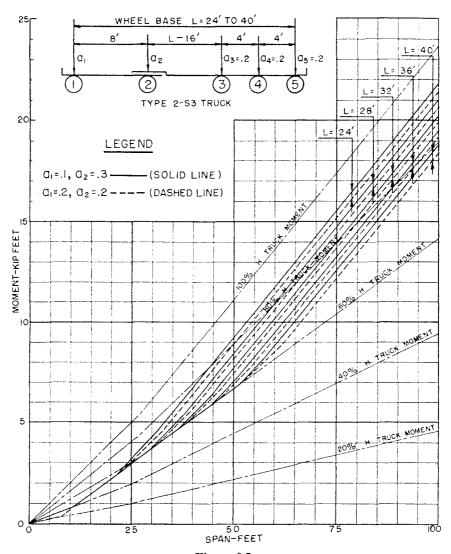


Figure 9.5a

EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-S3 TRUCKS WITH 12^{\prime} TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER

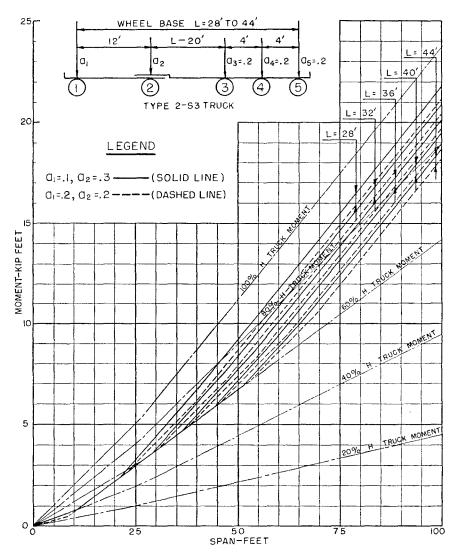


Figure 9.5b

EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-S3 TRUCKS WITH 16 TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER

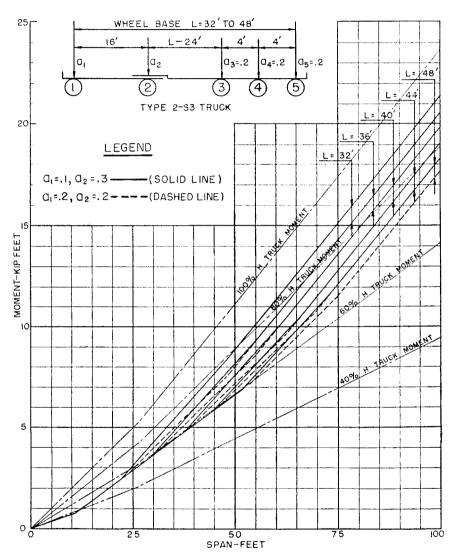


Figure 9.5c

EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-S3 TRUCKS WITH 8 TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER

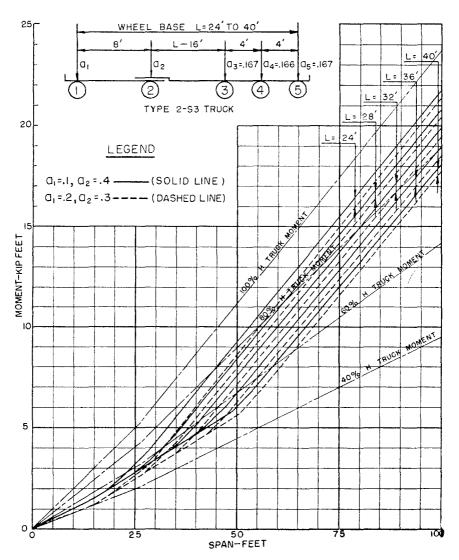


Figure 9.5d

EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-S3 TRUCKS WITH 12' TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER

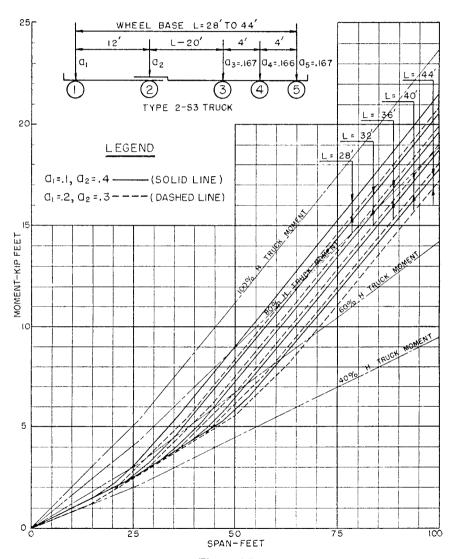


Figure 9.5e

EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-S3 TRUCKS WITH 16' TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER

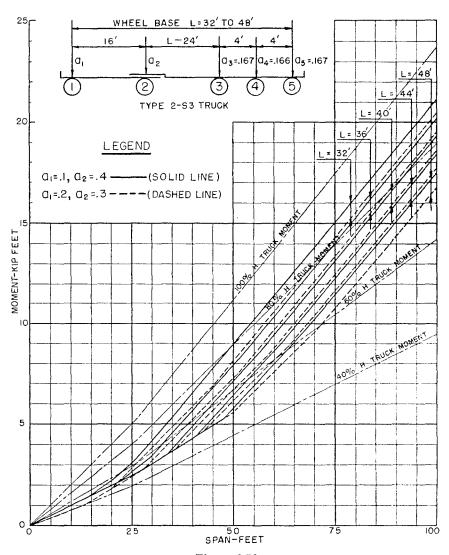


Figure 9.5f

EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-S3 TRUCKS WITH 8' TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER

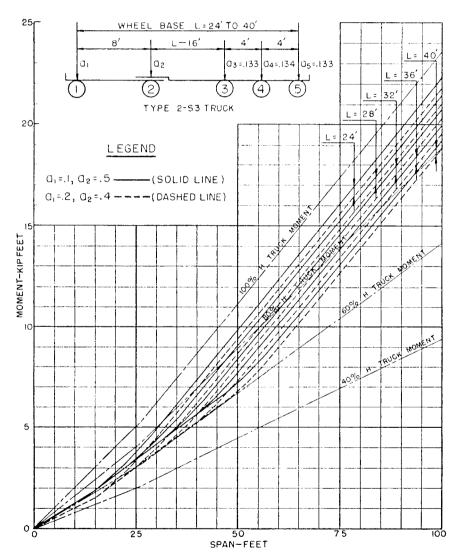


Figure 9.5g

EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-S3 TRUCKS WITH 12' TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER

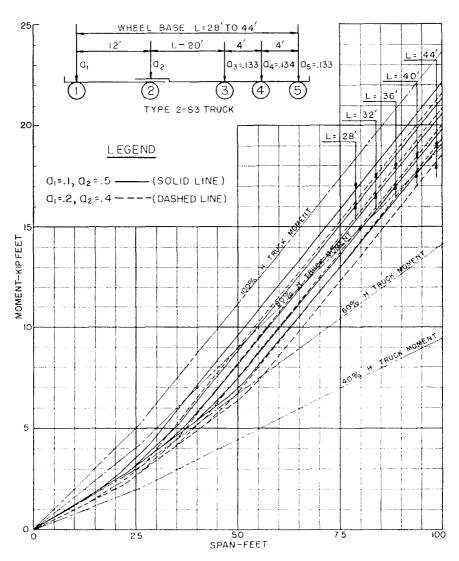


Figure 9.5h

EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-S3 TRUCKS WITH 16 TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER

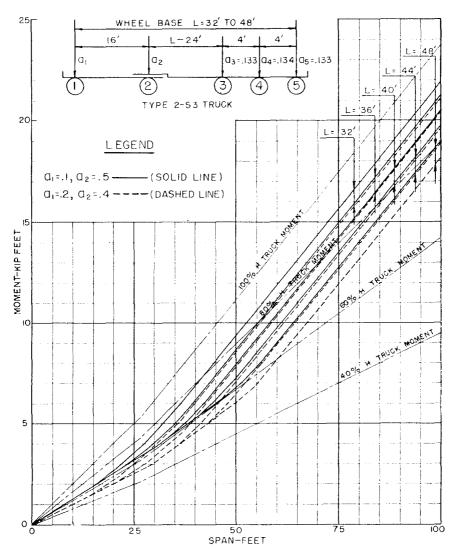


Figure 9.5i

EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-SI TRUCKS WITH 12 TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER

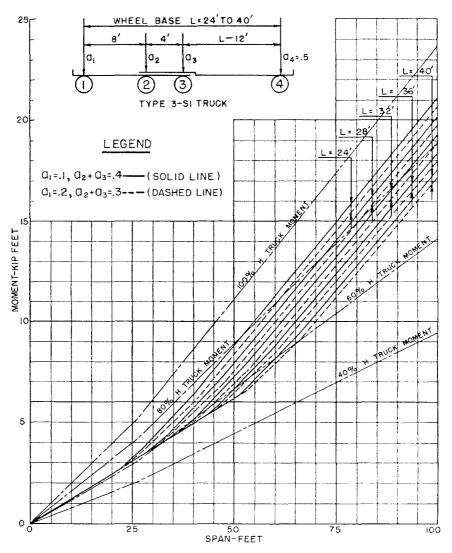


Figure 9.6a

EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-SI TRUCKS WITH 16' TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER

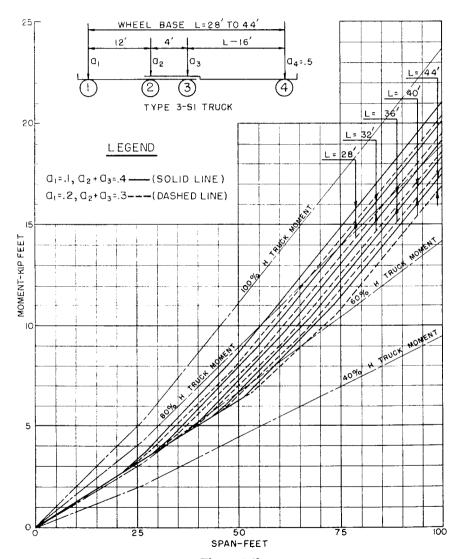


Figure 9.6b

EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-SI TRUCKS WITH 20 TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER

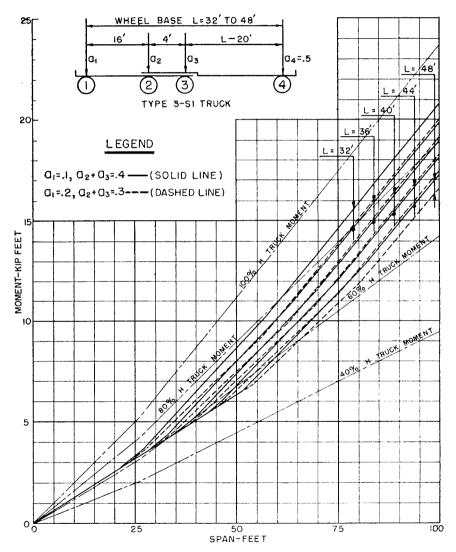


Figure 9.6c

EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-SI TRUCKS WITH 12' TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER

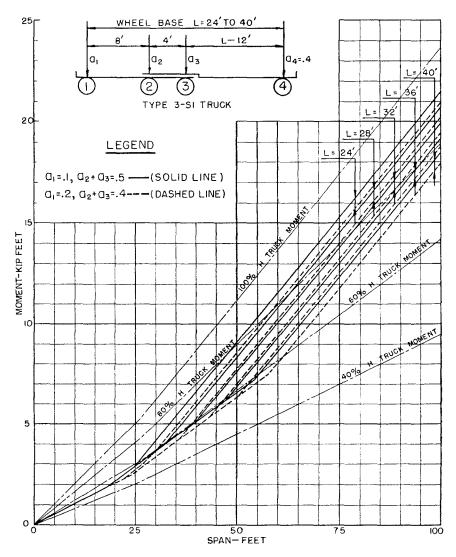


Figure 9.6d

EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-SI TRUCKS WITH $16^{'}$ TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER

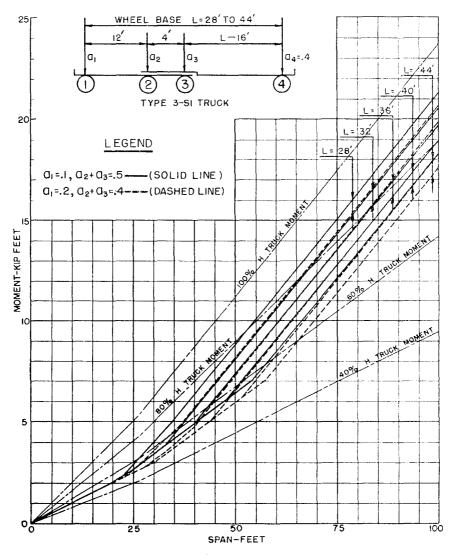


Figure 9.6e

EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-SI TRUCKS WITH 20 TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER

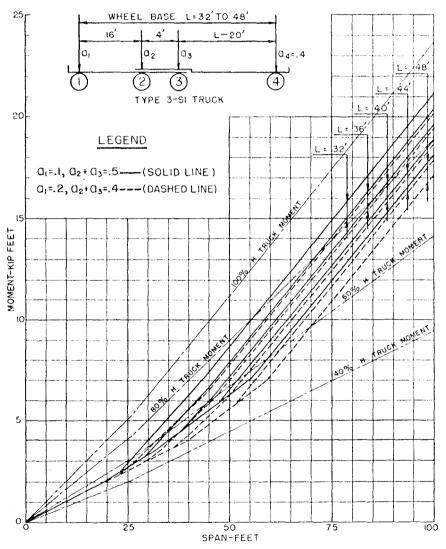


Figure 9.6f

EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-SI TRUCKS WITH 12 TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER

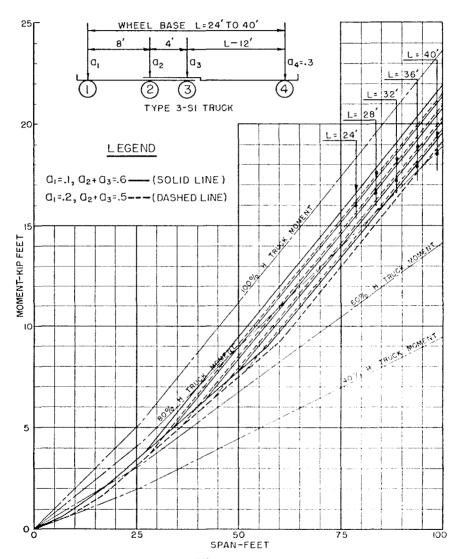


Figure 9.6g

EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-SI TRUCKS WITH, 16 TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER

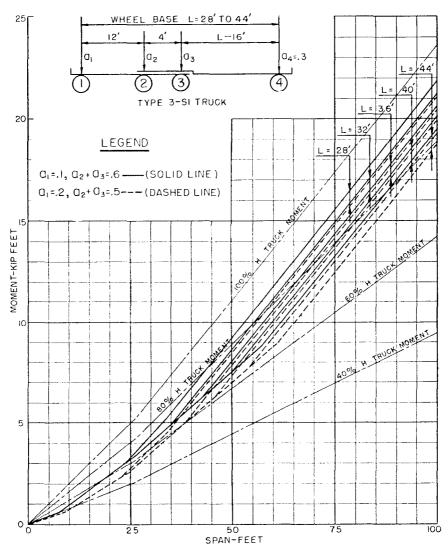


Figure 9.6h

EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-SI TRUCKS WITH 20 TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER

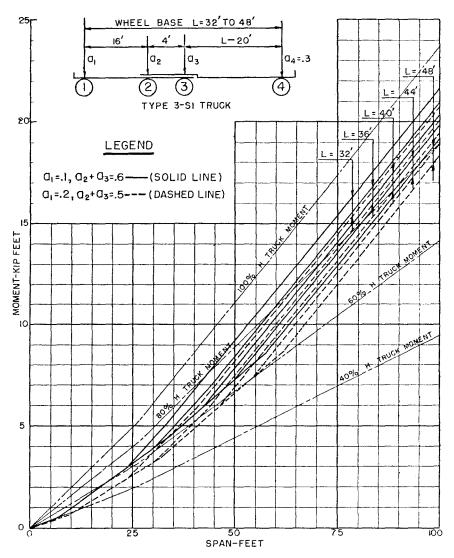


Figure 9.6i

EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-S2 TRUCKS WITH 12' TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER

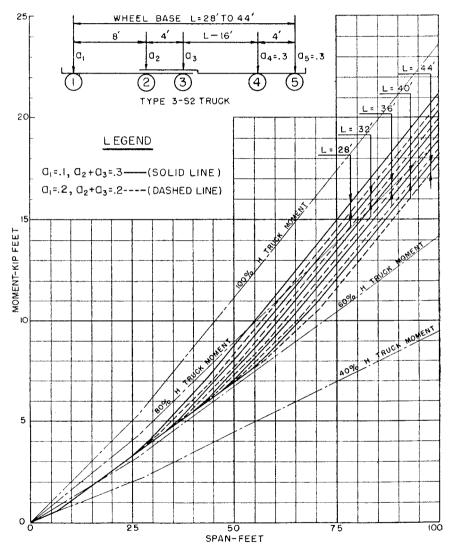


Figure 9.7a

EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-S2 TRUCKS WITH $16^{'}$ TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER

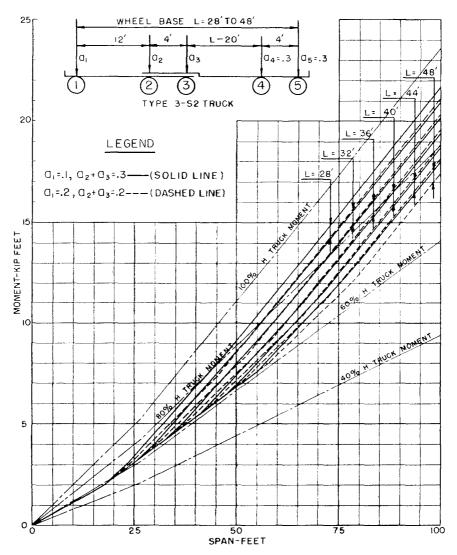


Figure 9.7b

EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-S2 TRUCKS WITH 20 TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER

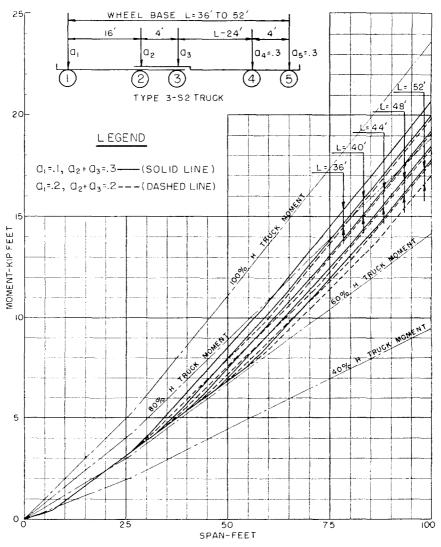


Figure 9.7c

EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-S2 TRUCKS WITH 12' TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER

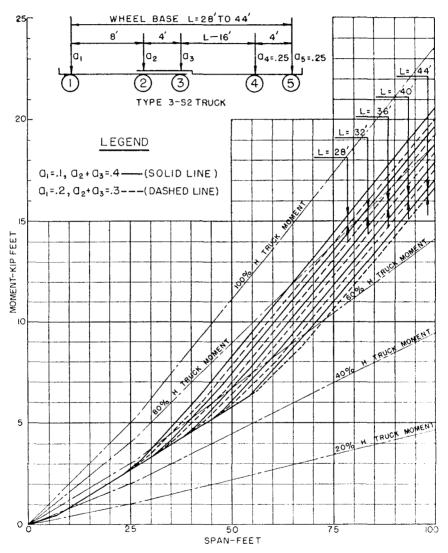


Figure 9.7d

EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-S2 TRUCKS WITH $16^{'}$ TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER

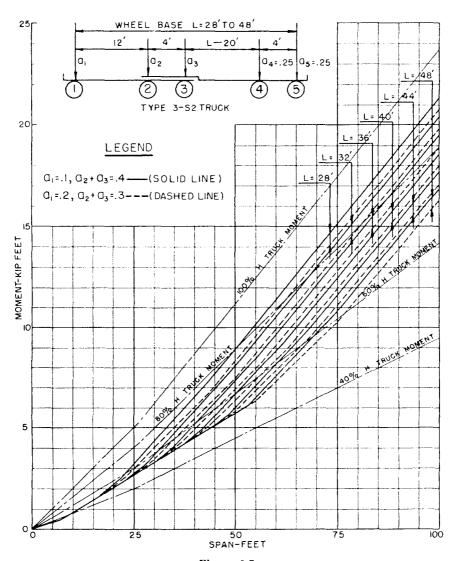


Figure 9.7e

EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-S2 TRUCKS WITH 20° TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER

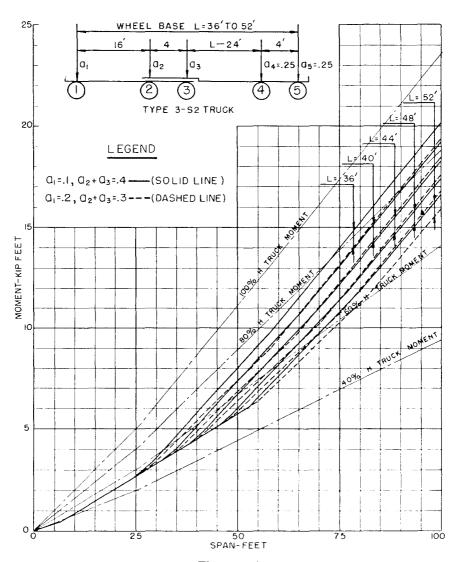


Figure 9.7f

EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-S2 TRUCKS WITH 12 $^{\prime}$ TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER

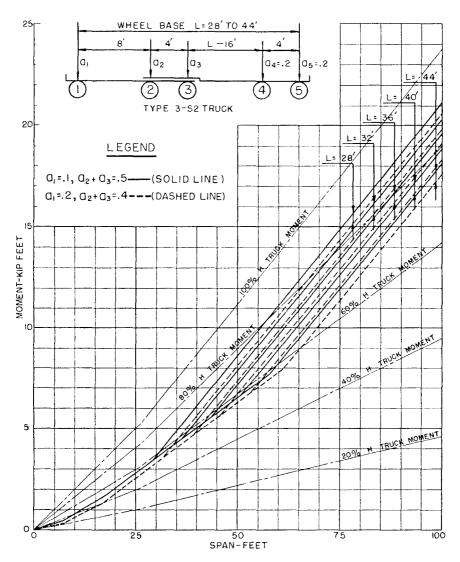


Figure 9.7g

EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-S2 TRUCKS WITH 16 TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER

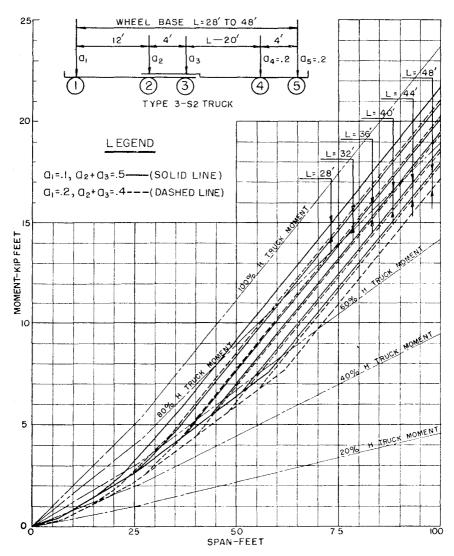


Figure 9.7h

EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-S2 TRUCKS WITH 20'TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER

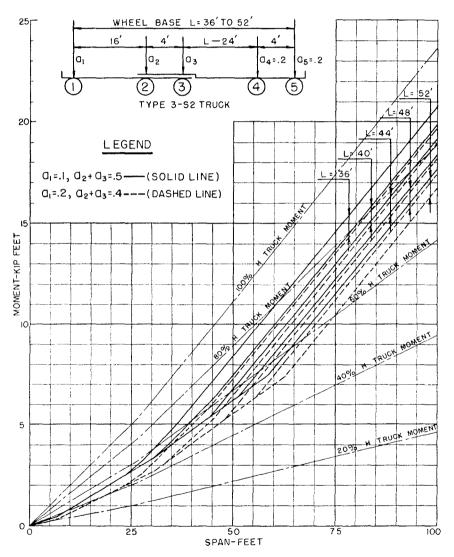


Figure 9.7i

EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-S3 TRUCKS WITH 12' TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER

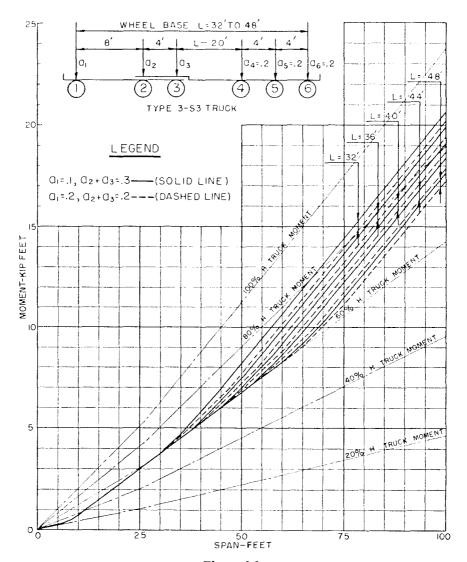


Figure 9.8a

EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-S3 TRUCKS WITH $16^{'}$ TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER

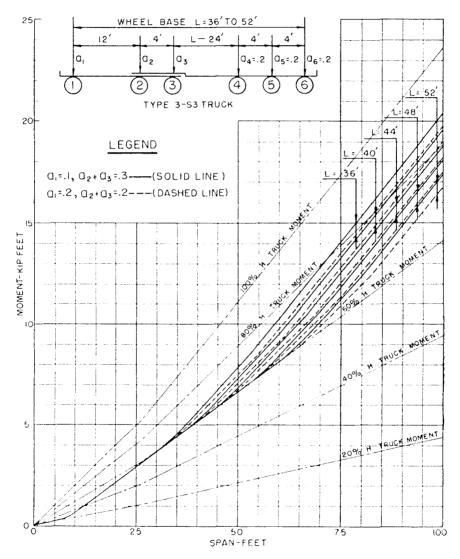


Figure 9.8b

EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-S3 TRUCKS WITH 20 TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER

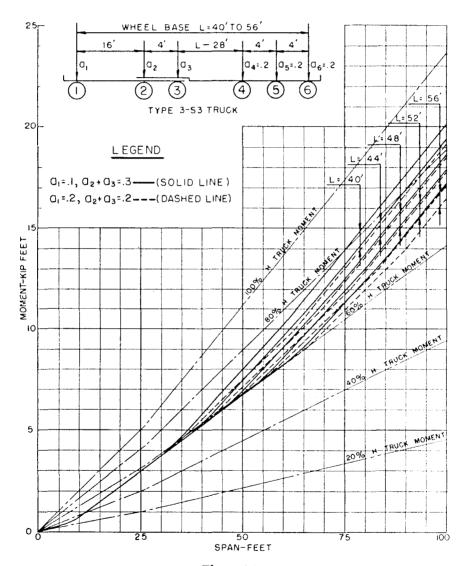


Figure 9.8c

EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-S3 TRUCKS WITH 12 TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER

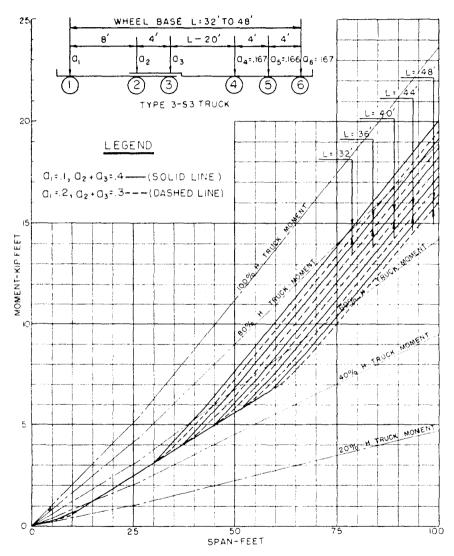


Figure 9.8d

EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-S3 TRUCKS WITH 16' TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER

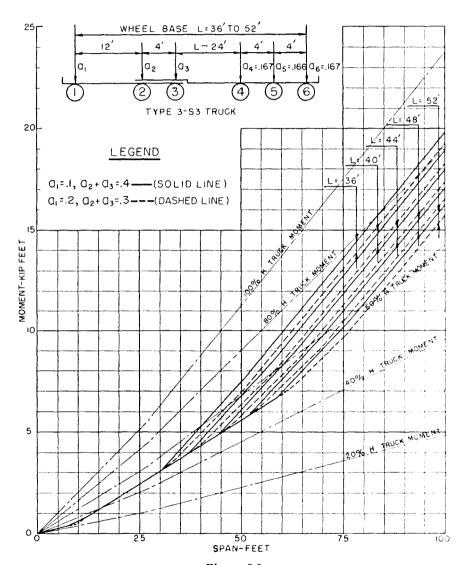


Figure 9.8e

EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-S3 TRUCKS WITH 20 TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER

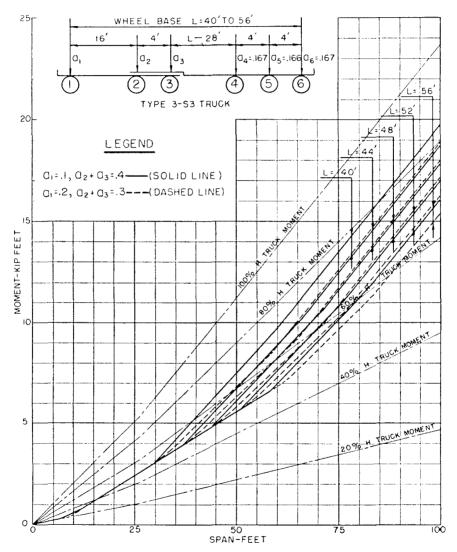


Figure 9.8f

EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-S3 TRUCKS WITH 12' TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER

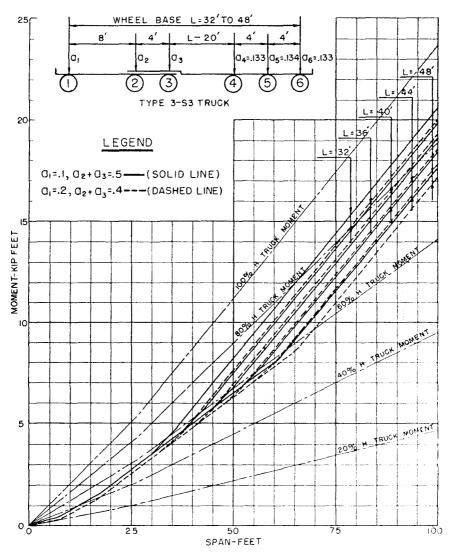


Figure 9.8g

EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-S3 TRUCKS WITH $16^{'}$ TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER

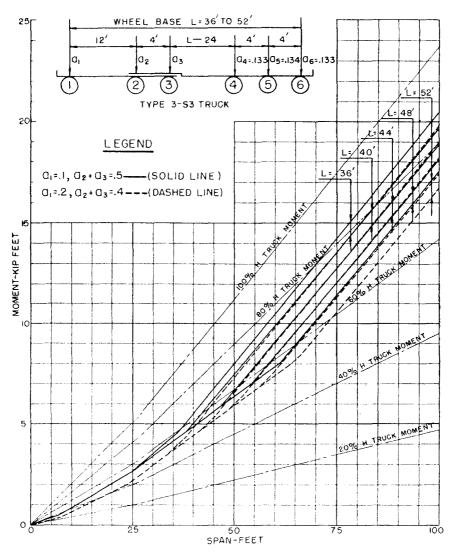


Figure 9.8h

EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-S3 TRUCKS WITH 20 TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER

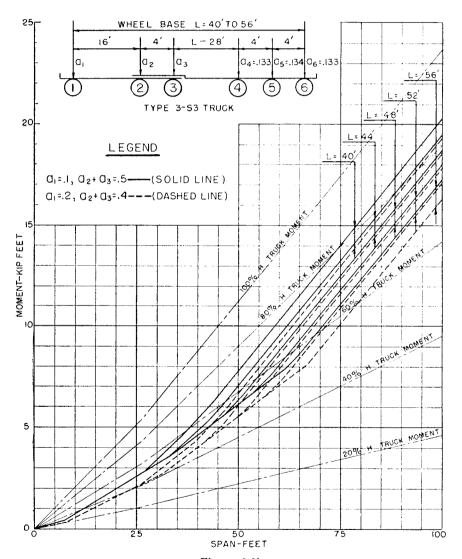


Figure 9.8i

EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-2 TRUCKS WITH 12' TRUCK AND VARIABLE LENGTH TRAILER

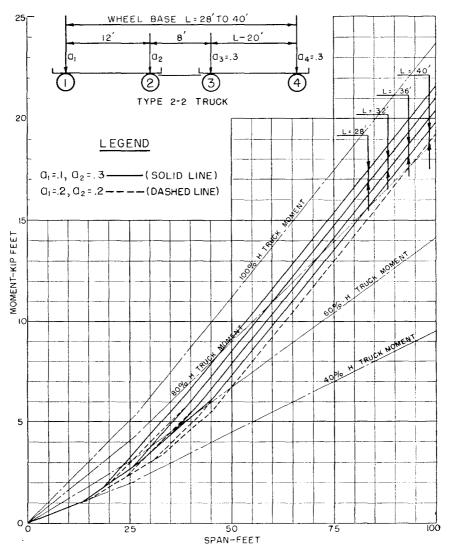


Figure 9.9a

EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-2 TRUCKS WITH 16' TRUCK AND VARIABLE LENGTH TRAILER

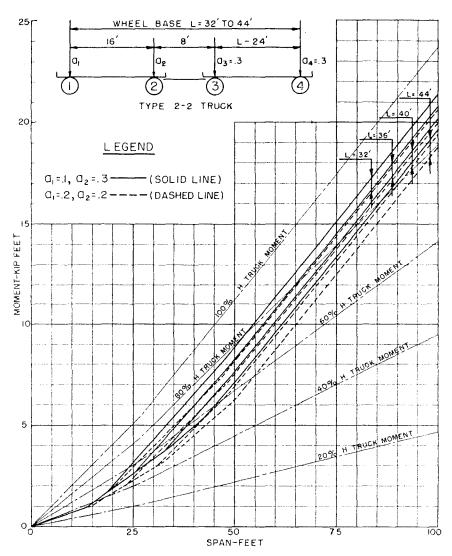


Figure 9.9b

EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-2 TRUCKS WITH 20'TRUCK AND VARIABLE LENGTH TRAILER

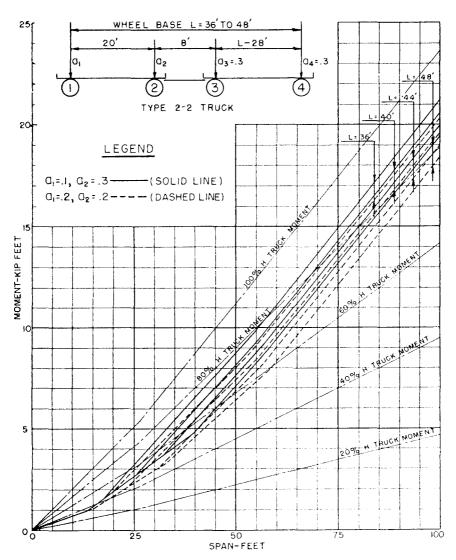


Figure 9.9c

EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-2 TRUCKS WITH 12' TRUCK AND VARIABLE LENGTH TRAILER

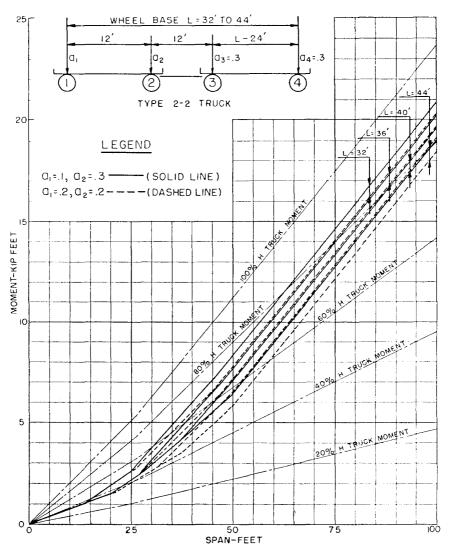


Figure 9.9d

EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-2 TRUCKS WITH 16' TRUCK AND VARIABLE LENGTH TRAILER

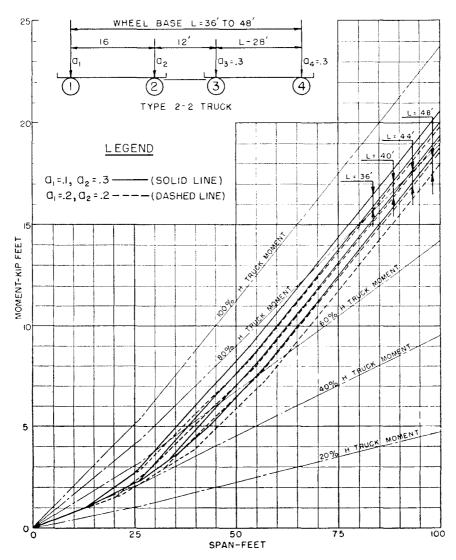


Figure 9.9e

EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-2 TRUCKS WITH 20'TRUCK AND VARIABLE LENGTH TRAILER

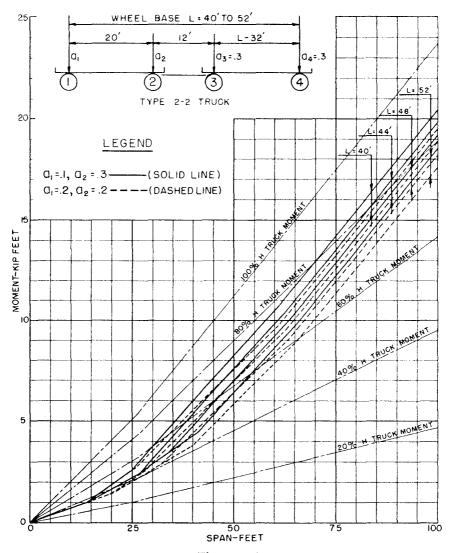


Figure 9.9f

EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-2 TRUCKS WITH 12 TRUCK AND VARIABLE LENGTH TRAILER

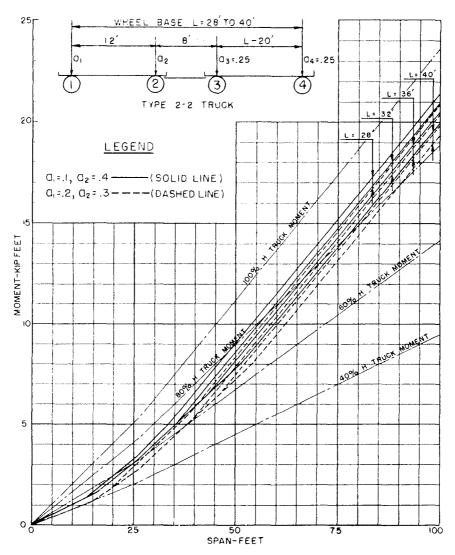


Figure 9.9g

EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-2 TRUCKS WITH 16' TRUCK AND VARIABLE LENGTH TRAILER

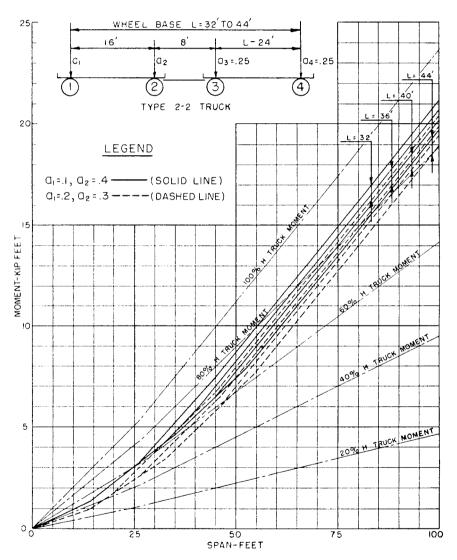


Figure 9.9h

EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-2 TRUCKS WITH 20 TRUCK AND VARIABLE LENGTH TRAILER

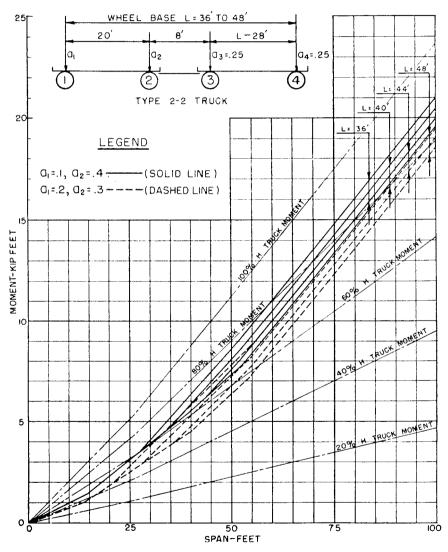


Figure 9.9i

EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-2 TRUCKS WITH 12' TRUCK AND VARIABLE LENGTH TRAILER

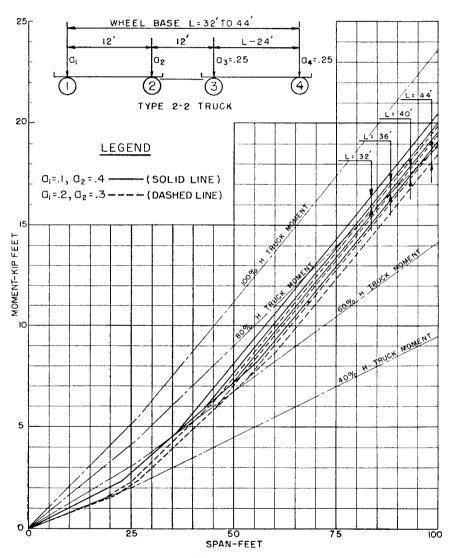


Figure 9.9j

EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-2 TRUCKS WITH 16' TRUCK AND VARIABLE LENGTH TRAILER

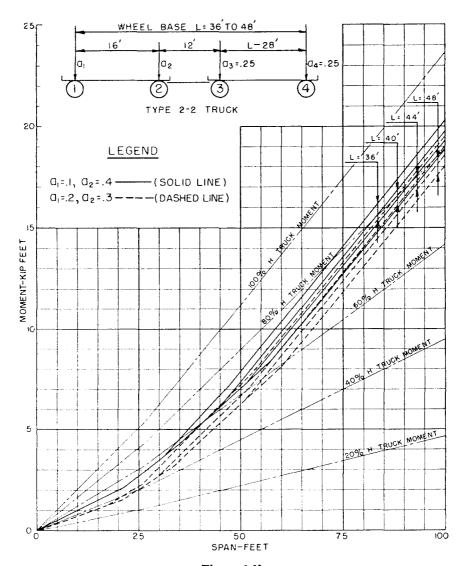


Figure 9.9k

EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-2 TRUCKS WITH 20 TRUCK AND VARIABLE LENGTH TRAILER

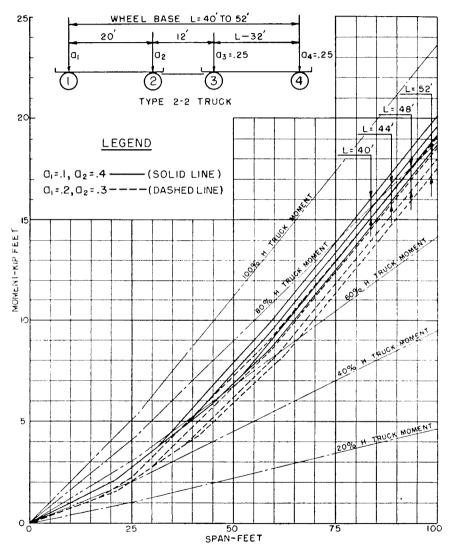


Figure 9.91

EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-3 TRUCKS WITH 12' TRUCK AND VARIABLE LENGTH TRAILER

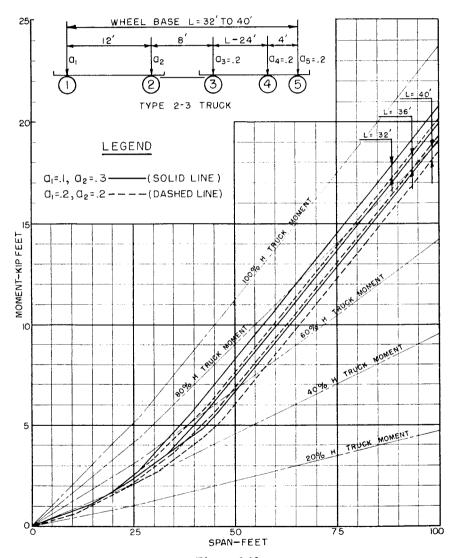


Figure 9.10a

EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-3 TRUCKS WITH 12' TRUCK AND VARIABLE LENGTH TRAILER

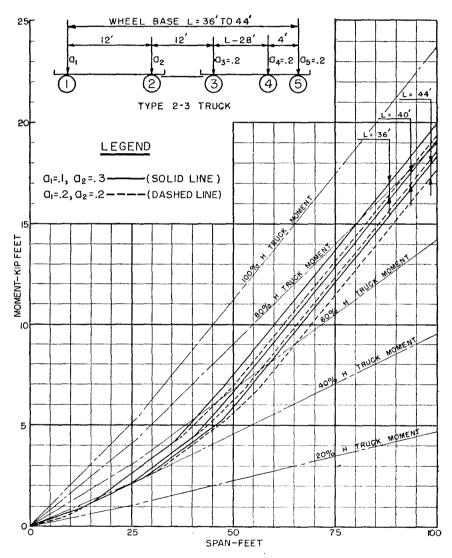


Figure 9.10b

EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-3 TRUCKS WITH 16' TRUCK AND VARIABLE LENGTH TRAILER

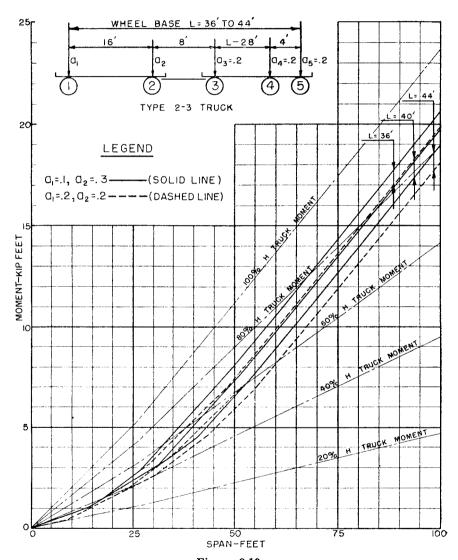


Figure 9.10c

EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-3 TRUCKS WITH 16 TRUCK AND VARIABLE LENGTH TRAILER

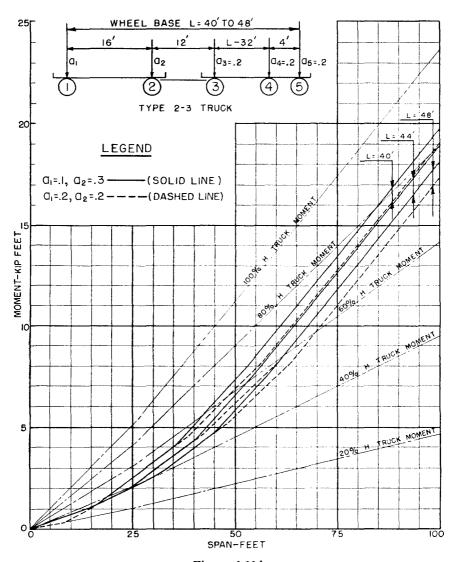


Figure 9.10d

EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-3 TRUCKS WITH 20'TRUCK AND VARIABLE LENGTH TRAILER

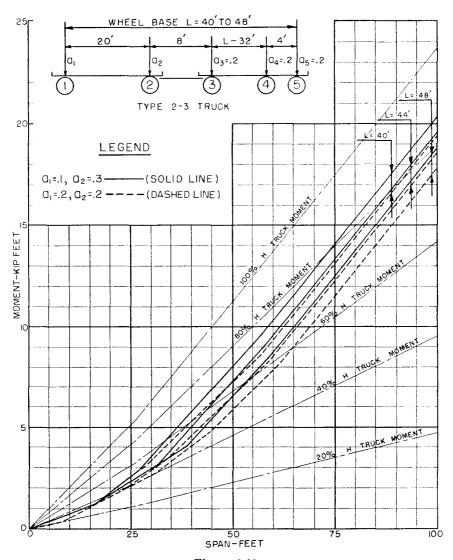


Figure 9.10e

EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-3 TRUCKS WITH 20 TRUCK AND VARIABLE LENGTH TRAILER

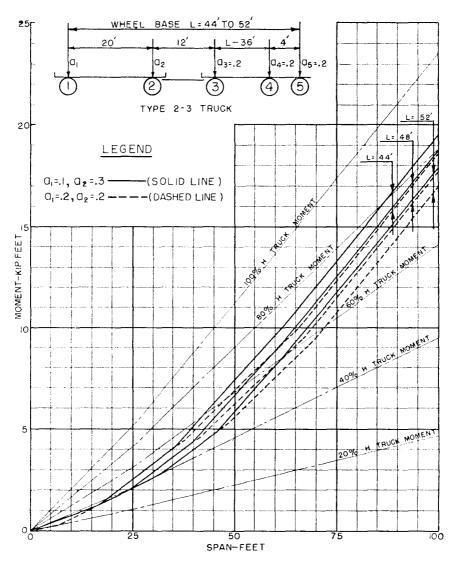


Figure 9.10f

EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-3 TRUCKS WITH 12' TRUCK AND VARIABLE LENGTH TRAILER

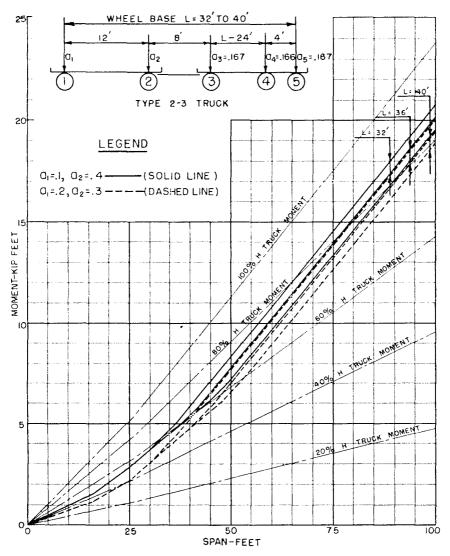


Figure 9.10g

EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-3 TRUCKS WITH 12' TRUCK AND VARIABLE LENGTH TRAILER

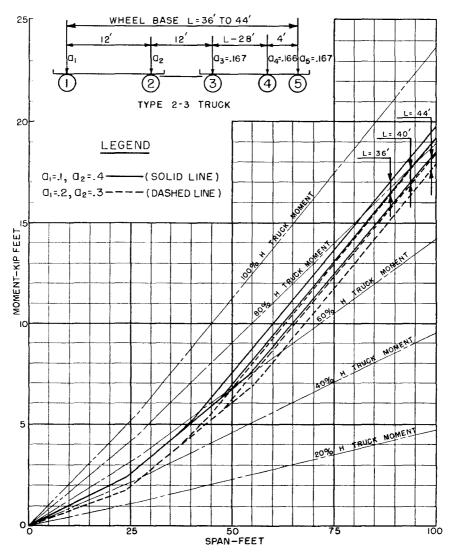


Figure 9.10h

EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-3 TRUCKS WITH 16' TRUCK AND VARIABLE LENGTH TRAILER

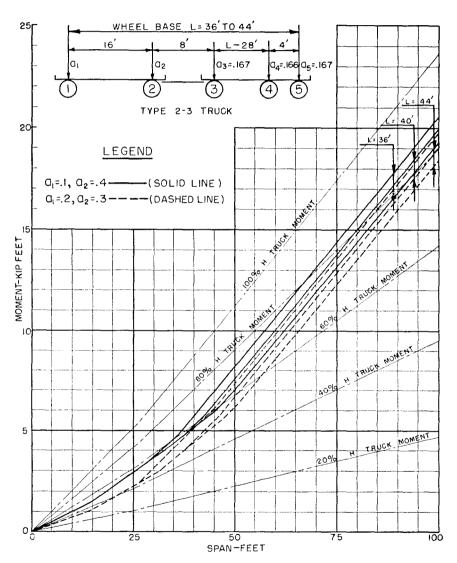


Figure 9.10i

EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-3 TRUCKS WITH 16' TRUCK AND VARIABLE LENGTH TRAILER

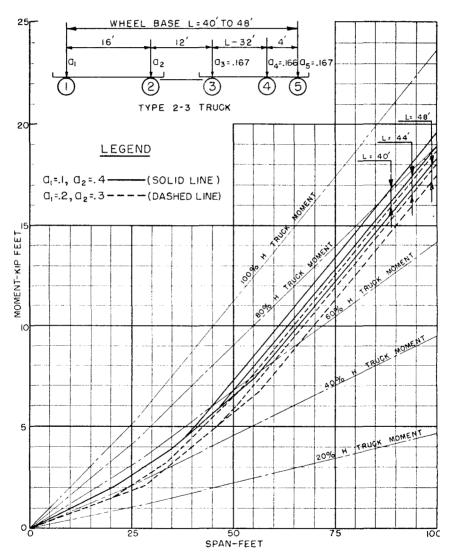


Figure 9.10j

EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-3 TRUCKS WITH 20'TRUCK AND VARIABLE LENGTH TRAILER

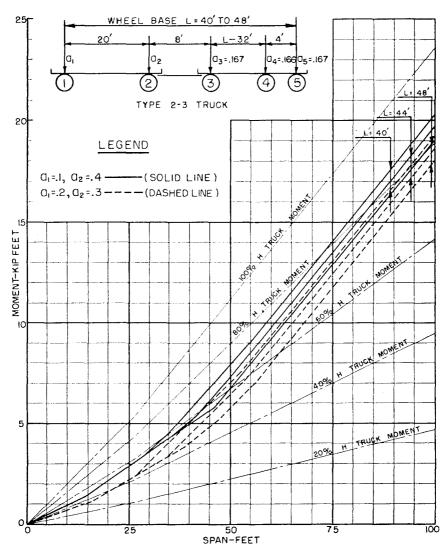


Figure 9.10k

EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-3 TRUCKS WITH 20 TRUCK AND VARIABLE LENGTH TRAILER

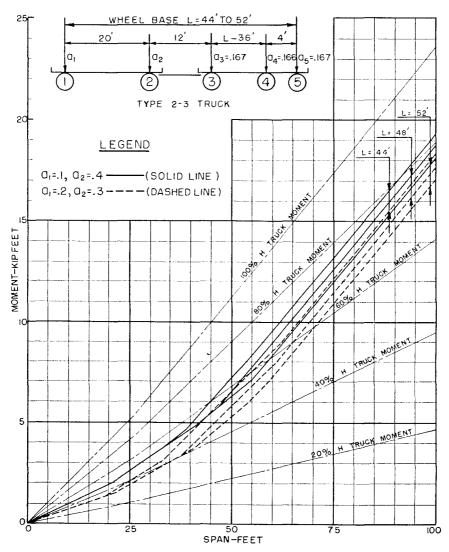


Figure 9.101

EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-2 TRUCKS WITH 16' TRUCK AND VARIABLE LENGTH TRAILER

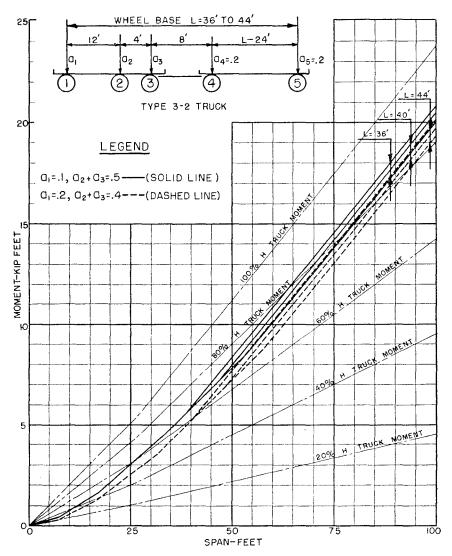


Figure 9.11a

EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-2 TRUCKS WITH 20'TRUCK AND VARIABLE LENGTH TRAILER

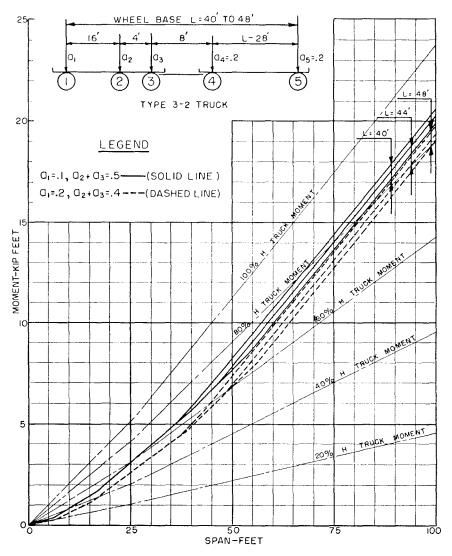


Figure 9.11b

EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-2 TRUCKS WITH 24 TRUCK AND VARIABLE LENGTH TRAILER

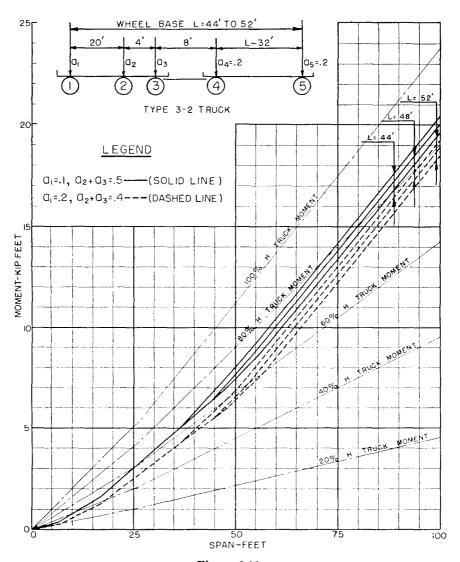


Figure 9.11c

EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-2 TRUCKS WITH 16' TRUCK AND VARIABLE LENGTH TRAILER

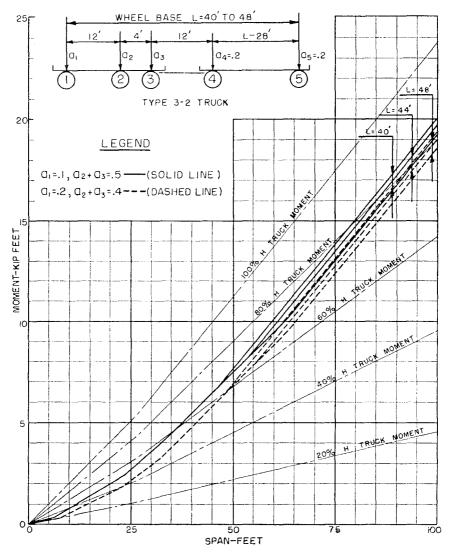


Figure 9.11d

EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-2 TRUCKS WITH 20 TRUCK AND VARIABLE LENGTH TRAILER

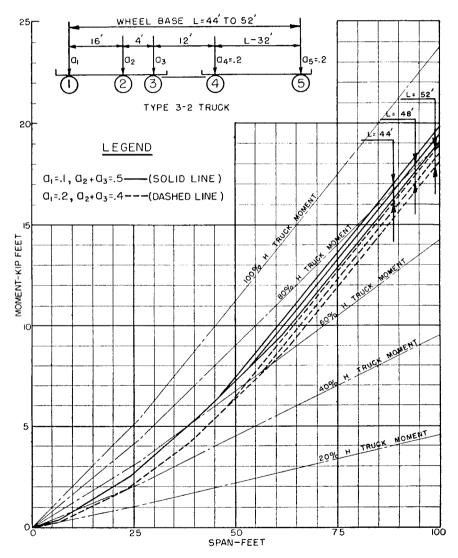


Figure 9.11e

EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-2 TRUCKS WITH 24 TRUCK AND VARIABLE LENGTH TRAILER

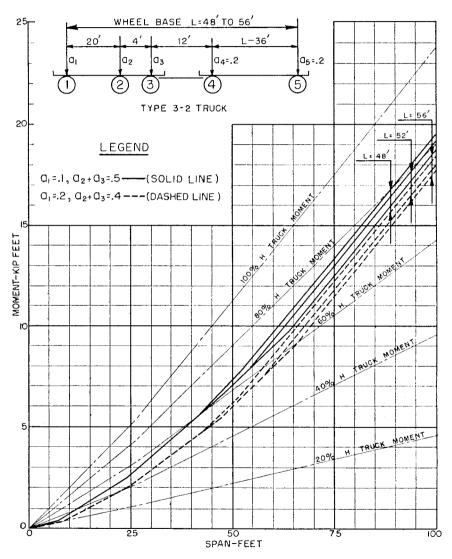


Figure 9.11f

EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-2 TRUCKS WITH 16' TRUCK AND VARIABLE LENGTH TRAILER

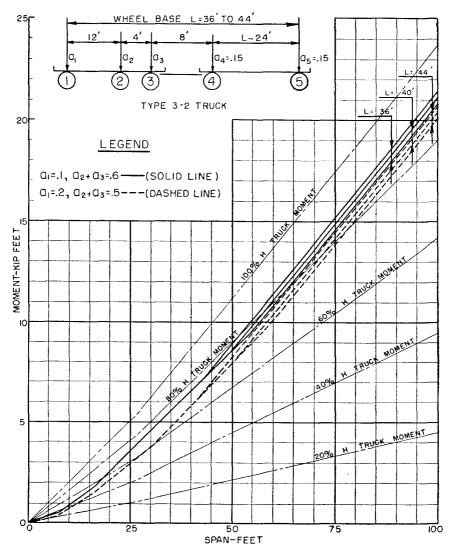


Figure 9.11g

EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-2 TRUCKS WITH 20'TRUCK AND VARIABLE LENGTH TRAILER

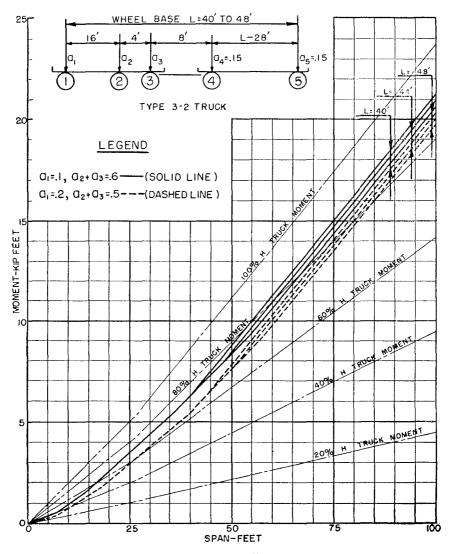


Figure 9.11h

EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-2 TRUCKS WITH 24 TRUCK AND VARIABLE LENGTH TRAILER

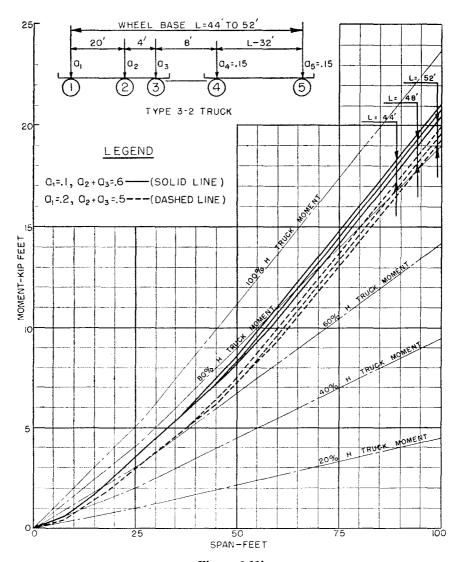


Figure 9.11i

EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-2 TRUCKS WITH 16' TRUCK AND VARIABLE LENGTH TRAILER

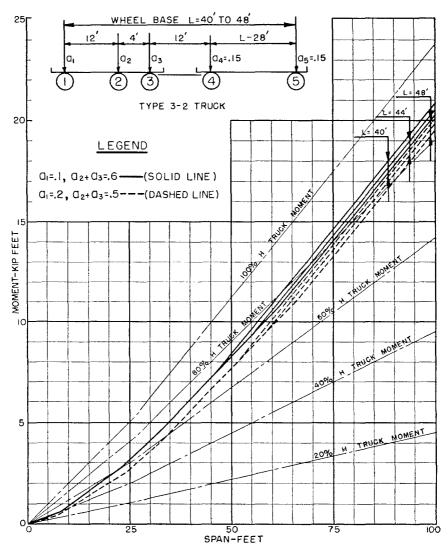


Figure 9.11j

EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-2 TRUCKS WITH 20 TRUCK AND VARIABLE LENGTH TRAILER

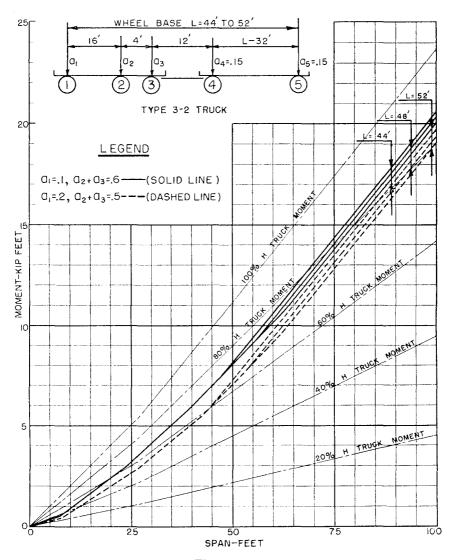


Figure 9.11k

EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-2 TRUCKS WITH 24'TRUCK AND VARIABLE LENGTH TRAILER

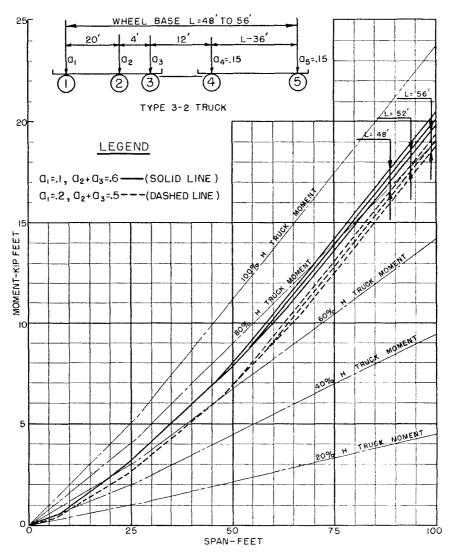


Figure 9.111

EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-3 TRUCKS WITH 16' TRUCK AND VARIABLE LENGTH TRAILER

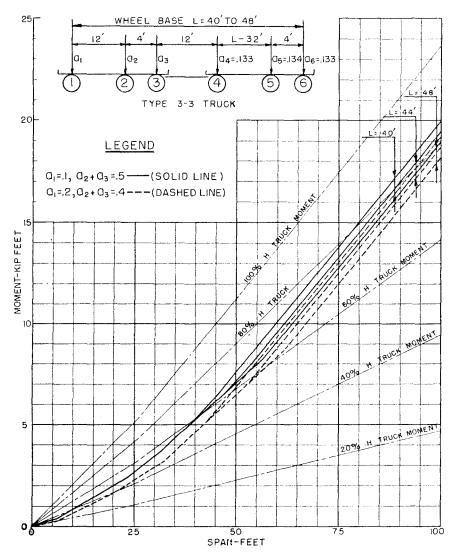


Figure 9.12a

EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-3 TRUCKS WITH 20' TRUCK AND VARIABLE LENGTH TRAILER

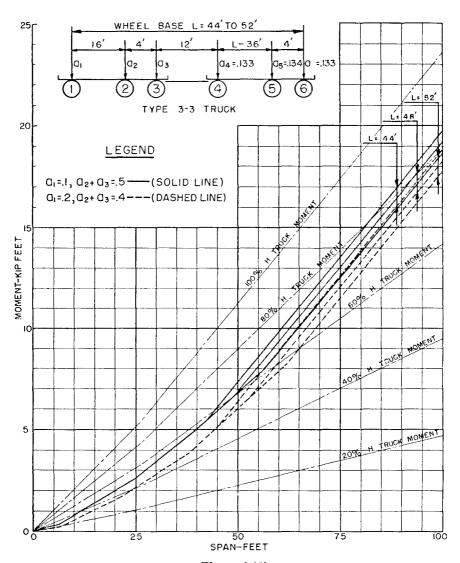


Figure 9.12b

EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-3 TRUCKS WITH 24 TRUCK AND VARIABLE LENGTH TRAILER

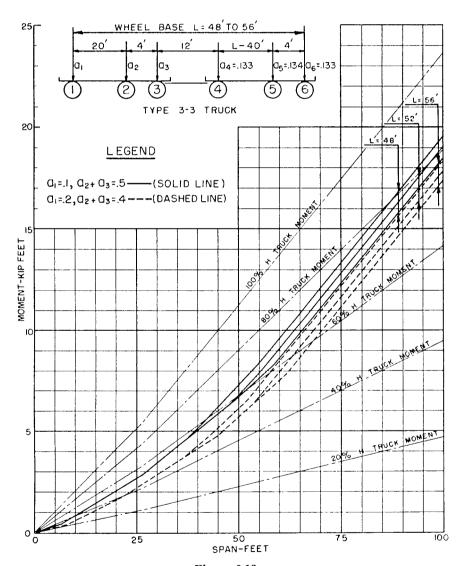


Figure 9.12c

EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-3 TRUCKS WITH 16' TRUCK AND VARIABLE LENGTH TRAILER

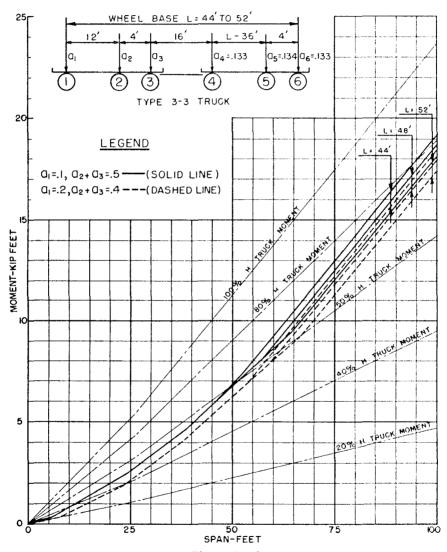


Figure 9.12d

EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-3 TRUCKS WITH 20'TRUCK AND VARIABLE LENGTH TRAILER

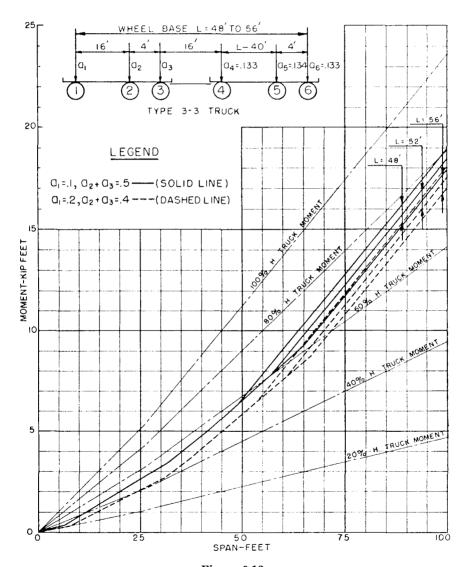


Figure 9.12e

EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-3 TRUCKS WITH 24 TRUCK AND VARIABLE LENGTH TRAILER

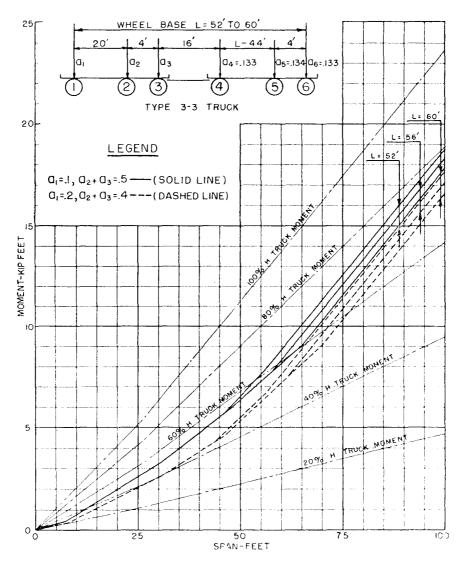


Figure 9.12f

EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-3 TRUCKS WITH 16' TRUCK AND VARIABLE LENGTH TRAILER

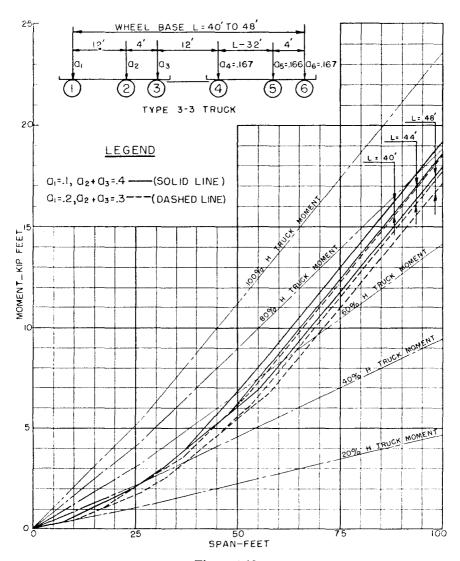


Figure 9.12g

EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-3 TRUCKS WITH 20 TRUCK AND VARIABLE LENGTH TRAILER

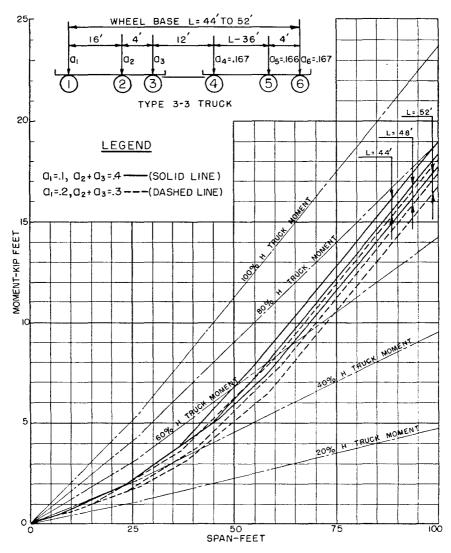


Figure 9.12h

EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-3 TRUCKS WITH 24 TRUCK AND VARIABLE LENGTH TRAILER

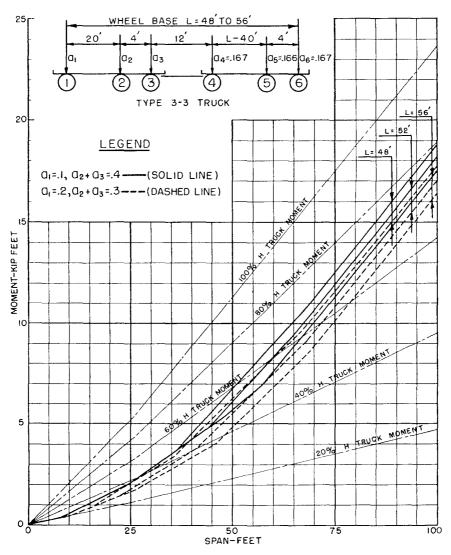


Figure 9.12i

EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-3 TRUCKS WITH 16' TRUCK AND VARIABLE LENGTH TRAILER

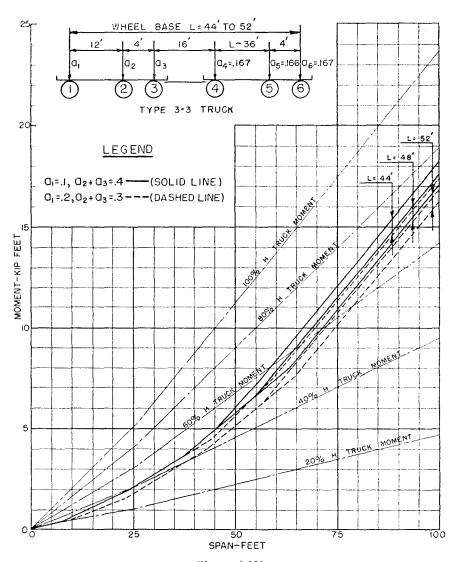


Figure 9.12j

EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-3 TRUCKS WITH 20 TRUCK AND VARIABLE LENGTH TRAILER

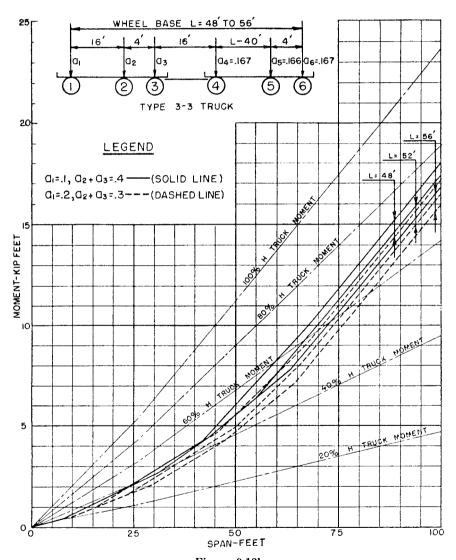


Figure 9.12k

EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-3 TRUCKS WITH 24 TRUCK AND VARIABLE LENGTH TRAILER

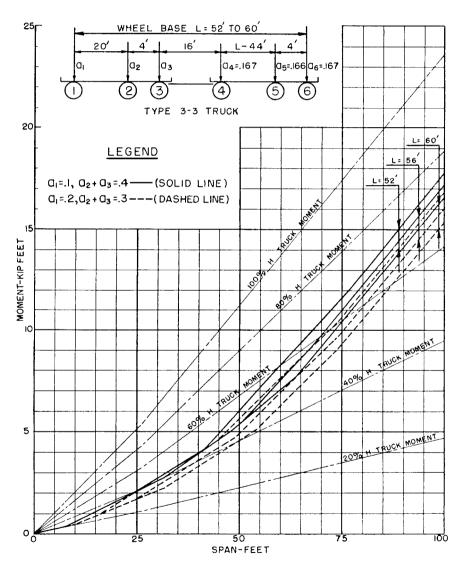
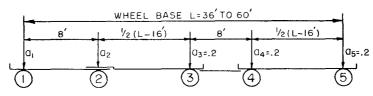


Figure 9.121

EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-SI-2 TRUCKS WITH 8' TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER AND TRAILER





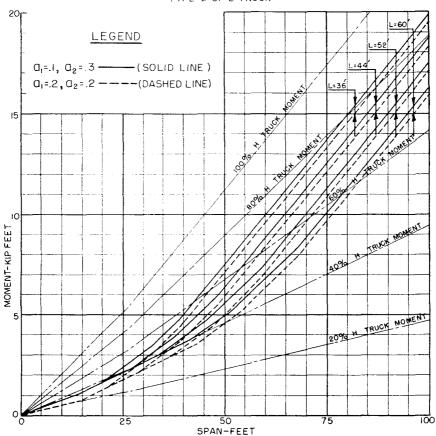
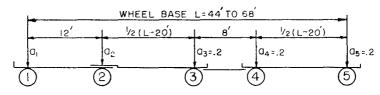


Figure 9.13a

EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-SI-2 TRUCKS WITH 12' TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER AND TRAILER





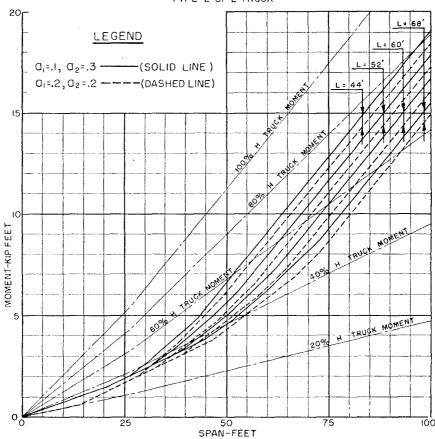


Figure 9.13b

2090 H TRUCK MOMENT

EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-SI-2 TRUCKS WITH 16' TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER AND TRAILER

BASED ON BENDING MOMENTS PRODUCED BY A GROSS VEHICLE WEIGHT OF ONE KIP ON SIMPLE SPANS

WHEEL BASE L=60 TO 84

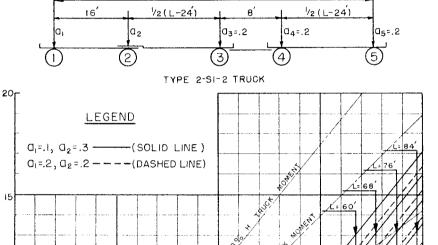


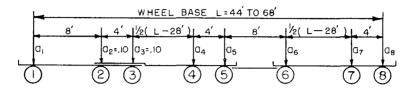
Figure 9.13c

50 SPAN-FEET

25

MOMENT-KIP FEET

EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-S2-3 TRUCKS WITH 12' TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER AND TRAILER



TYPE 3-S2-3 TRUCK

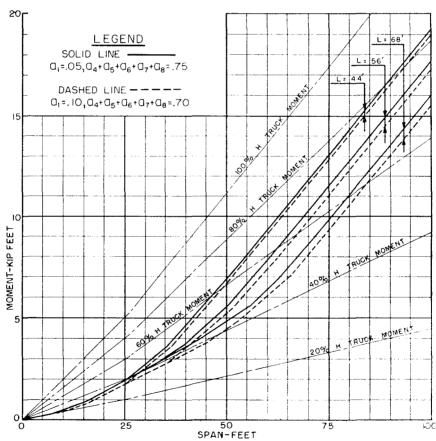
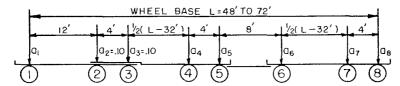


Figure 9.14a

EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-S2-3 TRUCKS WITH 16' TRUCK-TRACTOR

AND VARIABLE LENGTH SEMITRAILER AND TRAILER



TYPE 3-S2-3 TRUCK

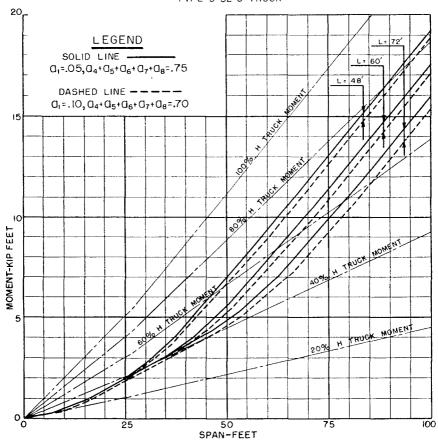
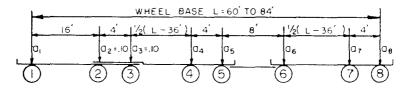


Figure 9.14b

EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-52-3 TRUCKS WITH 20 TRUCK-TRACTOR

AND VARIABLE LENGTH SEMITRAILER AND TRAILER



TYPE 3-S2-3 TRUCK

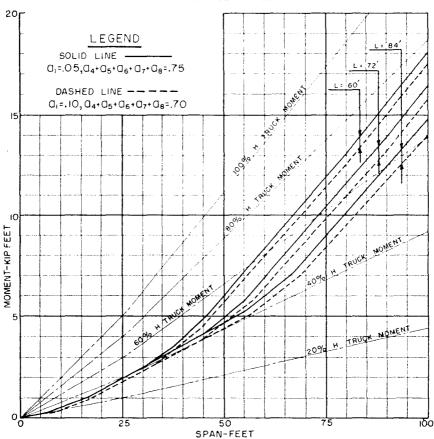
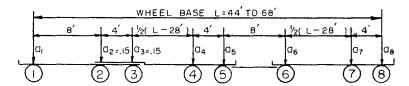


Figure 9.14c

EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-S2-3 TRUCKS WITH 12' TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER AND TRAILER



TYPE 3-S2-3 TRUCK

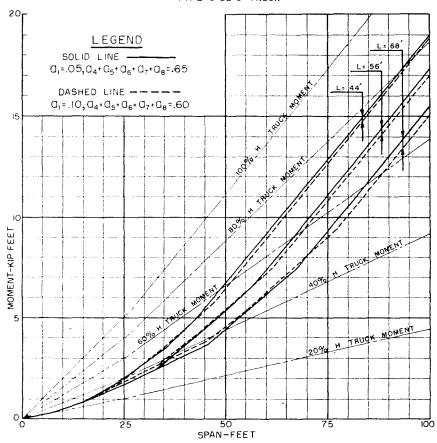
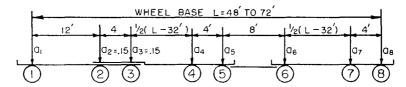


Figure 9.14d

EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-S2-3 TRUCKS WITH 16' TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER AND TRAILER



TYPE 3-S2-3 TRUCK

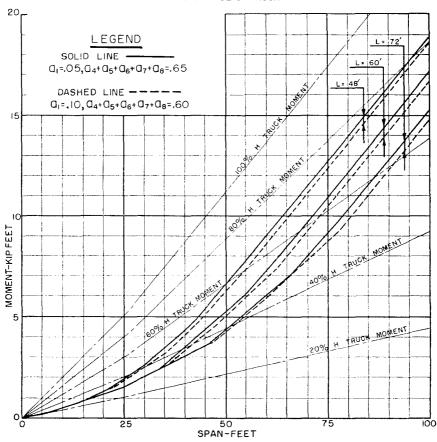
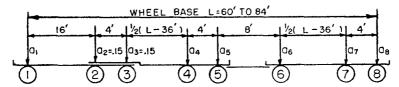


Figure 9.14e

EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-S2-3 TRUCKS WITH 20' TRUCK-TRACTOR AND VARIABLE LENGTH SEMITRAILER AND TRAILER

AND VARIABLE ELNOTT SEMATRALER AND TRACER



TYPE 3-S2-3 TRUCK

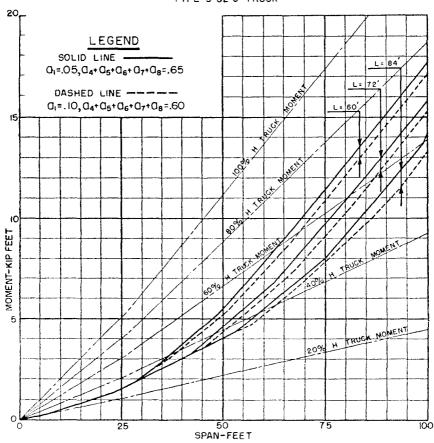


Figure 9.14f

10. EQUIVALENT H TRUCK LOADINGS FOR VEHICLES OF UNIT WEIGHT ON SIMPLE SPAN BRIDGES

Tables 10.1-10.14 give the equivalent H truck loading corresponding to each of the 1303 variations of the 14 heavy vehicle types weighing 1.0 kip each, as shown in identification index Tables 6.1-6.14, on spans of 10, 20, 30, 40, 50, 60, 80, and 100 feet in length. The equivalent H truck loadings corresponding to each of the 1303 heavy vehicle types and loadings on each of the 8 different span lengths makes a total of 10,424 H truck loading equivalents recorded in Tables 10.1-10.14. The table number corresponding to each of the 14 heavy vehicle types is as follows:

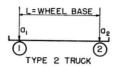
Table No.	Vehicle Type	Table No.	Vehicle Type
10.1	2	10.8	3-S3
10.2	3	10.9	2-2
10.3	2-S1	10.10	2-3
10.4	2-S2	10.11	3-2
10.5	2-S3	10.12	3-3
10.6	3-S1	10.13	2-S1-2
10.7	3-S2	10.14	3-S2-3

An equivalent H truck loading is defined as the gross weight—either in pounds, kips, or tons—on a standard H truck required to produce the same maximum moment on a given span as that produced by the particular heavy vehicle under consideration on the same span. The equivalent H truck loadings given for various span lengths by Tables 10.1-10.14 are those that would result if the particular vehicle under consideration had a gross weight of one kip. Thus, the equivalent H truck loading for any particular vehicle type and loading on a given span may be obtained simply by multiplying the H truck loading equivalent indicated for a gross vehicle weight of one kip by the number of kips carried by the vehicle under consideration.

The use of Tables 10.1-10.14 for converting any particular heavy vehicle type and loading into an equivalent H truck loading on a given span is given in Article 5.

Table 10.1

SUMMARY OF EQUIVALENT H TRUCK LOADINGS IN SIMPLE SPANS PRODUCED BY TYPE 2 TRUCKS WEIGHING ONE KIP EACH



Thirty six variations in the Type 2 truck are given in this Table. Each truck number, from 1 to 36, represents a different combination of wheel base length, and ratios of gross weight on each axle.

All dimensions are in feet.

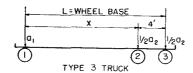
Equivalent H truck loadings are in kips.

a1 and a2-Represent the ratio of gross vehicle weight on axles.

Wheel Base Feet	Truck No.	Load On Axles Kips		Span-Feet							
		a ¹	\mathbf{a}^2	10	20	30	40	50	60	80	100
-	1	.45	.55	.688	.751	.879	.911	.929	.941	.956	.965
	2	.40	.60	.750	.800	.914	.937	.950	.959	.969	.975
L = 10	3	.35	.65	.813	.851	.949	.963	.971	.976	.982	.986
	4	.30	.70	.875	.903	.985	.989	.992	.993	.995	.996
	5	.25	.75	.938	.957	1.022	1.016	1.013	1.011	1.008	1.006
	6	.20	.80	1.000	1.013	1.060	1.044	1.034	1.028	1.021	1.017
	7	.45	.55	.688	.688	.818	.865	.893	.911	.934	.947
	8	.40	.60	.750	.750	.858	.895	.918	.932	.949	.959
L = 12	9	.35	.65	.813	.813	.900	.926	.942	.951	.964	.971
	10	.30	.70	.875	.875	.942	.958	.966	.972	.979	.984
	11	.25	.75	.938	.938	.985	.989	.992	.993	.995	.996
	12	.20	.80	1.000	1.000	1.030	1.022	1.017	1.014	1.011	1.008
	13	.45	.55	.688	.688	.759	.821	.857	.882	.911	.929
	14	.40	.60	.750	.750	.805	.855	.885	.904	.929	.943
L = 14	15	.35	.65	.813	.813	.852	.890	.913	.928	.947	.957
	16	.30	.70	.875	.875	.900	.926	.942	.951	.964	.971
	17	.25	.75	.938	.938	.949	.963	.971	.976	.982	.986
	18	.20	.80	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	19	.45	.55	.688	.688	.703	.777	.822	.852	.889	.912
	20	.40	.60	.750	.750	.753	.816	.853	.878	.909	.927
L = 16	21	.35	.65	.813	.813	.805	.855	.885	.904	.929	.943
	22	.30	.70	.875	.875	.858	.895	.918	.932	.949	.959
	23	.25	.75	.938	.938	.914	.937	.950	.959	.969	.975
	24	.20	.80	1.000	1.000	.973	.979	.983	.986	.990	.992
	25	.45	.55	.688	.688	.669	.735	.788	.823	.868	.894
	26	.40	.60	.750	.750	.730	.777	.822	.852	.889	.912
L = 18	27	.35	.65	.813	.813	.791	.821	.857	.882	.911	.929
	28	.30	.70	.875	.875	.852	.865	.893	.911	.934	9.47
	29	.25	.75	.938	.938	.912	.911	.929	.941	.956	.965
	30	.20	.80	1.000	1.000	.973	.958	.966	.972	.979	.984
	31	.45	.55	.688	.688	.669	.694	.755	.795	.846	.876
	32	.40	.60	.750	.750	.730	.740	.792	.827	.870	.896
L=20	33	.35	.65	.813	.813	.791	.787	.830	.858	.894	.915
	34	.30	.70	.875	.875	.852	.835	.869	.891	.919	.935
	35	.25	.75	.938	.938	.912	.885	.909	.924	.944	.955
	36	.20	.80	1.000	1.000	.973	.937	.950	.959	.969	.975

Table 10.2

SUMMARY OF EQUIVALENT H TRUCK LOADINGS IN SIMPLE SPANS PRODUCED BY TYPE 3 TRUCKS WEIGHING ONE KIP EACH



Forty two variations in the Type 3 truck are given in this Table. Each truck number, from 1 to 42, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

All dimensions are in feet.

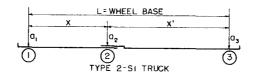
Equivalent H truck loadings are in kips.

as and as-Represent the ratio of gross vehicle weight on axles.

Wheel Base and Axle Spacing	Truck No.	Load On Axles Kips			Span-Feet							
Feet	H	a¹	\mathbf{a}^2	10	20	30	40	50	60	80	100	
L = 14 $X = 10$	1 2 3 4 5 6 7	.40 .35 .30 .25 .20 .15	.60 .65 .70 .75 .80 .85	.500 .521 .560 .600 .641 .680	0 .665 0 .709 0 .760 0 .810 0 .861	.805 .834 .863 .893 .925 .957	.861 .882 .904 .926 .948 .971	.892 .909 .926 .944 .961 .979	.912 .926 .940 .954 .968 .983	.936 .946 .956 .966 .977 .988	.949 .957 .966 .974 .982 .991	
L = 16 X = 12	8 9 10 11 12 13	.40 .35 .30 .25 .20 .15	.60 .65 .70 .75 .80 .85	.500 .520 .560 .600 .641 .680	.658 .709 .760 .810 .861 .911	.747 .782 .818 .855 .893 .933	.819 .844 .871 .898 .925 .954	.859 .879 .900 .921 .943 .965	.884 .901 .918 .936 .954 .972	.915 .928 .941 .954 .966 .980	.933 .943 .953 .964 .974 .984	
L = 18 X = 14	15 16 17 18 19 20 21	.40 .35 .30 .25 .20 .15	.60 .65 .70 .75 .80 .85	.500 .520 .560 .600 .640 .680	.658 .709 .760 .810 .861	.691 .731 .773 .816 .862 .909 .957	.777 .807 .838 .870 .903 .937 .971	.826 .850 .874 .900 .926 .952	.857 .877 .897 .918 .940 .961	.895 .910 .925 .940 .956 .972	.917 .929 .941 .953 .965 .978	
$egin{array}{l} L=20 \ X=16 \end{array}$	22 23 24 25 26 27 28	.40 .35 .30 .25 .20 .15	.60 .65 .70 .75 .80 .85	.500 .520 .560 .600 .640 .680	.658 .709 .760 .810	.637 .689 .742 .795 .848 .901	.736 .771 .806 .843 .881 .920	.793 .821 .849 .878 .908 .938	.830 .853 .877 .901 .925 .950	.875 .892 .910 .927 .946 .964	.901 .915 .929 .943 .957 .972	
L = 22 $X = 18$	29 30 31 32 33 34 35	.40 .35 .30 .25 .20 .15	.60 .65 .70 .75 .80 .85	.500 .520 .560 .600 .640 .680	.658 .709 .760 .810 .861	.636 .689 .742 .795 .848 .901	.697 .735 .775 .816 .859 .903	.761 .792 .824 .857 .891 .926	.803 .829 .856 .883 .911 .939	.854 .874 .894 .914 .935 .956	.884 .900 .916 .932 .949 .965	
L = 24 $X = 20$	36 37 38 39 40 41 42	.40 .35 .30 .25 .20 .15	.60 .65 .70 .75 .80 .85	.500 .520 .560 .600 .640 .680	.658 .709 .760 .810	.636 .689 .742 .795 .848 .901	.658 .700 .744 .789 .837 .887	.730 .764 .800 .836 .873 .912 .952	.777 .806 .835 .866 .896 .929	.835 .856 .879 .902 .925 .948	.869 .886 .904 .922 .940 .959	

Table 10.3

SUMMARY OF EQUIVALENT H TRUCK LOADINGS IN SIMPLE SPANS PRODUCED BY TYPE 2-S1 TRUCKS WEIGHING ONE KIP EACH



One hundred twenty-six variations in the Type 2-S1 truck are given in this Table. Each truck number, from 1 to 126, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

All dimensions are in feet.

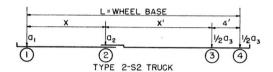
Equivalent H truck loadings are in kips.

Wheel Base	No.		Load C) n	1							
and Axle Spacing	Truck		Axles Kips		Profit Laborator			Span-	-Feet			
Feet	Ē	aı	a _?	\mathbf{a}_3	10	20	30	40	50	60	80	100
	1 2	.10 .10	.30 .40	.60 .50	$.759 \\ .625$	$.750 \\ .625$	$.822 \\ .740$.855 .797	.885 .838	.904 .865	.929 .899	.943 .919
$\begin{array}{c} L=20 \\ Y=8 \end{array}$	3	.10	$\frac{.45}{.50}$.45 $.40$.563 $.625$.591 .654	.742 $.784$.813 .844	.853	.879 $.900$.911	.929
$egin{array}{c} X \equiv 8 \ X' \equiv 12 \end{array}$	5	.20	.30	.50	.625	.625	.703	.759	.878 $.807$.839	.926 $.880$.942 $.904$
	6	.20	.40	.40	.500	.563	.711	.794	.839	.869	.904	.924
	7	.20	.50	.30	.625	.686	.800	.858	.891	.911	.935	.949
	8 9	.10	.30 .40	.60 .50	$.750 \\ .625$.750 $.625$.740 .637	.782 .704	.822 .762	.852 .801	.889	.912
L=24	10	.10	.45	.45	.563	.591	.623	.723	.781	.819	.851 $.866$.880 .893
X = 8	11	.10	.50	.40	.625	.654	.675	.763	.813	.846	.886	.909
X'= 16	12	.20	.30	.50	.625	.625	.623	.668	.733	.776	.832	.865
	13 14	.20 .20	.40 .50	$.40 \\ .30$.500 $.625$.563 $.686$.606 $.727$.710 $.794$.773 $.839$.814 $.869$.863 $.904$.892
	15	.10	.30	.60	.750	.750	.730	.723	.762	.801	.851	.880
	16	.10	.40	.50	.625	.625	.608	.629	.690	.740	.803	.842
$egin{array}{c} L=28 \ X=8 \end{array}$	17	.10	.45	.45	.563	.591	.606	.638	.712	.761	.822	.858
X'=8 X'=20	18 19	.10 .20	.50 .30	.40	.625 $.625$.654 $.625$.667 $.608$.685 .611	$.750 \\ .662$.793 $.716$.846 .785	.878 $.827$
A = 20	20	.20	.40	.40	.500	.563	.606	.631	.710	.761	.823	.860
	_21	.20	.50	.30	.625	.686	.727	.731	.790	.827	.873	.900
	22	.10	.30	.60	.750	.750	.730	.694	.713	.752	.813	.850
L = 32	23 24	.10 .10	.40 .45	.50 .45	.625 $.563$.625 $.591$.608 .606	.578 $.590$.625 $.646$.681 $.705$.758	.805
$ \begin{array}{c} $	25	.10	.50	.40	.625	.654	.667	.648	.690	.742	.779 $.808$.823 $.846$
X'=24	26	.20	.30	.50	.625	.625	.608	.578	.604	.658	.740	.790
	$\frac{27}{28}$.20 $.20$.40 .50	.40 .30	.500 .625	.563 $.686$.606 $.727$.604 $.719$.648	.709	.784	.828
	29	.19	30	.60	.750	.750	.730	.694	.741 $.673$.787	.843	.875
	30	.10	.40	.50	.625	.625	.608	.578	.570	.624	.776 .713	.820 $.768$
L=36	31	.10	.45	.45	.563	.591	.606	.590	.583	.651	.737	.790
$\begin{array}{c} X = 8 \\ X' = 28 \end{array}$	32	.10	.50	.40	.625	.654	.667	.648	.638	.693	.770	.816
A = 20	$\frac{33}{34}$.20	.30 .40	.50 $.40$.625 $.500$.625 $.563$.608 .606	.578 .604	.561 $.603$.602 $.659$.696 $.746$.75 4 .797
	35	.20	.50	.30	.625	.686	.727	.719	.715	.748	.813	.852
	36	.10	.30	.60	.750	.845	.909	.916	.933	.945	.959	.967
T 00	37	.10	.40	.50	.625	.760	.850	.875	.901	.918	.939	.951
$ L = 20 \\ X = 12 $	$\frac{38}{39}$	$.10 \\ .10$	$.45 \\ .50$	$.45 \\ .40$	$.563 \\ .625$.720 $.760$.835 $.865$.883 $.905$.909 .926	.926 .940	.946	.957
$\ddot{\mathbf{x}} = \ddot{\mathbf{s}}$	40	.20	.30	.50	.625	.723	.788	.816	.853	.878	.956 .909	.966 $.927$
	41	.20	.40	.40	.500	.649	.763	.833	.871	.895	.924	.940
	42	20		. 30	.625	.723	.827	.879	.907	.924	.945	.957
	43 44	.10	.30 .40	.60 .50	.750 $.625$	$.750 \\ .625$.822 .740	.843 $.782$.869	.891	.919	.935
L=24	45	.10	.45	.45	.563	.563	.740 $.705$.782	.822 $.834$.852 $.864$.889 .900	.912 $.921$
X = 12 $X' = 12$	46	.10	.50	.40	.625	.625	.747	.819	.859	.884	.915	.933
X'=12	47	.20	.30	.50	.625	.625	.703	.729	.777	.814	.860	.888
	48 49	.20	.40 .50	$.40 \\ .30$.50 0 .625	.500 .625	$.640 \\ .732$.744 .810	.802 $.853$.838 .881	.882 $.913$.907
							1.92				.913	.932

Table 10	.3 (Co	ntinu	ed)									
$L = 28 \ X = 12 \ X' = 16$	50 51 52 53 54 55 56	.10 .10 .10 .10 .20 .20	.30 .40 .45 .50 .30 .40	.60 .50 .45 .40 .50 .40	.750 .625 .563 .625 .625 .500	.750 .625 .563 .625 .625 .500 .625	.740 .637 .589 .637 .623 .648	.782 .704 .697 .736 .668 .659	.807 .747 .761 .793 .704 .734 .802	.839 .789 .803 .830 .752 .782 .838	.880 .841 .854 .874 .813 .840	.904 .873 .884 .900 .850 .874
L = \$2 $X = 12$ $X' = 20$	57 58 59 60 61 62 63	.10 .10 .10 .10 .20 .20	.30 .40 .45 .50 .30 .40	.60 .50 .45 .40 .50 .40	.750 .625 .563 .625 .625 .500 .625	.750 .625 .563 .625 .625 .500 .625	.730 .608 .576 .636 .608 .548	.723 .629 .610 .658 .611 .578	.758 .683 .692 .730 .649 .669	.789 .728 .745 .777 .692 .728	.841 .794 .810 .835 .767 .800	.873 .835 .849 .869 .812 .842 .882
$L = 36 \ X = 12 \ X' = 24$	64 65 66 67 68 69 70	.10 .10 .10 .10 .20 .20	.30 .40 .45 .50 .30 .40	.60 .50 .45 .40 .50 .40	.750 .625 .563 .625 .625 .500 .625	.750 .625 .563 .625 .625 .500 .625	.730 .608 .576 .636 .608 .548	.694 .578 .569 .626 .578 .562 .676	.713 .625 .625 .669 .604 .607	.744 .669 .688 .726 .636 .676	.803 .749 .767 .796 .722 .760 .820	.842 .797 .814 .837 .776 .810
L = 40 X = 12 X' = 28	71 72 73 74 75 76 77	.10 .10 .10 .10 .20 .20	.30 .40 .45 .50 .30 .40	.60 .50 .45 .40 .50 .40	.750 .625 .563 .625 .625 .500 625	.750 .625 .563 .625 .625 .500	.730 .608 .576 .636 .608 .548	.694 .578 .569 .626 .578 .562 .676	.673 .570 .565 .621 .561 .570	.706 .622 .634 .676 .599 .625	.767 .705 .725 .758 .679 .722 .761	.812 .761 .780 .807 .740 .779
$L = 44 \ X = 12 \ X' = 32$	78 79 80 81 82 83	.10 .10 .10 .10 .20 .20	.30 .40 .45 .50 .30 .40	.60 .50 .45 .40 .50 .40	.750 .625 .563 .625 .625 .500 .625	.750 .625 .563 .625 .625 .500	.730 .608 .576 .636 .608 .548	.694 .578 .569 .626 .578 .562 .676	.673 .561 .565 .621 .561 .570	.670 .576 .581 .628 .563 .576	.731 .662 .684 .721 .637 .684	.783 .726 .747 .776 .705 .748 .810
$egin{array}{l} L = 24 \ X = 16 \ X' = 8 \ \end{array}$	85 86 87 88 89 90	.10 .10 .10 .10 .20 .20	.30 .40 .45 .50 .30 .40	.60 .50 .45 .40 .50 .40	.750 .625 .563 .625 .625 .500 .625	.845 .760 .720 .760 .723 .640	.909 .850 .822 .850 .788 .731	.906 .864 .858 .881 .791 .786	.917 .885 .891 .908 .822 .835 .871	.931 .904 .911 .925 .852 .865	.949 .929 .935 .945 .889 .902	.959 .943 .949 .957 .912 .923
$L = 28 \ X = 16 \ X' = 12$	92 93 94 95 96 97 98	.10 .10 .10 .10 .20 .20	.30 .40 .45 .50 .30 .40	.60 .50 .45 .40 .50 .40	.750 .625 .563 .625 .625 .500 .625	.750 .625 .563 .625 .625 .500	.822 .740 .701 .740 .703 .623 .703	.843 .782 .762 .794 .729 .696 .763	.855 .807 .814 .839 .747 .764	.878 .839 .848 .869 .789 .808	.909 .880 .888 .904 .841 .859	.927 .904 .912 .924 .873 .889
$egin{array}{c} L = 32 \ X = 16 \ X' = 16 \ \end{array}$	99 100 101 102 103 104 105	.10 .10 .10 .10 .20 .20	.30 .40 .45 .50 .30 .40	.60 .50 .45 .40 .50 .40	.750 .625 .563 .625 .625 .500 .625	.750 .625 .563 .625 .625 .500 .625	.740 .637 .589 .637 .623 .523	.782 .704 .670 .710 .668 .609	.806 .743 .741 .773 .695 .696 .764	.826 .776 .787 .814 .728 .751	.870 .832 .843 .863 .794 .818	.896 .865 .875 .892 .835 .856
$egin{array}{l} L = 36 \ X = 16 \ X' = 20 \ \end{array}$	106 107 108 109 110 111 112	.10 .10 .10 .10 .20 .20	.30 .40 .45 .50 .30 .40	.60 .50 .45 .40 .50 .40	.750 .625 .563 .625 .625 .500 .625	.750 .625 .563 .625 .625 .500 .625	.730 .608 .547 .608 .608 .494	.723 .629 .585 .631 .611 .525	.758 .683 .671 .710 .649 .630	.782 .718 .728 .761 .674 .696	.832 .785 .798 .823 .749 .777	.865 .827 .840 .860 .797 .824
L = 40 X = 16 X' = 24	113 114 115 116 117 118 119	.10 .10 .10 .10 .20 .20	.30 .40 .45 .50 .30 .40	.60 .50 .45 .40 .50 .40	.750 .625 .563 .625 .625 .500 .625	.750 .625 .563 .625 .625 .500 .625	.730 .608 .547 .608 .608 .494	.694 .578 .547 .604 .578 .521 .635	.713 .625 .604 .648 .604 .566	.744 .669 .671 .709 .636 .643	.794 .740 .755 .784 .705 .737	.835 .790 .805 .828 .761 .792 .840
$L = 44 \ X = 16 \ X' = 28$	120 121 122 123 124 125 126	.10 .10 .10 .10 .20 .20	.30 .40 .45 .50 .30 .40	.60 .50 .45 .40 .50 .40	.750 .625 .563 .625 .625 .500 .625	.750 .625 .563 .625 .625 .500 .625	.730 .608 .547 .608 .608 .494	.694 .578 .547 .604 .578 .521 .635	.673 .570 .547 .603 .561 .537	.706 .622 .616 .659 .599 .592 .683	.758 .696 .713 .746 .662 .698	.805 .754 .771 .797 .726 .760

Table 10.4

SUMMARY OF EQUIVALENT H TRUCK LOADINGS IN SIMPLE SPANS PRODUCED BY TYPE 2-S2 TRUCKS WEIGHING ONE KIP EACH



One hundred eight variations in the Type 2-S2 truck are given in this Table. Each truck number, from 1 to 108, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

All dimensions are in feet.

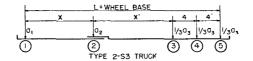
Equivalent H truck loadings are in kips.

Wheel Base and Axle Spacing	Truck No.	1	Load C Axles Kips	3			5	Span-	Feet			
Feet	H	a ₁	\mathbf{a}_2	a ₃	10	20	30	40	50	60	80	100
	1	.10	.30	.60	.480	.680	.805	.861	.892	.912	.936	.949
	2	.10	.40	.50	.500	.617	.770	.834	.870	.893	.921	.938
L = 20	3	.10	.50	.40	.625	.703	.841	.886	.911	.927	.947	.958
X = 8	4	.20	.30	.50	.400	.583	.710	.790	.835	.865	.900	.921
X'=8	5	.20	.40	.40	.500	.600	.770	.837	.873	.897	.924	.940
	6	.20	.50	.30	.625	.713	.846	.892	.917	.932	.951	.961
	7	.10	.30	.60	.480	.608	.714	.777	.826	.857	.895	.917
	8	.10	.40	.50	.500	.529	.646	.733	.789	.826	.871	.897
L=24	9	.10	.50	.40	.625	654	.729	.803	845	.873	.906	.925
$\mathbf{X} = \begin{array}{c} 8 \\ \mathbf{X'} = 12 \end{array}$	10	.20	.30	.50	.400	.506	.612	.690	.756	.798	.850	.881
X'=12	$\frac{11}{12}$.20	.40	.40	.500	.563	.654	.752	.806	.841 .890	.883	.908 $.936$
		.20	.50	.30	.625	.686	.758	.826	.865		.919	
	13	.10	.30	.60	.480	.608	.636	.704	.761	.803	.854	.884
T 00	14	.10	.40	.50	$.500 \\ .625$.529 $.654$.545 $.667$.638 $.723$.712 $.781$.761 .819	.822 .866	.858 .893
L=28	15 16	.10	.50	.40 .50	.400	506	.530	.603	.680	.734	.802	.842
$\begin{array}{c} X = 8 \\ X' = 16 \end{array}$	17	.20	.40	.40	.500	.563	.606	.670	.741	.787	.843	.875
A = 10	18	.20	.50	.30	.625	.686	.727	.762	.814	.848	.888	.912
	19	.10	.30	.60	.480	.608	.636	.643	.699	.751	.815	.853
	20	.10	.40	.50	.500	.529	.545	.559	.639	.699	.774	.820
L = 32	21	.10	.50	.40	.625	.654	.667	.659	.720	.768	.827	.862
$\mathbf{x} = \frac{32}{8}$	22	.20	.30	.50	.400	.506	.530	.543	.607	.672	.754	.804
$\mathbf{X} = \begin{array}{c} 8 \\ \mathbf{X'} = 20 \end{array}$	23	.20	.40	.40	.500	.563	.606	.606	.679	.735	.803	.844
	24	.20	.50	.30	.625	.686	.727	.719	.765	.807	.858	.888
	25	.10	.30	.60	.480	.608	.636	.626	.651	.701	.777	.822
	26	.10	.40	.50	.500	.529	.545	.533	.571	.640	.728	.780
L = 36	27	.10	.50	.40	.625	.654	.667	.648	.661	.718	.789	.831
X = 8	28	.20	.30	.50	.400	.506	.530	.522	.551	.613	.709	.766
X = 8 $X' = 24$	29	.20	.40	.40	.500	.563	.606	.604	.618	.684	.765	.813
	30	.20	.50	.30	.625	.686	.727	.719	.723	.767	.828	.864
	31	.10	.30	.60	.480	.608	.636	.626	.621	.656	.739	.791
	32	.10	.40	.50	.500	.529	.545	.533	.526	.582	.683	.745
L = 40	33	.10	.50	.40	.625	.654	.667	.648	.638	.669	.751	.801
X = 8	34	.20	.30	.50	.400	.506	.530	.522	.517	.557	.664	.730
X' = 28	35	.20	.40	.40	.500	.563	.606	.604	.603	.635	.727	.782
	36	.20	.50	.30	.625	.686	.727	.719	.715	.728	.798	.840
	37	.10	.30	.60	.480	.680	.805	.840	.875	.898	.925	.941
	38	.10	.40	.50	.500	.617	.762	.810	.852	.878	.910	.929
$egin{array}{l} L=24 \ X=12 \end{array}$	39	.10	.50	.40	.625	.686	.805	.861	.892	.912	.936	.949
X = 12	40	.20	.30	.50	.400	.583	.701	.749	.803	.838	.880	.905
X' = 8	41	.20	.40	.40	.500	.563	.701	.788	.836	.866	.902	.923
	42	.20	.50	.30	.625	.669	.779	.844	.880	.902	.929	.944

	_	ntinu										
	43	.10	.30	.60	.480	.608	.714	.768	.809	.843	.884	.908
T _ 00	44	.10	.40	.50	.500	.506	.646	.717	.771	.811	.860	.889
L = 28 X = 12	$\frac{45}{46}$.10 .20	.50 .30	.40 .50	$.625 \\ .400$.625 $.506$.691 $.612$.777 $.665$.826 $.725$.857 $.772$.895 $.831$.865
$\hat{\mathbf{X}}' = \hat{12}$	47	.20	.40	.40	.500	.500	.584	.701	.768	.810	.861	.890
A 12	48	.20	.50	.30	.625	.625	.694	.777	.827	.859	.897	.919
	49	.10	.30	.60	.480	.608	.636	.704	.747	.790	.844	.876
	50	.10	.40	.50	.500	.506	.539	.636	.694	.747	.811	.850
L = 32	51	.10	.50	.40	.625	.625	.636	.697	.761	.803	.854	.88
$L \equiv 32$ $X \equiv 12$ $X' \equiv 16$	52	.20	.30	.50	.400	.506	.530	.603	.650	.709	.783	.820
X'= 16	53 54	$.20 \\ .20$.40 .50	.40 .30	.500 $.625$.500 .625	.548 .668	.618 $.712$.702 .776	.755 .817	.820 .866	.858 .894
	55	.10	.30	.60	.480	.608	.636	.643	.698	.738	.805	.84
	56	.10	.40	.50	.500	.506	.530	.559	.630	.685	.764	.81
L = 36	57	.10	.50	.40	.625	.625	.636	.632	.699	.751	.815	.85
$\vec{\mathbf{x}} = \tilde{1}\tilde{2}$	58	.20	.30	.50	.400	.506	.530	.543	.598	.649	.736	.789
X' = 20	59	.20	.40	.40	.500	.500	.548	.562	.638	.702	.780	.82
	60_	.20	.50	.30	.625	.625	.668	.676	.726	.776	.835	.870
	61	.10	.30	.60	.480	.608	.636	.626	.651	.694	.767	.81
	62	.10	.40	.50	.500	.506	.530	.522	.571	.626	.718	.774
L = 40	63	.10	.50	.40 .50	.625 $.400$.625 $.506$.636	.626	.636 $.551$.701 .594	.777 $.691$.82
X = 12 $X' = 24$	64 65	.20 .20	.30 .40	.40	.500	.500	.530 $.548$.52 2 .5 62	.578	.650	.741	.79
A = 24	66	.20	.50	.30	.625	.625	.668	.676	.685	.735	.805	.84
	67	.10	.30	.60	.480	.608	.636	.626	.621	.656		.78
	68	.10	.40	.50	.500	.506	.530	.522	.517	.578	.730 .673	.737
L = 44	69	.10	.50	.40	.625	.625	.636	.626	.621	.652	.739	.791
$\ddot{\mathbf{x}} = \dot{1}\dot{2}$	70	.20	.30	.50	.500	.506	.530	.522	.517	.556	.646	.71
X = 12 $X' = 28$	71	.20	.40	.40	.500	.500	.548	.562	.570	.600	.703	.76
	72	.20	.50	.30	.625	.625	.668	.676	.681	.695	.775	.822
	73	.10	.30	.60	.480	.680	.805	.834	.859	.884	.915	.933
	74	.10	.40	.50	.500	.617	.762	.802	.835	.865	.900	.921
L = 28	75	.10	.50	.40	.625	.686	.795	.837	.873	.897	.924	.940
X = 16	76	.20	.30	.50	.400	.583	.701	.730	.771	.811	.860	.889
X'= 8	77 78	.20 .20	.40 .50	.40 .30	$.500 \\ .625$.563 $.669$.676 $.745$.740 .775	.799 $.826$.836 .858	.881 .897	.906 .919
											.874	
	79 80	.10 .10	$.30 \\ .40$.60 .50	.480 $.500$.608	.714 $.646$.768 $.717$.797 .757	.830 .798	.850	.900 .881
1 32	81	.10	.50	.40	.625	.625	.688	.752	.806	.841	.883	.908
L = 32 $X = 16$ $X' = 12$	82	.20	.30	.50	400	.506	.612	.665	.695	.747	.811	.85
X'= 12	83	.20	.40	.40	.509	.500	.572	.652	.730	.779	.839	.873
	84	.20	.50	.30	.625	.625	.662	.729	.790	.829	.875	.902
	85	.10	.30	.60	.480	.608	.636	.704	.747	.777	.835	.869
T 00	86	.10	.40	.50	.500	.506	.539	.636	.692	.734	.802	.842
L = 36	87 88	.10 .20	.50 .30	.40 .50	.625 $.400$.625 .506	.612 $.530$.670 .603	.741 .645	.787 .685	.843 .764	.878 .81
X = 16 $X' = 16$	89	.20	.40	.40	.500	.500	.494	.567	.663	.724	.797	.840
A _ 10	90	.20	.50	.30	.625	.625	.612	.663	.738	.786	.844	.87
	91	.10	.30	.60	.480	.608	.636	.643	.698	.734	.796	.83
	92	.10	.40	.50	.500	.506	.530	.559	.630	.677	.754	.80
L = 40	93	.10	.50	.40	.625	.625	.608	.606	.679	.735	.803	.84
L = 40 $X = 16$	94	.20	.30	.50	.400	.506	.530	.543	.598	.633	.718	.77
X' = 20	95	.20	.40	.40	.500	500	.494	.521	.598	.670	.757	.80
	96	.20	.50	.30	.625	.625	.612	.635	.687	.744	.813	.85
	97	.10	.30 .40	.60 .50	.480 .500	.608 .506	.636 .530	.626	.651	.694 .626	.758 $.709$.80° .760
T 44	98 99	$.10 \\ .10$.50	.au .40	.625	.625	.608	.522 $.604$.571 .618	.684	.765	.81
$\mathbf{x} - \frac{14}{16}$	100	.20	.30	.50	.400	.506	.530	.522	.551	.594	.673	.73
L = 44 $X = 16$ $X' = 24$	101	.20	.40	.40	.500	.500	.494	.521	.540	.617	.717	.77
	102	.20	.50	.30	.625	625	.612	.635	.649	.703	.782	.82
	103	.10	.30	.60	.480	.608	.636	.626	.621	.656	.721	.77
	104	.10	.40	.50	.500	.506	.530	.522	.517	.578	.664	.73
L = 48	105	.10	.50	.40	.625	625	.608	.604	.603	.635	.727	.78
L = 48 $X = 16$	106	.20	.30	.50	.400	.506	.530	.522	.517	.556	.629	.701
X'=28	107	.20	.40	.40	.500	.500	.494	.521	.537	.566	.679	.748
	108	.20	.50	.30	.625	.625	.612	.635	.648	.663	.752	.80

Table 10.5

SUMMARY OF EQUIVALENT H TRUCK LOADINGS IN SIMPLE SPANS PRODUCED BY TYPE 2-S3 TRUCKS WEIGHING ONE KIP EACH



Ninety variations in the Type 2-S3 truck are given in this Table. Each truck number, from 1 to 90, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

All dimensions are in feet.

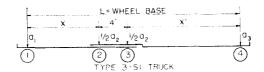
Equivalent H truck loadings are in kips.

Wheel Base and Axle Spacing	Truck No.	1	Joad O Axles Kips	n				Span-	Feet			
Feet	Ē	aı	a 2	a:	10	20	30	40	50	60	80	100
L = 24	1 2 3	.10 .10 .10	.225 .30 .40	.675 .60 .50	.394 .375 .500	.619 .550 .568	.741 .706 .701	.804 .788 .782	.849 .836 .829	.877 .866 .859	.910 .902 .896	.929 .923 .917
$ \begin{array}{ccc} $	4 5 6	.20 .20 .20	.20 .30 .40	.60 .50	.350 .375 .500	.550 .467 .585	.659 .626 .712	.744 .780 .794	.802 .789 .840	.838 .827 .869	.882 .873 .904	.907 .899 .924
	7 8	.10	.225	.675 .60	.394 .375	.619 .550	.676 .610	.739 .701	.792 .768	.830 .810	.876 .861	.902 .890
$\begin{array}{l}L=28\\X=8\\X'=12\end{array}$	9 10 11	.10 .20 .20	.40 .20 .30	.50 .60 .50	.500 $.350$ $.375$.529 $.550$ $.458$.594 .601 .523	.684 $.659$ $.630$.750 .734 .709	.793 .782 .760	.846 .840 .823	.877 .874 .859
	$\frac{12}{13}$.10 .10	.40 .225	.40 .675 .60	.394 .375	.563 .619 .550	.633 .675 .600	.711 .693 .629	774 737 .702	.814 .784 .755	.863 .842 .820	.892 .875 .858
$egin{array}{l} L=32\ X=8\ X'=16 \end{array}$	15 16 17 18	.10 .20 .20 .20	.40 .20 .30	.50 .60 .50	.500 .350 .375 .500	.529 .550 .458 .563	.545 .600 .500	.593 .616 .540 .640	.675 .669 .633	.730 .728 .696 .761	.798 .800 .774 .823	.839 .842 .820 .860
L = 36	19 20 21	.10 .10	.225 .30 .40	.675 .60 .50	.394 .375 .500	.619 .550 .529	.675 .600 .545	.676 .601 .539	.701 .639 .603	.740 .702 .669	.809 .780 .751	.849 .826 .801
X = 8 $X' = 16$	22 23 24	.20 .20 .20	.20 .30 .40	.60 .50 .40	.350 .375 .500	.550 .458 .563	.600 .500 .606	.601 .501 .604	.623 .560 .649	.676 .634 .710	.760 .727 .784	.810 .782 .828
$L = 40 \ X = 8 \ X' = 24$	25 26 27 28 29 30	.10 .10 .10 .20 .20	.225 .30 .40 .20 .30 .40	.675 .60 .50 .60 .50	.394 .375 .500 .350 .375 .500	.619 .550 .529 .550 .458	.675 .600 .545 .600 .500	.676 .601 .533 .601 .501	.677 .601 .543 .601 .501	.707 .650 .610 .628 .575	.776 .741 .705 .722 .680 .746	.823 .794 .763 .779 .744 .798
L = 28 X = 12 X'= 8	31 32 33 34 35 36	.10 .10 .10 .20 .20 .20	.225 .30 .40 .20 .30 .40	.675 .60 .50 .60 .50	.394 .375 .500 .350 .375 .500	.619 .550 .552 .550 .458	.741 .706 .675 .659 .616 .643	.786 .766 .756 .701 .685 .745	.831 .819 .809 .768 .754	.862 .852 .843 .810 .798 .838	.900 .892 .884 .861 .852 .882	.921 .915 .908 .890 .883
$L = 32 \ X = 12 \ X' = 12$	37 38 39 40 41 42	.10 .10 .10 .20 .20	.225 .30 .40 .20 .30 .40	.675 .60 .50 .60 .60 .50	.394 .375 .500 .350 .375 .509	.619 .550 .500 .550 .458 .500	.676 .610 .557 .601 .523 .569	.739 .695 .657 .657 .603	.775 .751 .730 .702 .674 .735	.816 .796 .777 .755 .731 .783	.865 .851 .834 .820 .802 .841	.894 .882 .868 .858 .843 .874
L = 36 X = 12 X'= 16	43 44 45 46 47 48	.10 .10 .10 .20 .20 .20	.225 .30 .40 .20 .30 .40	.675 .60 .50 .60 .50 .40	.394 .375 .500 .350 .375 .500	.619 .550 .560 .550 .458 .500	.675 .600 .515 .600 .500 .548	.693 .629 .570 .616 .539	.737 .690 .654 .655 .597	.771 .742 .713 .702 .667 .729	.832 .810 .786 .780 .753 .800	.867 .850 .829 .826 .803 .842

Table 10.	5 (Co	ntinu	ed)									
	49	.10	.225	.675	.394	.619	.675	.676	.701	.736	.799	.841
	56	.10	.30	.60	.375	.550	.600	.601	.639	.689	.770	.818
L = 40	51	.10	.40	.50	.500	.500	.515	.514	.582	.651	.739	.791
X = 12	52	.20	.20	.60	.350	.550	.600	.601	.623	.654	.741	.794
X'=20	53	.20	.30	.50	.375	.458	.500	.501	.548	.605	.706	.765
	54	.20	.40	.40	.500	.500	.548	.562	.608	.676	.761	.810
	55	.10	.225	.675	.394	.619	.675	.676	.677	.707	.766	.815
	56	.10	.30	.60	.375	.550	.600	.601	.601	.646	.731	.786
L = 44	57	.10	.40	.50	.500	.500	.515	.511	.522	.592	.693	.754
X = 12	58	.20	.20	.60	.350	.550	.600	.601	.601	.628	.703	.763
X'=24	59	.20	.30	.50	.375	.458	.50 0	.501	.501	.553	.659	.728
	60	.20	.40	.40	.500	.500	.548	.562	.572	.626	.722	.779
	61	.10	.225	.675	.394	.619	.741	.786	.813	.848	.889	.913
	62	.10	.30	.60	.375	.550	.706	.763	.802	.838	.882	.907
L = 32	62	.10	.40	.50	.500	.552	.675	.741	.789	.827	.873	.899
X = 16	64	.20	.20	.60	.350	.550	.659	.699	.734	.782	.840	.874
X′≕ 8	65	.20	.30	.50	.375	.458	.616	.671	.721	.771	.831	.867
	66	.20	.40	.40	.500	.540	.623	.696	.765	.808	.860	.890
	67	.10	.225	.675	.394	.619	.676	.739	.774	.802	.855	.886
	68	.10	.30	.60	.375	.550	.610	.695	.741	.782	.840	.874
L = 36	69	.10	.40	.50	.500	.500	.555	.654	.709	.760	.823	.859
X = 16 $X' = 12$	70	.20	.20	.60	.350	.550	.601	.657	.688	.728	.80 0	.842
X'=12	71	.20	.30	.50	.875	.458	.523	.603	.648	.705	.782	.827
	72	.20	40	.40	.500	.500	.537	.609	.696	.752	.818	.857
	73	.10	.225	.675	.394	.619	.675	.693	.737	.766	.822	.859
_	74	.10	.30	.60	.375	.550	.600	.629	.690	.728	.80 0	.842
L = 40	75	.10	.40	.50	.500	.500	.500	.570	.643	.696	.774	.820
X = 16	76	.20	.20	.60	.350	.550	.600	.616	.655	.681	.760	.810
X'=16	77	.20	.30	.50	.375	.458	.500	.539	.597	.642	.734	.788
	78	.20	.40	40	.500	.500	.494	.542	.630	.697	.777	.824
	79	.10	.225	.675	.394	.619	.675	.676	.701	.736	.789	.833
_	80	.10	.30	.60	.375	.550	.600	.601	.639	.687	.760	.810
L = 44	81	.10	.40	.50	.500	.500	.500	.501	.579	.636	.727	.782
X = 16	82	.20	.20	.60	.350	.550	.600	.601	.623	.654	.722	.779
X'=20	83	.20	.30	.50	.375	.458	.500	.501	.548	.593	.687	.750
	84	.20	.40	.40	.500	.500	.494	.521	.569	.644	.738	.792
	85	.10	.225	.675	.394	.619	.675	.676	.677	.707	.757	.807
·	86	.10	.30	.60	.375	.550	.600	.601	.601	.646	.722	.779
L = 48	87	.10	.40	.50	.500	.500	.500	.501	.518	.584	.680	.744
X = 16 $X' = 24$	88	.20 .20	.20	.60	.350	.550	.600	.601	.601	.628	.684	.748
$\Lambda = 24$	89 90		.30 .40	.50 .40	.375	.458	.500 .494	.501 $.521$.501 .537	.553	.642	.713
	90	_20	.40	.40	.500	.500	.494	021	.531	.592	.698	.761

Table 10.6

SUMMARY OF EQUIVALENT H TRUCK LOADINGS IN SIMPLE SPANS PRODUCED BY TYPE 3-S1 TRUCKS WEIGHING ONE KIP EACH



Ninety variations in the Type 3-S1 truck are given in this Table. Each truck number, from 1 to 90, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

All dimensions are in feet.

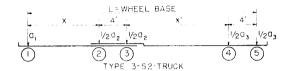
Equivalent H truck loadings are in kips.

Wheel Base and Axle Spacing	ruck No.	1	Load O Axles Kips	n				Span-				
Feet	⊢	a,	a 2	as	10	20	30	40	50	60	80	100
$L = 24 \ X = 8 \ X' = 12$	1 2 3 4 5 6	.10 .10 .10 .20 .20 .20	.40 .50 .60 .40 .50 .534	.50 .40 .30 .40 .30 .266	.625 .500 .480 .500 .400 .427	.625 .525 .526 .500 .552 .585	.688 .658 .732 .572 .649	.742 .756 .810 .696 .752	.792 .811 .853 .764 .808 .823	.826 .846 .881 .808 .843	.870 .887 .913 .859 .886 .895	.896 .911 .932 .889 .910
L = 28 $X = 8$ $X' = 16$	7 8 9 10 11 12	.10 .10 .10 .20 .20	.40 .50 .60 .40 .50 .534	.50 .40 .30 .40 .30 .266	.625 .500 .480 .500 .400 .427	.625 .52 \$.626 .500 .552	.612 .584 .690 .537 .642 .677	.666 .672 .744 .609 .684	.718 .744 .802 .696 .755	.764 .790 .838 .751 .800	.822 .846 .882 .818 .854 .866	.857 .878 .907 .856 .885
L = 32 $X = 8$ $X' = 20$	13 14 15 16 17 18	.10 .10 .10 .20 .20	.40 .50 .60 .40 .50	.50 .40 .30 .40 .30 .266	.625 .500 .480 .500 .400	.625 .525 .625 .500 .552	.608 .584 .690 .537 .642 .677	.595 .591 .694 .556 .659	.654 .679 .751 .630 .703	.704 .736 .796 .696 .758	.776 .806 .851 .777 .823 .838	.820 .846 .882 .824 .860 .872
$L = 36 \ X = 8 \ X' = 24$	19 20 21 22 23 24	.10 .10 .10 .20 .20	.40 .50 .60 .40 .50	.50 .40 .30 .40 .30 .266	.625 .500 .480 .500 .400 .427	.625 .525 .626 .500 .552 .585	.608 .584 .690 .537 .642 .677	.578 .590 .694 .556 .659	.597 .617 .702 .566 .669 .704	.647 .684 .755 .643 .716 .741	.731 .766 .820 .737 .792 .810	.783 .814 .858 .792 .836 .850
L = 40 $X = 8$ $X' = 28$	25 26 27 28 29 30	.10 .10 .10 .20 .20 .20	.40 .50 .60 .40 .50	.50 .40 .30 .40 .30 .266	.625 .500 .480 .500 .400 .427	.625 .525 .626 .500 .552	.608 .584 .690 .537 .642 .677	.578 .590 .694 .556 .659	.561 .593 .696 .566 .669	.599 .634 .715 .592 .675 .710	.687 .728 .790 .698 .761	.747 .783 .834 .760 .811 .829
L = 28 $X = 12$ $X' = 12$	31 32 33 34 35 36	.10 .10 .10 .20 .20	.40 .50 .60 .40 .50	.50 .40 .30 .40 .30 .266	.625 .500 .480 .500 .400 .427	.625 .506 .608 .500 .506	.688 .646 .714 .572 .612 .635	.742 .732 .787 .648 .706 .725	.777 .792 .835 .727 .772 .787	.814 .830 .866 .778 .814 .827	.860 .876 .902 .838 .864 .873	.888 .902 .923 .872 .593 .900
L = 32 $X = 12$ $X' = 16$	37 38 39 40 41 42	.10 .10 .10 .20 .20	.40 .50 .60 .40 .50	.50 .40 .30 .40 .30 .266	.625 .509 .480 .500 .400 .427	.625 .506 .608 .500 .506	.612 .552 .657 .494 .580 .615	.666 .646 .720 .559 .636	.713 .725 .783 .658 .718 .739	.752 .775 .823 .721 .770 .787	.813 .835 .870 .796 .832 .845	.850 .869 .898 .839 .868 .878

Table 10.0	6 (Co	ntinue	(b)									
	43 44	.10 .10	.40 .50	.50 .40	.625 .500	.625 .506	.608 .552	.595 .567	.654 .659	.694 .720	.767 .794	.812 .837
L = 36	45	.10	.60	.30	.480	.608	.657	.671	.732	.781	.839	.873
X = 12	46	.20	.40	.40	.500	.500	.487	.512	.591	.665	.754	.806
$\mathbf{X'} = 20$	47	.20 .20	.50 $.534$.30	.400 .427	.506 $.541$.580 $.615$.615 $.650$	$.666 \\ .691$.727 .748	.801 $.816$.843 $.855$
	48			.266_							7,140	
	49	.10	.40	.50	.625	.625	.608	.578	.597	.645	.722	.776 $.805$
T - 40	50 51	.10	.50 .60	.40 $.30$.500 $.480$.506 $.608$.552 $.657$.567 $.671$.597 $.682$.668 $.739$.755 $.809$.849
$egin{array}{c} \mathrm{L} = 40 \ \mathrm{X} = 12 \end{array}$	52	.20	.40	.40	.500	.500	.487	.512	.532	.611	.714	.774
$\ddot{\mathbf{X}}' = \ddot{2}$	53	.20	.50	.30	.400	.506	.580	.615	.634	.685	.769	.818
	54	.20	.534	.266	.427	.541	.615	.650	.669	.710	.788	.833
	55	.10	.40	.50	625	.625	.608	.578	.561	.599	.679	.740
	56	.10	.50	.40	.500	.506	.552	.567	.575	.617	.716	.774
L = 44	57	.10	.60	.30	.480	.608	.657	.671	.678	.699	.778	.825
X = 12	58	.20	.40	.40	.500	.500	.487	.512	.532	.559	.674	.742
X'=28	59	.20	.50	.30	.400	.506	.580	.615	.634	.646	.739	.794
	60	.20	.534	.266	.427	.541	.615	.650	669	681	.760	.811
	61	.10	.40	.50	.625	.625	.688	.742	.774	.801	.851	.880
	62	.10	.50	.40	.500	.506	.646	.717	.773	.815	.865	.894
L = 32	63	.10	.60	.30	480	.608	.714	.768	.817	.851	.891	.914
X = 16 $X' = 12$	64 65	.20 .20	.40 $.50$.40 $.30$	$.500 \\ .400$.500 $.506$.572 $.612$.630 $.665$.691 $.737$.748 .785	.816 $.843$.855 .877
$\Lambda = 12$	66	.20	.534	.266	.427	.541	.635	.682	.752	.798	.852	.884
			.40	.50	.625	.625	.612	.666	.713	.744	.803	.842
	67 68	.10 .10	.50	.40	.500	.506	.539	.636	.713	.759	.823	.861
L = 36	69	.10	.60	.30	.480	.608	.636	.704	.764	.808	.859	.889
X = 16	70	,20	.40	.40	.500	.500	.494	.556	.621	.690	.774	.822
$\hat{\mathbf{X}}' \equiv 16$	71	.20	.50	.30	.400	.506	.530	.603	.682	.741	.811	.851
	72	.20	.534	.266	.427	.541	.566	.626	.703	.758	.823	.861
	73	.10	.40	.50	.625	.625	.608	.595	.654	.694	.758	.805
	74	.10	.50	.40	.500	.506	.530	.560	.640	.704	.783	.828
L = 40	75	.10	.60	.30	.480	.608	.636	.648	.713	.765	.828	.865
X = 16	76	.20	.40	.40	.500	.500	.487	.486	.552	.634	.732	.789
X'=20	77 78	.20 .20	.50 .534	$.30 \\ .266$.400 $.427$.506 $.541$.530 $.566$.572 $.606$.629 $.655$.697 $.718$.779 .794	.826 $.838$
												.768
	79 80	.10 .10	.40 .50	.50	.625 $.500$.625 $.506$.608 $.530$.578 .544	.597 .576	.645 .651	.713 $.743$.796
L = 44	81	.10	.60	.40 .30	.480	.608	.636	.648	.663	.724	.797	.840
X = 16	82	.20	.40	.40	.500	.500	.487	.469	.498	.579	.691	.756
X'=24	83	.20	.50	.30	.400	.506	.530	.572	.600	.654	.747	.801
	84	.20	.534	.266	.427	.541	.566	.606	.635	.680	.766	.816
	85	.10	.40	.50	.625	.625	.608	.578	.561	.599	.671	.733
	86	.10	.50	.40	.500	.506	.530	.544	.557	.600	.704	.765
L = 48	87	.10	.60	.30	.480	.608	.636	.648	.660	.683	.767	.816
X = 16	88	.20	.40	.40	.500	.500	.487	.469	.498	.526	.651	.724
X'=28	89	.20	.50	.30	.400	.506	.530	.572	.600	.618	.716	.776
	90	.20	.534	.266	.427	.541	.566	.606	.635	.653	.738	.794

Table 10.7

SUMMARY OF EQUIVALENT H TRUCK LOADINGS IN SIMPLE SPANS PRODUCED BY TYPE 3-S2 TRUCKS WEIGHING ONE KIP EACH



One hundred twelve variations in the Type 3-S2 truck are given in this Table. Each truck number, from 1 to 112, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

All dimensions are in feet.

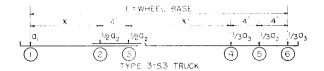
Equivalent H truck loadings are in kips.

Wheel Base and Axle Spacing	Truck No.		Load C Axles Kips	3				Span-	Feet			
Feet	H	a ₁	\mathbf{a}_2	\mathbf{a}_3	10	20	30	40	50	60	80	100
L = 28 X = 8 X'= 12	1 2 3 4 5 6 7	.10 .10 .10 .10 .20 .20	.30 .40 .45 .50 .30 .40	.60 .50 .45 .40 .50 .40	.480 .400 .360 .400 .400 .320 .400	.608 506 .475 .526 .506 .454	.671 .592 .559 .600 .569 .537	.736 .676 .683 .714 .634 .652	.785 .740 .753 .777 .702 .730 .781	.823 .785 .798 .818 .753 .779	.869 .840 .851 .866 .816 .839	.896 .873 .882 .895 .854 .873
L = 32 X = 8 X'= 16	8 9 10 11 12 13 14	.10 .10 .10 .10 .20 .20	.30 .40 .45 .50 .30 .40	.60 .50 .45 .40 .50 .40 .30	.480 .500 .360 .400 .400 .320 .400	.608 .506 .475 .526 .506 .454	.636 .530 .531 .584 .530 .537 .641	.673 .597 .593 .631 .572 .567	.722 .665 .680 .711 .628 .663 .729	.770 .722 .737 .763 .691 .724 .779	.830 .792 .806 .826 .768 .797 .838	.865 .834 .846 .862 .815 .840 .873
L = 36 X = 8 X' = 20	15 16 17 18 19 20 21	.10 .10 .10 .10 .20 .20	.30 .40 .45 .50 .30 .40	.60 .50 .45 .40 .50 .40	.480 .400 .360 .400 .400 .320 .400	.608 .506 .475 .526 .506 .454	.636 .530 .531 .584 .530 .537 .641	.627 .529 .538 .590 .525 .556	.674 .600 .611 .648 .574 .598	.719 .660 .679 .710 .631 .670	.791 .745 .762 .786 .722 .757	.833 .796 .811 .830 .777 .808 .848
L = 40 $X = 8$ $X' = 24$	22 23 24 25 26 27 28	.10 .10 .10 .10 .20 .20	.30 .40 .45 .50 .30 .40	.60 .50 .45 .40 .50 .40	.480 .400 .360 .400 .400 .320 .400	.608 .506 .475 .526 .506 .454	.636 .530 .531 .584 .530 .537	.626 .522 .538 .590 .522 .556 .659	.630 .543 .544 .593 .529 .566	.675 .602 .622 .659 .575 .617	.753 .699 .719 .747 .677 .717	.803 .759 .776 .799 .740 .776 .823
L = 44 $X = 8$ $X' = 28$	29 30 31 32 33 34 35	.10 .10 .10 .10 .20 .20	.30 .40 .45 .50 .30 .40	.60 .50 .45 .40 .50 .40	.480 .400 .360 .400 .400 .320 .400	.608 .506 .475 .526 .506 .454	.636 .530 .531 .584 .530 .537 .641	.626 .522 .538 .590 .522 .556	.621 .517 .541 .593 .517 .566 .669	.637 .555 .568 .609 .538 .572	.716 .655 .677 .709 .634 .679	.773 .722 .742 .768 .704 .745 .799
L = 28 X = 12 X'= 3	36 37 38 39 40 41 42	.10 .10 .10 .10 .20 .20	.30 .40 .45 .50 .30 .40	.60 .50 .45 .40 .50 .40	.480 .400 .360 .400 .400 .320 .400	.638 .551 .516 .551 .538 .454 .538	.759 .703 .676 .703 .656 .601	.860 .759 .754 .776 .697 .694	.834 .803 .810 .827 .748 .763 .800	.864 .839 .845 .859 .792 .807 .837	.900 .880 .887 .897 .845 .859	.921 .905 .911 .919 .877 .889

rabic 10.	7 (Co	ntinue	d)									
	43	.10	.30	.60	.480	.603	.671	.736	.772	.810	.859	.888
L = 32	44 45	.10 .10	$.40 \\ .45$	$.50 \\ .45$.360	.506 $.456$.592 .555	.676 .658	.725 .73 4	.772 .782	.831 .840	.865 .874
X = 12 X' = 12	46	.10	.50	.40	.400	.506	.592	.689	.758	.802	.855	.886
X'=:: 12	47	.20	.30	.50	.400	.506	.569	.634	.672	.728	.797	.838
	$\frac{48}{49}$.20 .20	$.40 \\ .50$.40 .30	.320 .400	.405 $.506$.493 $.580$.603 $.671$.692 .7 4 5	.749 $.792$.817 .848	.855 .881
	50	.10	.30	.60	480	.608	.636	.673	.722	.758	.820	.857
F 0.0	51	.10	.40	.50	.106	.506	.530	.597	.661	.709	.783	.826
$egin{array}{l} \mathbf{L} \equiv 36 \\ \mathbf{X} \equiv 12 \end{array}$	$\frac{52}{53}$.10 .10	$.45 \\ .50$	$\frac{.45}{.40}$.360 $.400$.456 $.506$.499 $.552$.566 $.605$	$.660 \\ .692$.721 .747	.795 .814	.837 .853
X'=16	54	.20	.30	.50	.400	.506	.532	.572	.621	.666	.750	.800
	55	.20	.40	.40	.320	.405	.476	.516	.624	.693	.775	.822
	$\frac{56}{57}$.20	.30	30 60	.400 .480	.506 .608	.636	.615 .627	.692	.749	.816 .781	.855
	58	.10	.40	.50	.400	.506	.530	.529	.600	.651	.736	.789
L = 40	59	.10	.45	.45	360	.456	.499	.515	.590	.662	.750	.802
$egin{array}{l} L \equiv 40 \ X \equiv 12 \ X' \equiv 20 \ \end{array}$	$\frac{60}{61}$.10	$.50 \\ .30$	$.40 \\ .50$.400 $.400$.506 $.506$.552 $.530$.567 $.525$.628 .574	.694 .613	.774 .704	.821 .762
-x — 20	62	.20	.40	.40	.320	.405	.476	.512	.558	.638	.734	.790
	63	.20	.50	.30	.400	.506	.580	.615	.642	.706	.785	.830
	$\frac{64}{65}$	$.10 \\ .10$	$.30 \\ .40$	$.60 \\ .50$	$.480 \\ .400$.608 $.506$.636 .530	.626 $.522$.630 $.543$.675 $.602$.7 44 .691	.795 .751
L = 44	66	.10	.45	.45	.360	.456	.499	.515	.523	.605	.707	.767
X = 12 $X' = 24$	67	.10	.50	.40	.400	.506	.552	.567	.575	.642	.735	.790
X' = 24	68 69	.20 .20	$.30 \\ .40$	$.50 \\ .40$.490 $.320$.506	.530	.522 $.512$.529 .532	.575	.660	.726
	70	.20	.50	.30	.400	.405 $.506$.476 $.580$.615	.634	.585 .664	.694 .754	.758 .806
	71	.10	.30	.60	.480	.608	.636	.626	.621	.637	.707	.765
1 40	72	.10	.40	.50	.400	.506	.530	.522	.517	.555	.646	.715
$L = 48 \\ X = 12$	$\frac{73}{74}$	$.10 \\ .10$	$.45 \\ .50$	$.45 \\ .40$.360 $.400$.456 $.506$.499 .552	.515 .567	.523 .575	.550 .592	.665 .697	.733 .758
X = 12 $X' = 28$	75	.20	.30	.50	.400	.506	.530	.522	.517	.538	.616	.690
	$\frac{76}{77}$.20	.40	.40	.320	.405	.476	.512	.532	.544	.655	.727
	71	.10	.50	30 60	.400	.608	.580 .671	.615 .736	.634 .772	.646	.723	.781 .880
	79	.10	.40	.50	.400	.506	.592	.676	.724	.759	.821	.857
$L \equiv 36$ $X \equiv 16$	80 81	.10 .10	.45	.45	.360	.456	.555	.648	.714	.766	.829	.865
X = 16 X' = 12	82	.20	.50 $.30$.40 .50	.400 .400	.506 .506	.592 .569	.676 $.634$.739 .670	.787 .703	.844 .778	.877 .82 3
	83	.20	.40	.40	.320	.405	.493	.576	.656	.719	.795	.838
	84	.20	.50	.30	.400	.506	.569	.634	.709	.763	.827	.864
	85 86	.10 .10	.30 $.40$.60 .50	.480 $.400$.608 .506	.636 .530	.673 .597	.722 $.661$.754 .703	.810 .773	.849 .819
L = 40	87	.10	.45	.45	.360	.456	.477	.562	.641	.705	.783	.828
X = 16 $X' = 16$	88 89	$.10 \\ .20$.50	.40	.400	.506	.530	.597	.672	.732	.803	.844
A 10	90	.20	.30 .40	.50 .40	.320	.506 $.405$.530 .424	.572 .499	.621 .586	.653 $.662$.731 .75 3	.785 .805
	91	.20	.50	.30	.400	.506	.530	.572	.65 5	.719	.795	.838
	92	.10	.30	.60	.480	.608	.636	.627	.674	.714	.772	.818
L = 44	93 94	.10 .10	.40 .45	.50 .45	$.400 \\ .360$.506 .456	.530 .477	.529 .492	.600 .570	.651 . 646	.72 7 .738	.781 .793
X = 16 $X' = 20$	95	.10	.50	.40	.400	.506	.530	.544	.608	.678	.763	.812
X' = 20	96 97	$.20 \\ .20$.30 $.40$.50 .40	$.400 \\ .320$.506 .405	.530	.525	.574	.613	.686	.748
	98	.20	.50	.30	.400	.506	.424 .530	.469 .572	.519 .605	.60 6 .676	.711 .763	.772 .813
	99	.10	.30	.60	.480	.608	.636	.626	.630	.675	.734	.788
L = 48	100 101	.10	.40	.50	.400	.506	.530	.522	.543	.602	.682	.744
X = 16	102	.10 .10	.45 .50	.45 .40	.360 $.400$.456 .506	.477 .530	.492 .544	.505 .557	.58 8 .62 5	.695 $.723$.750 .781
X'=24	103	.20	.30	.50	.400	.506	.530	.522	.529	.575	.642	.712
	104 105	.20 .20	.40 .50	.40 .30	.320	$.405 \\ .506$.424 .530	.469	.498	.552	.671	.740
	106	.10	.30	.60	.400	.608	.636	.572 . 6 26	.600	.633	.732	.788 .758
	107	.10	.40	.50	.400	.506	.530	.522	.517	.555	.640	.708
$L_{r} = 52$	108 109	.10	.45	.45	.360	.456	.477	.492	.505	.533	.652	.723
X = 16	110	.10 .20	.50 .30	.40 .50	.400 .400	.506 .506	.530 .530	.544 .522	.557 .517	.575 .538	.68 5 .60 4	.7 49 .676
X'=28												
X'= 28	111 112	.20	.40 .50	.40 .30	.320 .400	.405 .506	.424 .530	.469 .572	.498 .600	.516 .618	.632 .701	.708 .764

Table 10.8

SUMMARY OF EQUIVALENT H TRUCK LOADINGS IN SIMPLE SPANS PRODUCED BY TYPE 3-S3 TRUCKS WEIGHING ONE KIP EACH



One hundred five variations in the Type 3-S3 truck are given in this Table. Each truck number, from 1 to 105, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

All dimensions are in feet.

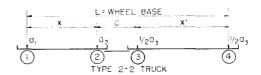
a1, a2, and a3-Represent the ratio of gross vehicle weight on axles.

and Axle Spacing	Truck No.		Load C Axles Kips	3				Span-	Feet			
Feet	L	a ₁	\mathbf{a}_2	સ ર	10	20	30	40	50	60	80	100
	1	.10	.30	.60	.350	.550	.600	.662	.726	.776	.835	.870
	2	.10	.36	.54	.315	.495	.541	.631	.704	.757	.821	.858
L = 32	3	.10	.40	.50	.320	.458	.500	.612	.689	.745	.811	.851
$\mathbf{X} = 8$	4	.10	.50	.40	.400	.525	.585	.672	.745	.791	.846	.878
X'=12	5	.20	.30	.50	.291	.458	.500	.571	.651	.712	.787	.831
	6	.20	.40	.40	.320	.454	.537	.609	.696	.752	.818	.857
	7	.20	.50	.30	.400	.552	.642	.689	.755	.800	.854	.885
	8	.10	.30	.60	.350	.550	.600	.610	.664	.722	.795	.838
	9	.10	.36	.54	.315	.495	.540	.556	.631	.696	.775	.822
L = 36	10	.10	.40	.50	.320	.458	.500	.530	.612	.680	.762	.811
X = 8 $X' = 16$	11	.10	.50	.40	.400	.525	.584	.603	.680	.737	.806	.846
X=16	12 13	.20	.30	.50	.291 $.320$.458 .454	.500	.511	.575	.648 .697	.739	.792 .82 4
	14	.20 .20	.40 .50	.40 .30	.400	.552	.537 $.642$.558 .661	.630 .703	.758	.777 .82 3	.860
		COMMUNICATION OF		41.4 April		PROPERTY OF THE PA	~~~~~~					
	15	.10	.30	.60	.350	.550	.600	.601	.616	.670	.755	.806
L = 40	$\frac{16}{17}$.10 .10	.36 $.40$.54 .50	.315 $.320$.495 $.458$.540 .500	.541 .501	.574 .548	.638 $.619$.731 .715	.786 $.773$
Y 40	18	.10	.50	.40	.400	.525	.584	.590	.618	.685	.767	.815
X = 8 $X' = 20$	19	.20	.30	.50	.291	.458	.500	.501	.524	.587	.692	.754
2L 20	20	.20	.40	.40	.320	.454	.537	.556	.575	.644	.738	.792
	21	.20	.50	.30	.400	552	.642	.659	.768	.716	.792	.836
	22	.10	.30	.60	.350	.550	.600	.601	.601	.626	.717	.775
	23	.10	.36	.54	.315	.495	.540	.541	.541	.585	.688	.751
L == 44	24	.10	.40	.50	.320	.458	.500	.501	.501	.559	.669	.735
X = 8	25	.10	.50	.40	.400	.525	.584	.590	.593	.634	.728	.784
X'=24	26	.20	.30	.50	.291	.458	.500	.501	.501	.534	.646	.717
	27	.20	.40	.40	.320	.454	.537	.556	.56 6	.592	.698	.761
	28	.20	.50	.30	.400	. 552	.642	.659	.669	.764	.761	.811
	29	.10	.30	.60	.350	.550	.600	.601	.601	.601	.679	.744
	30	.10	.36	.54	.315	.495	.540	.541	.541	.542	.645	.716
L = 48	31	.10	.40	.50	.320	.458	.500	.501	.501	.511	.624	.698
X = 8 $X' = 28$	32	.10	.50	.40	.400	.525	.584	.590	.593	.594	.690	.753
X' = 28	33	.20	.30	.50	.291	.458	.500	.501	.501	.501	.602	.680
	34	.20	.40	.40	.320	.454	.537	.556	.566	.572	.660	.730
	35	.20	.50	.30	.400	.552	.642	.775	.669	675	.731	.787
	36	.10	.30	.60	.350	.550	.600	.662	.715	.762	.825	.862
	37	.10	.36	.54	.315	.495	.541	.631	.691	.743	.811	.850
L = 36	38	.10	.40	.50	.320	.458	.500	.612	.675	.731	.802	.843
X = 12	39	.10	.50	.40	.400	.506	.652	.647	.725	.775	.835	.870
X'=12	40	.20	.30	.50	.291	.458	.500	.571	.622	.686	.767	.815
	41	.20	.40	.40	.320	.405	.476	.560	.658	.721	.796	.839
	42	.20	.50	.30	.400	.506	.580	.640	.718	.770	.832	.868

	43	ntinue	,30	.60	.350	.550	.600	.610	.664	.709	.785	.830
	44	.10	.36	.54	.315	.330	.540	.556	.631	.683	.765	.814
L = 40	45	.10	.40	.50	.320	.458	.500	.530	.611	.667	.753	.803
K = 12	46	.10	.50	.40	.400	.506	,552	.578	.660	.721	.795	.837
$\zeta = 12$ $\zeta' = 16$	47	.20	.30	.50	.291	.458	.500	.511	.572	.624	.720	.77
	48	.20	.40	.40	.320	.405	.476	.512	.591	.666	.755	.806
	49	.20	.50	.30	.400	.506	.580	.615	.682	.727	.801	.843
	50	.10	.30	.60	.350	.550	.600	.601	.616	.666	.746	.798
	51	.10	.36	.54	.315	.495	.540	.541	574	.632	.698	.759
L = 44	52	.10	.40	.50	.320	.458	.500	.501	.548	.610	.705	.765
X = 12 $X' = 20$	53	.10	.50	.40	.400	.506	.552	.567	.598	.668	.755	.806
$r = z_0$	54 55	.20 .20	.30 .40	.50 .40	.291 $.320$.458 .405	.500 .476	.501 .512	.524 .537	.573 .612	.673 .714	.738 .774
	56	.20	.50	.30	.400	.506	.580	.615	.638	.685	.769	.818
	57	.10	.30	.60	.350	.550	.600	.601	.601	.626	.707	.767
	58	.10	.36	.54	.315	.495	.540	.541	.541	.584	.678	.743
L = 48	59	.10	.40	.50	.320	.458	.500	.501	.501	.559	.659	.727
$\zeta = 12$	60	.10	.50	.40	.400	.506	.552	.567	.575	.617	.716	.778
X = 12 X' = 24	61	.20	.30	.50	.291	.458	.500	.501	.501	.534	.628	.701
	62	.20	.40	.40	.320	.405	.476	.512	.532	.559	.675	.743
	63	.20	.50	.30	.400	.506	.580	.615	.634	.654	.739	.794
	64	.10	.30	.60	.350	.550	.600	.601	.601	.601	.670	.737
	65	.10	.36	.54	.315	.495	.540	.541	.541	.542	.636	.709
L = 52	66	.10	.40	.50	.320	.458	.500	.501	.501	.510	.614	.691
X = 12 $X' = 28$	67	.10	.50	.40	.400	.506	.552	.567	.575	.579	.678	.744
X' = 28	68	.20	.30	.50	.291	.458	.500	.501	.501	.501	.584	.666
	69 70	.20 .20	.40 .50	.40 .30	.320 .400	.405 .506	.476 .580	.512 .615	.532 .634	.5 44 .646	.636 .708	.711 .769
	71	.10	~.30 ~	.60	.350	.550	.600	.662	.715	.749	.815	.854
	72	.10	.36	.54	.315	.495	.541	.631	.691	.730	.801	.842
= 40	73	.10	.40	.50	.320	.458	.500	.612	.675	.718	.792	.835
X = 16 X' = 12	74	.10	.50	.40	.400	.506	.562	.637	.706	.759	.824	.861
√ = 12	75	.20	.30	.50	.291	.458	.500	.571	.622	.660	.748	.799
	76	.20	.40	.40	.320	.405	.461	.538	.621	.691	.774	.822
	77	.20	.50	.30	.400	.506	.552	.603	.664	.726	800	.843
	78	.10	.30	.60	.350	.550	.600	.610	.664	.707	.775	.822
	79	.10	.36	.54	.315	.495	.540	.556	.631	.680	.756	.806
L = 44	80	.10	.40	.50	.320	.458	.500	.530	.610	.662	.743	.796
X = 16 $X' = 16$	81 82	.10 .20	.50 .30	.40 .50	.400 .291	.506 .458	.530 .500	.568 .511	.640 .572	.705 .613	.783 .701	.829
	83	.20	.40	.40	.320	.405	.424	.469	.553	.635	.732	.761 .789
	84	.20	.50	.30	.400	.506	.530	.572	.629	.697	.779	.826
	85	.10	.30	.60	.350	.550	.600	.601	.616	.666	.736	.790
	86	.10	.36	.54	.315	.495	.540	.541	.574	.632	.712	.770
L = 48	87	.10	.40	.50	.320	.458	.500	.501	.548	.610	.696	.751
X = 16 $X' = 20$	88	.10	.50	.40	.400	.506	.530	.544	.579	.642	.743	.797
C'=20	89	.20	.30	.50	.291	.458	.500	.501	.524	.573	.654	.724
	90	.20	.40	.40	.320	.405	.424	.469	.500	.580	.692	.75
	91	.20	.50	.30	.400	.506	.530	.572	.601	.654	.747	.801
	92	.10	.30	.60	.350	.550	.600	.601	.601	.626	.698	.760
L = 52	$93 \\ 94$.10	.36	.54	.315	.495	.540	.541	.541	.585	.669	.736
Z — 16	95	.10 $.10$.40 .50	.50 .40	.320 $.400$.458 .506	.500 .530	.501 .544	.501	.559	.650	.720
X = 16 $X' = 24$	96	.20	.30	.50	.291	.458	.500	.501	.557 .50 1	.601 .534	.704 $.610$.765 .687
	97	.20	.40	.40	.320	.405	.424	.469	.498	.527	.652	.728
	98	.20	.50	.30	.400	.506	.530	.572	.600	.624	.716	.776
	99	.10	.30	.60	.350	.550	.600	.601	.601	.601	.669	.729
	100	.10	.36	.54	.315	.495	.540	.541	.541	.542	.632	.702
L = 56	101	.10	.40	.50	.320	.458	.500	.501	.501	.510	.609	.688
X = 16 $X' = 28$	102	.10	.50	.40	.400	.506	.530	.544	.557	.565	.666	.73
K'= 28	103	.20	.30	.50	.291	.458	.500	.501	.501	.501	.574	.651
	104	.20	.40	.40	.320	.405	.424	.469	.498	.516	.613	.693
	105	.20	.50	.30	.400	.506	.530	.572	.600	.618	.685	.752

Table 10.9

SUMMARY OF EQUIVALENT H TRUCK LOADINGS IN SIMPLE SPANS PRODUCED BY TYPE 2-2 TRUCKS WEIGHING ONE KIP EACH



One hundred forty-four variations in the Type 2-2 truck are given in this Table. Each truck number, from 1 to 144, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

All dimensions are in feet.

a1, a2, and a3-Represent the ratio of gross vehicle weight on axles.

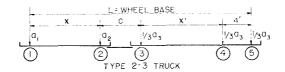
Wheel Base and Axle Spacing Feet	Truck No.		Load C Axles Kips	š				Span-				
Feet	F-	a 1	a ₂	a 3	10	20	30	40	50	60	80	100
	1	.10	.20	.70	.438	.580	.740	.787	.835	.866	.902	.923
L = 28	2	.10	.30	.60	.375	.525	.706	.766	.819	.852	.892	.915
$\begin{array}{c} X = 12 \\ X' = 8 \end{array}$	3	.10 .20	.40 .20	.50	.500 $.375$.582 $.503$.675 .650	.757 .701	.809 $.768$.843	.884 .861	.908
C = 8	4 5	.20	.30	.60 .50	.375	.460	.617	.685	.754	.810 $.798$.852	.890 .883
C 0	6	.20	.40	.40	.500	.563	.650	.744	.802	.838	.882	.907
	7	.10	.20	.70	.438	.502	.635	.711	.772	.814	.864	.893
L = 32	8	.10	.30	.60	.375	.480	.610	,695	.763	.807	.859	.889
$ \begin{array}{l} L = 32 \\ X = 12 \end{array} $	9	.10	.40	.50	.500	.582	.654	.706	.769	.810	.859	.888
$ \begin{array}{c} \overline{X}' = 12 \\ \overline{C} = 8 \end{array} $	10	.20	.20	.60	.375	.441	.558	.628	.711	.764	.828	864
c = s	11	.20	.30	.50	.375	.460	.556	.628	.710	.762	.825	.862
	12_	20_	.40	.40	.500	.563	.650	.701	.768	.810	.861	.890
	13	.10	.20	.70	.438	.502	.546	.637	.711	.764	.828	.864
L = 36	14 15	.10	.30 .40	.60	.375 $.500$.480 .582	.562 $.654$.629 $.683$.709 .730	.763 .777	.827 .835	.864 .869
X = 12 Y' 16	16	.10 .20	.20	.50 .60	.375	.441	.485	.564	.656	.719	.795	.838
L = 36 $X = 12$ $X' = 16$ $C = 8$	17	.20	.30	.50	.375	.460	.556	.613	.669	.728	.800	.842
0 — 0	18	.20	.40	.40	.500	.563	.650	.694	.734	.782	.840	.874
	19	.10	.20	.70	.438	.502	.546	.567	.652	.715	.791	.835
L = 40	20	.10	,30	.60	.375	.480	.562	.603	.657	.720	.795	.839
X = 12	21	.10	.40	.50	.500	.582	.654	.683	.698	.745	.810	.849
X' = 20 $C = 8$	22	.20	.20	.60	.375	.441	.485	.532	.602	.675	.762	.813
C == 8	23	.20	.30	.50	.375	.460	.556	.613	.644	.695	.775	.822
	24	.20	.40	.40	.500	.563	.650	.694	.719	.755	.820	.858
T 00	25	.10	.20	.70	.438	.560	.673	.740	.783	.82 3 .796	.870	.898 .882
$ \begin{array}{l} L = 32 \\ X = 12 \end{array} $	$\frac{26}{27}$.10 .10	.30 .40	.60	.375 $.500$.480 $.500$.610 .578	.695 $.658$.751 $.730$.777	.851 $.835$.869
$\hat{\mathbf{x}} = 12$	28	.20	.20	.50 .60	.375	.480	.584	.647	.702	.755	.820	.858
$ \begin{array}{ccc} $	29	.20	.30	.50	.375	.400	.523	.604	.674	.731	.802	.843
0 — 12	30	.20	.40	.40	.500	.500	.584	.659	.734	.782	.840	.874
	31	.10	.20	.70	.438	.438	.564	.662	.718	.770	.832	.868
L=36	32	.10	.30	.60	.375	.375	.511	.624	.694	.750	.817	.856
X = 12	33	.10	.40	.50	.500	.500	.578	.627	.692	.745	.810	.849
	34	.20	.20	.60	.375	.375	.489	.579	.643	.708	.786	.831
C = 12	35	.20	.30	.50	.375	.375	.475	.555	.630	.695	.775	.822 $.858$
	36	.20	.40	.40	.500	.500	.584	.647	.702	.755	.820	
	37	.10	.20	.70	.438	.438	.489	.586	.656	.719	.795	.838
L = 40	38	.10	.30	.60	.375	.375 $.500$.473 $.578$.556 $.627$.638 $.655$.705 $.713$.784 .786	.830
$ \begin{array}{l} X = 12 \\ X' = 16 \end{array} $	39 40	.10 .20	.40 .20	.50 .60	$.500 \\ .375$.375	.429	.514	.586	.662	.753	.805
C = 10	41	.20	.30	.50	.375	.375	,475	.555	.599	.663	.751	.802
0 12	42	.20	.40	.40	.500	.500	.584	.647	.682	.728	.800	.842

Table 10	.9 (Co	ntinu	ed)									
L = 44	43 44	.10 .10	.20 .30	.70 .60	.438 .375	.438 .375	.489	.514	.599	.669	.758	.809
X = 12 $X' = 20$	45	.10	.40	.50	.500	.500	.473 .578	$.538 \\ .627$.584 $.655$	$.660 \\ .682$.752 $.762$.804 .810
$X' \equiv 20$ $C \equiv 12$	46 47	.20 .20	.20 .30	.60 .50	.375 $.375$.375 .375	.429 $.475$.464 $.555$.530 $.599$.617 $.631$.720 .726	.779 .783
/accesses, , reserves, ,	48	.20	.40	40	.500	.500	.584	.647	.682	.704	.780	.826
L = 32	49 50	.10 .10	.20 .30	.70 .60	.438 .375	.580 .525	.740 .706	.787 .763	.818 $.802$.851 .838	.892 $.882$.915 .907
X = 16	51	.10	.40	.50	.500	.582	.675	.741	.790	.827	.873	.900
X' = 8 $C = 8$	52 53	.20 .20	.20 .30	$.60 \\ .50$	$375 \\ 375$.503 . 46 0	$.650 \\ .617$.694 $.671$.734 $.721$.782 .771	.840 $.831$.874 .867
	54	.20			.500	.563	.623	.696	.764	.808	.859	.889
L = 36	55 56	.1 0 .10	.20 .30	.70 .60	$.438 \\ .375$.502 .480	.635 $.610$.711 $.695$.754 $.746$.799 $.793$.854 $.849$.885 .881
$X = 16 \\ X' = 12$	57 58	.19 .20	.40 .20	.50 .60	.500 $.375$.582 .441	.637 $.558$.682 $.628$.749 .677	.794 $.736$	$.848 \\ .807$.879
X' = 12 $C = 8$	59	.20	.30	.50	.375	.460	.536	.613	.672	.732	.803	.844
	60	.20	.20	.40 .70	.500	.563	.606	.652	.730 .695	.779	.839	.873
L = 40	62	.10	.30	.60	.375	.480	.548	.629	.691	.748	.816	.855
X = 16 $X' = 16$	63 64	$.10 \\ .20$.40 .20	.50 .60	.500 $.375$.582 .441	.637 $.485$.659 $.564$.710 $.621$.761 $.690$.823 .774	$.860 \\ .822$
C = 8	65 66	.20 .20	.30 .40	.50 .40	.375 $.500$.460 $.563$.517 .606	.568 .650	$.630 \\ .696$.696 .751	.777 .818	.824 .856
	67	.10	.20	.70	.438	.502	.546	.567	.638	.700	.780	.827
L = 44 Y = 16	68 69	.10 .10	.30 .40	.60 .50	.375 $.500$.480 $.582$.548 .637	.579 $.659$.639 $.680$.705 $.728$.784 .798	.830 .840
X = 16 $X' = 20$	70	.20	.20	.60	.375	.441	.485	.503	.567	.646	.741	.796
C = 8	$\frac{71}{72}$.20 .20	.30 .40	.50 .40	.375 .500	.460 $.563$.517 .606	.568 $.650$.609 $.684$.663 $.724$.752 .797	.804 .840
	73	.10	.20	.70	.438	.560	.673	.740	.777	.809	.860	.890
L = 36 X = 16	74 75	.10 .10	.30 .40	.60 .50	.375 $.500$.480 .500	.610 .566	.69 5 .65 4	.741 .710	.782 .761	$.840 \\ .823$.874 .860
$\begin{array}{c} X = 16 \\ X' = 8 \\ C = 12 \end{array}$	76 77	.20	.20	.60	.375 $.375$.480 .400	.584 .523	.647 .604	.682 .648	.728 .705	.800 .782	$.842 \\ .827$
C = 12	78	.20 .20	.40	.50 .40	.500	.500	.548	.609	.696	.751	.818	.856
T - 40	79 80	.10 .10	.20	.70	.438 .375	.438 .375	.564 .511	.662 .624	.715 .687	.756 .736	.822 .807	.860 .848
$egin{array}{c} L \equiv 40 \ X \equiv 16 \end{array}$	81	.10	.30 .40	.60 .50	.500	.500	.566	.603	.671	.728	.798	.840
X = 16 X' = 12 C = 12	82 83	.20 .20	.20 .30	.60 .50	.375 $.375$.375 $.375$.489 .448	.579 .544	.629 $.602$.681 .665	.766 .753	.815 .804
	84	.20	.40	.40	.500	.500	.548	.602	.663	.724	.797	.840
L = 44	85 86	.10 .10	.20 .30	.70 .60	.438 .375	.438 .375	.489 .467	.586 .556	.656 $.634$.704 .690	.784 .774	.830 .822
X 16	87 88	.10 .20	.40 .20	.50 .60	.500 .875	.500 .375	.566 .429	.603 $.514$	$\frac{636}{.578}$.696 .634	.774 $.732$.820 .789
X' = 16 $C = 12$	89	.20	.30	.50	.375	.375	.448	.509	.563	.630	.727	.784
~	90	.10	.20	.40	.500 .438	.500 .438	.489	.602	.647	.696	.777	.824
L = 48	92	.10	.30	.60	.375	.375	.467	.513	.582	.646	.741 .750	.796 .801
X = 16 $X' = 20$	93 94	.10 .20	.40 .20	.50 .60	$.500 \\ .375$	$.500 \\ .375$.566 $.429$.603 $.451$	$.636 \\ .528$.665 .588	.699	.762
C = 12	95 96	.20 .20	.30 .40	.50 .40	.375 $.500$.375 .500	.448 .548	.509 .602	.563 .647	.598 .675	.703 .757	.764 .808
	97	.10	.20	.70	.438	.560	.740	.787	.813	.837	.881	.906
L = 36 $X = 20$	98 99	.10 .10	.30 .40	.60 .50	.375 .500	.525 .582	.706 .675	.763 .741	.795 .777	.824 .812	$.871 \\ .862$.898 .891
X' = 8	100	.20	.20	.60	.375	.503	.650	.694	.719 .700	.755 .744	.820 .811	.858 .851
C = 8	101 102	.20 .20	.30 .40	.50 .40	.375 $.500$.460 .563	.617 $.623$.671 .668	.727	.778	.838	.872
T - 10	103	.10	.20	.70	.438	.502	.635	.711	.753	.785 .778	.843 .838	.876 .872
L = 40 X = 20 X' = 12	104 105	.10 .10	.30 .40	.60 .50	.375 $.500$.480 .582	.610 $.637$.695 $.682$.741 .732	.778	.836	.871
X'=12 $C=8$	$\begin{array}{c} 106 \\ 107 \end{array}$.20 .20	.20 .30	.60 .50	.375 .375	.441 .460	.558 .536	.628 $.613$.667 .656	.708 .704	.786 .783	.831 .828
	108	20_	.40	.40	.500	.563	.606	.630	.692	.749	.817	.855
T 44	109 110	.10 .10	.20 .30	.70 .60	$.438 \\ .375$.502 $.480$.546 .548	.637 .629	.695 $.690$.734 .734	.806 .805	.847 .847
$\tilde{\mathbf{x}} = 20$	111	.10	.40	.50	.500	.582	.548 .637	.640	.689	.744	.811	.851
$ \begin{array}{l} L = 44 \\ X = 20 \\ X' = 16 \\ C = 8 \end{array} $	$\frac{112}{113}$.20 .20	.20 .30	.60 .50	.375 $.375$.441 .460	.485 $.517$	$.564 \\ .557$.616 .612	.662 .665	.753 .754	.805 .806
	114	.20	.40	.40	.500	.563	.606	.606	.658	.721	.796	.839
L = 48	$\frac{115}{116}$.10 .10	.20 .30	.70 .60	.438 $.375$.502 .480	.546 .548	.567 .565	.638 .639	.685 $.690$.769 .773	.818 .821
X = 20 $X' = 20$	$\frac{117}{118}$.10 .20	.40 .20	.50 .60	$.500 \\ .375$.582 .441	.637 $.485$.640 $.503$	$.662 \\ .567$.712 .617	.787 .720	.831 $.779$
$\mathbf{C} = 8$	119	.20	.30	.50	.375	.460	.517	.506	.575	.631	.729	.786
	120	.20	.40	.40	.500	.563	.606	.606	.650	.693	.775	.822

Table 10.9 (Continued) 121 10 20 70 438 560 673 740 777 800 850 881														
	121	.10	.20	.70	.438	.560	.673	.740	.777	.800	.850	.881		
L == 40	122	,10	.30	.60	.375	.480	.610	.695	.741	.771	.830	.866		
X = 20	123	.10	.40	.50	.500	.500	.566	.654	.709	.744	.811	.851		
X'= 8	124	.20	.20	.60	.375	.480	.584	.647	.682	.704	.780	.826		
C = 12	125	.20	.30	.50	.375	.400	.523	.604	.648	.680	.762	.811		
	126	.20	.40	.40	.500	.500	.548	.592	.658	.721	.796	.839		
	127	.10	.20	.70	.438	.438	.564	.662	.715	.749	.811	.851		
L = 44	128	.10	.30	.60	.375	.375	.511	.624	.687	.726	.796	.839		
X = 20	129	.10	.40	.50	.500	.500	.566	.592	.661	.712	.787	.831		
X'=12	130	.20	.20	.60	.375	.375	.489	.579	.629	.661	.746	.799		
C = 12	131	.20	.30	.50	.375	.375	.448	.544	.602	.638	.733	.788		
	132	.20	.40	.40	.500	.500	.548	.562	.624	.693	.775	.822		
	133	.10	.20	.70	.438	.438	.489	.586	.656	.700	.773	.821		
L == 48	134	.10	.30	.60	.375	.375	.467	.556	.634	.683	.763	.813		
X = 20	135	.10	.40	.50	.500	.500	.566	.588	.618	.680	.762	.811		
X' = 16	136	.20	.20	.60	.375	.375	.429	.514	.578	.618	.711	.772		
C = 12	137	.20	.30	.50	.375	.375	.448	.486	.557	.602	.704	.766		
	138	.20	.40	.40	.500	.500	.548	.562	.612	.665	.754	.806		
	139	.10	.20	.70	.438	.438	.489	.514	.599	.653	.736	.792		
L = 52	140	.10	.30	.60	.375	.375	.467	.501	.582	.640	.730	.788		
$\mathbf{X} = 20$	141	.10	.40	.50	.500	.500	.566	.588	.618	.648	.738	.792		
X' = 20	142	.20	.20	.60	.375	.375	.429	.451	.528	.577	.678	.746		
C = 12	143	.20	.30	.50	.375	.375	.448	.474	.528	.569	.679	.746		
	144	.20	.40	.40	.500	.500	.548	.562	.612	.646	.734	.790		

Table 10.10

SUMMARY OF EQUIVALENT H TRUCK LOADINGS IN SIMPLE SPANS PRODUCED BY TYPE 2-3 TRUCKS WEIGHING ONE KIP EACH



Ninety variations in the Type 2-3 truck are given in this Table. Each truck number, from 1 to 90, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

All dimensions are in feet.

Equivalent H truck loadings are in kips.

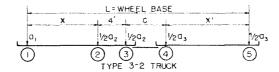
Wheel Base and Axle Spacing	Truck No.		Load (Axles Kips	S				Span-	Feet			
Feet	F	aı	82	аз	10	20	30	40	50	60	80	100
T 00	1	.10	.20	.70	.374 .375	.530 $.454$.634 .580	.708 .673	.752 .745	.797 .792	.852	.884
$egin{array}{c} L \equiv 32 \ X \equiv 12 \end{array}$	2 3	.10	.30 .40	.60 .50	.500	.552	.606	.690	.756	.799	.848 .851	.881 .882
X'= 8	4	.20	.20	.60	.320	.454	.546	.616	.692	.749	.817	.855
C = 8	5	.20	.30	.50	.375	.429	.511	.611	.696	.751	.817	.855
	6	.10	.20	.70	.374	.473	.556	.621	.680	.731	.803	.845
$egin{array}{c} L=36 \ X=12 \end{array}$	7 8	.10 .10	.30 .40	.60 .50	.375 $.500$.441 .552	.503 .606	.586 .635	.674 $.704$.734 .755	.806 $.818$.847 .856
X' = 12	9	.20	.20	.60	.320	.405	.476	.537	.619	.689	.773	.821
X' = 12 $C = 8$	10	.20	.30	.50	.375	.429	.511	.560	.643	.706	.783	.828
	11	.10	.20	.70	.374	.473	.495	.548	.614	.667	.755	.807
$egin{array}{c} \mathbf{L} \equiv 40 \ \mathbf{X} \equiv 12 \end{array}$	$\frac{12}{13}$.10 .10	.30 .40	.60 .50	.375 .500	.441 $.552$.503 $.606$.532 $.625$.605 $.654$.677 .713	.764 .786	.814 .830
$\hat{X}' = 16$	14	.20	.20	.60	.320	.405	.424	.469	.549	.632	.731	.788
$ \begin{array}{c} $	15	.20	.30	.50	.375	.429	.511	.556	.593	.663	.751	.802
	16	.10	.20	.70	.374	.530	.626	.667	.717	.753	.820	.858
L = 36	17 18	.10	.30	.60	.375 $.500$.454 .500	.537 .553	.601 .601	.675 .679	.735 .734	.806 $.802$.847 .842
X = 12 $X' = 8$	19	$.10 \\ .20$.40 .20	.50 .60	.320	.454	.537	.576	.624	.693	.775	.822
$\overset{\sim}{\mathrm{C}} \equiv 1\overset{\circ}{2}$	20	.20	.30	.50	.375	.377	.455	.524	.617	.685	.767	.815
	21	.10	.20	.70	.374	.473	.556	.597	.649	.692	.770	.819
L = 40	22	.10	.30	.60	.375	.405	.476	.512	.602	.675	.762	.813
$egin{array}{l} X = 12 \\ X' = 12 \end{array}$	$\frac{23}{24}$.10 .20	.40 .20	.50 .60	$.500 \\ .320$	$.500 \\ .405$.553 .476	.587 .512	$.630 \\ .562$.692 $.632$.770 .731	.817 .788
C = 12	25	.20	.30	.50	.375	.375	.455	.517	.566	.642	.735	.789
	26	.10	.20	.70	.374	.473	.495	.548	.585	.638	.722	.780
L = 44	27	.10	.30	.60	.375	.405	.441	.487	.532	.617	.720	.779
X = 12	28 29	.10 .20	$.40 \\ .20$.50	.500 .320	.500 $.405$.553 $.424$.587 .469	.517 $.503$.652 .572	.739 .687	.791 .754
$egin{array}{c} X' \equiv 16 \\ C \equiv 12 \end{array}$	30	.20	.30	.60 .50	.375	.375	.455	.517	.551	.600	.703	.763
	31	.10	.20	.70	.374	.530	.634	.708	.749	.782	.841	.875
$L \equiv 36$	32	.10	.30	.60	.375	.454	.580	.673	.727	.778	.838	.872
X = 16	33	.10	.40	.50	.500	.552	.597	.664	.736	.783	.840	.873
X'= 8 C = 8	34 35	.20 .20	.20 .30	.60 .50	.320 $.375$.454 $.429$.546 .510	.616 $.594$.658 $.657$	$\begin{array}{c} .721 \\ .719 \end{array}$.796 .794	.839 $.837$
	36	${10}^{20}$.20	.70	.374	.473	.556	.621	.680	.718	.792	.836
L = 40	37	.10	.30	,60	.375	.441	.485	.586	.656	.719	.795	.838
$egin{array}{l} \mathbf{X} = 16 \\ \mathbf{X'} = 12 \end{array}$	38	.10	.40	.50	.500	.552	.586	.610	.684	.739	.807	.846
$ \begin{array}{c} X' = 12 \\ C = 8 \end{array} $	$\frac{39}{40}$.20 .20	.20	.60	.320	.405	.476	.537	.592	.660	.752	.804
c = 8	41	.10	.30	.50	.375	.429	.465	.521	.603	.674	.760	.810
L = 44	42	.10	.30	.70	.374 $.375$.413	.495	.548 .509	.514	.662	.744	.805
X = 16	43	.10	.40	.50	.500	.552	.586	.602	.633	.696	.774	.820
X' = 16	44	.20	.20	.60	.320	.405	.424	.469	.532	.602	.709	.771
C = 8	45	.20	.30	.50	.375	.429	.465	.513	.555	.630	.727	.784

Table 10.10 (Co	ntinu	ed)									
46	.10	.20	.70	.374	.530	.626	.667	.717	.749	.809	.850
L = 40 - 47	.10	.30	.60	.375	.454	.537	.601	.669	.721	.796	.839
X = 16 - 48	.10	.40	.50	.500	.500	.537	.575	.658	.718	.790	.833
X' = 8 - 49	.20	.20	.60	.320	.454	.537	.575	.623	.665	.754	.806
C = 12 - 50	.20	.30	.50	.375	.377	.447	.524	.587	.652	.744	.797
51	.10	.20	.70	.374	.473	.556	.597	.649	.692	.759	.810
L = 44 - 52	.10	.30	.60	.375	.405	.476	.512	.599	.660	.752	.804
X = 16 - 53	.10	.40	.50	.500	.500	.537	.563	.609	.676	.758	.807
X' = 12 - 54	.20	.20	.60	.320	.405	.476	.512	.562	.603	.710	.771
$C \equiv 12$ 55	.20	.30	.50	.375	.375	.417	.472	.527	.609	.711	.771
56	.10	.20	.70	.374	.473	.495	.548	.585	.638	.710	.772
L == 48 57	.10	.30	.60	.375	.405	.429	.469	.532	.602	.709	.771
X = 16 - 58	.10	.40	.50	.500	.500	.537	.563	.587	.635	.727	.782
X' = 16 59	.20	.20	.60	.320	.405	.424	.469	503	.553	.666	.737
C = 12 - 60	.20	.30	.50	.375	.375	.417	.472	.516	.567	.679	.745
61	.10	.20	.70	.374	.530	.634	.708	.749	.776	.830	.867
L = 40 62	.10	.30	.60	.375	.454	.580	.673	.724	.763	.827	.864
X = 20 63	.10	.40	.50	.500	.552	.597	.663	.717	.767	.828	.864
X' = 8 - 64	.20	.20	.60	.320	.454	.546	.616	.655	.693	.775	.822
C = 8 65	.20	.30	.50	.375	.429	.510	.594	.641	.691	.773	.821
66	.10	.20	.70	.374	.473	.556	.621	.680	.718	.781	.827
L == 44 67	.10	.30	.60	.375	.441	.485	.586	.656	.704	.784	.830
X = 20 - 68	.10	.40	.50	.500	.552	.586	.600	.663	.723	.795	.837
X' = 12 69 C = 8 70	.20	.20 .36	.60 .50	.320	.405	.476	.537	.592	.632	.731	.788
				.375	.429	.465	.521	.584	.642	.738	.793
71	.10	.20	.70	.374	.473	.495	.548	.614	.663	.733	.789
$ \begin{array}{ccc} L = 48 & 72 \\ X = 20 & 73 \end{array} $.10	.30	.60	.375	.441	.485	.504	.591	.647	.742	.796
X = 20 73 X' = 16 74	.10 .20	.40	.50 .60	$.500 \\ .320$.552 $.405$.586	.581	.612 $.532$.680	.763	.811
$\hat{C} = \begin{array}{ccc} 10 & 74 \\ \hat{C} = 8 & 75 \end{array}$.20	.20 $.30$.50	.375	.429	.424 $.465$.469 $.470$.528	.57 7 .598	.687 $.704$.754 .766
A COMPANIES DE LA COMPANIE DE LA COM		.20									
$L = 44 \begin{array}{c} 76 \\ 77 \end{array}$.10		.70	.374	.530	.626	.667	.717	.749	.798	.841
L = 44 - 77 X = 20 - 78	.10 .10	.30 .40	.60 .50	.375 $.500$.454 .500	.537 .537	.601 $.572$.669 $.646$.712 .701	.785 .779	.831
$\ddot{X} = \frac{20}{8}$.20	.20	.60	.320	.454	.537	.576	.623	.654	.734	.824 .790
$\hat{C} = 12$.20	.30	.50	.375	.377	.447	.524	.587	.626	.723	.781
81	.10	.20	.70	.374	.473		.597	.649			
$L \simeq 48 - 82$.10	.30	.60	.375	.405	.556 .476	.512	.599	$.692 \\ .654$.748 $.741$.802
$X = \frac{48}{20} + \frac{62}{88}$.10	.40	.50	.500	.500	.537	.545	.587	.659	.746	.796 .798
	.20	.20	.60	.320	.405	.476	.512	.562	.602	.689	.755
X' = 12 - 84 C = 12 - 85	.20	.30	.50	.375	.375	.417	.448	.527	.578	.688	.753
86	.10	.20	.70	.374	.473	.495	.548	.585	.638	.704	.763
L = 52 - 87	.10	.30	.60	.375	.405	.429	.469	.532	.599	.698	.762
X = 20 - 88								.00	.000		
								.569	617	.715	
X' = 16 89	.10	.40	.50	.500 .320	.500 .405	.537 .424	.545 .469	.569 $.503$.617 .553	.715 $.645$.773 .720

Table 10.11

SUMMARY OF EQUIVALENT H TRUCK LOADINGS IN SIMPLE SPANS

PRODUCED BY TYPE 3-2 TRUCKS WEIGHING ONE KIP EACH



Ninety variations in the Type 3-2 truck are given in this Table. Each truck number, from 1 to 90, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

All dimensions are in feet.

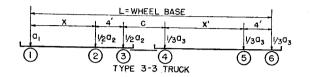
a1, a2, and a3-Represent the ratio of gross vehicle weight on axles.

Wheel Base and Axle Spacing	Iruck No.	I	Load C Axles Kips	3				Span-	Feet			
Feet	H	aı	\mathbf{a}_2	\mathbf{a}_3	10	20	30	40	50	60	80	100
	1	.10	.40	.50	.320	.470	.567	.637	.710	.762	.825	.862
L = 36	$\bar{2}$.10	.50	.40	.400	.552	.642	.689	.758	.802	.855	.886
X = 12	3	.10	.60	.30	.480	.638	.718	.754	.809	.844	.886	.910
X' = 12	4	.20	.40	.40	.320	.454	.537	.606	.692	.749	.817	.855
C = 8	5	.20	.50	.30_	.400	.538	.612	.682	.745	.792	.848	.881
	6	.10	.40	.50	.320	.470	.567	.613	.669	.728	.800	.842
L = 40	7	.10	.50	.40	.400	.552	.642	.683	.725	.775	.835	.869
X = 12 $X' = 16$	8	.10	.60	.30	.480	.638	.718	.754	.783	.823	.870	.898
C = 8	9	.20 .20	.40	.40	.320 $.400$.454 .538	.537	.606 $.682$.658 $.721$.721 .770	.796 .832	.839
<u> </u>	10		.50	30			.612					.868
*	11	.10	.40	.50	.320	.470	.567	.613	.644	.695	.775	.822
$ L = 44 \\ X = 12 $	12 13	.10	.50 .60	.40	.400 $.480$.552 .638	.642 $.718$.683 $.754$.710 .776	.747 $.802$.814	.853 .886
X = 12 X' = 20	14	.10 .20	.40	.30 .40	.320	.454	.718	.606	.650	.693	.855 .775	,822
$\hat{C} = 8$	15	.20	.50	.30	.400	.538	.612	.682	.721	.749	.816	.855
	16	.10	.40	.50	.320	.405	.493	.555	.630	.695	.775	.822
T 40	17	.10	.50	.40	.400	.506	.580	.636	.692	.747	.814	.853
$\begin{array}{c} L = 40 \\ X = 12 \end{array}$	18	.10	.60	.30	.480	.608	.670	.718	.757	.802	.855	.886
$\ddot{X}' = \ddot{1}\ddot{2}$	19	.20	.40	.40	.320	.405	.476	.557	.624	.693	.775	.822
C = 12	20	.20	.50	.30	.400	.506	.580	.648	.694	.749	.816	.855
	21	.10	.40	.50	.320	.405	.493	.555	.599	.663	.751	.802
L = 44	22	.10	.50	.40	.400	.506	.580	.636	.673	.720	.794	,837
X 12	23	.10	.60	.30	.480	.608	.670	.718	.748	.781	.839	.873
X' = 16 C = 12	24	.20	.40	.40	.320	.405	.476	.557	.612	.665	.754	.806
C = 12	25	.20	.50	.30	.400	.506	.580	.648	.694	.727	.801	.843
	26	.10	.40	.50	.320	.405	.493	.555	.599	.631	.726	.783
L = 48	27	.10	.50	.40	.400	.506	.580	.636	.673	.697	.774	.821
X = 12	28	.10	.60	.30	.480	.608	.670	.718	.748	.767	.824	.861
X' = 20 $C = 12$	29	.20	.40	.40	.320	.405	.476	.557	.612	.646	.734	.790
C = 12	30_	.20	.50	.30	.400	.506	.580	.648	.694	.723	.785	.830
	31	.10	.40	.50	.320	.470	.567	.637	.696	.746	.814	.853
L = 40	32	.10	.50	.40	.400	.552	.642	.676	.739	.787	.844	.877
X = 16	33	.10	.60	.30	.480	.638	.718	.736	.790	.829	.875	.902
X' = 12	34	.20 .20	.40	.40	.320	.454	.537	.576	.656	.719	.795	.838
C = 8	35		.50	.30	.400	.538	.612	.636	.709	.763	.827	.864
	36	.10	.40	.50	.320	.470	.567	.591	.651	.712	.788	.833
L = 44	37	.10	.50	.40	.400	.552	.642	.661	.705	.759	.823	.861
X = 16	38	.10	.60	.30	.480	.638	.718	.732	.764	.808	.859	.889
$ \begin{array}{c} \overline{X} = 16 \\ \overline{X}' = 16 \\ \overline{X} = 8 \end{array} $	39 40	.20 .20	.40 .50	$.40 \\ .30$.320 $.400$.454 .538	.537 .612	.564 .636	.621 .685	.690 $.741$.774 .811	.822 .851
$\mathbf{A} = 8$								The second second second				
T 45	41	.10	.40	.50	.320	.470	.567	.591	.627	.679	.763	.813
L = 48 $X = 16$	42 43	.10	.50 .60	.40	.400 .480	.552 .638	.642	.661	.692	.732	.803	.844
X = 16 X' = 20	44	.10 .20	.40	.30 .40	.480 .320	.638 .454	.718 .537	.732 .564	.758 .616	.786 .662	.844 .753	.877 .805
C = 8	45	.20	.50	.30	.400	.538	.612	.636	.685	.719	.795	.838
<u> </u>	- 30		.00		.400	.000	.014	000	.000	.110		.000

Table 10.	11 (C	ontini	ıed)									
	46	.10	.40	.50	.320	.405	.493	.549	.627	.679	.763	.813
L = 44	47	.10	.50	.40	.400	.506	.580	.615	.672	.732	.803	.844
X = 16	48	.10	.60	.30	.480	.608	.670	.695	.738	.786	.844	.877
X'=12	49	.20	.40	.40	.320	.405	.476	.514	.586	.662	.753	.895
C = 12	50	.20	.50	.30	.400	.506	.565	.590	.655	.719	.795	.838
	51	.10	.40	.50	.320	.405	.493	.537	.581	.647	.739	.793
L = 48	52	.10	.50	.40	.400	.506	.580	.615	.656	.704	.783	.828
X = 16	53	.10	.60	.30	.480	.608	.670	.695	.730	.765	.828	.865
X' = 16	54	.20	.40	.40	.320	.405	.476	.514	.578	.634	.732	.789
C = 12	55	.20	.50	.30	.400	.506	.565	.590	.640	.697	.779	.826
	56	.10	.40	.50	.320	.405	.493	.537	.581	.615	.715	.773
L = 52	57	.10	.50	.40		.506			.656			.812
X = 16					.400		.580	.615		.682	.763	
$\mathbf{X'} = \begin{array}{c} 16 \\ \mathbf{X'} = 20 \end{array}$	58	.10	.60	.30	.480	.608	.670	.695	.730	.753	.813	.852
	59	.20	.40	.40	.320	.405	.476	.514	.578	.618	.711	.772
C = 12	60	.20		.30	.400	.506	.565	.590	.640	.679	.763	.813
	61	.10	.40	.50	.320	.470	.567	.637	.696	.734	.803	.844
L = 44	62	.10	.50	.40	.400	.552	.642	.676	.724	.772	.833	.868
X = 20	63	.10	.60	.30	.480	.638	.718	.736	.772	.814	.864	.893
X'=12	64	.20	.40	.40	.320	.454	.537	.576	.623	.689	.773	.821
C = 8	65	.20	.50	.30	.400	.538	.612	.634	.674	.734	.806	.847
	66	.10	.40	.50	.320	.470	.567	.591	.651	.697	.777	.824
L = 48	67	.10	.50	.40	.400	.552	.642	.659	.692	.744	.812	.852
X = 20	68	.10	.60	.30	.480	.638	.718	.728	.747	.793	.849	.881
X' = 16	69	.20	.40	.40	.320	.454	.537	.556	.592	.660	.752	.804
C ⇒ 8	70	.20	.50	.30	.400	.538	.612	.624	.649	.712	.789	.834
	71	.10	.40	.50	.320	.470	.567	.591	.609	.663	.752	.804
L = 52	72	.10	.50	.40	.400	.552	.642	.659	.675	.716	.792	.836
X = 20	73	.10	.60	.30	.480	.638	.718	.728	.741	.771	.833	.868
X' = 20	74	.20	.40	.40	.320	,454	,537	.556	.584	.632	.731	.788
C == 8	75	.20	.50	.30	.400	.538	.612	.624	.649	.690	.773	.821
	76	.10	.40	.50	.320	.405	.493	.549	.627	.677	.753	.804
L = 48	77	.10	.50	.40	.400	.506	.580	.615	.661	.716	.792	.836
$\ddot{X} = 20$	78	.10	.60	.30	.480	.608	.670	.694	.723	.771	.833	.868
X'=12	79	.20	.40	.40	.320	.405	.476	.512	.562	.632	.731	.788
C = 12	80	.20	.50	.30	.400	.506	.565	.590	.622	.690	.773	.821
	81	.10	.40	.50	.320	.405	.493	.537	.580	.639	.727	.784
L = 52	82	.10	.50	.40	.400	.506	.580	.615	.638	.689	.771	.819
$\ddot{\mathbf{x}} = \ddot{\mathbf{z}}$	83	.10	.60	.30	.480	.608	.670	.694	.713	.750	.817	.856
X' = 16	84	.20	.40	.40	.320	.405	.476	.512	.544	.603	.710	.771
$\hat{C} = 12$	85	.20	.50	.30	.400	.506	.565	.590	.622	.667	.757	.809
0 - 12												
L = 56	86 87	.10 .10	.40 .50	.50	.320 .400	.405 .506	.493 .580	.537 .615	.563 .638	.602 .668	.703 .751	.764
X = 20	88	.10	.60	.30	.480	.608	.670	.613	.038	.738	.802	.803 .843
X' = 20 X' = 20	89	.10	.40	.40	.320	.405	.476	.512	.544	.738	.689	.755
C = 12	90	.20	.50	.30	.400	.506	.565	.512	.622	.664	.689	.796
c = 12	90	.20	.00	.30	.400	.000	.000	.590	.024	.004	. : 41	.790

Table 10.12

SUMMARY OF EQUIVALENT H TRUCK LOADINGS IN SIMPLE SPANS PRODUCED BY TYPE 3-3 TRUCKS WEIGHING ONE KIP EACH



Ninety variations in the Type 3-3 truck are given in this Table. Each truck number, from 1 to 90, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

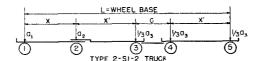
All dimensions are in feet.

Equivalent H truck loadings are in kips.

Wheel Base and Axle Spacing	Truck No.		Load (Axle Kips	S				Span-	Feet			
Feet	Ē	a ₁	\mathbf{a}_2	83	10	20	30	40	50	60	80	100
	1	.10	.30	.60	.320	.454	.537	.569	.642	.700	.780	.827
L = 40	2	.10	.40	.50	.320	.405	.466	.528	.617	.685	.767	.815
X = 12	3	.10	.50	.40	.400 $.267$.506 .377	$.560 \\ .447$.607 .490	.681 .560	.738	.808	.848
$X' = 8 \\ C = 12$	4 5	.20	.30 .40	.50 .40	.320	.405	.476	.540	.613	.635 $.683$.732 .768	.788 .817
0 = 12	- 6	10	.30	60	.320	.405	.476	.512	.571	.639	.736	792
L = 44	7	.10	.40	.50	.320	.405	.466	.517	.547	.642	.735	.789
X = 12	8	.10	.50	.40	.400	,506	.560	.606	.643	.703	.781	.826
$\ddot{\mathbf{X}}' = \ddot{1}\ddot{2}$	9	.20	.30	.50	.267	.338	.396	.444	.500	.584	.693	.757
C = 12	10	.20	.40	.40	.320	.405	.476	.540	.584	.647	.741	.795
	11	.10	.30	.60	.320	.405	.424	.469	.503	.565	.682	.749
L = 48	12	.10	.40	.50	.320	.405	.466	.517	.551	.600	.703	.763
X = 12	13	.10	.50	.40	.400	.506	.560	.606	.635	.668	.754	.805
$X' \equiv 16$ $C \equiv 12$	14	.20	.30	.50	.267	.338	.374	.444	.494	.541	.661	.731
C = 12	15	.20	.40	.40	.320	.405	.476	.540	.584	.612	.714	.774
	16	.10	.30	.60	.320	.454	.537	.556	.589	.646	.739	.794
$ L = 44 \\ X = 12 $	17 18	.10 .10	.40 .50	.50 .40	$.320 \\ .400$.405 .506	.447 .552	.478 .574	.545 $.620$.621 .685	.719 .768	.776 .816
X = 12 X' = 8	19	.20	,30	.50	.267	.377	.552	.463	.508	.567	.680	.746
$\overset{\mathbf{A}}{\mathbf{C}} = \overset{\circ}{16}$	20	.20	.40	.40	.320	.405	.476	.512	.560	.629	.727	.785
	21	.10	.30	.60	320	.405	.476	.512	.532	.587	.694	.759
L = 48	22	.10	.40	.50	.820	.405	.447	.478	.521	.580	.687	.751
$\tilde{\mathbf{x}} = 12$	23	.10	.50	.40	.400	.506	.552	.574	.610	.651	.741	.795
$ \begin{array}{l} X = 12 \\ X' = 12 \end{array} $	24	.20	.30	.50	.267	.338	.396	.426	.465	.520	.645	.718
C = 16	25	.20	.40	.40	.230	.405	.476	.512	.560	.593	.701	.763
	26	.10	.30	.60	.320	.405	.424	.469	.498	.529	.650	.724
L = 52 $ X = 12$	27	.10	.40	.50	.320	.405	.447	.478	.521	.548	.656	.726
X = 12	28	.10	.50	.40	.400	.506	552	.574	.610	.633	.716	.774
X' = 16	29	.20	.30	.50	.267	.338	.374	.409	.465	.502	.614	.693
C = 16	30	.20	.40	.40	.320	.405	.476	.512	.560	.592	.674	742
T 44	31	.10	.30	.60	.320	.454	.537	.569	.642	.689	.770	.818
$egin{array}{c} L=44 \ X=16 \end{array}$	32 33	.10	.40 .50	.50	.320 $.400$.405 $.506$.466	.528	.612	.668	.755	.806
$\hat{\mathbf{v}}' = \hat{\mathbf{v}}$	34	.20	.30	.40 .50	.267	.377	.560 $.447$.592 $.490$.661 .560	.722 $.605$.796 .709	.839 $.769$
X' = 8 $C = 12$	35	.20	.40	.40	.320	.405	.456	.493	.575	.652	.746	.799
	36	.10	.30	.60	.320	.405	.476	.512	.571	.631	.725	784
L = 48	37	.10	.40	.50	.320	.405	.466	.495	.550	.625	.723	.780
$\bar{x} = 16$	38	.10	.50	.40	.400	.506	.560	.584	.624	.687	.769	.817
X = 16 $X' = 12$	39	.20	.30	.50	.267	.338	.396	.426	.500	.555	.670	.739
C = 12	40	.20	.40	.40	.320	.405	.456	.493	.548	.615	.718	.778
	41	.10	.30	.60	.320	.405	.424	.469	.503	.575	.682	.749
L = 52	42	.10	.40	.50	.320	.405	.466	.495	.533	.583	.691	.754
X = 16	43	.10	.50	.40	.400	.506	.560	. 584	.617	.651	.743	.796
X' = 16	44	.20	.30	.50	.267	.338	.363	.397	.458	.508	.637	.713
C = 12	45	.20	.40	.40	.320	.405	.456	.493	.548	.582	.691	.756

Table 10.	12 (C	ontini	aed)									
$L \equiv 48$	46 47	.10	.30	.60 .50	.320 .320	.454 .405	.537	.556 .463	.589 .545	.646	.729	.786 .767
V — 16	48	.10	.50	.40	.400	.506	.530	.553	.601	.669	.756	.807
$\begin{array}{c} \mathbf{X} = 16 \\ \mathbf{X'} = 8 \end{array}$	49	.20	.30	.50	.267	.377	.447	,463	.508	.562	.661	.730
$\stackrel{\mathbf{a}}{\mathbf{c}} \equiv \stackrel{\mathbf{c}}{\mathbf{c}}$	50	.20	.40	.40	.320	.405	.424	.469	.524	.597	.705	.767
0 = 10	51	.10	.30	.60	.320	.405	.476	.512	.532	.587	.684	.751
L = 52	52	.10	.40	.50	.320	.405	.424	.459	.503	.563	.675	.741
X - 16	53	.10	.50	.40	.400	.506	.530	.553	.593	.634	.730	.786
X = 16 $X' = 12$	54	.20	.30	.50	.267	.338	.396	.426	.446	.511	.621	.700
C = 16	55	.20	.40	.40	.320	.405	.424	.469	.524	.563	.678	.745
	56	.10	.30	.60	,320	.405	.424	.469	.498	.529	.639	.716
L = 56	57	.10	.40	.50	.320	.405	.424	.459	.503	.533	.644	.716
$egin{array}{c} X = 16 \ X' = 16 \end{array}$	58	.10	.50	.40	.400	.506	.530	.553	.593	.619	.704	.765
	59	.20	.30	.50	.267	.338	.353	.391	.428	.472	.589	.674
C = 16	60	.20	.40	.40	.320	.405	.424	.469	.524	.562	.651	.724
	61	.10	.30	.60	.320	.454	.537	.569	.642	.689	.759	.816
L = 48	62	.10	.40	.50	.320	.405	.466	.528	.612	.664	.744	.797
X = 20 $X' = 8$	63	.10	.50	.40	.400	.506	.560	.592	.651	.707	.785	.830
X' = 8	64	.20	.30	.50	.267	.377	.447	.490	.560	.604	.689	.753
C = 12	65	.20	.40	.40	.320	.405	.456	.491	.552	.622	.724	.782
	66	.10	.30	.60	.320	.495	.476	.512	.571	.631	.715	.775
L = 52	67	.10	.40	.50	.320	.405	.466	.495	.550	.614	.711	.771
X = 20	68	.10	.50	.40	.400	.506	.560	.582	.610	.671	.758	.809
X' = 12	69	.20	.30	.50	.267	.338	.396	.426	.500	.555	.650	.723
C = 12	70	.20	.40	.40	.320	.405	.456	.479	.512	.584	.696	.760
	71	.10	.30	.60	.320	.405	.424	.469	.503	.575	.671	.741
L = 56	72	.10	.40	.50	.320	.405	.466	.495	.516	.567	.679	.745
$\begin{array}{c} X=20 \\ X'=16 \end{array}$	73	.10	.50	.40	.400	.506	.560	.582	.600	.635	.731	.787
X' = 16	74	.20	.30	.50	.267	.338	.363	.392	.442	.507	.614	.695
C = 12	75	.20	.40	.40	.320	.405	.456	.479	.512	.553	.668	.738
	76	.10	.30	.60	.320	.454	.537	.556	.589	.646	.719	.778
L = 52	77	.10	.40	.50	.320	.405	.447	.463	.545	.609	.695	.758
$\begin{array}{c} X = 20 \\ X' = 8 \end{array}$	78	.10	.50	.40	.400	.506	.530	.553	.591	.653	.744	.798
X' = 8	79	.20	.30	.50	.267	.377	.447	.463	.508	.562	.642	.715
C = 16	80	.20	.40	.40	.320	.405	.424	.449	.493	.566	.682	.749
	81	.10	.30	.60	.320	.405	.476	.512	.532	.587	.674	.742
L = 56	82	.10	.40	.50	.320	.405	.424	.459	.485	.557	.663	.732
$egin{array}{c} X = 20 \ X' = 12 \end{array}$	83	.10	.50	.40	.400	.506	.530	.553	.575	.618	.718	.777
	84	.20	.30	.50	.267	.338	.396	.426	.446	.511	.602	.684
C = 16	85	.20	.40	.40	.320	.405	.424	.449	.488	.533	.655	.727
T 60	86	.10	.30	.60	.320	.405	.424	.469	.498	.529	.629	.708
L = 60	87	.10	.40	.50	.320	.405	.424	.459	.485	.519	.632	.707
X = 20	88	.10	.50	.40	.400	.506	.530	.553	.575	.604	.692	.756
X'=16	89	.20	.30	.50	.267	.338	.353	.391	.415	.462	.566	.656
C = 16	90	.20	.40	.40	.320	.405	.424	.449	.488	.533	.628	.706

SUMMARY OF EQUIVALENT H TRUCK LOADINGS IN SIMPLE SPANS



PRODUCED BY TYPE 2-S1-2 TRUCKS WEIGHING ONE KIP EACH

Ninety six variations in the Type 2-S1-2 truck are given in this Table. Each truck number, from 1 to 96, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

All dimensions are in feet.

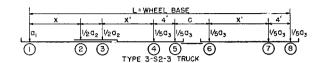
a1, a2, and a3-Represent the ratio of gross vehicle weight on axles.

Wheel Base and Axle Spacing	Truck No.	Load On Axles Kips						Span-	Feet			
Feet	H	a ₁	\mathbf{a}_2	\mathbf{a}_3	10	20	30	40	50	60	80	100
	1	.10	.20	.70	.293	.374	.512	.598	.682	.740	.810	.850
$\ddot{x} = \ddot{s}$	2	.10	.30	.60	.375	.408	.506	.578	.673	.734	.805	.847
X' = 10	3	.20	.20	.60	.250	.320	.438	.532	.637	.704	.784	.830
$ \begin{array}{c} L = 36 \\ X = 8 \\ X' = 10 \\ C = 8 \end{array} $	4	.20	.30	.50	.375	.441	.546	.669	.659	.717	.790	.833
L = 40	5	.10	.20	.70	.293	.374	.475	.547	.634	.701	.781	.827
$\bar{x} = 8$	6	.10	.30	.60	.375	.405	.476	.537	.619	.689	.773	.821
X = 8 $X' = 12$	7	.20	.20	.60	.250	.320	.407	.483	.584	.660	.752	.804
C = 8	8	.20	.30	.50	.375	.441	.519	.575	.631	.675	.758	.807
L = 44	9	.10	.20	.70	.293	.374	.440	.515	.587	.661	.752	.805
X = 8	10	.10	.30	.60	.375	.405	.447	.499	.566	.646	.741	.796
X'=14	11	.20	.20	.60	.250	.320	.376	.445	.530	.617	.720	.779
C = 8	12	.20	.30	.50	.375	.441	.493	.544	.604	.645	.727	.782
L = 48	13	.10	.20	.70	.293	.374	.427	.490	.548	.622	.724	.782
X = 8	14	.10	.30	.60	.375	.405	.424	.469	.532	.602	.709	.771
X'=16	15	.20	.20	.60	.250	.320	.365	.419	.490	.573	.688	.754
C = 8	16	.20	.30	.50_	.375	.441	.485	.525	.578	.623	.696	.757
L = 52	17	.10	.20	.70	.293	.374	.427	.465	.517	.583	.695	.760
X = 8 $X' = 18$	18	.10	.30	.60	.375	.405	.424	.449	.503	.558	.677	.745
X' = 18	19	.20	.20	.60	.250	.320	.365	.398	.460	.529	.656	.729
C = 8	20	.20	30	.50	.375	.441	.485	.507	.552	.601	.666	.732
L = 56	21	.10	.20	.70	.293	.374	.427	.440	.498	.548	.666	.737
X = 8	22	.10	.30	.60	.375	.405	.424	.429	.474	.528	.645	.720
X' = 20	23	.20	.20	.60	.250	.320	.365	.377	.431	.494	.624	.703
C = 8	24	.20	.30	.50	.375	.441	.485	.489	.529	.580	.645	.708
L = 60	25	.10	.20	.70	.293	.374	.427	.438	.479	.518	.638	.714
X = 8	26	.10	.30	.60	.375	.405	.424	.417	.450	.505	.613	.695
X'= 22	27	.20	.20	.60	.250	.320	.365	.375	.410	.470	.592	.678
C = 8	28	.20	.30	.50	.375	.441	.485	.489	.515	.559	.629	.684
L = 64	29	.10	.20	.70	.293	.374	.427	.438	.460	.503	.609	.692
X = 8	30	.10	.30	.60	.375	.405	.424	.417	.434	.481	.581	.670
X'=24	31	.20	.20	.60	.250	.320	.365	.375	.394	.446	.560	.653
C = 8	32	.20	.30	.50	.375	.441	.485	.489	.501	.538	.613	.660
L = 40	33	.10	.20	.70	.293	.374	.512	.598	.665	.725	.799	.841
X = 12	34	.10	.30	.60	.375	.400	.482	.570	.655	.719	.795	.838
X' = 10	35	.20	.20	.60	.250	.320	.438	.518	.602	.675	.763	.813
C = 8	36	.20	.30	.50	.375	.394	.482	.559	.621	.685	.767	.815
L = 44	37	.10	.20	.70	.293	.374	.475	.547	.626	.685	.770	.819
X = 12 $X' = 12$	38	.10	.30	.60	.375	.375	.441	.513	.602	.675	.762	.813
X'=12	39	.20	.20	.60	.250	.320	.407	.472	.549	.632	.731	.788
C = 8	40	.20	.30	.50	.375	.375	.455	.524	.593	.642	.734	.789
L = 48	41	.10	.20	.70	.293	.374	.440	.515	.587	.644	.689	.755
X = 12	42	.10	.30	.60	.375	.375	.411	.481	.554	.631	.730	.788
X'=14 $C=8$	43	.20	.20	.60	.250	.320	.376	.441	.508	.588	.699	.762 .763
U = 8	44	.20	.30	.50	.375	.375	.429	.497	.565	.613	.703	.103

Table 10.1	13 (C	ontint	ıed)									
L = 52	45	.10	.20	.70	.293	.374	.427	.490	.548	.612	.713	.774
$\ddot{X} = 12$	46	.10	.30	.60	.375	.375	.394	.450	.511	.587	.698	.762
X' = 16	47	.20	.20	.60	.250	.320	.365	.419	.473	.545	.667	.737
C = 8	48	.20	.30	.50	.375	.375	.429	.478	.538	.591	.671	.738
L = 56 $X = 12$	49	.10	.20	.70	.293	.374	.427	.465	.517	.580	.684	.751
X = 12	50	.10	.30	.60	.375	.375	.394	.423	.481	.544	.666	.737
X' = 18	51	.20	.20	.60	.250	.320	.365	.398	.443	.503	.635	.712
C = 8	52	.20	30	.50_	.375	.375	.429	.459	.511	.569	.641	.713
L = 60 $X = 12$	53 54	.10	.20	.70 .60	.293 .375	.374 $.375$.427 $.394$.440 $.403$.498 .457	.548 .511	.655 $.634$.728 .712
$\mathbf{X'} = \frac{12}{20}$	55	.10 .20	.20	.60	.250	.320	.365	.377	,426	.473	.603	.687
$\hat{c} = \frac{20}{8}$	56	.20	.30	.50	.375	.375	.429	.448	.491	.547	.622	.688
L = 64	57	.10	.20	.70	.293	.374	.427	.438	.479	.518	.627	.706
X = 12	58	.10	.30	.60	.375	.375	.394	.396	.434	.487	.602	.686
$\ddot{\mathbf{X}}' = \ddot{2}\ddot{2}$	59	.20	.20	.60	.250	.320	.365	.375	.410	.446	.571	.662
C = 8	60	.20	.30	.50	.375	.375	.429	.448	.477	.525	.606	.664
L = 68	61	.10	.20	.70	.293	.374	.427	.438	.460	,503	.598	.683
X = 12	62	.10	.30	.60	.375	.375	.394	.396	.414	.464	.570	.661
X'=24	63	.20	.20	.60	.250	.320	.365	.375	.394	.431	.540	.637
C = 8	64	.20	.30	.50	.375	.375	.429	.448	.463	.504	.590	.640
L = 56	65	.10	.20	.70	.293	.374	.427	.490	.548	.612	.702	.765
X = 16 $X' = 16$	66	.10	.30	.60	.375	.375	.376	.450	.508	.580	.688	.754
X' = 16 C = 8	67	.20	.20	.60 .50	.250	.320	.365	.419	.473	.532	.646	.721
	68	.20_	.30_		.375	.375	.376	.432	.499	.559	.647	.719
L = 60 $X = 16$	69 70	.10 .10	.20 $.30$.70 .60	0.75	.271	.497	.465	.517	.580	.673	.742 .729
X = 16 X' = 18	71	.20	.20	.60	.375 $.250$.375 .320	.365 $.365$.420 .398	.481 .443	.543 $.503$.656 .614	.696
$\hat{c} = 18$	72	.20	.30	.50	.375	.375	.376	.412	.472	.537	.616	.694
L = 64	73	.10	.20	.70	.293	.374	.427	.448	.498	.548	.645	.720
	74	.10	.30	.60	.375	.375	.365	.390	.457	.507	.624	.703
X = 16 $X' = 20$	75	.20	.20	.60	.250	.320	.365	.377	.426	.473	.583	.671
C = 8	76	.20	.30	.50	.375	.375	.376	.408	.455	.515	.599	.669
L = 68	77	.10	.20	.70	.293	.374	.427	.438	.479	.518	.619	.697
X = 16 $X' = 22$	78	.10	.30	.60	.375	.375	.365	.375	.434	.480	.592	.678
	79	.20	.20	.60	.250	.320	.365	.375	.410	.444	.551	.646
c = 8	80	.20	30	.50	.375	.375	.376	.408	440	.493	582	.645
L = 72	81	.10	.20	.70	.293	.374	.427	.438	.460	.503	.596	.675
X = 16 $X' = 24$	82 83	.10	.30	.60	.375	.375	.365	.375	.411	.461 .431	.560	.653
$\hat{\mathbf{C}} = 24$ $\hat{\mathbf{C}} = 8$	84	.20 .20	.20 .30	.60 .50	.250 $.375$.320 .375	.365 .376	.375 $.408$.394 $.427$.431	.519 .5 66	.621 .621
L = 76	85	.10	.20		.293	.374	.427	.438	.444	.487	.572	.652
X = 76 X = 16	86 86	.10	.20	.70 .60	.293	.374	.365	.438 .375	.388	.487	.572	.628
$\mathbf{X'} = 26$	87	.20	.20	.60	.250	.320	.365	.375	.380	.417	.496	.596
C = 8	88	.20	.30	.50	.375	.375	.376	.408	.427	.458	.550	.608
L = 80	89	,10	.20	.70	.293	.374	.427	.438	.444	.472	.549	.630
X = 16	90	.10	.30	.60	.375	.375	.365	.375	.380	.424	.505	.603
X' = 28	91	.20	.20	.60	.250	.320	.365	.375	.380	.404	.475	.571
C = 8	92	.20	.30	.50	.375	.375	.376	.408	.427	.446	.534	.596
L = 84	93	.10	.20	.70	.293	.374	.427	.438	.444	.457	.526	.607
X = 16	94	.10	.30	.60	.375	.375	.365	.375	.380	.405	.481	.578
X' = 30 C = 8	95 96	.20 .20	.20 .30	.60 .50	.250 .375	.320 .375	.365 .376	.375 .408	.380 .427	.391 .439	.453 .518	.546 .583
<u> </u>	90	.20	.00	.00	.515	.010	.510	.400	,421	.409	.010	.000

Table 10.14

SUMMARY OF EQUIVALENT H TRUCK LOADINGS IN SIMPLE SPANS PRODUCED BY TYPE 3-S2-3 TRUCKS WEIGHING ONE KIP EACH



Eighty four variations in the Type 3-S2-3 truck are given in this Table. Each truck number, from 1 to 84, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

All dimensions are in feet.

a1, a2, and a3-Represent the ratio of gross vehicle weight on axles.

Wheel Base and Axle Spacing	Truck No.]	Load C Axles Kips	5				Span-	Feet			
Feet	Ţ	aı	\mathbf{a}_2	\mathbf{a}_3	10	20	30	40	50	60	80	100
L = 44	1	.05	.20	.75	.240	.340	.434	.528	.622	.691	.774	.822
X = 8	2	.05	.30	.65	.240	.334	.438	.508	.600	.673	.761	.812
X' = 8	3	.10	.20	.70	.224	.318	.411	.497	.587	.663	.754	.806
C = 8	4	.10	.30	.60	.240	.331	.439	.506	.577	.654	.747	.801
L = 48	5	.05	.20	.75	.240	.340	.411	.486	.578	.650	.744	.799
X = 8 $X' = 10$	6 7	$.05 \\ .10$.30 .20	$.65 \\ .70$.240 $.224$.313 .318	.400 .385	.472 .454	.548 .544	.629 $.621$.729 $.723$.786 $.782$
C = 8	8	.10	.30	.60	.240	.325	.401	.471	.532	.607	.713	.773
L = 52	9	.05		.75	.240	.340	.403	.452	.534	.610	.715	.775
X = 82	10	.05	.30	.65	.240	.313	.363	.439	.501	.584	.696	.760
X' = 12	11	.10	.20	.70	.224	.318	.376	.426	.501	.578	.692	.757
$\ddot{c} = 18$	12	.10	.30	.60	.240	.325	.373	.444	.504	.560	.678	.746
L = 56	13	.05	.20	.75	.240	.340	.403	.430	.493	.573	.685	.752
X = 8	14	.05	.30	.65	.240	.313	.349	.408	.473	.539	.663	.735
X' = 14	15	.10	.20	.70	.224	.318	.376	.403	.461	.539	.660	.732
C = 8	16	.10	.30	.60	.240	.325	.373	.419	.475	.526	.643	.719
L = 60	17	.05	.20	.75	.240	.340	.403	.419	.468	.537	.656	.729
$\mathbf{x} = 8$	18	.05	.30	.65	.240	.313	.349	.380	.446	.498	.630	.709
X' = 16	19	.10	.20	.70	.224	.318	.376	.391	.437	.504	.629	.708
C = 8	20	.10	.30	.60	.240	.325	.373	.393	.448	.502	.609	.692
L = 64	21	.05	.20	.75	.240	.340	.403	.417	.444	.501	.627	.706
$\begin{array}{c} X = 8 \\ X' \equiv 18 \end{array}$	22	.05	.30	.65	.240	.313	.349	.361	.422	.475	.598	.683
C = 8	$\frac{23}{24}$	$.10 \\ .10$.20 .30	.70 .60	.224 $.240$.318 $.325$.376 $.373$.389 $.382$.418 .428	.469 $.480$.598 .575	.683 $.665$
$ \begin{array}{c} L = 68 \\ X = 8 \end{array} $	25 26	.05	.20 .30	.75 $.65$.240 $.240$.340 $.313$.403 .349	.417 .361	.431 .398	.478 .453	.597	.682 .657
X = 8 $X' = 20$	27	$.05 \\ .10$.20	.70	.224	.318	.349	.389	.403	.446	.565 $.567$.659
$C = \frac{20}{8}$	28	.10	.30	.60	.240	.325	.373	.382	.409	.457	.540	.638
L = 48	29	.05	.20	.75	.240	.340	.434	.528	.622	.683	.768	.817
X = 12	30	.05	.30	.65	.240	.334	.431	.507	.598	.666	.756	.808
$\mathbf{X'} = 8$	31	.10	.20	.70	.224	.318	.411	.497	.587	.648	.743	.798
$\ddot{c} = \ddot{s}$	32	.10	.30	.60	.240	.331	.422	.481	.563	.639	.736	.792
L = 52	33	.05	.20	.75	.240	.340	.411	.486	.578	.646	.739	.794
X = 12	34	.05	.30	.65	.240	.304	.395	.472	.548	.622	.723	.782
$X' \equiv 10$ $C \equiv 8$	35	.10	.20	.70	.224	.318	.385	.454	.544	.609	.712	.773
C = 8	36	.10	.30	.60	.240	.304	.388	.447	.515	.592	.702	.765
L = 56	37	.05	.20	.75	.240	.340	.403	.452	.534	.609	.709	.771
X = 12	38	.05	.30	.65	.240	.304	.360	.439	.499	.580	.691	.756
X' = 12	39	.10	.20	.70	.224	318	.376	.426	.501	.574	.681	.749
C = 8	40	.10	.30	.60	.240	.304	.355	.420	.484	.546	.667	.738
L = 60	41	.05	.20	.75	.240	.340	.403	.430	.493	.573	.680	.748
X = 12	42	.05	.30	.65	.240	.304	.349	.408	.470	.539	.658	.730
X' = 14 $C = 8$	43 44	.10	.20	.70	.224	.318	.376	.403	.461	.539	.650	.724
C == 8	44	.10	.30	.60	.240	.304	.342	.394	.455	.509	.633	.710

Table 19.	14 (0	ontini	ied)									
$egin{array}{l} L = 64 \ X \equiv 12 \ X' \equiv 16 \ \end{array}$	45 46 47	.05 .05	.20 .30 .20	.75 .65 .70	.240 .240 .224	.340 .304 .318	.403 .349 .376	.419 .377 .391	.468 .446 .437	.537 .498 .504	.650 .625 .619	.724 .705 .699
C = 8	48	.10	.30	.60	.240	.304	.342	.368	.429	.486	.598	.683
L = 68	49 50	.05 .05	.20 .30	.75 .65	.240 .240	.340 .304	.403 .349	.417 .361	.444 .422	.501 .470	.621 .592	.701 .679
X = 12 $X' = 18$	51	.10	.20	.70	.224	.318	.376	.389	.418	.469	.587	.675
C = 8	52	.10	.30	,60	.240	.304	.342	.359	.409	.463	.564	.656
$egin{array}{l} L \equiv 72 \ X \equiv 12 \end{array}$	53 54	$.05 \\ .05$.20 .30	.75 .65	.240 $.240$.340 $.304$	$.403 \\ .349$.417 $.361$.431 $.398$.478 .450	.594 $.560$.678 $.653$
$X' = \frac{12}{20}$	55	.10	.20	.70	.224	.318	.376	.389	.403	.446	.559	.650
$\ddot{c} = \ddot{s}$	56	.10	.30	.60	.240	.304	.342	.359	.389	.440	.529	.629
L = 60	57	.05	.20	.75	.240	.340	.403	.452	.534	.609	.704	.767
X = 16	58	.05	.30	.65	.240	.304	.360	.439	.499	.580	.685	.752
X' = 12	59	.10	.20	.70	.224	.318	.376	.426	.501	.574	.670	.740
C = 8	60	.10	.30	.60	.240	.304	.355	.415	.471	.546	.656	.729
L = 64	61	.05	.20	.75	.240	.340	.403	.430	.493	.573	.674	.743
X = 16	62	.05	.30	.65	.240	.304	.349	.408	.470	.539	.653	.726
X' = 14	63	.10	.20	.70	.224	.318	.376	.403	.461	.539	.639	.716
C = 8	64	.10	.30	.60	.240	.304	.330	.384	.445	.506	.622	.702
L = 68	65	.05	.20	.75	.240	.340	.403	.419	.468	.537	.647	.720
$\begin{array}{c} X = 16 \\ X' = 16 \end{array}$	66 67	.05 .10	.30	.65	.240	.304	.349	.377	.446	.498	.620 .610	.700 .691
C = 8	68	.10	.20 .30	.70 .60	.224 $.240$.318 $.304$.376 $.322$.391 $.358$.437 $.420$.504 $.469$.587	.675
L = 72 $X = 16$	69 70	$.05 \\ .05$.20 .30	.75	.240	.340	.403	.417	.444	.501	.621 .590	.697 .675
X' = 16 X' = 18	71	.10	.20	.65 .70	.240 $.224$.304 .318	.349 .376	.361 $.389$.422 .418	.470 .469	.584	.666
$\hat{C} = \frac{18}{8}$	72	.10	.30	.60	.244	.304	.322	.337	.396	.446	.554	.648
L = 76	73	.05	.20	.75	.240	.340	.403	.417	.431	.478	.594	.674
$\ddot{X} = 16$	74	.05	.30	.65	.240	.304	.349	.361	.398	.450	.560	.649
$\ddot{\mathbf{X}}' = \ddot{20}$	75	.10	.20	.70	.224	.318	.376	.389	.403	.446	.559	.642
C = 8	76	.10	.30	.60	.240	.304	.322	.337	.373	.428	.525	.621
L = 80	77	.05	.20	.75	.240	.340	,403	.417	.425	.458	.567	.650
X = 16	78	.05	.30	.65	.240	.304	.349	.361	.375	.430	.529	.623
X'=22	79	.10	.20	.70	.224	.318	.376	.389	.396	.428	.533	.617
C = 8	80	.10	.30	60	.240	.304	.322	.337	.351	.405	.496	.594
L = 84	81	.05	.20	.75	.240	.340	.403	.417	.425	.440	.541	.627
X = 16	82	.05	.30	.65	.240	.304	.349	.361	.368	.411	.499	.597
X' = 24	83	.10	.20	.70	.224	.318	.376	.389	.396	.414	.508	.593
C = 8	84	.10	.30	.60	.240	.304	.322	.337	.351	.386	.477	.567

11. GROSS LOAD REQUIRED FOR VARIOUS TRUCK TYPES AND LOAD-INGS TO PRODUCE SAME MOMENT AS STANDARD H TRUCK OF UNIT WEIGHT ON SIMPLE SPAN BRIDGES

Tables 11.1-11.14 give the gross load on each of the 1303 variants of the 14 heavy vehicle types shown in the identification index Tables 6.1-6.14 on simple spans of 10, 20, 30, 40, 50, 60, 80, and 100 feet in length that would be required to produce the same maximum moment as that produced on the span under consideration by a standard H truck weighing one kip. It will be noted that the values given by Tables 11.1-11.14 are the reciprocals of the corresponding values shown in Tables 10.1-10.14.

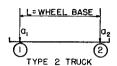
The table number corresponding to each of the 14 heavy vehicle types shown in Figure 6.1 is as follows:

Table No.	Vehicle Type	Table No.	Vehicle Type
11.1	2	11.8	3 S3
11.2	3	11.9	2-2
11.3	2-S1	11.10	2-3
11.4	2-S2	11.11	3-2
11.5	2-S3	11.12	3-3
11.6	3-S1	11.13	2-S1-2
11.7	3-S2	11.14	3-S2-3

The use of Tables 11.1-11.14 for determining the gross load required on a particular vehicle such that it will produce the same moment on a given span as an H truck of given designation is given in Article 5.

Table 11.1

SUMMARY OF GROSS LOADS REQUIRED FOR TYPE 2 TRUCKS TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS A STANDARD H TRUCK WEIGHING ONE KIP



Thirty-six variations in the Type 2 truck are given in this Table. Each truck number, from 1 to 36, represents a different combination of wheel base length, and ratios of gross vehicle weight on each axle.

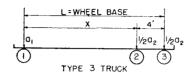
All dimensions are in feet.

Gross loads are in kips.

Wheel Base	Truck No.	A	id On cles ips				Span-F	eet			
Feet	4	aı	82	10	20	30	40	50	60	80	100
	1	.45	.55	1.453	1.332	1.138	1.098	1.076	1.063	1.046	1.036
	2	.40	.60	1.333	1.250	1.094	1.067	1.053	1.043	1.032	1.026
L = 10	3	.35	.65	1.230	1.175	1.054	1.038	1.030	1.025	1.018	1.014
D 10	4	.30	.70	1.143	1.107	1.015	1.011	1.008	1.007	1.005	1.004
	5	.25	.75	1.066	1.045	.978	.984	.987	.989	.992	.994
	6	.20	.80	1.000	.987	.943	.915	.967	.978	.979	.983
	7	.45	.55	1.453	1.453	1.222	1.156	1.120	1.098	1.071	1.056
	8	.40	.60	1.333	1.333	1.166	1.117	1.089	1.073	1.054	1.043
L = 12	9	.35	.65	1.230	1.230	1.111	1.080	1.062	1.052	1.037	1.030
	10	.30	.70	1,143	1,143	1.062	1.044	1.035	1.029	1.021	1.016
	11	.25	.75	1.066	1.066	1.015	1.011	1.008	1.007	1.005	1.004
	12	.20	.80	1.000	1.000	.971	.978	.983	.986	.989	.992
	13	.45	.55	1.453	1.453	1.318	1.218	1.167	1.134	1.098	1.076
	14	.40	.60	1.333	1.333	1.242	1.170	1.130	1.106	1.076	1.060
L = 14	15	.35	.65	1.230	1.230	1.174	1.124	1.095	1.078	1.056	1.045
	16	.30	.70	1.143	1.143	1.111	1.080	1.062	1.052	1.037	1.030
	17	.25	.75	1.066	1.066	1.054	1.038	1.030	1.025	1.018	1.014
	18	.20	.80	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	19	.45	.55	1.453	1.453	1.422	1.287	1.217	1.174	1.125	1.096
	20	.40	.60	1.333	1.333	1.328	1.225	1.172	1.139	1.100	1.079
L = 16	21	.35	.65	1.230	1.230	1.242	1,170	1.130	1.106	1.076	1.060
	22	.30	.70	1.143	1.143	1.166	1.117	1.089	1.073	1.054	1.043
	23	.25	.75	1.066	1.066	1.094	1.067	1.053	1.043	1.032	1.026
	24	.20	.80	1.000	1.000	1.028	1.021	1.017	1.014	1.010	1.008
	25	.45	.55	1,453	1.453	1.495	1.361	1.269	1.215	1.152	1.119
	26	.40	.60	1.333	1.333	1.370	1.287	1.217	1.174	1.125	1.096
L = 18	27	.35	.65	1.230	1.230	1.264	1.218	1.167	1.134	1.098	1.076
	28	.30	.70	1.143	1.143	1.174	1.156	1.120	1.098	1.071	1.056
	29	.25	.75	1.066	1.066	1.096	1.098	1.076	1.063	1.046	1.036
	30	.20	.80	1.000	1.000	1.028	1.044	1.035	1.029	1.021	1.016
	31	.45	.55	1.453	1.453	1.495	1.441	1.325	1.258	1.182	1.142
	32	.40	.60	1.333	1.333	1.370	1.351	1.263	1.209	1.149	1.116
L = 20	33	.35	.65	1.230	1.230	1.264	1.271	1.205	1.166	1.119	1.093
	34	.30	.70	1.143	1.143	1.174	1.198	1.151	1.122	1.088	1.070
	35	.25	.75	1.066	1.066	1.096	1.130	1.100	1.082	1.059	1.047
	36	.20	.80	1.000	1.000	1.028	1.067	1.053	1.043	1.032	1.026
				2,000					~.~.0		

Table 11.2

SUMMARY OF GROSS LOADS REQUIRED FOR TYPE 3 TRUCKS TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS A STANDARD H TRUCK WEIGHING ONE KIP



Forty-two variations in the Type 3 truck are given in this Table. Each truck number, from 1 to 42, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

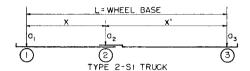
All dimensions are in feet.

Gross loads are in kips.

Wheel Base and Axle Spacing	Truck No.	A:	id On xles lips				Span-F	eet			
Feet	Ë	81	8.2	10	20	30	40	50	60	80	100
	1	.40	.60	2.000	1.600	1.242	1.161	1.121	1.096	1.068	1.054
	2	.35	.65	1.923	1.504	1.199	1.134	1.100	1.080	1.057	1.045
L = 14 $X = 10$	3	.30	.70	1.786	1.410	1.159	1.106	1.080	1.064	1.046	1.035
X = 10	4	.25	.75	1.667	1.316	1.120	1.080	1.059	1.048	1.035	1.027
	5	.20	.80	1.563	1.235	1.081	1.055	1.041	1.033	1.024	1.018
	6	.15	.85	1.471	$\frac{1.161}{1.098}$	1.045	1.030	1.021	1.017	1.012	1.009
	7	.10	.90	1.389		1.010	1.005	1.003	1.002	1.001	1.001
	8	.40	.60	2.000	1.645	1.339	1.221	1.164	1.131	1.093	1.072
	9	.35	.65	1.923	1.520	1.279	1.185	1.138	1.110	1.078	1.060
L = 16	10	.30	.70	1.786	1.410 1.316	1.222	1.148	1.111	1.089	1.063	1.049
X = 12	11	.25	.75	1.667	$\frac{1.316}{1.235}$	$\frac{1.170}{1.120}$	$1.114 \\ 1.081$	1.086	1.068	1.048	1.037
	12 13	.20 .15	.80 .85	1.563 1.471	1.161	1.120	1.048	$1.060 \\ 1.036$	$1.048 \\ 1.029$	$\frac{1.035}{1.020}$	$\frac{1.027}{1.016}$
	14	.10	.90	1.389	1.098	1.027	1.017	1.012	1.029	1.020	1.005
	15		.60	2.000	1.645	1.447	1.287	1.211	1.167	1.117	1.003
	16	.40 .35	.65	1.923	1.520	1.368	1.239	1.211	1.167	1.099	1.091
L = 18	17	.30	.70	1.786	1.410	1.294	1.193	1.144	1.115	1.081	1.063
X = 14	18	.25	.75	1.667	1.316	1.225	1.149	1.111	1.089	1.064	1.049
A — 14	19	.20	.80	1.563	1.235	1.160	1.107	1.080	1.064	1.046	1.036
	20	.15	.85	1.471	1.161	1.100	1.067	1.050	1.041	1.029	1.022
	21	.10	.90	1.389	1.098	1.045	1.030	1.021	1.017	1.012	1.009
	22	.40	.60	2.000	1.645	1.570	1.359	1.261	1.205	1.143	1.110
	23	.35	.65	1.923	1.520	1.451	1.297	1.218	1.172	1.121	1.093
L = 20	24	.30	.70	1.786	1.410	1.348	1,241	1.178	1.140	1.099	1.076
$\bar{x} = 16$	25	.25	.75	1.667	1.316	1,258	1.186	1.139	1.110	1,079	1.060
	26	.20	.80	1.563	1.235	1.179	1.135	1.101	1.081	1.057	1.045
	27	.15	.85	1.471	1.161	1.110	1.087	1.066	1.053	1.037	1.029
	28	.10	.90	1.389	1.098	1.048	1.042	1.031	1.025	1.017	1.013
	29	.40	.60	2.000	1.645	1.572	1.435	1.314	1.245	1.171	1.131
	30	.35	.65	1.923	1.520	1.451	1.361	1.263	1.206	1.144	1.111
L = 22	31	.30	.70	1.786	1.410	1.348	1.290	1.214	1.168	1.119	1.092
X = 18	32	.25	.75	1.667	1.316	1.258	1.225	1.167	1.133	1.094	1.073
	33	.20	.80	1.563	1.235	1.179	1.164	1.122	1.098	1.070	1.054
	34	.15	.85	1.471	1.161	1.110	1.107	1.108	1.065	1.046	1.036
	85	.10	.90	1.389	1.098	1.048	1.055	1.041	1.033	1.024	1.018
	36	.40	.60	2.000	1.645	1.572	1.520	1.370	1.287	1.198	1.151
	37	.35	.65	1.923	1.520	1.451	1.429	1.309	1.241	1.168	1.129
L = 24	38	.30	.70	1.786	1.410	1.348	1.344	1.250	1.198	1.138	1.106
X = 20	39	.25	.75	1.667	1.316	1.258	1.267	1.196	1.155	1.109	1.085
	40	.20	.80	1.563	1.235	1.179	1,195	1.145	1.116	1.081	1.064
	41	.15	.85	1.471	1.161	1.110	1.127	1.096	1.076	1.055	1.043
	42	.10	.90	1.389	1.098	1.048	1.065	1.050	1.041	1.029	1.022

Table 11.3

SUMMARY OF GROSS LOADS REQUIRED FOR TYPE 2-S1 TRUCKS TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS A STANDARD H TRUCK WEIGHING ONE KIP



One hundred twenty-six variations in the Type 2-S1 truck are given in this Table. Each truck number, from 1 to 126, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

All dimensions are in feet.

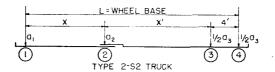
Gross loads are in kips.

Wheel	1 ~	1										
Base	No.	I	Load O	n	i i			Span-F	ont			
and			Axles		İ			Span-r	eet			
Axle	10		Kips									
Spacing	Truck				10			4.0		20		100
Feet	1 -	aı	8.2	a 3	10	20	30	40	50	60	80	100
	1	.10	.30	.60	1.333	1.333	1.217	1.170	1.130	1.106	1.076	1.060
	2	.10	.40	.50	1.600	1.600	1.351	1.255	1.193	1.156	1.112	1.088
L = 20	3	.10	.45	.45	1.776	1.692	1.348	1.230	1.172	1.138	1.098	1.076
$\bar{x} = 8$	4	.10	.50	.40	1,600	1.529	1.276	1.185	1.139	1.111	1.080	1.062
X' = 12	5	.20	.30	.50	1.600	1.600	1.422	1.318	1.239	1.192	1.136	1.106
	6	.20	.40	.40	2.000	1.776	1.406	1.259	1.192	1.151	1.106	1.082
	7	.20	.50	.30	1.600	1.458	1.250	1.166	1.122	1.098	1.070	1.054
	8	.10	.30	.60	1.333	1.333	1.351	1.279	1.217	1.174	1.125	1.096
	9	.10	.40	.50	1.600	1.600	1.570	1.420	1.312	1.248	1.175	1.136
L=24	10	.10	.45	.45	1.776	1.692	1.605	1.383	1.280	1.221	1.155	1.120
$ \begin{array}{l} L = 24 \\ X = 8 \\ X' = 16 \end{array} $	11	.10	.50	.40	1.600	1.529	1.481	1.311	1.230	1.182	1.129	1.100
X' = 16	12	.20	.30	.50	1.600	1.600	1.605	1.497	1.364	1.289	1.202	1.156
	13	.20	.40	.40	2.000	1.776	1.650	$1.408 \\ 1.259$	$\frac{1.294}{1.192}$	$1.229 \\ 1.151$	1.159 1.106	$1.121 \\ 1.082$
	14	.20	.50	.30	1.600	1.458	1.376					
	15	.10	.30	.60	1.333	1.333	1.370	1.383	1.312	1.248	$1.175 \\ 1.245$	1.136 1.188
	16	.10	.40	.50	$\frac{1.600}{1.776}$	$\frac{1.600}{1.692}$	$\frac{1.645}{1.650}$	$\frac{1.590}{1.567}$	$\frac{1.449}{1.404}$	$1.351 \\ 1.314$	$\frac{1.245}{1.217}$	1.166
$ \begin{array}{l} L = 28 \\ X = 8 \\ X' = 20 \end{array} $	17	.10	.45	.45	1.600	1.529	1,499	1.460	1.333	1.261	1.182	1.139
$\mathbf{x} = \mathbf{s}$	18	.10	.50	.40 .50	1.600	1.600	1.645	1.637	1.511	1.397	1.274	1.209
X' = 20	19	.20	.30 $.40$.40	2.000	1.776	1.650	1.585	1.408	1.314	1.215	1.163
	$\frac{20}{21}$.20 $.20$.50	.30	1.600	1.458	1.376	1.368	1.266	1.209	1.145	1.111
		.10	.30	.60	1,333	1,333	1.370	1.441	1.403	1.330	1.230	1.176
	$\frac{22}{23}$.10	.40	.50	1.600	1.600	1.645	1.730	1.600	1.468	1.319	1.242
r 00	24	.10	.45	.45	1.776	1.692	1.650	1.695	1.548	1.418	1.284	1.215
$ \begin{array}{c} L = 32 \\ X = 8 \end{array} $	24 25	.10	.50	.40	1.600	1.529	1,499	1.543	1.449	1.348	1.238	1.182
X = 3 X' = 24	26	.20	.30	.50	1.600	1,600	1.645	1.730	1.656	1.520	1.351	1.266
A 24	27	.20	.40	.40	2,000	1.776	1,650	1.656	1.543	1.410	1.276	1.208
	28	.20	.50	.30	1.600	1.458	1.376	1.391	1.350	1.271	1.186	1.143
	29	.10	.30	,60	1.333	1.333	1.370	1.441	1.486	1.416	1.289	1.220
	30	.10	.40	.50	1.600	1.600	1.645	1.730	1.754	1.603	1.403	1.302
L = 36	31	.10	.45	.45	1.776	1.692	1.650	1.695	1.715	1.536	1.357	1.266
$\mathbf{x} = \mathbf{s}$	32	.10	.50	.40	1.600	1.529	1.499	1.543	1.567	1,443	1.299	1.225
$\mathbf{X}' = 28$	33	.20	.30	.50	1.600	1.600	1.645	1.730	1.783	1.661	1.437	1.326
A 20	84	.20	.40	.40	2.000	1.776	1.650	1.656	1.658	1.517	1,340	1.255
	35	.20	.50	.30	1.600	1.458	1.376	1.391	1.399	1.337	1.230	1.174
	36	.10	.30	.60	1.333	1.183	1.100	1.092	1.072	1.058	1.043	1.034
	37	.10	.40	.50	1.600	1.316	1.176	1.143	1.110	1.089	1.065	1.052
T. == 20	38	.10	.45	.45	1.776	1.389	1.198	1.133	1,100	1.080	1.057	1.045
$\ddot{\mathbf{x}} = \ddot{1} \ddot{2}$	39	.10	.50	.40	1.600	1.316	1.156	1.105	1.080	1.064	1.046	1.035
$ \begin{array}{l} L = 20 \\ X = 12 \\ X' = 8 \end{array} $	40	.20	.30	.50	1,600	1.383	1.269	1.225	1.172	1.139	1.100	1.079
	41	.20	.40	.40	2,000	1.563	1.311	1.200	1.148	1.117	1.082	1.064
	42	.20	.50	.30	1.600	1.383	1.209	1.138	1.103	1.082	1.058	1.045
	43	.10	,30	.60	1.333	1.333	1.217	1,186	1.151	1.122	1.088	1.070
	44	.10	.40	.50	1.600	1.600	1.351	1.279	1.217	1.174	1.125	1.096
L = 24	45	.10	.45	.45	1.776	1.776	1.418	1.271	1.199	1.157	1.111	1.086
$\tilde{\mathbf{x}} = \tilde{1}$	46	.10	.50	.40	1.600	1.600	1.339	1.221	1.164	1,131	1.093	1.072
X' = 12	47	.20	.30	.50	1.600	1.600	1.422	1.372	1.287	1.229	1.163	1.126
	48	.20	.40	.40	2.000	2.000	1.563	1.344	1.247	1.193	1.134	1.103
	49	.20	.50	.30	1,600	1,600	1.366	1.235	1.172	1.135	1.095	1.073

Table 11.	3 (Cor	tinue	d)									
L = 28 X = 12 X' = 16	50 51 52 53 54 55	.10 .10 .10 .10 .20 .20	.30 .40 .45 .50 .30 .40	.60 .50 .45 .40 .50 .40	1.333 1.600 1.776 1.600 1.600 2.000 1.600	1.333 1.600 1.776 1.600 1.600 2.000 1.600	1.351 1.570 1.698 1.570 1.605 1.543 1.497	1.279 1.420 1.435 1.359 1.497 1.517 1.344	1.239 1.339 1.314 1.261 1.420 1.362 1.247	1.192 1.267 1.245 1.205 1.330 1.279 1.193	1.136 1.189 1.171 1.144 1.230 1.190 1.134	1.106 1.145 1.131 1.111 1.176 1.144 1.103
L = 32 X = 12 X'= 20	57 58 59 60 61 62 63	.10 .10 .10 .10 .20 .20	.30 .40 .45 .50 .30 .40	.60 .50 .45 .40 .50 .40	1.333 1.600 1.776 1.600 1.600 2.000 1.600	1.333 1.600 1.776 1.600 1.600 2.000 1.600	1.370 1.645 1.736 1.572 1.645 1.825 1.497	1.383 1.590 1.639 1.520 1.637 1.730 1.471	1.319 1.464 1.445 1.370 1.541 1.495 1.332	1.267 1.374 1.342 1.289 1.445 1.374 1.256	1.189 1.259 1.235 1.198 1.304 1.250 1.175	1.145 1.198 1.178 1.151 1.232 1.188 1.134
L = 36 $X = 12$ $X' = 24$	64 65 66 67 68 69 70	.10 .10 .10 .10 .20 .20	.30 .40 .45 .50 .30 .40	.60 .50 .45 .40 .50 .50	1.333 1.600 1.776 1.600 1.600 2.000 1.600	1,333 1,600 1,776 1,600 1,600 2,000 1,600	1.370 1.645 1.736 1.572 1.645 1.825 1.497	1.441 1.730 1.757 1.597 1.730 1.779 1.479	1.403 1.600 1.600 1.495 1.656 1.647 1.425	1.344 1.495 1.453 1.377 1.572 1.479 1.325	1.245 1.335 1.304 1.256 1.385 1.316 1.220	1.188 1.255 1.229 1.195 1.289 1.235 1.166
L = 40 X = 12 X' = 28	71 72 73 74 75 76 77	.10 .10 .10 .10 .20 .20	.30 .40 .45 .50 .30 .40	.60 .50 .45 .40 .50 .40	1.333 1.600 1.776 1.600 1.600 2.000 1.600	1.333 1.600 1.776 1.600 1.600 2.000 1.600	1.370 1.645 1.736 1.572 1.645 1.825 1.497	1.441 1.730 1.757 1.597 1.730 1.779 1.479	1.486 1.754 1.770 1.610 1.783 1.754 1.468	1.416 1.608 1.577 1.479 1.669 1.600 1.399	1.304 1.418 1.379 1.319 1.473 1.385 1.314	1,232 1,314 1,282 1,239 1,351 1,284 1,199
L = 44 X = 12 X' = 32	78 79 80 81 82 83 84	.10 .10 .10 .10 .20 .20	.30 .40 .45 .50 .30 .40	.60 .50 .45 .40 .50 .40	1.333 1.600 1.776 1.600 1.600 2.000 1.600	1.333 1.600 1.776 1.600 1.600 2.000 1.600	1.370 1.645 1.736 1.572 1.645 1.825 1.497	1.441 1.730 1.757 1.597 1.730 1.779 1.479	1.486 1.783 1.770 1.610 1.783 1.754 1.468	1.493 1.736 1.721 1.592 1.776 1.736 1.460	1.368 1.511 1.462 1.387 1.570 1.462 1.316	1.277 1.377 1.339 1.289 1.418 1.337 1.235
$L = 24 \ X = 16 \ X' = 8$	85 86 87 88 89 90	.10 .10 .10 .10 .20 .20	.30 .40 .45 .50 .30 .40	.60 .50 .45 .40 .50 .40	1,333 1,600 1,776 1,600 1,600 2,000 1,600	1.183 1.316 1.389 1.316 1.383 1.563 1.383	1.100 1.176 1.217 1.176 1.269 1.368 1.269	1.104 1.157 1.156 1.135 1.264 1.272 1.200	1.091 1.130 1.122 1.101 1.217 1.198 1.148	1.074 1.106 1.098 1.081 1.174 1.156 1.117	1.054 1.076 1.070 1.058 1.125 1.109 1.082	1.043 1.060 1.054 1.045 1.096 1.083 1.064
$L = 28 \ X = 16 \ X' = 12$	92 93 94 95 96 97 98	.10 .10 .10 .10 .20 .20	.30 .40 .45 .50 .30 .40	.60 .50 .45 .40 .50 .40	1,333 1,600 1,776 1,600 1,600 2,000 1,600	1.333 1.600 1.776 1.600 1.600 2.000 1.600	1.217 1.351 1.427 1.351 1.422 1.605 1.422	1.186 1.279 1.312 1.259 1.372 1.437 1.311	1.170 1.239 1.229 1.192 1.339 1.309 1.224	1.139 1.192 1.179 1.151 1.267 1.238 1.175	1.100 1.136 1.126 1.106 1.189 1.164 1.122	1.079 1.106 1.096 1.082 1.145 1.125 1.094
L = 32 $X = 16$ $X' = 16$	99 100 101 102 103 104 105	.10 .10 .10 .10 .20 .20	.30 .40 .45 .50 .30 .40	.60 .50 .45 .40 .50 .40	1,333 1,600 1,776 1,600 1,600 2,000 1,600	1.333 1.600 1.776 1.600 1.600 2.000 1.600	1.351 1.570 1.698 1.570 1.605 1.912 1.605	1.279 1.420 1.493 1.408 1.497 1.642 1.437	1.241 1.346 1.350 1.294 1.439 1.437 1.309	1.211 1.289 1.271 1.229 1.374 1.332 1.238	1.149 1.202 1.186 1.159 1.259 1.222 1.164	1.116 1.156 1.143 1.121 1.198 1.168 1.125
L = 36 X = 16 X' = 20	106 107 108 109 110 111 112	.10 .10 .10 .10 .20 .20	.30 .40 .45 .50 .30 .40	.60 .50 .45 .40 .50 .40	1.333 1.600 1.776 1.600 1.600 2.000 1.600	1.333 1.600 1.776 1.600 1.600 2.000 1.600	1.370 1.645 1.828 1.645 1.645 2.024 1.634	1.383 1.590 1.709 1.585 1.637 1.905 1.575	1.319 1.464 1.490 1.408 1.541 1.587 1.403	1.279 1.393 1.374 1.314 1.484 1.437 1.307	1.202 1.274 1.253 1.215 1.335 1.287 1.208	1.156 1.209 1.190 1.163 1.255 1.214 1.156
L = 40 X = 16 X' = 24	113 114 115 116 117 118 119	.10 .10 .10 .10 .20 .20	.30 .40 .45 .50 .30 .40	.60 .50 .45 .40 .50 .40	1,333 1,600 1,776 1,600 1,600 2,000 1,600	1.333 1.600 1.776 1.600 1.600 2.000 1.600	1.370 1.645 1.828 1.645 1.645 2.024 1.634	1.441 1.730 1.828 1.656 1.730 1.919 1.575	1.403 1.600 1.656 1.543 1.656 1.767 1.508	1.344 1.495 1.490 1.410 1.572 1.555 1.381	1.259 1.351 1.325 1.276 1.418 1.357 1.255	1.198 1.266 1.242 1.208 1.314 1.263 1.190
L = 44 X = 16 X' = 28	120 121 122 123 124 125 126	.10 .10 .10 .10 .20 .20 .20	.30 .40 .45 .50 .30 .40	.60 .50 .45 .40 .50 .40	1.333 1.600 1.776 1.600 1.600 2.000 1.600	1.333 1.600 1.776 1.600 1.600 2.000 1.600	1.370 1.645 1.828 1.645 1.645 2.024 1.634	1.441 1.730 1.828 1.656 1.730 1.919 1.575	1.486 1.754 1.828 1.658 1.783 1.862 1.543	1.416 1.608 1.623 1.517 1.669 1.689 1.464	1.319 1.437 1.403 1.340 1.511 1.433 1.304	1.242 1.326 1.297 1.255 1.377 1.316 1.225

Table 11.4

SUMMARY OF GROSS LOADS REQUIRED FOR TYPE 2-S2 TRUCKS TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS A STANDARD H TRUCK WEIGHING ONE KIP



One hundred eight variations in the Type 2-S2 truck are given in this Table. Each truck number, from 1 to 108, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

All dimensions are in feet.

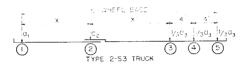
a1, a2, and a3-Represent the ratio of gross vehicle weight on axles.

Wheel Base and Axle Spacing	Truck No.	1	oad C Axles Kips					Span-F	eet			
Feet	(H	aı	A 2	аз	10	20	30	40	50	60	80	100
L = 20 $X = 8$ $X' = 8$	1 2 3 4 5 6	.10 .10 .10 .20 .20	.30 .40 .50 .30 .40	.60 .50 .40 .50 .40	2.083 2.000 1.600 2.500 2.000 1.600	1.471 1.621 1.422 1.715 1.667 1.403	1.242 1.299 1.189 1.408 1.299 1.182	1.161 1.199 1.129 1.266 1.195 1.121	1.121 1.149 1.098 1.198 1.145 1.091	1.096 1.120 1.079 1.156 1.115 1.073	1.068 1.086 1.056 1.111 1.082 1.052	1.054 1.066 1.044 1.086 1.064 1.041
L = 24 X = 8 X'= 12	7 8 9 10 11 12	.10 .10 .10 .20 .20	.30 .40 .50 .30 .40	.60 .50 .40 .50 .40 .30	2.083 2.000 1.600 2.500 2.000 1.600	1.645 1.890 1.529 1.976 1.776 1.458	1.401 1.548 1.372 1.634 1.529 1.319	1.287 1.364 1.245 1.449 1.330 1.211	1.211 1.267 1.183 1.323 1.241 1.156	1.167 1.211 1.145 1.253 1.189 1.124	1.117 1.148 1.104 1.176 1.133 1.088	1.091 1.115 1.081 1.135 1.101 1.068
L = 28 X = 8 X'= 16	13 14 15 16 17 18	.10 .10 .10 .20 .20 .20	.30 .40 .50 .30 .40	.60 .50 .40 .50 .40 .30	2.083 2.000 1.600 2.500 2.000 1.600	1.645 1.890 1.529 1.976 1.776 1.458	1.572 1.835 1.499 1.887 1.650 1.376	1.420 1.567 1.383 1.658 1.493 1.312	1.314 1.404 1.280 1.471 1.350 1.229	1.245 1.314 1.221 1.362 1.271 1.179	1.171 1.217 1.155 1.247 1.186 1.126	1.131 1.166 1.120 1.188 1.143 1.096
L = 32 $X = 8$ $X' = 20$	19 20 21 22 23 24	.10 .10 .10 .20 .20 .20	.30 .40 .50 .30 .40	.60 .50 .40 .50 .40 .30	2.083 2.000 1.600 2.500 2.000 1.600	1.645 1.890 1.529 1.976 1.776 1.458	1.572 1.835 1.499 1.887 1.650 1.376	1.555 1.789 1.517 1.842 1.650 1.391	1.431 1.565 1.389 1.647 1.473 1.307	1.332 1.431 1.302 1.488 1.361 1.239	1.227 1.292 1.209 1.326 1.245 1.166	1.172 1.220 1.160 1.244 1.185 1.126
L = 36 X = 8 X' = 24	25 26 27 28 29 30	.10 .10 .10 .20 .20	.30 .40 .50 .30 .40	.60 .50 .40 .50 .40 .30	2.083 2.000 1.600 2.500 2.000 1.600	1.645 1.890 1.529 1.976 1.776 1.458	1.572 1.835 1.499 1.887 1.650 1.376	1.597 1.876 1.543 1.916 1.656 1.391	1.536 1.751 1.513 1.815 1.618 1.383	1.427 1.563 1.393 1.631 1.462 1.304	1.287 1.374 1.267 1.410 1.307 1.208	1.217 1.279 1.203 1.305 1.230 1.157
L = 40 X = 8 X' = 28	31 32 33 34 35 36	.10 .10 .10 .20 .20	.30 .40 .50 .30 .40	.60 .50 .40 .50 .40	2.083 2.000 1.600 2.500 2.000 1.600	1.645 1.890 1.529 1.976 1.776 1.458	1.572 1.835 1.499 1.887 1.650 1.376	1.597 1.876 1.543 1.916 1.656 1.391	1.610 1.901 1.567 1.934 1.658 1.399	1.524 1.718 1.495 1.795 1.575 1.374	1.353 1.464 1.332 1.506 1.376 1.253	1.264 1.342 1.248 1.370 1.279 1.190
L = 24 X = 12 X' = 8	37 38 39 40 41 42	.10 .10 .10 .20 .20	.30 .40 .50 .30 .40 .50	.60 .50 .40 .50 .40 .30	2.083 2.000 1.600 2.500 2.000 1.600	1.471 1.621 1.458 1.715 1.776 1.495	1,242 1,312 1,242 1,427 1,427 1,427	1.190 1.235 1.161 1.335 1.269 1.185	1.143 1.174 1.121 1.245 1.196 1.198	1.114 1.139 1.096 1.193 1.155 1.109	1,081 1,099 1,068 1,136 1,109 1,076	1.063 1.076 1.054 1.105 1.083 1.059

Table 11.4	(Con	tinue	1)									
	43	.10	.30	.60	2.083	1.645	1.401	1.302	1.236	1.186	1.131	1,101
.	44	.10	.40	.50	2.000	1.976	1.548	1.395	1.297	1.233	1.163	1.125
$\begin{array}{c} L=28 \\ X=12 \end{array}$	$\frac{45}{46}$.10 .20	.50 .80	$.40 \\ .50$	$\frac{1.600}{2.500}$	$\frac{1.600}{1.976}$	$\frac{1.447}{1.634}$	$\frac{1.287}{1.504}$	$\frac{1.211}{1.379}$	$\frac{1.167}{1.295}$	$\frac{1.117}{1.203}$	$\frac{1.091}{1.156}$
X = 12 X' = 12	47	.20	.40	.40	2.000	2.000	1.712	1.427	1.302	1.235	1.161	1.124
	48	.20	.50	.30	1,600	1.600	1.441	1.287	1.209	1.164	1.115	1.088
	49	.10	.30	.60	2.083	1.645	1.572	1.420	1.339	1.266	1,185	1.142
	50	.10	.40	.50	2.000	1.976	1.855	1.572	1.441	1.339	1.233	1.176
L = 32	51	.10	.50	.40	1.600	1.600	1.572	1.435	1.314	1.245	1.171	1.131
X = 12 $X' = 16$	52 53	.20 $.20$.30 .40	.50 $.40$	$\frac{2.500}{2.000}$	$\frac{1.976}{2.000}$	$\frac{1.887}{1.825}$	$\frac{1.658}{1.618}$	$\frac{1.538}{1.425}$	$\frac{1.410}{1.325}$	$\frac{1.277}{1.220}$	$\frac{1.211}{1.166}$
A 10	54	.20	.50	.30	1.600	1.600	1.497	1.404	1.289	1.224	1.155	1.119
	55	.10	.30	.60	2.083	1.645	1.572	1.555	1.433	1.355	1.242	1.183
	56	.10	.40	.50	2.000	1.976	1.887	1.789	1.587	1.460	1.309	1.233
L = 36	57	.10	.50	.40	1.600	1.600	1.572	1.582	1.431	1.332	1.227	1.172
$\begin{array}{c} X = 12 \\ X' = 20 \end{array}$	58	.20	.30	.50	2.500	1.976	1.887	1.842	1.672	1.541	1.359	1.267
$\mathbf{X} = \mathbf{z}0$	59 60	$.20 \\ .20$.40 .50	.40 .30	$\frac{2.000}{1.600}$	$\frac{2.000}{1.600}$	$\frac{1.825}{1.497}$	$1.779 \\ 1.479$	$\frac{1.567}{1.377}$	$\frac{1.425}{1.289}$	$\frac{1.282}{1.198}$	$\frac{1.211}{1.149}$
	$-\frac{60}{61}$.10	.30	- 60	2.083	1.645	1.572	1.597	1.536	1.441	1.304	1.229
	62	.10	.40	.50	2.000	1.976	1.887	1.916	1.751	1.597	1.393	1.292
L = 40	63	.10	.50	.40	1.600	1.600	1.572	1.597	1.572	1.427	1.287	1,217
X = 12	64	.20	.30	.50	2.500	1.976	1.887	$\frac{1.916}{1.779}$	1.815	1.684	1.447	1.332
X'=24	65	.20	.40	.40	2.000	2.000	1.825	1.779	1.730	1.538	1.350	1.259
	66	.20	.50_	.30	1.600	1.600	1.497	1.479	1.460	1.361	1.242	1.182
	67 68	.10	.30 .40	.60 .50	$\frac{2.083}{2.000}$	$\frac{1.645}{1.976}$	$\frac{1.572}{1.887}$	$\frac{1.597}{1.916}$	$\frac{1.610}{1.934}$	$\frac{1.524}{1.730}$	$1.370 \\ 1.486$	$1.276 \\ 1.357$
L = 44	69	.10	.50	.40	1.600	1.600	1.572	1.597	1.610	1.534	1.353	1.264
	70	.20	.30	.50	2.500	1.976	1.887	1.916	1.934	1.799	1.548	1.399
X' = 28	71	.20	.40	.40	2.000	2.000	1.825	1.779	1.754	1.667	1.422	1.311
	72	.20	50	.30	1.600	1.600	1.497	1.479	1.468	1.439	1.290	1.217
	73	.10	.30	.60	2.083	1.471	1.242	1.199	1.164	1.131	1.093	1.072
T 00	74 75	.10 .10	.40 .50	.50 .40	$\frac{2.000}{1.600}$	$\frac{1.621}{1.458}$	$\frac{1.312}{1.258}$	$\frac{1.247}{1.195}$	$\frac{1.198}{1.145}$	$\frac{1.156}{1.115}$	$\frac{1.111}{1.082}$	$\frac{1.086}{1.064}$
L = 28 X = 16	76	.20	.30	.50	2.500	1.715	1.427	1.370	1.297	1.233	1.163	1.125
$\ddot{\mathbf{x}}' = \ddot{8}$	77	.20	.40	.40	2.000	1.776	1.479	1.351	1.252	1.196	1.135	1.104
	78	.20	.50	.30	1.600	1.495	1.342	1.290	1.211	1.166	1.115	1.088
-	79	.10	.30	.60	2.083	1.645	1.401	1.302	1.255	1.205	1.144	1.111
T 00	80 81	.10 .10	.40 .50	.50 .40	2.000 1.600	$1.976 \\ 1.600$	$\frac{1.548}{1.453}$	$\frac{1.395}{1.330}$	$\frac{1.321}{1.241}$	$\frac{1.253}{1.189}$	$\frac{1.176}{1.133}$	$\frac{1.135}{1.101}$
L = 32 X = 16	82	.20	.30	.50	2,500	1.976	1.634	1.504	1.439	1.339	1.233	1.176
	83	.20	.40	.40	2,000	2.900	1.748	1.534	1.370	1.284	1.192	1.145
	84	.20	.50	.30	1.600	1.600	1.511	1.372	1.266	1.206	1.143	1.109
	85	.10	.30	.60	2.083	1.645	1.572	1.420	1.339	1.287	1.198	1.151
	86	.10	.40	.50	2.000	1.976	1.855	1.572	1.445	1.362	1.247	1.188
$egin{array}{c} \mathbf{L} = 36 \ \mathbf{X} = 16 \end{array}$	87 88	$.10 \\ .20$.50 .30	.40 .50	$\frac{1.600}{2.500}$	$\frac{1.600}{1.976}$	$\frac{1.634}{1.887}$	$\frac{1.493}{1.658}$	$\frac{1.350}{1.550}$	$\frac{1.271}{1.460}$	$\frac{1.186}{1.309}$	$\frac{1.143}{1.233}$
X' = 16	89	.20	.40	.40	2.000	2.000	2.024	1.764	1.508	1.381	1.255	1.190
	90	.20	.50	.30	1.600	1.600	1.634	1.508	1.355	1.272	1.185	1.140
	91	.10	.30	.60	2.083	1.471	1.572	1.555	1.433	1.362	1.256	1.195
	92	.10	.40	.50	2.000	1.976	1.887	1.789	1.587	1.477	1.326	1.244
$ \begin{array}{l} L = 40 \\ X = 16 \end{array} $	93 94	.10 .20	.50 .30	.40 $.50$	$\frac{1.600}{2.500}$	$\frac{1.600}{1.976}$	$\frac{1.645}{1.887}$	$\frac{1.650}{1.842}$	$\frac{1.473}{1.672}$	$\frac{1.361}{1.580}$	$\frac{1.245}{1.393}$	$\frac{1.185}{1.292}$
$\mathbf{X}' = 10$	95	.20	.40	.40	2.000	2.000	2.024	1.919	1.672	1.493	1.321	1.238
11 20	96	.20	.50	.30	1.600	1.600	1.634	1.575	1.456	1.344	1.230	1.174
	97	.10	.30	.60	2.083	1.471	1,572	1.597	1.536	1.441	1.319	1.239
	98	.10	.40	.50	2.000	1.976	1.887	1.916	1.751	1.597	1.410	1.305
L = 44	99	.10	.50	.40	1.600	1.600	1.645	1.656	1.618	1.462	1.307	1.230
$egin{array}{c} \mathbf{X} = 16 \ \mathbf{X'} = 24 \end{array}$	100 101	$.20 \\ .20$	$.30 \\ .40$	$.50 \\ .40$	$\frac{2.500}{2.000}$	$\frac{1.976}{2.000}$	$\frac{1.887}{2.024}$	$\frac{1.916}{1.919}$	$\frac{1.815}{1.852}$	$\frac{1.684}{1.621}$	$\frac{1.486}{1.395}$	$\frac{1.357}{1.289}$
A 24	102	.20	.50	.30	1,600	1.600	1.634	1.575	1.541	1.422	1.279	1.208
	103	.10	.30	.60	2.083	1,471	1,572	1.597	1.610	1,524	1.387	1.289
	104	.10	.40	.50	2.000	1.976	1.887	1.916	1.934	1.730	1.506	1.370
L = 48	105	.10	.50	.40	1.600	1.600	1.645	1.656	1.658	1.575	1.376	1.279
X = 16 X' = 28	$\frac{106}{107}$.20	.30	.50	2.500	1.976	1.887	1.916	1.934	$\frac{1.799}{1.767}$	$\frac{1.590}{1.473}$	$\frac{1.427}{1.342}$
A - 28	107	$.20 \\ .20$.40 .50	$.40 \\ .30$	$\frac{2.000}{1.600}$	$\frac{2.000}{1.600}$	$\frac{2.024}{1.634}$	$\frac{1.919}{1.575}$	$\frac{1.862}{1.543}$	1.767	1.330	1.342
	100				1.000	1.000	1.004		1.0.10			

Table 11.5

SUMMARY OF GROSS LOADS REQUIRED FOR TYPE 2-S3 TRUCKS TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS A STANDARD H TRUCK WEIGHING ONE KIP



Ninety variations in the Type 2-S3 truck are given in this Table. Each truck number, from 1 to 90, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

All dimensions are in feet.

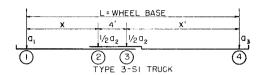
a1, a2, and a3-Represent the ratio of gross vehicle weight on axles.

$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	80 100
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	1.099 1.076
X = 8	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	
X' = 8 5 .20 .30 .50 2.667 2.141 1.597 1.370 1.267 1.208 6 .20 .40 .40 2.000 1.709 1.404 1.259 1.190 1.151	
6 .20 .40 .40 2.000 1.109 1.404 1.259 1.190 1.155	
0.00 1.00 1.00 1.000 1.000	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	
L = 28 9 .10 .40 .50 2.000 1.890 1.684 1.462 1.333 1.261	
X = 8 10 .20 .20 .60 2.857 1.818 1.664 1.517 1.362 1.278	
X' = 12 11 .20 .30 .50 2.667 2.183 1.912 1.587 1.410 1.316	
12 .20 .40 .40 2.000 1.776 1.580 1.406 1.292 1.229	
13 .10 .225 .675 2.538 1.616 1.481 1.443 1.357 1.276	3 1.188 1.143
14 .10 .30 .60 2.667 1.818 1.667 1.590 1.425 1,325	
L = 32 15 .10 .40 .50 2.000 1.890 1.835 1.686 1.481 1.370	
X = 8 16 .20 .20 .60 2.857 1.818 1.667 1.623 1.495 1.374 X' = 16 17 .20 .30 .50 2.667 2.183 2.000 1.852 1.580 1.437	
X' = 16	
19 .10 .225 .675 2.538 1.616 1.481 1.479 1.427 1.351	
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	
X = 8 22 .20 .20 .60 2.857 1.818 1.667 1.664 1.605 1.478	
X 8 22 .20 .20 .60 2.857 1.818 1.667 1.664 1.605 1.476 X'= 16 23 .20 .30 .50 2.667 2.183 2.000 1.996 1.786 1.573	
24 .20 .40 .40 2.000 1.776 1.650 1.656 1.541 1.408	
25 .10 .225 .675 2.538 1.616 1.481 1.479 1.477 1.414	1.289 1.215
26 .10 .30 .60 2.667 1.818 1.667 1.664 1.664 1.538	
L = 40 27 .10 .40 .50 2.000 1.890 1.835 1.876 1.842 1.639	
X = 8 28 .20 .20 .60 2.857 1.818 1.667 1.664 1.664 1.592	
X' = 24 29 .20 .30 .50 2.667 2.183 2.000 1.996 1.733	
30 .20 .40 .40 2.000 1.776 1.650 1.656 1.642 1.518	
31 .10 .225 .675 2.538 1.616 1.350 1.272 1.203 1.160	
L=28 33 .10 .30 .60 2.667 1.818 1.416 1.305 1.221 1.174 1.228 33 .10 .40 .50 2.000 1.812 1.481 1.323 1.236 1.186	
$egin{array}{cccccccccccccccccccccccccccccccccccc$	
X' = 8 35 .20 .30 .50 2.667 2.183 1.623 1.460 1.326 1.253	
36 .20 .40 .40 2.000 1.852 1.555 1.342 1.247 1.193	
37 .10 .225 .675 2.538 1.616 1.479 1.353 1.290 1.225	
38 .10 .30 .60 2.667 1.818 1.639 1.439 1.332 1.256	
L = 32 39 .10 .40 .50 2.000 2.000 1.795 1.522 1.370 1.287	1.199 1.152
X = 12 40 .20 .20 .60 2.857 1.818 1.664 1.522 1.425 1.325	1.220 1.166
X' = 12 41 .20 .30 .50 2.667 2.183 1.912 1.658 1.484 1.368	
42 .20 .40 .40 2.000 2.000 1.757 1.515 1.361 1.277	1.189 1.144

,	Table 11.5	(Cor	tinue	1)									
		43	.10	.225	.675	2,538	1.616	1.481	1.443	1.357	1.297	1.202	1.153
		44	.10	.30	.60	2.667	1.818	1.667	1.590	1,449	1.348	1.235	1.176
	L = 36	45	.10	.40	.50	2.000	2,000	1.942	1.754	1.529	1.403	1.272	1.206
	X = 12	46	.20	.20	.60	2.857	1.818	1.667	1.623	1.527	1.425	1.282	1.211
	X' = 16	47	.20	.30	.50	2,667	2.183	2.000	1.855	1.675	1.499	1.328	1.245
		48	.20	.40	.40	2.000	2.000	1.825	1.695	1.493	1.372	1.250	1.188
		49	.10	.225	.675	2,538	1.616	1.481	1.479	1.427	1.359	1.252	1.189
		50	.10	.30	.60	2.667	1.818	1.667	1.664	1.565	1.451	1.299	1.222
	L = 40	51	.10	.40	.50	2.000	2.000	1.942	1.946	1.718	1.536	1.353	1.264
	$\ddot{X} = 12$	52	.20	.20	.60	2.857	1.818	1.667	1.664	1.605	1.529	1.350	1.259
	$\ddot{\mathbf{X}}' = \ddot{20}$	53	.20	.30	.50	2.667	2.183	2.000	1.996	1.825	1.653	1.416	1.307
		54	.20	.40	.40	2.000	2.000	1.825	1.779	1.645	1.479	1.314	1.235
		55	.10	.225	.675	2.538	1.616	1.481	1.479	1.477	1.414	1.305	
		56	.10	.30	.60	2.667	1.818	1.667		1.664			1.227
	L = 44	57	.10	.40	.50	2.000	2.000	1.942	$\frac{1.664}{1.957}$		1.548	1.368	1.272
	X = 12	58	.20	.20	.60	2.857	1.818	1.667	1.664	1.916	1.689	1.443	1.326
	X' = 14	59	.20	.30	.50	2.667	2.183			1.664	1.592	1.422	1.311
	A 24	60	.20	.40	.40	2.000	2.000	$\frac{2.000}{1.825}$	1.996	$\frac{1.996}{1.748}$	1.808	1.517	1.374
^					-				1.779	THE STREET STREET	1.597	1.385	1.284
		61	.10	.225	.675	2.538	1.616	1.350	1.272	1.230	1.179	1.125	1.095
		62	.10	.30	.60	2.667	1.818	1.416	1.311	1.247	1.193	1.134	1.103
	L = 32	63	.10	.40	.50	2.000	1.812	1.481	1.350	1.267	1.209	1.145	1.112
	X = 16	64	.20	.20	.60	2.857	1.818	1.517	1.431	1.362	1.279	1.190	1.144
	$\mathbf{X'} = 8$	65	.20	.30	.50	2.667	2.183	1.623	1.490	1.387	1.297	1.203	1.153
		66	.20	40	.40	2,000	1.852	1.605	1.437	1.307	1.238	1.163	1.124
		67	.10	.225	.675	2.538	1.616	1.479	1.353	1.292	1.247	1.170	1.129
		68	.10	.30	.60	2.667	1.818	1.639	1.439	1.350	1.279	1.190	1.144
	L = 36	69	.10	.40	.50	2.000	2.000	1,802	1.529	1.410	1.316	1.215	1.164
	X = 16	70	.20	.20	.60	2.857	1.818	1.664	1.522	1.453	1.374	1.250	1.188
	X' = 12	71	.20	.30	.50	2.667	2.183	1.912	1.658	1.543	1.418	1.279	1.209
_		72	.20	.40	.40	2.000	2.000	1.862	1.642	1.437	1.330	1,222	1.167
		73	.10	.225	.675	2.538	1.616	1.481	1.443	1.357	1.305	1.217	1.164
		74	.10	.30	.60	2.667	1.818	1.667	1.590	1.449	1.374	1.250	1.188
	L = 40	75	.10	.40	.50	2.000	2.000	2.000	1.754	1.555	1.437	1.292	1.220
	X = 16	76	.20	.20	.60	2.857	1.818	1.667	1.623	1.527	1,468	1.316	1.235
	X' = 16	77	.20	.30	.50	2.667	2.183	2.000	1.855	1.675	1.558	1.362	1.269
		78	.20	.40_	40 _	2.000	2.000	2.024	1.845	1.587	1.435	1.287	1.214
		79	.10	.225	.675	2.538	1.616	1.481	1.479	1.427	1.359	1.267	1.200
		80	.10	.30	.60	2.667	1.818	1.667	1.664	1.565	1.456	1.316	1.235
	L = 44	81	.10	.40	.50	2.000	2.000	2.000	1.996	1.727	1.572	1.376	1.279
	X = 16	82	.20	.20	.60	2.857	1.818	1.667	1.664	1.605	1.529	1.385	1.284
	X' = 20	83	.20	.30	.50	2.667	2.183	2.000	1.996	1.825	1.686	1.456	1.333
		84	.20	.40	.40	2.000	2.000	2.024	1.919	1.757	1.553	1.355	1.263
		85	.10	.225	.675	2.538	1.616	1.481	1.479	1.477	1.414	1.321	1.239
		86	.10	.30	.60	2.667	1.818	1.667	1.664	1.664	1.548	1.385	1,284
	L = 48	87	.10	.40	.50	2.000	2.000	2.000	1.996	1.931	1.712	1.471	1.344
	X = 16	88	.20	.20	.60	2.857	1.818	1.667	1.664	1.664	1.592	1.462	1.337
	X' = 24	89	.20	.30	.50	2.667	2.183	2.000	1.996	1.996	1.808	1.558	1.403
		90	.20	.40	.40	2.000	2.000	2.024	1.919	1.862	1.689	1.433	1.314

Table 11.6

SUMMARY OF GROSS LOADS REQUIRED FOR TYPE 3-S1 TRUCKS TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS A STANDARD H TRUCK WEIGHING ONE KIP



Ninety variations in the Type 3-S1 truck are given in this Table. Each truck number, from 1 to 90, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

All dimensions are in feet.

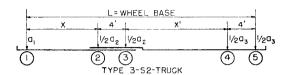
a1, a2, and a3-Represent the ratio of gross vehicle weight on axles.

Wheel Base and Axle Spacing	Truck No.		Load C Axles Kips					Span-I	Feet			
Feet	Ē	aı	ae	a3	10	20	30	40	50	60	80	100
	1	.10	.40	.50	1.600	1.600	1.453	1.348	1.263	1.211	1.149	1.116
	2	.10	.50	.40	2.000	1.905	1.520	1.323	1.233	1.182	1.127	1.098
L = 24	3	.10	.60	.30	2.083	1.597	1.366	1.235	1.172	1.135	1.095	1.073
$\mathbf{x} = \mathbf{s}$	4	.20	.40	.40	2.000	2.000	1.748	1.437	1.309	1.238	1.164	1.125
X' = 12	5 6	.20 .20	.50 $.534$.30 .266	$\frac{2.500}{2.342}$	$\frac{1.812}{1.709}$	$\frac{1.541}{1.477}$	$\frac{1.330}{1.299}$	$\frac{1.238}{1.215}$	$1.186 \\ 1.168$	1.129 1.117	1.099 1.091
	7		.40	.50	1.600	1.600	1,634	1.502	1.393	1.309	1.217	1.167
	8	.10 .10	.50	.40	2.000	1.905	1.712	1.488	1.344	1.266	1.182	1.139
L = 28	9	.10	.60	.30	2.083	1.597	1.449	1.344	1.247	1.193	1.134	1.103
$\mathbf{x} = \mathbf{s}$	10	.20	.40	.40	2.000	2.000	1.862	1.642	1.437	1.332	1.222	1.168
X' = 16	11	.20	.50	.30	2.500	1.812	1.558	1.462	1.325	1.250	1.171	1.130
	12	.20	.534	.266	2.342	1,709	1.477	1.410	1.290	1.224	1.155	1.117
	13	.10	.40	.50	1.600	1.600	1.645	1.681	1.529	1.420	1.289	1.220
	14	.10	.50	.40	2.000	1.905	1.712	1.692	1.473	1.359	1.241	1.182
$\mathbf{L} = 32$ $\mathbf{X} = 8$	15	.10 .20	.60 .40	.30 $.40$	$\frac{2.083}{2.000}$	$\frac{1.600}{2.000}$	$\frac{1.449}{1.862}$	$1.441 \\ 1.799$	$\frac{1.332}{1.587}$	$1.256 \\ 1.437$	$1.175 \\ 1.287$	1.134 1.214
X = 8 X' = 20	16 17	.20	.50	.30	$\frac{2.000}{2.500}$	1.812	1.558	1.517	1.422	1.319	1.215	1.163
A 20	18	.20	.534	.266	2.342	1.709	1.477	1.439	1.372	1.285	1.193	1.147
	19	.10	.40	.50	1.600	1.600	1.645	1.730	1.675	1.546	1.368	1.277
	20	.10	.50	.40	2.000	1.905	1,712	1.695	1.621	1.462	1.305	1.229
L = 36	21	.10	.60	.30	2.083	1.597	1.449	1.441	1,425	1.325	1.220	1.166
$\mathbf{x} = \mathbf{s}$	22	.20	.40	.40	2.000	2.000	1.862	1.799	1.767	1.555	1.357	1.263
X' = 24	23	.20	.50	.30	2.500	1.812	1.558	1.517	1.495	1.397	1.263	1.196
	24	.20	.534	.266	2.342	1.709	1.477	1.439	1.420	1.350	1.235	1.176
	25	.10	.40	.50	1.600	1.600	1.645	1.730	1.783	1.669	1.456	1.339
L = 40	$\frac{26}{27}$.10	.50 .60	.40 .30	$\frac{2,000}{2,083}$	$\frac{1.905}{1.597}$	$1.712 \\ 1.449$	$\frac{1.695}{1.441}$	1.686	1.577	1.374	1.277 1.199
X = 8	28	.10 .20	.40	.40	2.000	2,000	1.862	1.799	$\frac{1.437}{1.767}$	$\frac{1.399}{1.689}$	1.266 1.433	1.316
$\mathbf{X}' = 28$	29	.20	.50	.30	2.500	1.812	1.558	1.517	1,495	1.481	1.314	1.233
	30	.20	.534	.266	2.342	1.718	1.477	1.439	1.420	1.408	1.277	1.206
	31	.10	.40	.50	1.600	1.600	1.453	1.348	1.287	1.229	1.163	1.126
	32	.10	.50	.40	2.000	1.976	1.548	1.366	1.263	1.205	1.142	1.109
L = 28	33	.10	.60	.30	2.083	1.645	1.401	1.271	1.198	1.155	1.109	1.083
$\mathbf{x} = 12$	34	.20	.40	.40	2.000	2.000	1.748	1.543	1.376	1.285	1.193	1.147
X'=12	35	.20	.50	.30	2.500	1.976	1.634	1.416	1.295	1.229	1.157	1.120
	36	.20	.534	.266	2.342	1.848	1.575	1.379	1.271	1.209	1.145	1.111
	37	.10	.40	.50	1.600	1.600	1.634	1.502	1.403	1.330	1.230	1.176
L = 32	38 39	.10 .10	.50 .60	.40 .30	$\frac{2.000}{2.083}$	$\frac{1.976}{1.645}$	$\frac{1.812}{1.522}$	$\frac{1.548}{1.389}$	$\frac{1.379}{1.277}$	$\frac{1.290}{1.215}$	1.198 1.149	1.151
X = 12	40	.20	.40	.40	2.000	2.000	2.024	1.389 1.789	1.520	1.387	1.149	1.114 1.192
X' = 16	41	.20	.50	.30	2.500	1.976	1.724	1.572	1.323	1.299	1.202	1.152
	42	.20	.534	.266	2.342	1.848	1.626	1.508	1.353	1.271	1.183	1.139
						2407.21	2.020	1.000	2.000	*****	1.100	1.100

	43	.10	.40	.50	1,600	1.600	1.645	1.681	1.529	1.441	1.304	1.232
	44	.10	.50	.40	2.000	1.976	1.812	1.764	1.517	1.389	1.259	1.195
$_{1} = 36$	45	.10	.60	.30	2.083	1.645	1.522	1.490	1.366	1.280	1.192	1.145
= 12	46	.20	.40	.40	2.009	2.000	2.653	1.953	1.692	1.504	1.326	1.241
C' = 20	47	.20	.50	.30	2.500	1.976	1.724	1.626	1.502	1.376	1.248	1.186
	48	.20	.534	.266	2.342	1.848	1.626	1.538	1.447	1.237	1.225	1.170
	49	.10	.40	.50	1.600	1.609	1.645	1.730	1.675	1.550	1.385	1.289
	50	.10	.50	.40	2.000	1.976	1.812	1.764	1.675	1.497	1.325	1.242
≈ 40 •••	51	.10	.60	.30	2.083	1.645	1.522	1.490	1.466	1.353	1.236	1.178
== 12 '== 24	52 53	.20	.40	.40	2.000	2.000	2.053	1.953	1.880	1.637	1.401	1.292
24	54	.20	.534	.30 .266	$\frac{2.500}{2.342}$	$\frac{1.976}{1.848}$	$1.724 \\ 1.626$	$\frac{1.626}{1.538}$	$\frac{1.577}{1.495}$	$\frac{1.460}{1.408}$	$\frac{1.300}{1.269}$	$\frac{1.222}{1.200}$
	55	.10		.50	1.600	1.600	1.645	1.730		mer and some	ere comme	
	56	.10	.40 .50	.40	$\frac{1.600}{2.000}$	1.976	1.812	1.764	$\frac{1.783}{1.739}$	1.669	$\frac{1.473}{1.397}$	$\frac{1.351}{1.292}$
== 4-1	57	.10	.60	.30	2.083	1.645	1.522	1.490	1.475	$\frac{1.621}{1.431}$	1.285	1.292
= 12	58	.20	.40	.40	2.000	2.600	2.053	1.953	1.880	1.789	1.484	1.348
$' = \frac{12}{28}$	59	.20	.50	.30	2.500	1.976	1.724	1.626	1.577	1.548	1.353	1.259
	60	.20	.534	.266	2.342	1.848	1.626	1.538	1.495	1.468	1.316	1.233
	61	.10	.40	.50	1.600	1.600	1.453	1.348	1.292	1.248	1.175	1.136
	62	.10	.50	.40	2,000	1.976	1.548	1.395	1.294	1,227	1.156	1.119
= 82	63	.10	.60	.30	2.083	1.645	1.401	1.302	1.224	1.175	1.122	1.094
= 16	64	.20	.40	.40	2.000	2.000	1.748	1.587	1.447	1.337	1.225	1.170
' = 12	65	.20	.50	.30	2,500	1.976	1.634	1.504	1.357	1.274	1.186	1.140
	66	.20	.534	.266	2.342	1.848	1.575	1.466	1.330	1.253	1.174	1.131
	67	.10	.40	.50	1.600	1.600	1.634	1.502	1.403	1.344	1.245	1.188
	68	.10	.50	.40	2.000	1.976	1.855	1.572	1.418	1.318	1.215	1.161
= 36	69	.10	.60	.30	2.083	1.645	1.572	1.420	1.309	1.238	1.164	1.125
= 16	70	.20	.40	.40	2.000	2.000	2.024	1.799	1.610	1.449	1.292	1.217
′= 16	71	.20	.50	.30	2.500	1.976	1.887	1.658	1.466	1.350	1.233	1.175
	72	.20	.534	.266	2.342	1.848	1.767	1.597	1,422	1.319	1.215	1.161
	$\frac{73}{74}$.10 .10	.40	.50	1.600	1.600	1.645	1.681	1.529	1.441	1.319	1.242
= 40	75	.10	.50 .60	.40 .30	$\frac{2.000}{2.083}$	$\frac{1.976}{1,645}$	$\frac{1.887}{1.572}$	$\frac{1.786}{1.543}$	1.563	1.420	$\frac{1.277}{1.208}$	$\frac{1.208}{1.156}$
= 16	76	.20	.40	.40	2.000	2.000	2.053	2,058	$\frac{1.403}{1.812}$	$\frac{1.307}{1.577}$	1.366	1.156
'= 20	77	.20	.50	.30	2.500	1.976	1.887	1.748	1.590	1.435	1.284	1.211
20	78	.20	.534	.266	2.342	1.848	1.767	1.650	1.527	1.393	1.259	1.193
	79	.10	.40	.50	1.600	1.600	1,645	1.730	1.675	1.550	1.403	1.302
	80	.10	.50	.40	2.000	1.976	1.887	1.838	1.736	1.536	1.346	1.256
= 44	81	.10	.60	.30	2.083	1.645	1.572	1.543	1.508	1.381	1.255	1.190
= 16	82	.20	.40	.40	2.000	2.000	2.053	2.132	2.008	1.727	1.447	1.323
' = 24	83	.20	.50	.30	2.500	1.976	1.887	1.748	1.667	1.529	1.339	1.248
	84	.20	.534	.266	2.342	1.848	1.767	1.650	1.575	1.471	1.305	1.225
	85	.10	.40	.50	1.600	1,600	1.645	1.730	1.783	1.669	1.490	1.364
	86	.10	.50	.40	2.000	1.976	1.887	1.838	1.795	1.667	1.420	1.307
= 48	87	.10	.60	.30	2.083	1.645	1.572	1.543	1.515	1.464	1.304	1.225
= 16	88	.20	.40	.40	2.000	2.000	2.053	2.132	2.008	1.901	1.536	1.381
C' = 28	89 90	.20	.50	.30	2.500	1.976	1.887	1.748	1.667	1.618	1.397	1.289
	90	20	.534	.266	2.342	1.848	1.767	1.650	1.575	1.531	1.355	1.259

Table 11.7

SUMMARY OF GROSS LOADS REQUIRED FOR TYPE 3-S2 TRUCKS TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS A STANDARD H TRUCK WEIGHING ONE KIP



One hundred twelve variations in the Type 3-S2 truck are given in this Table. Each truck number, from 1 to 112, represents a different combination of wheel base length, axle spacing, and ratios of gross vehicle weight on each axle.

All dimensions are in feet.

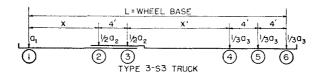
a1, a2, and a3-Represent the ratio of gross vehicle weight on axles.

Wheel Base and Axle Spacing	Truck No.	Load On Axles Kips			Span-Feet							
Feet	E	a ₁	\mathbf{a}_2	a ₃	10	20	30	40	50	60	80	100
L = 28 X = 8 X' = 12	1 2 3 4 5 6 7	.10 .10 .10 .10 .20 .20	.30 .40 .45 .50 .30 .40	.60 .50 .45 .40 .50 .40	2.083 2.500 2.778 2.500 2.500 3.125 2.500	1.645 1.976 2.105 1.901 1.976 2.203 1.815	1.490 1.689 1.789 1.667 1.757 1.862 1.560	1.359 1.479 1.464 1.401 1.577 1.534 1.395	1.274 1.351 1.328 1.287 1.425 1.370 1.280	1.215 1.274 1.253 1.222 1.328 1.284 1.217	1.151 1.190 1.175 1.155 1.225 1.192 1.149	1.116 1.145 1.134 1.117 1.171 1.145 1.114
L = 32 X = 8 X'= 16	8 9 10 11 12 13 14	.10 .10 .10 .10 .20 .20	.30 .40 .45 .50 .30 .40 .50	.60 .50 .45 .40 .50 .40	2.083 2.500 2.778 2.500 2.500 3.125 2.500	1.645 1.976 2.105 1.901 1.976 2.203 1.815	1.572 1.887 1.883 1.712 1.887 1.862 1.560	1.486 1.675 1.686 1.585 1.748 1.764 1.506	1.385 1.504 1.471 1.406 1.592 1.508 1.372	1.299 1.385 1.357 1.311 1.447 1.381 1.284	1.205 1.263 1.241 1.211 1.302 1.255 1.193	1.156 1.199 1.182 1.160 1.227 1.190 1.145
L = 36 $X = 8$ $X' = 20$	15 16 17 18 19 20 21	.10 .10 .10 .10 .20 .20	.30 .40 .45 .50 .30 .40	.60 .50 .45 .40 .50 .40	2.083 2.500 2.778 2.500 2.500 3.125 2.500	1.645 1.976 2.105 1.901 1.976 2.203 1.976	1.572 1.887 1.883 1.712 1.887 1.862 1.560	1.595 1.890 1.859 1.695 1.905 1.799 1.517	1.484 1.667 1.637 1.543 1.742 1.672 1.471	1.391 1.515 1.473 1.408 1.585 1.493 1.357	1.264 1.342 1.312 1.272 1.385 1.321 1.239	1,200 1,256 1,233 1,205 1,287 1,238 1,179
L = 40 X = 8 X' = 24	22 23 24 25 26 27 28	.10 .10 .10 .10 .20 .20	.30 .40 .45 .50 .30 .40	.60 .50 .45 .40 .50 .40	2.083 2.500 2.778 2.500 2.500 3.125 2.500	1.645 1.976 2.105 1.901 1.976 2.203 1.815	1.572 1.887 1.883 1.712 1.887 1.862 1.560	1.597 1.916 1.859 1.695 1.916 1.799 1.517	1.587 1.842 1.838 1.686 1.890 1.767 1.495	1.481 1.661 1.608 1.517 1.739 1.621 1.439	1.328 1.431 1.391 1.339 1.477 1.395 1.289	1.245 1.318 1.289 1.252 1.351 1.289 1.215
L = 44 X = 8 X'= 28	29 30 31 32 33 34 35	.10 .10 .10 .10 .20 .20	.30 .40 .45 .50 .30 .40	.60 .50 .45 .40 .50 .40	2.083 2.500 2.778 2.500 2.500 3.125 2.500	1.645 1.976 2.105 1.901 1.976 2.203 1.976	1.572 1.887 1.883 1.712 1.887 1.862 1.560	1.597 1.916 1.859 1.695 1.916 1.799 1.517	1.610 1.934 1.848 1.686 1.934 1.767 1.495	1.570 1.802 1.761 1.642 1.859 1.748 1.481	1.397 1.527 1.477 1.410 1.577 1.473 1.340	1.294 1.385 1.348 1.302 1.420 1.342 1.252
L = 28 X = 12 X' = 8	36 37 38 39 40 41 42	.10 .10 .10 .10 .20 .20	.30 .40 .45 .50 .30 .40	.60 .50 .45 .40 .50 .40	2.083 2.500 2.778 2.500 2.500 3.125 2.500	1.567 1.815 1.938 1.815 1.859 2.203 1.859	1.318 1.422 1.479 1.422 1.524 1.664 1.524	1.250 1.318 1.326 1.289 1.435 1.441 1.350	1.199 1.245 1.235 1.209 1.337 1.311 1.250	1.157 1.192 1.183 1.164 1.263 1.239 1.195	1.111 1.136 1.127 1.115 1.183 1.164 1.135	1.086 1.105 1.098 1.088 1.140 1.125 1.104

Table 11.	7 (Cor	tinue	d)									
	43	.10	.30	.60	2.083	1.645	1.490	1.359	1.295	1.235	1.164	1.126
	44	.10	.40	.50	2.500	1.976	1.689	1.479	1.379	1.295	1.203	1.156
1. = 32 X == 12	45	.10	.45	.45	2.778	2.193	1.802	1.520	1.362	1.279	1.190	1.144
X' = 12	46 47	$.10 \\ .20$.50 $.30$.40 .50	$\frac{2.500}{2.500}$	$\frac{1.976}{1.976}$	$\frac{1.689}{1.757}$	1.451	$\frac{1.319}{1.488}$	$\frac{1.247}{1.374}$	1.170	1.129
A = 12	48	.20	.40	.40	3.125	2,469	2.028	$\frac{1.577}{1.658}$	$\frac{1.488}{1.445}$	1.335	$\frac{1.255}{1.224}$	1.193
	49	.20	.50	.30	2.500	1.976	1.724	1.490	1.342	1.263	1.179	$\frac{1.170}{1.135}$
-	50	.10	.30	.60	2.083	1.645	1.572	1.486	1.385	1.319	1.220	1.167
	51	.10	.40	.50	2.500	1.976	1.887	1.675	1.513	1.410	1.277	1.211
L == 36	52	.10	.45	.45	2.778	2.193	2.004	1.767	1.515	1.387	1.258	1.195
X == 12	53	.10	.50	.40	2,500	1.976	1.812	1.653	1.445	1.339	1.229	1.172
X' = 16	54	.20	.30	.50	2.500	1.976	1.887	1.748	1.610	1.502	1,333	1.250
	55	.20	.40	.40	3.125	2.469	2.101	1.938	1.603	1.443	1.290	1.217
	56	.20	.50	.30	2,500	1.976	1.724	1.626	1.445	1.335	1.225	1.170
	57	.10	.30	.60	2.083	1.645	1.572	1.595	1.484	1.401	1.280	1.211
T 10	58	.10	.40	.50	2.500	1.976	1.887	1.890	1.667	1.536	1.359	1.267
L = 40 X = 12	59 60	.10 .10	.45 .50	.45 .40	$\frac{2.778}{2.500}$	$\frac{2.193}{1.976}$	2.004	1.942	1.695	1.511	1.333	1.247
X' = 20	61	.20	.30	.50	2.500	1.976	$\frac{1.812}{1.887}$	$1.764 \\ 1.905$	$\frac{1.592}{1.742}$	$1.441 \\ 1.631$	$1.292 \\ 1.420$	1.218
	62	,20	.40	.40	3.125	2.469	2.101	1.953	1.792	1.567	1.362	$\frac{1.312}{1.266}$
	63	.20	.50	.30	2.500	1.976	1.724	1.626	1.558	1.416	1.274	1.205
	64	.10	.30	.60	2.083	1.645	1.572	1.597	1.587	1.481	1.344	1.258
	65	.10	.40	.50	2.500	1.976	1.887	1.916	1.842	1.661	1.447	1.332
L = 44	66	.10	.45	.45	2.778	2.193	2.004	1.942	1.912	1.653	1.414	1.304
X = 12	67	.10	.50	.40	2.500	1.976	1.812	1.764	1.739	1.558	1.361	1.266
X' = 24	68	.20	.30	.50	2.500	1.976	1.887	1.916	1.890	1.739	1.515	1.377
	69	.20	.40	.40	3.125	2.469	2.101	1.953	1.880	1.709	1.441	1.319
	70	.20	.50	.30	2.500	1.976	1.724	1.626	1.577	1.506	1.326	1.241
	71	.10	.30	.60	2.683	1.645	1.572	1.597	1.610	1.570	1.414	1.307
1 40	72	.10	.40	.50	2.500	1.976	1.887	1.916	1.934	1.802	1.548	1.399
L = 48 X = 12	$\frac{73}{74}$.10 .10	.45	.45	2.778	2.193	2.004	1.942	1.912	1.818	1.504	1.364
X' = 28	75	.20	.50 .30	.40 .50	$\frac{2.500}{2.500}$	$1.976 \\ 1.976$	$\frac{1.812}{1.887}$	$1.764 \\ 1.916$	1.739	1.689	1.435	1.319
200	76	.20	.40	.40	3,125	2.469	2.101	1.916 1.953	$1.934 \\ 1.880$	$\frac{1.859}{1.838}$	$\frac{1.623}{1.527}$	1.449 1.376
	77	.20	.50	.30	2.500	1,976	1.724	1.626	1.557	1.548	1.383	1.280
	78	.10	.30	.60	2.083	1.645	1.490	1.359	1.295	1.255	1.178	1.136
	79	.10	.40	.50	2.500	1.976	1.689	1.479	1.381	1.318	1.218	1.167
L = 36	80	.10	.45	.45	2.778	2.193	1.802	1.543	1.401	1.305	1.206	1.156
X = 16	81	.10	.50	.40	2.500	1.976	1.689	1.479	1.353	1.271	1.185	1.140
X'=12	82	.20	.30	.50	2.500	1.976	1.757	1.577	1.493	1.422	1.285	1.215
	83	.20	.40	.40	3.125	2.469	2.028	1.736	1.524	1.391	1.258	1.193
	84	20	.50_	.30	2.500	1.976	1.757	1.577	1.410	1.311	1.209	1.157
	85	.10	.30	.60	2.083	1.645	1.572	1.486	1.385	1.326	1.235	1.178
L = 40	86 87	.10 .10	.40	.50	2.500	1.976	1.887	1.675	1.513	1.422	1.294	$\frac{1.221}{1.208}$
X = 16	88	.10	$.45 \\ .50$.45 .40	$\frac{2.778}{2.500}$	$\frac{2.193}{1.976}$	$\frac{2.096}{1.887}$	$\frac{1.779}{1.675}$	1.560	$\frac{1.418}{1.366}$	$1.277 \\ 1.245$	1.208
$\mathbf{X'} = 16$	89	.20	.30	.50	2.500	1.976	1.887	1.748	$\frac{1.448}{1.610}$	1.531	1.368	1.185 1.274
	90	.20	.40	.40	3.125	2.469	2.358	2.004	1.706	1.511	1.328	1.242
	91	.20	.50	.30	2.500	1.976	1.887	1.748	1.527	1.391	1.258	1.193
	92	.10	.30	.60	2.083	1.645	1.572	1.595	1.484	1.401	1.295	1,222
	93	.10	.40	.50	2.500	1.976	1.887	1.890	1.667	1.536	1.376	1.280
L = 44	94	.10	.45	.45	2.778	2.193	2.096	2.033	1.754	1.548	1.355	1.261
$X = 16 \\ X' = 20$	95	.10	.50	.40	2.500	1.976	1.887	1.838	1.645	1.475	1.311	1.232
X 20	96 97	.20 .20	.30 .40	.50 .40	2.500	1.976	1.887	1.905	1.742	1.631	1.458	1.337
	98	.20	.50	.30	$\frac{3.125}{2.500}$	$\frac{2.469}{1.976}$	$\frac{2.358}{1.887}$	$\frac{2.132}{1.748}$	$\frac{1.927}{1.653}$	$\frac{1.650}{1.479}$	$1.406 \\ 1.311$	1.295 1.230
	99	.10	30	.60	2.083	1.645	1.572	1.597				
	100	.10	.40	.50	2.500	1.976	1.887	1.916	1.587 1.842	$\frac{1.481}{1.661}$	1.362 1.466	1.269 1.344
L = 48	101	.10	.45	.45	2.778	2.193	2.096	2.033	1.980	1.701	1.439	1.333
X == 16	102	.10	.50	.40	2.500	1.976	1.887	1.838	1.795	1.600	1.383	1.280
X'= 24	103	.20	.30	.50	2,500	1.976	1.887	1.916	1.890	1.739	1.558	1.404
	104	.20	.40	.40	3.125	2.469	2.358	2.132	2.008	1.812	1.490	1.351
	105	.20	.50	.30	2.500	1.976	1.887	1.748	1.667	1.580	1.366	1.269
	106	.10	.30	.60	2.083	1.645	1.572	1.597	1.610	1.570	1.420	1.319
	107	.10	.40	.50	2,500	1.976	1.887	1.916	1.934	1.802	1.563	1.412
L = 52	108	.10	.45	.45	2.778	2.193	2.096	2.033	1.980	1.876	1.534	1.383
$X = 16 \\ X' = 28$	109	.10	.50	.40	2.500	1.976	1.887	1.838	1.795	1.739	1.460	1.335
A - 48	110 111	.20 .20	.30 .40	.50 $.40$	$\frac{2.500}{3.125}$	1.976	$\frac{1.887}{2.358}$	1.916	1.934	1.859	1.656	1.479
	112	.20	.50	.30	$\frac{3.125}{2.500}$	$\frac{2.469}{1.976}$	1.887	$\frac{2.132}{1.748}$	$\frac{2.008}{1.667}$	$\frac{1.938}{1.618}$	$1.582 \\ 1.427$	1.412 1.309
	- 1.5			.00	2.000	1.040	3.0CT	1,140	1.001	1.010	1.741	1.009

Table 11.8

SUMMARY OF GROSS LOADS REQUIRED FOR TYPE 3-S3 TRUCKS TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS A STANDARD H TRUCK WEIGHING ONE KIP



One hundred five variations in the Type 3-S3 truck are given in this Table. Each truck number, from 1 to 105, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

All dimensions are in feet.

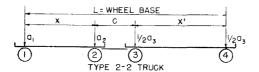
a1, a2, and a3-Represent the ratio of gross vehicle weight on axles.

Wheel Base and Axle Spacing	Truck No.		Load (Axles Kips					Span-F	reet			
Feet	H	aı	\mathbf{a}_2	a3	10	20	30	40	50	60	80	100
L = 32 X = 8 X' = 12	1 2 3 4 5 6	.10 .10 .10 .10 .20 .20	.30 .36 .40 .50 .30 .40	.60 .54 .50 .40 .50 .40	2.857 3.175 3.125 2.500 3.436 3.125 2.500	1.818 2.020 2.183 1.905 2.183 2.203 1.812	1.667 1.848 2.000 1.709 2.000 1.862 1.558	1.511 1.585 1.634 1.488 1.751 1.642 1.451	1.377 1.420 1.451 1.342 1.536 1.437 1.325	1.289 1.321 1.342 1.264 1.404 1.330 1.250	1.198 1.218 1.233 1.182 1.271 1.222 1.171	1.149 1.166 1.175 1.139 1.203 1.167 1.130
L = 36 X = 8 X'= 16	8 9 10 11 12 13 14	.10 .10 .10 .10 .20 .20 .20	.30 .36 .40 .50 .30 .40	.60 .54 .50 .40 .50 .40 .30	2.857 3.175 3.125 2.500 3.436 3.125 2.500	1.818 2.020 2.183 1.905 2.183 2.203 1.812	1.667 1.852 2.000 1.712 2.000 1.862 1.558	1.639 1.799 1.887 1.658 1.957 1.792 1.513	1.506 1.585 1.634 1.471 1.739 1.587 1.422	1.385 1.437 1.471 1.357 1.543 1.435 1.319	1.258 1.290 1.812 1.241 1.353 1.287 1.215	1.193 1.217 1.233 1.182 1.263 1.214 1.163
L = 40 X = 8 X' = 20	15 16 17 18 19 20 21	.10 .10 .10 .10 .20 .20	.30 .36 .40 .50 .30 .40	.60 .54 .50 .40 .50 .40	2.857 3.175 3.125 2.500 3.436 3.125 2.500	1.818 2.020 2.183 1.905 2.183 2.203 1.812	1,667 1,852 2,000 1,712 2,000 1,862 1,558	1.664 1.848 1.996 1.695 1.996 1.799 1.517	1.623 1.742 1.825 1.618 1.908 1.739 1.302	1.493 1.567 1.616 1.460 1.704 1.553 1.397	1.325 1.368 1.399 1.304 1.445 1.355 1.263	1.241 1.272 1.294 1.227 1.326 1.263 1.196
L = 44 X = 8 X' = 24	22 28 24 25 26 27 28	.10 .10 .10 .10 .20 .20	.30 .40 .50 .30 .40	.60 .50 .50 .40 .50 .40	2.857 3.175 3.125 2.500 3.436 3.125 2.500	1.818 2.020 2.183 1.905 2.183 2.203 1.812	1.667 1.852 2.000 1.712 2.000 1.862 1.558	1.664 1.848 1.996 1.695 1.996 1.799 1.517	1.664 1.848 1.996 1.686 1.996 1.767 1.495	1.597 1.709 1.789 1.577 1.873 1.689 1.309	1.395 1.453 1.495 1.374 1.548 1.433 1.314	1.290 1.332 1.361 1.276 1.395 1.314 1.233
L = 48 X = 8 X' = 28	29 30 31 32 33 34 35	.10 .10 .10 .10 .20 .20	.30 .36 .40 .50 .30 .40	.60 .54 .59 .40 .50 .40	2.857 3.175 3.125 2.500 3.436 3.125 2.500	1.818 2.020 2.183 1.905 2.183 2.203 1.812	1.667 1.852 2.000 1.712 2.000 1.862 1.558	1.664 1.848 1.996 1.695 1.996 1.799 1.290	1.664 1.848 1.996 1.686 1.996 1.767 1.495	1.664 1.845 1.957 1.684 1.996 1.748 1.481	1.473 1.550 1.603 1.449 1.661 1.515 1.368	1.344 1.397 1.433 1.328 1.471 1.370 1.271
L = 36 X = 12 X' = 12	36 37 38 39 40 41 42	.10 .10 .10 .10 .20 .20	.30 .36 .40 .50 .30 .40	.60 .54 .50 .40 .50 .40	2.857 3.175 3.125 2.500 3.436 3.125 2.500	1.818 2.020 2.183 1.976 2.183 2.469 1.976	1.667 1.848 2.000 1.534 2.000 2.101 1.724	1.511 1.585 1.634 1.546 1.751 1.786 1.563	1.399 1.447 1.481 1.379 1.608 1.520 1.393	1.312 1.346 1.368 1.290 1.458 1.387 1.299	1.212 1.233 1.247 1.198 1.304 1.256 1.202	1.160 1.176 1.186 1.149 1.227 1.192 1.152

Table 11.	8 (Cor	ıtinue	d)									
L = 40 X = 12 X' = 16	48 44 45 46 47 48 49	.10 .10 .10 .10 .20 .20 .20	.30 .36 .40 .50 .30 .40	.60 .54 .50 .40 .50 .40	2.857 3.175 3.125 2.500 3.436 3.125 2.500	1.818 2.020 2.183 1.976 2.183 2.469 1.976	1.667 1.852 2.000 1.812 2.000 2.101 1.724	1.639 1.799 1.887 1.730 1.957 1.953 1.626	1.506 1.585 1.637 1.515 1.748 1.692 1.466	1.410 1.464 1.499 1.387 1.603 1.502 1.376	1.274 1.307 1.328 1.258 1.389 1.325 1.248	1.205 1.229 1.245 1.195 1.287 1.241 1.186
$L = 44 \ X = 12 \ X' = 20$	50 51 52 53 54 55 56	.10 .10 .10 .10 .20 .20 .20	.30 .36 .40 .50 .30 .40	.60 .54 .50 .40 .50 .40	2.857 3.175 3.125 2.500 3.436 3.125 2.500	1.818 2.020 2.183 1.976 2.183 2.469 1.976	1.667 1.852 2.000 1.812 2.000 2.101 1.724	1.664 1.848 1.996 1.764 1.996 1.953 1.626	1.623 1.742 1.825 1.672 1.908 1.862 1.567	1.502 1.582 1.639 1.497 1.745 1.684 1.460	1.340 1.433 1.418 1.325 1.486 1.401 1.300	1.253 1.318 1.307 1.241 1.355 1.292 1.222
L = 48 X = 12 X' = 24	57 58 59 60 61 62 63	.10 .10 .10 .10 .20 .20	.30 .36 .40 .50 .30 .40	.60 .54 .50 .40 .50 .40	2.857 3.175 3.125 2.500 3.436 3.125 2.500	1.818 2.020 2.183 1.976 2.183 2.469 1.976	1.667 1.852 2.000 1.812 2.000 2.101 1.724	1.664 1.848 1.996 1.764 1.996 1.953 1.626	1.664 1.848 1.996 1.739 1.996 1.88 0 1.577	1.597 1.712 1.789 1.621 1.873 1.789 1.529	1.414 1.475 1.517 1.397 1.592 1.481 1.853	1.304 1.346 1.376 1.290 1.427 1.346 1.259
$L = 52 \ X = 12 \ X' = 28$	64 65 66 67 68 69 70	.10 .10 .10 .10 .20 .20	.30 .36 .40 .50 .30 .40	.60 .54 .50 .40 .50 .40	2.857 3.175 3.125 2.500 3.436 3.125 2.500	1.818 2.020 2.183 1.976 2.183 2.469 1.976	1.667 1.852 2.000 1.812 2.000 2.101 1.724	1.664 1.848 1.996 1.764 1.996 1.953 1.626	1.664 1.848 1.996 1.739 1.996 1.880 1.577	1.664 1.845 1.961 1.727 1.996 1.838 1.548	1.493 1.572 1.629 1.475 1.712 1.572 1.412	1.357 1.410 1.447 1.344 1.504 1.406 1.300
L = 40 X = 16 X' = 12	71 72 78 74 75 76 77	.10 .10 .10 .10 .20 .20	.30 .36 .40 .50 .30 .40	.60 .54 .50 .40 .50 .40	2.857 3.175 3.125 2.500 3.436 3.125 2.500	1.818 2.020 2.183 1.976 2.183 2.469 1.976	1.667 1.848 2.000 1.779 2.000 2.169 1.812	1.511 1.585 1.634 1.570 1.751 1.859 1.658	1.399 1.447 1.481 1.416 1.608 1.610 1.506	1.335 1.370 1.393 1.318 1.515 1.447 1.377	1.227 1.248 1.263 1.214 1.337 1.292 1.250	1.171 1.188 1.198 1.161 1.252 1.217 1.186
L = 44 X = 16 X' = 16	78 79 80 81 82 83 84	.10 .10 .10 .10 .20 .20	.30 .36 .40 .50 .30 .40	.60 .54 .50 .40 .50 .40	2.857 3.175 3.125 2.500 3.436 3.125 2.500	1.818 2.020 2.183 1.976 2.183 2.469 1.976	1.667 1.852 2.000 1.887 2.000 2.358 1.887	1.639 1.799 1.887 1.761 1.957 2.132 1.748	1.506 1.585 1.639 1.563 1.748 1.808 1.590	1.414 1.471 1.511 1.418 1.631 1.575 1.435	1.290 1.323 1.346 1.277 1.427 1.366 1.284	1.217 1.241 1.256 1.206 1.314 1.267 1.211
L = 48 X = 16 X' = 20	85 86 87 88 89 90	.10 .10 .10 .10 .20 .20	.30 .36 .40 .50 .30 .40	.60 .54 .50 .40 .50 .40	2.857 3.175 3.125 2.500 3.436 3.125 2.500	1.818 2.020 2.183 1.976 2.183 2.469 1.976	1.667 1.852 2.000 1.887 2.000 2.358 1.887	1.664 1.848 1.996 1.838 1.996 2.132 1.748	1.623 1.742 1.825 1.727 1.908 2.000 1.664	1.502 1.582 1.639 1.558 1.745 1.724 1.529	1.359 1.404 1.437 1.346 1.529 1.445 1.839	1.266 1.299 1.321 1.255 1.381 1.323 1.248
L = 52 X = 16 X'= 24	92 93 94 95 96 97 98	.10 .10 .10 .10 .20 .20	.30 .36 .40 .50 .30 .40	.60 .54 .50 .40 .50 .40	2.857 3.175 3.125 2.500 3.436 3.125 2.500	1,818 2,020 2,183 1,976 2,183 2,469 1,976	1.667 1.852 2.000 1.887 2.000 2.358 1.887	1.664 1.848 1.996 1.838 1.996 2.132 1.748	1.664 1.848 1.996 1.795 1.996 2.008 1.667	1.597 1.709 1.789 1.664 1.873 1.898 1.603	1.433 1.495 1.538 1.420 1.639 1.534 1.397	1.316 1.359 1.389 1.307 1.456 1.379 1.289
L = 56 X = 16 X' = 28	99 100 101 102 103 104 105	.10 .10 .10 .10 .20 .20	.30 .36 .40 .50 .30 .40	.60 .54 .50 .40 .50 .40	2.857 3.175 3.125 2.500 3.436 3.125 2.500	1.818 2.020 2.183 1.976 2.183 2.496 1.976	1.667 1.852 2.000 1.887 2.000 2.358 1.887	1.664 1.848 1.996 1.838 1.996 2.132 1.748	1.664 1.848 1.996 1.795 1.996 2.008 1.667	1.664 1.845 1.961 1.770 1.996 1.938 1.618	1.495 1.582 1.642 1.502 1.742 1.631 1.460	1.372 1.425 1.464 1.361 1.536 1.443 1.380

Table 11.9

SUMMARY OF GROSS LOADS REQUIRED FOR TYPE 2-2 TRUCKS TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS A STANDARD H TRUCK WEIGHING ONE KIP



One hundred forty-four variations in the Type 2-2 truck are given in this Table. Each truck number, from 1 to 144, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

All dimensions are in feet.

a1, a2, and a3-Represent the ratio of gross vehicle weight on axles.

Wheel Base and Axles Span-Feet Axle Spacing Kips Feet 10 20 30 40 50 60		
	80	100
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	1.109 1.121	1.083 1.093
X = 12 3 .10 .40 .50 2.000 1.718 1.481 1.321 1.236 1.186 X' = 8 4 .20 .20 .60 2.667 1.988 1.538 1.427 1.302 1.235	1.131 1.161	1.101 1.124
C = 8 5 .20 .30 .50 2.667 2.174 1.621 1.460 1.326 1.258	1.174	1.124
6 .20 .40 .40 2.000 1.776 1.538 1.344 1.247 1.193	1.134	1.103
7 .10 .20 .70 2.283 1.992 1.575 1.406 1.295 1.229	1.157	1.120
L = 32 8 .10 .30 .60 2.667 2.083 1.639 1.439 1.311 1.239	1.164	1.125
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\frac{1.164}{1.208}$	$1.126 \\ 1.157$
C = 8 11 .20 .30 .50 2.667 2.174 1.799 1.592 1.408 1.312	1.212	1.160
12 .20 .40 .40 2.000 1.776 1.538 1.427 1.302 1.235	1.161	1.124
13 .10 .20 .70 2.283 1.992 1.832 1.570 1.406 1.309	1.208	1.157
L = 36 14 .10 .30 .60 2.667 2.083 1.779 1.590 1.410 1.311	1.209	1.157
X = 12 15 .10 .40 .50 2.000 1.718 1.529 1.464 1.370 1.287 X'= 16 16 .20 .20 .60 2.667 2.268 2.062 1.773 1.524 1.391	1.198 1.258	$1.151 \\ 1.193$
X'= 16	1.258	1.193
18 .20 .40 .40 2.000 1.776 1.538 1.441 1.362 1.279	1.190	1.144
19 .10 .20 .70 2.283 1.992 1.832 1.764 1.534 1.399	1.264	1.198
L = 40 20 .10 .30 .60 2.667 2.083 1.779 1.658 1.522 1.389	1.258	1.192
X = 12 21 .10 .40 .50 2.000 1.718 1.529 1.464 1.433 1.342	1.235	1.178
X'= 20 22 .20 .20 .60 2.667 2.268 2.062 1.880 1.661 1.481 C = 8 23 .20 .30 .50 2.667 2.174 1.799 1.631 1.553 1.439	$\frac{1.312}{1.290}$	$\frac{1.230}{1.217}$
C = 8 28 .20 .30 .50 2.001 2.114 1.733 1.031 1.333 1.435 24 .20 .40 .40 2.000 1.776 1.538 1.441 1.391 1.325	1.220	1.166
25 ,10 ,20 ,70 2,283 1,786 1,486 1,351 1,277 1,215	1.149	1.114
L = 32 26 .10 .30 .60 2.667 2.083 1.639 1.439 1.332 1.256	1.175	1.134
X = 12 27 .10 .40 .50 2.000 2.000 1.730 1.520 1.370 1.287	1.198	1.151
X' = 8 28 .20 .20 .60 2.667 2.083 1.712 1.546 1.425 1.325	1.220	1.166
C = 12 29 .20 .30 .50 2.667 2.500 1.912 1.656 1.484 1.368 30 .20 .40 .40 2.000 2.000 1.712 1.517 1.362 1.279	1.247 1.190	1.186
31 .10 .20 .70 2.283 2.283 1.773 1.511 1.393 1.299	1.202	1.144
L = 36 32 .10 .30 .60 2.667 2.667 1.957 1.603 1.441 1.333	1.224	1.168
X = 12 33 .10 .40 .50 2.000 2.000 1.730 1.595 1.445 1.342	1.235	1.178
X' = 12 34 .20 .20 .60 2.667 2.667 2.045 1.727 1.555 1.412	1.272	1.203
C = 12 35 .20 .30 .50 2.667 2.667 2.105 1.802 1.587 1.439	1.290	1.217
<u>36 .20 .40 .40 2.000 2.000 1.712 1.546 1.425 1.325</u>	1.220	1.166
37 .10 .20 .70 2.283 2.283 2.045 1.706 1.524 1.391	1.258	1.193
L = 40 38 .10 .30 .60 2.667 2.667 2.114 1.799 1.567 1.418 X = 12 39 .10 .40 .50 2.000 .2000 1.730 1.595 1.527 1.403	$\frac{1.276}{1.272}$	$\frac{1.205}{1.205}$
X' = 16 40 .20 .20 .60 2.667 2.667 2.331 1.946 1.706 1.511	1.328	1.242
C = 12 41 .20 .30 .50 2.667 2.667 2.105 1.802 1.669 1.508	1.332	1.247
42 .20 .40 .40 2.000 2.000 1.712 1.546 1.466 1.374	1.250	1.188

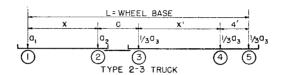
Table 11.9	(Cor	tinue	d)									
L = 44 X = 12 X' = 20 C = 12	43 44 45 46 47 48	.10 .10 .20 .20 .20	.20 .30 .40 .20 .30 .40	.70 .60 .50 .60 .50	2.283 2.667 2.000 2.667 2.667 2.000	2.283 2.667 2.000 2.667 2.667 2.000	2.045 2.114 1.730 2.331 2.105 1.712	1.946 1.859 1.595 2.155 1.802 1.546	1.669 1.712 1.527 1.887 1.669 1.466	1.495 1.515 1.466 1.621 1.585 1.420	1.319 1.330 1.312 1.389 1.377 1.282	1.236 1.244 1.235 1.284 1.277 1.211
L = 32 $X = 16$ $X' = 8$ $C = 8$	49 50 51 52 53 54	.10 .10 .10 .20 .20 .20	.20 .30 .40 .20 .30 .40	.70 .60 .50 .60 .50	2.283 2.667 2.000 2.667 2.667 2.000	1.724 1.905 1.718 1.988 2.174 1.776	1.351 1.416 1.481 1.538 1.621 1.605	1.271 1.311 1.350 1.441 1.490 1.437	1.222 1.247 1.266 1.362 1.387 1.309	1.175 1.193 1.209 1.279 1.297 1.238	1.121 1.134 1.145 1.190 1.203 1.164	1.093 1.103 1.111 1.144 1.153 1.125
L = 36 X = 16 X' = 12 C = 8	55 56 57 58 59 60	.10 .10 .10 .20 .20 .20	.20 .30 .40 .20 .30	.70 .60 .50 .60 .50	2.283 2.667 2.000 2.667 2.667 2.000	1.992 2.083 1.718 2.268 2.174 1.776	1.575 1.639 1.570 1.792 1.866 1.650	1.406 1,439 1.466 1.592 1.631 1.534	1.326 1.340 1.335 1.477 1.488 1.370	1.252 1.261 1.259 1.359 1.366 1.284	1.171 1.178 1.179 1.239 1.245 1.192	1.130 1.135 1.138 1.179 1.185 1.145
L = 40 X = 16 X' = 16 C = 8	61 62 63 64 65 66	.10 .10 .10 .20 .20	.20 .30 .40 .20 .30 .40	.70 .60 .50 .60 .50	2.283 2.667 2.000 2.667 2.667 2.000	1.992 2.083 1.718 2.268 2.174 1.776	1.832 1.825 1.570 2.062 1.934 1.650	1.570 1.590 1.517 1.773 1.761 1.538	1.439 1.447 1.408 1.610 1.587 1.437	1.335 1.337 1.314 1.449 1.437 1.332	1.224 1.225 1.215 1.292 1.287 1.222	1.170 1.170 1.163 1.217 1.214 1.168
L = 44 X = 16 X' = 20 C = 8	67 68 69 70 71 72	.10 .10 .10 .20 .20	.20 .30 .40 .20 .30	.70 .60 .50 .60 .50	2.283 2.667 2.000 2.667 2.667 2.000	1.992 2.083 1.718 2.268 2.174 1.776	1.832 1.825 1.570 2.062 1.934 1.650	1.764 1.727 1.517 1.988 1.761 1.538	1.567 1.565 1.471 1.764 1.642 1.462	1.429 1.418 1.374 1.548 1.508 1.381	1.282 1.276 1.253 1.350 1.330 1.255	1.209 1.205 1.190 1.256 1.244 1.190
L = 36 X = 16 X' = 8 C = 12	73 74 75 76 77 78	.10 .10 .10 .20 .20	.20 .30 .40 .20 .30 .40	.70 .60 .50 .60 .50	2.283 2.667 2.000 2.667 2.667 2.000	1.786 2.083 2.000 2.083 2.500 2.000	1.486 1.639 1.767 1.712 1.912 1.825	1.351 1.439 1.529 1.546 1.656 1.642	1.287 1.350 1.408 1.466 1.543 1.437	1.236 1.279 1.314 1.374 1.418 1.332	1.163 1.190 1.215 1.250 1.279 1.222	1.124 1.144 1.163 1.188 1.209 1.168
L = 40 X = 16 X'= 12 C = 12	79 80 81 82 83 84	.10 .10 .10 .20 .20	.20 .30 .40 .20 .30 .40	.70 .60 .50 .60 .50	2.283 2.667 2.000 2.667 2.667 2.000	2.283 2.667 2.000 2.667 2.667 2.000	1.773 1.957 1.767 2.045 2.232 1.825	1.511 1.603 1.658 1.727 1.838 1.661	1.399 1.456 1.490 1.590 1.661 1.508	1.323 1.359 1.374 1.468 1.504 1.381	1.217 1.239 1.253 1.305 1.328 1.255	1.163 1.179 1.190 1.227 1.244 1.190
L = 44 X = 16 X' = 16 C = 12	85 86 87 88 89 90	.10 .10 .10 .20 .20	.20 .30 .40 .20 .30 .40	.70 .60 .50 .60 .50	2.283 2.667 2.000 2.667 2.667 2.000	2.283 2.667 2.000 2.667 2.667 2.000	2.045 2.141 1.767 2.331 2.232 1.825	1.706 1.799 1.658 1.946 1.965 1.661	1.524 1.577 1.572 1.730 1.776 1.546	1.420 1.449 1.437 1.577 1.587 1.437	1.276 1.292 1.292 1.366 1.376 1.287	1.205 1.217 1.220 1.267 1.276 1.214
L = 48 X = 16 X' = 20 C = 12	91 92 93 94 95 96	.10 .10 .10 .20 .20	.20 .30 .40 .20 .30 .40	.70 .60 .50 .60 .50	2,283 2,667 2,000 2,667 2,667 2,000	2.283 2.667 2.000 2.667 2.667 2.000	2.045 2.141 1.767 2.331 2.232 1.825	1.946 1.949 1.658 2.217 1.965 1.661	1.669 1.718 1.572 1.894 1.776 1.546	1.529 1.548 1.504 1.701 1.672 1.481	1.339 1.350 1.333 1.431 1.422 1.321	1.248 1.256 1.248 1.312 1.309 1.238
L = 36 $X = 20$ $X' = 8$ $C = 8$	97 98 99 100 101 102	.10 .10 .10 .20 .20	.20 .30 .40 .20 .30 .40	.70 .60 .50 .60 .50	2.283 2.667 2.000 2.667 2.667 2.000	1.786 1.905 1.718 1.988 2.174 1.776	1.351 1.416 1.481 1.538 1.621 1.605	1.271 1.311 1.350 1.441 1.490 1.497	1.230 1.258 1.287 1.391 1.429 1.376	1.195 1.214 1.232 1.325 1.344 1.285	1.135 1.148 1.160 1.220 1.233 1.193	1.104 1.114 1.122 1.166 1.175 1.147
L = 40 X = 20 X' = 12 C = 8	103 104 105 106 107 108	.10 .10 .10 .20 .20	.20 .30 .40 .20 .30 .40	.70 .60 .50 .60 .50	2.283 2.667 2.000 2.667 2.667 2.000	1,992 2,083 1,718 2,268 2,174 1,776	1.575 1.639 1.570 1.792 1.866 1.650	1.406 1.439 1.466 1.592 1.631 1.587	1.328 1.350 1.366 1.499 1.524 1.445	1.274 1.285 1.285 1.412 1.420 1.335	1.186 1.193 1.196 1.272 1.277 1.224	1.142 1.147 1.148 1.203 1.208 1.170
L = 44 X = 20 X' = 16 C = 8	109 110 111 112 113 114	.10 .10 .10 .20 .20	.20 .30 .40 .20 .30	.70 .60 .50 .60 .50	2.283 2.667 2.000 2.667 2.667 2.000	1.992 2.083 1.718 2.268 2.174 1.776	1.832 1.825 1.570 2.062 1.934 1.650	1.570 1.590 1.563 1.773 1.795 1.650	1,439 1,449 1,451 1,623 1,634 1,520	1.362 1.362 1.344 1.511 1.504 1.387	1.241 1.242 1.233 1.328 1.326 1.256	1.181 1.181 1.175 1.242 1.241 1.192
L = 48 X = 20 X' = 20 C = 8	115 116 117 118 119 120	.10 .10 .10 .20 .20	.20 .30 .40 .20 .30 .40	.70 .60 .50 .60 .50	2.283 2.667 2.000 2.667 2.667 2.000	1.992 2.083 1.718 2.268 2.174 1.776	1,832 1.825 1.570 2.062 1.934 1.650	1.764 1.770 1.563 1.988 1.901 1.650	1.567 1.565 1.511 1.764 1.739 1.538	1.460 1.449 1.404 1.621 1.585 1.443	1.300 1.294 1.271 1.389 1.372 1.290	1.222 1.218 1.203 1.284 1.272 1.217

Table	11.9	(Continued)

Tubic Tite												
	121	.10	.20	.70	2.283	1.786	1.486	1.351	1.287	1.250	1.176	1.135
L = 40	122	.10	.30	.60	2.667	2.083	1.639	1.439	1.350	1.297	1.205	1.155
X = 20	123	.10	.40	.50	2.000	2.000	1.767	1.529	1.410	1.344	1.233	1.175
X' = 8	124	.20	.20	.60	2.667	2.083	1.712	1.546	1,466	1.420	1.282	1.211
C = 12	125	.20	.30	.50	2.667	2.500	1.912	1.656	1.543	1.471	1.312	1.233
	126	.20	.40	.40	2.000	2.000	1.825	1.689	1.520	1.387	1.256	1.192
	127	.10	.20	.70	2.283	2.283	1.773	1.511	1,399	1.335	1.233	1.175
L = 44	128	.10	.30	.60	2.667	2.667	1.957	1.603	1.456	1.377	1.256	1.192
X = 20	129	.10	.40	.50	2.000	2.000	1.767	1.689	1.513	1.404	1.271	1.203
X' = 12	130	.20	.20	.60	2.667	2.667	2.045	1.727	1.590	1.513	1.340	1.252
C = 12	131	.20	.30	.50	2.667	2.667	2.232	1.838	1.661	1.567	1.364	1.269
	132	.20	.40	.40	2.000	2.000	1.825	1.779	1.603	1.443	1.290	1.217
V-114	133	.10	.20	.70	2.283	2,283	2.045	1.706	1.524	1.429	1.294	1.218
L = 48	134	.10	.30	.60	2.667	2.667	2.141	1.799	1.577	1.464	1.311	1.230
X = 20	135	.10	.40	.50	2.000	2.000	1.767	1.701	1.618	1.471	1.312	1.233
X' = 16	136	.20	.20	.60	2.667	2.667	2.331	1.946	1.730	1.618	1.406	1.295
C = 12	137	.20	.30	.50	2.667	2.667	2.232	2.058	1.795	1.661	1.420	1.305
	138	.20	.40	.40	2.000	2.000	1.825	1.779	1.634	1.504	1.326	1.241
	139	.10	.20	.70	2.283	2.283	2.045	1.946	1.669	1.531	1.359	1.263
L = 52	140	.10	.30	.60	2.667	2.667	2.141	1.996	1.718	1.563	1.370	1.269
X = 20	141	.10	.40	.50	2.000	2.000	1.767	1.701	1.618	1.543	1.355	1.263
X' = 20	142	.20	.20	.60	2.667	2.667	2.331	2.217	1.894	1.733	1.475	1.340
C = 12	143	.20	.30	.50	2.667	2.667	2.232	2.110	1.894	1.757	1.473	1.340
	144	.20	.40	.40	2.000	2.000	1.825	1.779	1.634	1.548	1.362	1.266

Table 11.10

SUMMARY OF GROSS LOADS REQUIRED FOR TYPE 2-3 TRUCKS TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS A STANDARD H TRUCK WEIGHING ONE KIP



Ninety variations in the Type 2-3 truck are given in this Table. Each truck number, from 1 to 90, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

All dimensions are in feet.

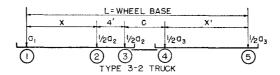
a1, a2, and a3-Represent the ratio of gross vehicle weight on axles.

Wheel Base and Axle Spacing	Truck No.	I	oad O Axles Kips		St. Labeld Primer Personal VIII of the			Span-F	eet			
Feet	1 5	81	a 2	\mathbf{a}_3	10	20	30	40	50	60	80	100
	1	.10	.20	.70	2.674	1.887	1.577	1.412	1,330	1.255	1.174	1.131
L = 32	2	.10	.30	.60	2.667	2.203	1.724	1.486	1.342	1.263	1,179	1.135
X = 12	3	.10	.40	.50	2.000	1.812	1.650	1.449	1.323	1.252	1.175	1.134
$\mathbf{x}' = 8$	4	.20	.20	.60	3.125	2.203	1.832	1.623	1.445	1.335	1.224	1.170
C = 8	5	.20	.30	.50	2,667	2.331	1.957	1.637	1.437	1.332	1.224	1.170
	6	.10	.20	.70	2.674	2.114	1.799	1.610	1.471	1.368	1.245	1.183
$\Gamma=36$	7	.10	.30	.60	2.667	2.268	1.988	1.706	1.484	1.362	1.241	1.181
X = 12	8	.10	.40	.50	2.000	1.812	1.650	1.575	1.420	1.325	1.222	1.168
X' = 12	9	.20	.20	.60	3.125	2.469	2.101	1.862	1.616	1.451	1.294	1.218
C = 8	10	.20	.30	.50	2.667	2.331	1.957	1.786	1.555	1.416	1.277	1.208
	11	.10	.20	.70	2.674	2.114	2.020	1.825	1.629	1.499	1.325	1.239
L = 40	12	.10	.30	.60	2.667	2.268	1.988	1.880	1,653	1.477	1.309	1.229
$X = 12 \\ X' = 16$	13	.10	.40	.50	2.000	1.812	1.650	1.600	1.529	1.403	1.272	1.205
	14	.20	.20	.60	3.125	2.469	2.358	$\frac{2.132}{1.799}$	$\frac{1.821}{1.686}$	$1.582 \\ 1.508$	1,368	1.269 1.247
C = 8	15	.20	.30	.50	2.667	2.331	1.957				1.332	manager and the second
T - 00	16	.10	.20	.70	2.674	1.887	1.597	1.499	1.395	1.328	1.220	1.166
$ \begin{array}{l} L = 36 \\ X = 12 \end{array} $	17	.10	.30	.60	2.667	2.203	1.862	1.664	$\frac{1.481}{1.473}$	$\frac{1.361}{1.362}$	1.241	1.181
X = 12 X' = 8	18	.10	.40 .20	.50	$\frac{2.000}{3.125}$	$\frac{2.000}{2.203}$	$\frac{1.808}{1.862}$	$\frac{1.664}{1.736}$	1.603	1.443	$\frac{1.247}{1.290}$	$\frac{1.188}{1.217}$
$\overset{\mathbf{A}}{\mathbf{C}} = \overset{\mathbf{a}}{12}$	$\frac{19}{20}$.20	.30	.60 .50	$\frac{3.125}{2,667}$	2.653	2.198	1.908	1.621	1.446	1.304	1.227
U - 12											1.299	
T 40	21	.10	.20	.70	2.674	2.114	1.799	1.675	1.541 1.661	$1.445 \\ 1.481$	$\frac{1.299}{1.312}$	1.221 1.230
L = 40 X = 12	22 23	.10	.30	.60	$\frac{2.667}{2.000}$	$\frac{2.469}{2.000}$	$\frac{2.101}{1.808}$	$\frac{1.953}{1.704}$	1.587	1.481 1.445	$\frac{1.312}{1.299}$	1.224
X' = 12	24	.10	.40 .20	.50 .60	3.125	2.469	2.101	1.953	1.779	1.582	1.368	1.269
C = 12	25	.20	.30	.50	$\frac{3.125}{2.667}$	2.667	$\frac{2.101}{2.198}$	1.934	1.767	1.558	1.361	1.267
0 = 12					2.674				and the second second			1.282
L = 44	26	.10	.20	.70		$\frac{2.114}{2.469}$	2.020	1.825	1.709 1.880	$1.567 \\ 1.621$	1.385 1.389	1.282 1.284
X = 12	$\begin{array}{c} 27 \\ 28 \end{array}$.10 .10	.30 .40	.60	$\frac{2.667}{2.000}$	2.469	$\frac{2.268}{1.808}$	$\frac{2.053}{1.704}$	$\frac{1.880}{1.934}$	1.534	1.353	1.284 1.264
X' = 16	28 29	.10	.20	.60	3.125	2.469	2.358	$\frac{1.704}{2.132}$	1.988	1.748	1.456	1.326
$\mathbf{C} = 10$	30	.20	.30	.50	2.667	2.667	2.198	1.934	1.815	1.667	1.422	1.311
0 - 12					2.674				1.335	1.279		1.143
1 9.0	31	.10	.20	.70	$\frac{2.674}{2.667}$	1.887	1.577	1.412		1.279	$\frac{1.189}{1.193}$	1.143
$ \begin{array}{l} L = 36 \\ X = 16 \end{array} $	32	.10	.30	.60	2.000	$\frac{2.203}{1.812}$	1.724	1.486	$\frac{1.376}{1.359}$	1.285	1.193	1.147
$\mathbf{X}' = \begin{array}{c} \mathbf{X} & -16 \\ \mathbf{X}' = 8 \end{array}$	$\frac{33}{34}$	$.10 \\ .20$.40 .20	.50 .60	$\frac{2,000}{3,125}$	$\frac{1.814}{2.203}$	$\frac{1.675}{1.832}$	$\frac{1.506}{1.623}$	1.520	1.387	1.190 1.256	1.145
$\hat{\mathbf{C}} = \hat{8}$	35	.20	.30	.50	2.667	$\frac{2.203}{2.331}$	1.961	1.684	1.522	1.391	1.256 1.259	1.195
<u> </u>												
T 40	36	.10	.20	.70	2.674	2.114	1.799	1.610	1.471	1.393	1.263	1.196
L = 40 X = 16	37	.10	.30	.60	2.667	2.268	2.062	1.706	1.524	$\frac{1.391}{1.353}$	1.258	$\frac{1.193}{1.182}$
X' = 16 X' = 12	38 39	.10	$.40 \\ .20$.50 .60	$\frac{2.000}{3.125}$	$\frac{1.812}{2.469}$	1.706	$\frac{1.639}{1.862}$	$\frac{1.462}{1.689}$	$\frac{1.353}{1.515}$	1.239 1.330	1.182
C = 8	40	.20 .20	.30	.50	$\frac{3.125}{2.667}$	$\frac{2.469}{2.331}$	$2.101 \\ 2.151$	1.919	1.658	1.484	1.316	1.235
		,20	,50	.00	2,001	4.551	2.101	1.010	1.000	1.404	1.010	1.200

Table 11.1	0 (Co	ntinu	ed)									
L = 44 X = 16 X' = 16	41 42 43 44	.10 .10 .10 .20	.20 .30 .40 .20	.70 .60 .50	2.674 2.667 2.000 3.125	2.114 2.268 1.812 2.469	2.020 2.062 1.706 2.358	1.825 1.965 1.661 2.132	1.629 1.692 1.580 1.880	1.508 1.511 1.437 1.661	1.344 1.328 1.292 1.410	1.253 1.242 1.220 1.297
C = 8 $L = 40$ $X = 16$ $X' = 8$	45 46 47 48 49	.20 .10 .10 .10 .20	.30 .30 .40 .20	.50 .70 .60 .50	2.667 2.674 2.667 2.000 3.125	2,331 1,887 2,203 2,000 2,203	2.151 1.597 1.862 1.862 1.862	1.949 1.499 1.664 1.739 1.739	1.802 1.395 1.495 1.520 1.605	1.587 1.335 1.387 1.393 1.504	1.376 1.236 1.256 1.266 1.326	1.276 1.176 1.192 1.200 1.241
C = 12 $L = 44$ $X = 16$ $X' = 12$ $C = 12$	50 51 52 53 54 55	.20 .10 .10 .10 .20 .20	.30 .20 .30 .40 .20	.50 .70 .60 .50 .60	2.667 2.674 2.667 2.600 3.125 2.667	2.653 2.114 2.469 2.000 2.469 2.667	2.237 1.799 2.101 1.862 2.101 2.398	1.908 1.675 1.953 1.776 1.953 2.119	1.704 1.541 1.669 1.642 1.779 1.898	1.534 1.445 1.515 1.479 1.658 1.642	1.344 1.318 1.330 1.319 1.408 1.406	1.255 1.235 1.244 1.239 1.297 1.297
C = 12 $L = 48$ $X = 16$ $X' = 16$ $C = 12$	56 57 58 59 60	.10 .10 .10 .20 .20	.20 .30 .40 .20	.70 .60 .50 .60	2.674 2.667 2.000 3.125 2.667	2.114 2.469 2.000 2.469 2.667	2.020 2.331 1.862 2.358 2.398	1.825 2.132 1.776 2.132 2.119	1.709 1.880 1.704 1.988 1.938	1.567 1.661 1.575 1.808 1.764	1.408 1.410 1.376 1.502 1.473	1.295 1.297 1.279 1.357 1.342
L = 40 X = 20 X' = 8 C = 8	61 62 63 64 65	.10 .10 .10 .20 .20	.20 .30 .40 .20 .30	.70 .60 .50 .60	2.674 2.667 2.000 3.125 2.667	1.887 2.203 1.812 2.203 2.331	1.577 1.724 1.675 1.832 1.961	1.412 1.486 1.508 1.623 1.684	1.335 1.381 1.395 1.527 1.560	1.289 1.311 1.304 1.443 1.447	1.205 1.209 1.208 1.290 1.294	1.153 1.157 1.157 1.217 1.217
L = 44 $X = 20$ $X' = 12$ $C = 8$	66 67 68 69 70	.10 .10 .10 .20 .20	.20 .30 .40 .20	.70 .60 .50 .60	2.674 2.667 2.000 3.125 2.667	2.114 2.268 1.812 2.469 2.331	1.799 2.062 1.706 2.101 2.151	1.610 1.706 1.667 1.862 1.919	1.471 1.524 1.508 1.689 1.712	1.393 1.420 1.383 1.582 1.558	1.280 1.276 1.258 1.368 1.355	1.209 1.205 1.195 1.269 1.261
L = 48 X = 20 X'= 16 C = 8	71 72 73 74 75	.10 .10 .10 .20 .20	.20 .30 .40 .20	.70 .60 .50 .60	2.674 2.667 2.000 3.125 2.667	2.114 2.268 1.812 2.469 2.331	2.020 2.062 1.706 2.358 2.151	1.825 1.984 1.721 2.132 2.128	1.629 1.692 1.634 1.880 1.894	1.508 1.546 1.471 1.733 1.672	1.364 1.348 1.311 1.456 1.420	1.267 1.256 1.233 1.326 1.305
L = 44 X = 20 X' = 8 C = 12	76 77 78 79 80	.10 .10 .10 .20 .20	.20 .30 .40 .20 .30	.70 .60 .50 .60	2.674 2.667 2.000 3.125 2.667	1.887 2.203 2.000 2.203 2.653	1.597 1.862 1.862 1.862 2.237	1.499 1.664 1.748 1.736 1.908	1.395 1.495 1.548 1.605 1.704	1.335 1.404 1.427 1.529 1.597	1.253 1.274 1.284 1.362 1.383	1.189 1.203 1.214 1.266 1.280
L = 48 X = 20 X' = 12 C = 12	81 82 83 84 85	.10 .10 .10 .20 .20	.20 .30 .40 .20 .30	.70 .60 .50 .60	2.674 2.667 2.000 3.125 2.667	2.114 2.469 2.000 2.469 2.667	1.799 2.101 1.862 2.101 2.398	1.675 1.953 1.835 1.953 2.232	1.541 1.669 1.704 1.779 1.898	1.445 1.529 1.517 1.661 1.730	1.337 1.350 1.340 1.451 1.453	1.247 1.256 1.253 1.325 1.328
L = 52 X = 20 X' = 16 C = 12	86 87 88 89 90	.10 .10 .10 .20 .20	.20 .30 .40 .20 .30	.70 .60 .50 .60 .50	2,674 2,667 2,000 3,125 2,667	2.114 2.469 2.000 2.469 2.667	2.020 2.331 1.862 2.358 2.398	1.825 2.132 1.835 2.132 2.326	1.709 1.880 1.757 1.988 2.075	1.567 1.669 1.621 1.808 1.876	1.420 1.433 1.399 1.550 1.527	1.311 1.312 1.294 1.389 1.376

Table 11.11

SUMMARY OF GROSS LOADS REQUIRED FOR TYPE 3-2 TRUCKS TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS A STANDARD H TRUCK WEIGHING ONE KIP



Ninety variations in the Type 3-2 truck are given in this Table. Each truck number, from 1 to 90, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

All dimensions are in feet.

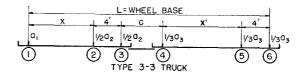
a1, a2, and a3-Represent the ratio of gross vehicle weight on axles.

Wheel Base and Axle Spacing	Truck No.	1	Load O Axles Kips					Span-F	eet			
Feet	ΙĒ	aı	\mathbf{a}_2	аз	10	20	30	40	50	60	80	100
	1	.10	.40	.50	3.125	2.128	1.764	1.570	1.408	1.312	1.212	1.160
$\Gamma = 36$	2	.10	.50	.40	2.500	1.812	1.558	1.451	1.319	1.247	1.170	1.129
X = 12	3	.10	.60	.30	2.083	1.567	1.393	1.326	1.236	1.185	1.129	1.099
X' = 12	4	.20	.40	.40	3.125	2.203	1.862	1.650	1.445	1.335	1.224	1.170
C = 8	5	.20	.50_	.30	2.500	1.859	1.634	1.466	1.342	1.263	1.179	1.135
T - 40	6	.10	.40 .50	.50	$\frac{3.125}{2.500}$	$\frac{2.128}{1.812}$	1.764	1.631	$\frac{1.495}{1,379}$	$\frac{1.374}{1.290}$	1.250	1.188 1.151
$egin{array}{c} \mathbf{L} = 40 \ \mathbf{X} = 12 \end{array}$	7 8	.10	.60	$.40 \\ .30$	$\frac{2.500}{2.083}$	1.512	$\frac{1.558}{1.393}$	$\frac{1.464}{1.326}$	1.277	1.215	$\frac{1.198}{1.149}$	1.114
X' = 16	9	.20	.40	.40	$\frac{2.033}{3.125}$	2.203	1.862	1.650	1.520	1.387	1.149 1.256	1.114
$\overset{\mathbf{C}}{\mathbf{C}} = \overset{10}{8}$	10	.20	.50	.30	2.500	1.859	1.634	1.466	1.387	1.299	1.202	1.152
	11	.10	.40	.50	3.125	2.128	1.764	1.631	1.553	1,439	1.290	1.217
L = 44	12	.10	.50	.40	2,500	1.812	1.558	1.464	1.408	1.339	1.229	1.172
X = 12	13	.10	.60	.30	2.083	1.567	1.393	1.326	1.289	1.247	1.170	1.129
X' = 20	14	.20	.40	.40	3.125	2.203	1.862	1.650	1.538	1.443	1.290	1.217
C = 8	15	.20	.50	.30	2.500	1.859	1.634	1.466	1.387	1.335	1.225	1.170
	16	.10	.40	.50	3.125	2.469	2.028	1.802	1.587	1.439	1.290	1.217
$egin{array}{l} \mathbf{L} = 40 \ \mathbf{X} = 12 \end{array}$	17	.10	.50	.40	2.500	1.976	1.724	1.572	1.445	1.339	1.229	1.172
$X = 12 \\ X' = 12$	18	.10	.60	.30	2.083	1.645	1.493	1.393	1.321	1.247	1.170	1.129
C = 12	$\frac{19}{20}$.20 .20	$.40 \\ .50$.40 $.30$	$\frac{3.125}{2.500}$	$\frac{2.469}{1.976}$	$\frac{2.101}{1.724}$	$\frac{1.795}{1.543}$	$\frac{1.603}{1.441}$	$\frac{1.443}{1.335}$	$\frac{1.290}{1.225}$	$\frac{1.217}{1.170}$
0 - 12	$-\frac{20}{21}$.10	.40	.50	3.125	2.469	2,028	1.802	1.669	1.508	1.332	1.247
L = 44	$\frac{21}{22}$.10	.50	.40	$\frac{3.125}{2.500}$	1.976	$\frac{2.028}{1.724}$	$\frac{1.602}{1.572}$	1.486	1.389	$\frac{1.332}{1.259}$	1.195
$\ddot{\mathbf{x}} = 12$	23	.10	.60	.30	2.083	1.645	1.493	1.393	1.337	1.280	1.192	1.145
$\tilde{\mathbf{X}}' = \tilde{16}$	24	.20	.40	.40	3.125	2.469	2.101	1.795	1.634	1.504	1.326	1.241
C = 12	25	.20	.50	.30	2.500	1.976	1.724	1.543	1.441	1.376	1.248	1.186
	26	.10	.40	.50	3.125	2.469	2.028	1.802	1.669	1.585	1.377	1.277
L = 48	27	.10	.50	.40	2.500	1.976	1.724	1.572	1.486	1.435	1.292	1.218
X = 12	28	.10	.60	.30	2.083	1.645	1.493	1.393	1.337	1.304	1.214	1.161
X' = 20	29	.20	.40	.40	3.125	2.469	2.101	1.795	1.634	1.548	1.362	1.266
C = 12	30	.20_	.50	30_	2.500	1.976	1.724	1.543	1.441	1.383	1.274	1.205
T 10	31	.10	.40	.50	3.125	2.128	1.764	1.570	1.437	1.340	1.229	1.172
$ L = 40 \\ X = 16 $	32	.10	.50	.40	2.500	1.812	1.558	1.479	1.353	1.271	1.185	1.140
$X = 16 \\ X' = 12$	$\frac{33}{34}$	$.10 \\ .20$	$.60 \\ .40$.30 $.40$	$\frac{2.083}{3.125}$	$\frac{1.567}{2.203}$	$\frac{1.393}{1.862}$	$\frac{1.359}{1.736}$	$\frac{1.266}{1.524}$	$\frac{1.206}{1.391}$	$\frac{1.143}{1.258}$	1.109 1.193
$C = \frac{12}{8}$	35	.20	.50	.30	$\frac{3.125}{2.500}$	1.859	1.634	1.572	1.410	1.311	1.209	1.157
	36	.10	.40	.50	3,125	2.128	1.764	1.692	1.536	1.404	1.269	1.200
L = 44	37	.10	.50	.40	$\frac{5.129}{2.500}$	1.812	1.764	1.513	1.418	1.318	1.209 1.215	1.161
$\ddot{x} = 16$	38	.10	.60	.30	2.083	1.567	1.393	1.366	1.309	1.238	1.164	1.125
X' = 16	39	.20	.40	.40	3.125	2.203	1.862	1.773	1,610	1.449	1.292	1.217
c = s	40	.20	.50	.30	2.500	1.859	1.634	1.572	1.460	1.350	1.233	1.175
	41	.10	.40	.50	3.125	2.128	1.764	1.692	1.595	1.473	1.311	1.230
L = 48	42	.10	.50	.40	2.500	1.812	1.558	1.513	1.445	1.366	1.245	1.185
X = 16	43	.10	.60	.30	2.083	1.567	1.393	1.366	1.319	1.272	1.185	1.140
X' = 20 $C = 8$	44	.20	.40	.40	3.125	2.203	1.862	1.773	1.623	1.511	1.328	1.242
<u>C</u> == 8	45	20	.50	.30	2,500	1.859	1.634	1.572	1.460	1.391	1.258	1.193

$ \begin{array}{c} \mathbf{L} = 44 47 .10 .50 .40 2.500 1.976 1.724 1.626 1.488 1.366 1.245 \\ \mathbf{X} = 16 48 .10 .60 .30 2.083 1.645 1.493 1.439 1.355 1.272 1.185 \\ \mathbf{X}' = 12 49 .20 .40 .40 3.125 2.469 2.101 1.946 1.706 1.511 1.328 \\ \mathbf{C} = 12 50 .20 .50 .30 2.500 1.976 1.770 1.695 1.527 1.391 1.258 \\ \hline 51 .10 .40 .50 3.125 2.469 2.028 1.862 1.721 1.546 1.353 \\ \mathbf{L} = 48 52 .10 .50 .40 2.500 1.976 1.724 1.626 1.524 1.420 1.277 \\ \mathbf{X} = 16 53 .10 .60 .30 2.083 1.645 1.493 1.439 1.370 1.307 1.208 \\ \mathbf{X}' = 16 54 .20 .40 .40 3.125 2.469 2.101 1.946 1.730 1.577 1.366 \\ \mathbf{C} = 12 55 .20 .50 .30 2.500 1.976 1.770 1.695 1.563 1.435 1.284 \\ \hline \mathbf{L} = 52 57 .10 .40 .50 3.125 2.469 2.028 1.862 1.721 1.626 1.399 \\ \mathbf{L} = 52 57 .10 .50 .40 2.500 1.976 1.724 1.626 1.524 1.466 1.311 \\ \mathbf{X} = 16 58 .10 .60 .30 2.083 1.645 1.493 1.439 1.370 1.328 1.230 \\ \mathbf{X}' = 20 59 .20 .40 .40 3.125 2.469 2.028 1.862 1.721 1.626 1.399 \\ \mathbf{X}' = 16 58 .10 .60 .30 2.083 1.645 1.493 1.439 1.370 1.328 1.230 \\ \mathbf{X}' = 20 59 .20 .40 .40 3.125 2.469 2.101 1.946 1.730 1.618 1.406 \\ \mathbf{C} = 12 60 .20 .50 .30 2.500 1.976 1.770 1.695 1.563 1.473 1.311 1.66 \\ \mathbf{C} = 12 60 .20 .50 .30 2.500 1.976 1.770 1.695 1.563 1.473 1.311 1.66 \\ \mathbf{C} = 12 60 .20 .50 .30 2.500 1.976 1.770 1.695 1.563 1.473 1.311 1.66 \\ \mathbf{C} = 12 60 .20 .50 .30 2.500 1.976 1.770 1.695 1.563 1.473 1.311 1.66 \\ \mathbf{C} = 12 60 .20 .50 .30 2.500 1.976 1.770 1.695 1.563 1.473 1.311 1.66 \\ \mathbf{C} = 10 .40 .50 .30 2.500 1.976 1.770 1.695 1.563 1.473 1.311 1.66 \\ \mathbf{C} = 10 .40 .50 .30 2.500 1.976 1.770 1.695 1.563 1.473 1.311 1.6$	1.230 1.185 1.140 1.242 1.193 1.261 1.208 1.156 1.267 1.211 1.294 1.232 1,174
$\begin{array}{c} \mathbf{X} = 16 \\ \mathbf{X}' = 12 \\ 49 \\ 20 \\ 40 \\ 40 \\ 30 \\ 20 \\ 40 \\ 40 \\ 30 \\ 20 \\ 30 \\ 1.776 \\ 1.724 \\ 1.626 \\ 1.524 \\ 1.524 \\ 1.420 \\ 1.277 \\ 1.208 \\ \mathbf{X}' = 16 \\ 54 \\ 20 \\ 40 \\ 40 \\ 30 \\ 2.083 \\ 1.645 \\ 1.493 \\ 1.439 \\ 1.439 \\ 1.370 \\ 1.307 \\ 1.307 \\ 1.307 \\ 1.208 \\ \mathbf{X}' = 16 \\ 54 \\ 20 \\ 40 \\ 40 \\ 30 \\ 2.500 \\ 1.976 \\ 1.770 \\ 1.695 \\ 1.626 \\ 1.524 \\ 1.435 \\ 1.435 \\ 1.284 \\ 1.577 \\ 1.366 \\ 1.528 \\ 1.645 \\ 1.529 \\ 1.645 \\ 1.529 \\ 1.645 \\ 1.529 \\ 1.645 \\ 1.529 \\ 1.626 \\ 1.524 \\ 1.466 \\ 1.311 \\ 1.245 \\ 1.570 \\ 1.626 \\ 1.524 \\ 1.466 \\ 1.511 \\ 1.328 \\ 1.230 \\ 1.570 \\ 1.626 \\ 1.524 \\ 1.626 \\ 1.512 \\ \mathbf$	1.140 1.242 1.193 1.261 1.208 1.156 1.267 1.211 1.294 1.232 1.174
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	1.120
	1.218
	1.181
	1.214
	1.174
	1.135
	1.244
	1.199
	1.244
	1.196
	1.152
	1.269
	1.218
	1.244
	1.196
	1.152
	1.269
	1.218
	1.276
	1.221
	1.168
	1.297
	1.236
	1.309
	1.245
	1.186
<u>C = 12 90 .20 .50 .30 2.500 1.976 1.770 1.695 1.608 1.506 1.350 </u>	1.186 1.325 1.256

Table 11.12

SUMMARY OF GROSS LOADS REQUIRED FOR TYPE 3-3 TRUCKS TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS A STANDARD H TRUCK WEIGHING ONE KIP



Ninety variations in the Type 3-3 truck are given in this Table. Each truck number, from 1 to 90, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

All dimensions are in feet,

a1, a2, and a3-Represent the ratio of gross vehicle weight on axles.

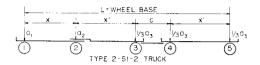
Wheel Base and Axle Spacing	Truck No.]	Load C Axles Kips	5				Span-I	Feet			
Feet	ļ.	a ₁	a 2	\mathbf{a}_3	10	20	30	40	50	60	80	100
	1	.10	.30	.60	3.125	2.203	1.862	1.757	1.558	1.429	1.282	1.209
L = 40	2	.10	.40	.50	3.125	2.469	2.146	1.894	1.621	1.460	1.304	1.227
X = 12	3	.10	.50	.40	2.500	1.976	1.786	1.647	1.468	1.355	1.238	1.179
X' = 8	4	.20	.30	.50	$\frac{3.745}{3.125}$	$\frac{2.653}{2.469}$	$\frac{2.237}{2.101}$	$\frac{2.041}{1.852}$	$\frac{1.786}{1.631}$	$1.575 \\ 1.464$	$\frac{1.366}{1.302}$	$1.269 \\ 1.224$
C = 12	5	20	.40_	40								
	6	.10	.30	.60	3,125	2.469	2.101	1.953	1.751	1.565	1.359	1.263
L = 44	7	.10	.40	.50	$\frac{3.125}{2.500}$	$\frac{2.469}{1.976}$	$\frac{2.146}{1.786}$	$\frac{1.934}{1.650}$	$\frac{1.828}{1.555}$	$\frac{1.558}{1.422}$	$1.361 \\ 1.280$	$\frac{1.267}{1.211}$
$ \begin{array}{l} X = 12 \\ X' = 12 \end{array} $	8 9	$\frac{.10}{.20}$.50 .30	.40 .50	$\frac{2.500}{3.745}$	$\frac{1.576}{2.959}$	$\frac{1.786}{2.525}$	$\frac{1.050}{2.252}$	$\frac{1.555}{2.000}$	$\frac{1.422}{1.712}$	1.443	1.211 1.321
C = 12	10	.20	.40	.40	3.125	2.469	2.101	1.852	1.712	1.546	1.350	1.258
	11	.10	.30	.60	3,125	2.469	2.358	2.132	1.988	1.770	1.466	1.335
L = 48	12	.10	.40	.50	3.125	2.469	2.146	1.934	1.815	1.667	1.422	1.311
$\ddot{X} = 12$	13	.10	.50	.40	2,500	1.976	1.786	1.650	1.575	1.497	1.326	1.242
$\tilde{\mathbf{x}}' = \tilde{16}$	14	.20	.30	50	3.745	2,959	2.674	2.252	2.024	1.848	1.513	1.368
C = 12	15	.20	.40	.40	3.125	2.469	2.101	1.852	1.712	1.634	1.401	1.292
	16	.10	.30	.60	3.125	2.203	1.862	1.799	1.698	1.548	1.353	1.259
L = 44	17	.10	.40	.50	3.125	2.469	2.237	2.092	1.835	1.610	1.391	1.289
X = 12	18	.10	.50	.40	2.500	1.976	1.812	1.742	1.613	1.460	1.302	1.225
$\mathbf{x}' = 8$	19	.20	.30	.50	3.745	2.653	2.237	2.160	1.969	1.764	1.471	1.340
C = 16	20	.20	.40	.40	3.125	2.469	2.101	1.953	1.786	1.590	1.376	1.274
	21	.10	.30	.60	3.125	2.469	2.101	1.953	1.880	1.704	1.441	1.318
L = 48	22	.10	.40	.50	3.125	2.469	2.237	2.092	1.919	1.724	1.456	1.332
$ \begin{array}{r} X = 12 \\ X' = 12 \end{array} $	23	.10	.50	.40	2.500	1.976	$\frac{1.812}{2.525}$	$\frac{1.742}{2.347}$	$\frac{1.639}{2.151}$	$\frac{1.536}{1.923}$	1.350	1.258
C = 16	$\frac{24}{25}$	$.20 \\ .20$.30 .40	.50 .40	$\frac{3.745}{3.125}$	$\frac{2.959}{2.469}$	$\frac{2.525}{2.101}$	$\frac{2.347}{1.953}$	$\frac{2.151}{1.786}$	1.686	$1.550 \\ 1.427$	$\frac{1.393}{1.311}$
C - 16												
L = 52	26	.10	.30	.60	$\frac{3.125}{3.125}$	2.469	$\frac{2.358}{2.237}$	$\frac{2.132}{2.092}$	$\frac{2.008}{1.919}$	$\frac{1.890}{1.825}$	$1.538 \\ 1.524$	1.381
X = 12	27 28	.10 .10	.40 .50	$.50 \\ .40$	$\frac{3.125}{2.500}$	$\frac{2.469}{1.976}$	1.812	$\frac{2.092}{1.742}$	1.639	1.525	$\frac{1.324}{1.397}$	$1.377 \\ 1.292$
X = 12 X' = 16	28 29	.20	.30	.50	$\frac{2.500}{3.745}$	$\frac{1.976}{2.959}$	$\frac{1.514}{2.674}$	2.445	$\frac{1.039}{2.151}$	1.992	1.629	1.443
C = 16	30	.20	.40	.40	3.125	2.469	2.101	1.953	1.786	1.689	1.484	1.348
	31	.10	.30	.60	3,125	2.203	1.862	1.757	1.558	1.451	1.299	1.222
$I_{*} = 44$	32	.10	.40	.50	$\frac{3.125}{3.125}$	2.469	$\frac{1.862}{2.146}$	1.894	1.634	1.497	1.325	1.241
X = 16	33	.10	.50	.40	2.500	1.976	1.786	1.689	1.513	1.385	1.256	1.192
$\mathbf{X}' = 8$	34	.20	.30	.50	3.745	2.653	2.237	2.041	1.786	1.653	1.410	1.300
C = 12	35	.20	.40	.40	3.125	2.469	2.193	2.028	1.739	1.534	1.340	1.252
	36	.10	.30	.60	3,125	2.469	2,101	1.953	1.751	1,585	1.379	1.276
L = 48	37	.10	.40	.50	3.125	2.469	2.146	2.020	1.818	1.600	1.383	1.282
X = 16	38	.10	.50	.40	2,500	1.976	1.786	1.712	1.603	1.456	1.300	1.224
X' = 12	39	.20	.30	.50	3.745	2.959	2.525	2.347	2.000	1.802	1.493	1.353
C = 12	40	.20	.40	.40	3.125	2.469	2.193	2.028	1.825	1.626	1.393	1.285

Table 11.12	(Continued)
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	41	.10	.30	.60	3,125	2.469	2.358	2.132	1.988	1.739	1.466	1.335
L = 52	42	.10	.40	.50	3.125	2.469	2.146	2.020	1.876	1.715	1.447	1.326
X = 16	43	.10	.50	.40	2.500	1.976	1.786	1.712	1.621	1.536	1.346	1.256
X' = 16	44	.20	.30	.50	3.745	2.959	2.755	2.519	2.183	1.969	1.570	1.403
$_{ m C}=12$	45	.20	.40	.40	3.125	2.469	2.193	2.028	1.825	1.718	1.447	1.323
	46	.10	.30	.60	3.125	2.203	1.862	1.799	1.698	1.548	1.372	1.272
L = 48	47	.10	.40	.50	3.125	2.469	2.237	2.160	1.835	1.642	1.414	1.304
X = 16	48	.10	.50	.40	2.500	1.976	1.887	1.808	1.664	1.495	1.323	1.239
X' = 8	49	.20	.30	.50	3.745	2.653	2.237	2.160	1.969	1.779	1.513	1.370
C = 16	50	.20	.40	.40	3.125	2.469	2.358	2.132	1.908	1.675	1.418	1.304
	51	.10	.30	.60	3,125	2.469	2.101	1.953	1.880	1,704	1.462	1.332
L = 52	52	.10	.40	.50	3.125	2.469	2.358	2.179	1.988	1.776	1.481	1.350
$\bar{x} = 16$	53	.10	.50	.40	2.500	1.976	1.887	1.808	1.686	1.577	1.370	1.272
X' = 12	54	.20	.30	.50	3.745	2.959	2.525	2.347	2.242	1.957	1.610	1.429
C = 16	55	.20	.40	.40	3.125	2.469	2,358	2.132	1.908	1.776	1.475	1.342
	56	.10	.30	.60	3.125	2.469	2.358	2.132	2.008	1.890	1.565	1.397
L = 56	57	.10	.40	.50	3.125	2.469	2.358	2.179	1.988	1.876	1.553	1.397
X = 16	58	.10	.50	.40	2,500	1.976	1.887	1.808	1.686	1.616	1.420	1.307
$\widetilde{\mathbf{X}}' = \widetilde{16}$	59	.20	.30	.50	3.745	2.959	2.833	2.558	2.336	2.119	1.698	1.484
C = 16	60	.20	.40	.40	3.125	2.469	2.358	2.132	1.908	1.779	1.536	1.381
	61	.10	.30	.60	3,125	2,203	1.862	1.757	1.558	1.451	1.318	1.235
L = 48	62	.10	.40	.50	3.125	2.203 2.469	$\frac{1.862}{2.146}$	1.894	1.634	1.451 1.506	1.318 1.344	1.255 1.255
$\ddot{\mathbf{x}} = \ddot{\mathbf{z}}_0$	63	.10	.50	.40	2.500	1.976	1.786	1.689	1.536	1.414	1.274	1.205 1.205
$\mathbf{x}' = \mathbf{x}'$	64	.20	.30	.50	3.745	2.653	$\frac{1.786}{2.237}$	2.041	1.786	1.656	1.451	1.328
$\ddot{c} = 12$	65	.20	.40	.40	3,125	2.469	2.193	2.037	1.812	1.608	1.381	$\frac{1.328}{1.279}$
	66											
L = 52	67	.10	.30	.60	3.125	2.469	2.101	1.953	1.751	1.585	1.399	1.290
X = 20	68	$.10 \\ .10$.40	.50	3.125	2.469	2.146	2.020	1.818	1.629	1.406	1.297
X = 20 X' = 12	69		.50	.40	2.500	1.976	1.786	1.718	1.639	1.490	1.319	1.236
C = 12	70	.20 .20	$.30 \\ .40$.50	3.745	$\frac{2.959}{2.469}$	$2.525 \\ 2.193$	$\frac{2.347}{2.088}$	$\frac{2.000}{1.953}$	1.802	1.538	1.383
0 - 12				.40	3.125					1.712	1.437	1.316
T _ F0	71	.10	.30	.60	3.125	2.469	2.358	2.132	1.988	1.739	1.490	1.350
L = 56	72	.10	.40	.50	3.125	2.469	2.146	2.020	1.938	1.764	1.473	1.342
X = 20	73	.10	.50	.40	2.500	1.976	1.786	1.718	1.667	1.575	1.368	1.271
X' = 16 C = 12	74	.20	.30	.50	3.845	2.959	2.755	2.551	2.262	1.972	1.629	1.439
C = 12	75_	20_	.40	.40	3.125	-2.469	2.193	2.088	1.953	1.808	1.497	1.355
	76	.10	.30	.60	3.125	2.203	1.862	1.799	1.698	1.548	1.391	1.285
L = 52	77	.10	.40	.50	3.125	2.469	2.237	2.160	1.835	1.642	1.439	1.319
X = 20	78	.10	.50	.40	2.500	1.976	1.887	1.808	1.692	1.531	1.344	1.253
X' = 8	79	.20	.30	.50	3.745	2.653	2.237	2.160	1.969	1.779	1.558	1.399
C = 16	80	.20	.40	.40	3.125	2.469	2.358	2.227	2.028	1.767	1.466	1.355
	81	.10	.30	.60	3.125	2.469	2.101	1.953	1.880	1.704	1.484	1.348
L = 56	82	.10	.40	.50	3.125	2.469	2.358	2.179	2,062	1.795	1.508	1.366
X = 20	83	.10	.50	.40	2.500	1.976	1.887	1.808	1.739	1.618	1.393	1.287
X' = 12	84	.20	.30	.50	3.745	2.959	2.525	2.347	2.242	1.957	1.661	1.462
C = 16	85	.20	.40	.40	3.125	2,469	2.358	2.227	2.049	1.876	1.527	1.376
	86	.10	.30	.60	3.125	2.469	2.358	2.132	2.008	1.890	1.590	1.412
L = 60	87	.10	.40	.50	3.125	2.469	2.358	2.179	2.062	1.927	1.582	1.414
X = 20	88	.10	.50	.40	2.500	1.976	1.887	1.808	1.739	1.656	1.445	1.323
X' = 16	89	.20	.30	.50	3.745	2.959	2.833	2.558	2.410	2.165	1.767	1.524
C = 16	90	.20	.40	.40	3.125	2.469	2.358	2.227	2.049	1.876	1.592	1.416

Table 11.13

SUMMARY OF GROSS LOADS REQUIRED FOR TYPE 2-S1-2 TRUCKS TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS A STANDARD H TRUCK WEIGHING ONE KIP



Ninety-six variations in the Type 2-S1-2 truck are given in this Table. Each truck number, from 1 to 96, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

All dimensions are in feet.

Gross loads are in kips.

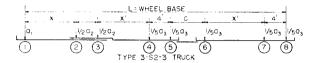
a1, a2, and a3-Represent the ratio of gross vehicle weight on axles.

Wheel Base and Axle Spacing	Truck No.	I	oad O Axles Kips	n				Span-F	eet			
Feet	ΙĔ	a ₁	a 2	\mathbf{a}_3	10	20	30	40	50	60	80	100
L = 36	1	.10	.20	.70	3.413	2.674	1.953	1.672	1.466	1.351	1.235	1.176
$\mathbf{x} = 8$	2	.10	.30	.60	2.667	2.451	1.976	1.730	1.486	1.362	1.242	1.181
X' = 10 C = 8	3	.20	.20	.60	$\frac{4.000}{2.667}$	$\frac{3.125}{2.268}$	$\frac{2.283}{1.832}$	$\frac{1.880}{1.642}$	$\frac{1.570}{1.517}$	$\frac{1.420}{1.395}$	$\frac{1.276}{1.266}$	$\frac{1.205}{1.200}$
	4	.20	.30	.50		and the second second						water a second
L = 40 X = 8	5	.10	.20 .30	.70 .60	$\frac{3.413}{2.667}$	$\frac{2.674}{2.469}$	$\frac{2.105}{2.101}$	$\frac{1.828}{1.862}$	$\frac{1.577}{1.616}$	$\frac{1.427}{1.451}$	$1.280 \\ 1.294$	$\frac{1.209}{1.218}$
X = 8 X' = 12	$\frac{6}{7}$	$.10 \\ .20$.20	.60	4.000	$\frac{2.405}{3.125}$	$\frac{2.101}{2.457}$	$\frac{1.002}{2.070}$	1.712	1.515	1.330	1.218 1.244
$\mathbf{c} = \mathbf{s}$	8	.20	.30	.50	2.667	2.268	1.927	1.739	1.585	1.481	1.319	1.239
L = 44	9	.10	.20	.70	3,413	2.674	2.273	1.942	1.704	1.513	1.330	1.242
$\ddot{x} = \ddot{s}$	10	.10	.30	.60	2.667	2.469	2.237	2.004	1.767	1.548	1.350	1.256
X' = 14	11	.20	.20	.60	4.000	3.125	2,660	2.247	1.887	1.621	1.389	1.284
c = s	12	.20	.30	.50	2.667	2.268	2.028	1.838	1.656	1.550	1.376	1.279
L = 48	13	.10	.20	.70	3.413	2.674	2.342	2.041	1.825	1.608	1.381	1.279
X = 8	14	.10	.30	.60	2.667	2.469	2.358	2.132	1.880	1.661	1.410	1.297
X' = 16	15	.20	.20	.60	4.000	3.125	2.740	2,387	2.041	1.745	1.453	1.326
c = s	16	.20	.30	.50	2.667	2.268	2.062	1.905	1.730	1.605	1.437	1.321
L = 52	17	.10	.20	.70	3.413	2.674	2.342	2.151	1.934	1.715	1.439	1.316
$ \begin{array}{r} \mathbf{x} = 8 \\ \mathbf{x}' = 18 \end{array} $	18	.10	.30	.60	2.667	2.469	2.358	2.227	1.988	1.792	1.477	1.342
$C = \frac{8}{8}$	$\frac{19}{20}$.20	.20 .30	.60 .50	$\frac{4.000}{2.667}$	$\frac{3.125}{2.268}$	$\frac{2.740}{2.062}$	$\frac{2.513}{1.972}$	$\frac{2.174}{1.812}$	$1.890 \\ 1.664$	$\frac{1.524}{1.502}$	$\frac{1.372}{1.366}$
L = 56	21	.10	.20	.70	3.413	2.674	2.342	$\frac{1.972}{2.273}$	2.008	1.825	1.502	1.357
X = 8	22	.10	.30	.60	$\frac{3.413}{2.667}$	2.469	$\frac{2.342}{2.358}$	2.331	$\frac{2.008}{2.110}$	$\frac{1.825}{1.894}$	1.550	1.389
$\ddot{\mathbf{X}}' = 20$	23	.20	.20	.60	4,000	3.125	2.740	2.653	2.320	2.024	1.603	1.422
$\hat{\mathbf{c}} = \hat{\mathbf{s}}$	$\frac{23}{24}$.20	.30	.50	2.667	2.268	2.062	2.045	1.890	1.724	1.550	1.412
L = 60	25	.10	.20	.70	3.413	2,674	2.342	2.283	2.088	1.931	1.567	1.401
$\mathbf{x} = 8$	26	.10	.30	.60	2.667	2.469	2.358	2.398	2.222	1.980	1.631	1.439
X' = 22	27	.20	.20	.60	4.000	3.125	2.740	2,667	2.439	2.128	1.689	1.475
C = 8	28	.20	.30	.50	2.667	2.268	2.062	2.045	1.942	1.789	1.590	1.462
L = 64	29	.10	.20	.70	3.413	2.674	2.342	2.283	2.174	1.989	1.642	1.445
$\mathbf{x} = 8$	30	.10	.30	.60	2.667	2.469	2.358	2.398	2.304	2.079	1.721	1.493
X' = 24	31	.20	.20	.60	4.000	3,125	2.740	2.667	2.538	2.242	1.786	1.531
C = 8	32_	.20	.30_	50_	2.667	2.268	2.062	2.045	1.996	1.859	1.631	1.515
L = 40 $X = 12$	33	.10	.20	.70	3.413	2.674	1.953	1.672	1.504	1.379	1.252	1.189
$X = 12 \\ X' = 10$	$\frac{34}{35}$	$.10 \\ .20$.30	.60	2.667	2.500	$\frac{2.075}{2.283}$	1.754	1.527	1.391	1.258	1.193
$\overset{\lambda}{c} = \overset{10}{8}$	36	.20	$.20 \\ .30$.60 .50	$\frac{4.000}{2.667}$	$\frac{3.125}{2.538}$	$\frac{2.283}{2.075}$	$\frac{1.931}{1.789}$	$\frac{1.661}{1.610}$	$\frac{1.481}{1.460}$	$\frac{1.311}{1.304}$	$\frac{1.230}{1.227}$
L = 44		.10		70^{-}	3.413	2,674	2.105	1.828	1.597	1.460	1.299	1.221
$\ddot{X} = 12$	38	.10	.30	.60	$\frac{5.415}{2.667}$	$\frac{2.674}{2.667}$	$\frac{2.105}{2.268}$	$\frac{1.028}{1.949}$	1.661	1.481	1.312	1.231
$\ddot{X}' = 12$	39	.20	.20	.60	4.000	3.125	2.457	2.119	1.821	1.582	1.368	1.269
C = 8	40	.20	.30	.50	2.667	2.667	2.198	1.908	1.686	1.558	1.362	1.267
L = 48	41	.10	.20	.70	3,413	2.674	2.273	1.942	1.704	1.553	1.451	1.325
X = 12	42	.10	.30	.60	2,667	2.667	2.433	2.079	1.805	1.585	1.370	1.269
X'=14	43	.20	.20	.60	4.000	3.125	2.660	2.268	1.969	1.701	1.431	1.312
c = 8	44	.20	.30	.50	2,667	2.667	2.331	2.012	1.770	1.631	1.422	1.311

Table 11.1	3 (Co	ntinue	ed)									
L = 52	45	.10	.20	.70	3.413	2.674	2.342	2.041	1.825	1.634	1.403	1.292
X = 12 $X' = 16$	46	.10	.30	.60	2.667	2.667	2.538	2.222	1.957	1.704	1.433	1.312
X' = 16	47	.20	.20	.60	4.000	3.125	2.740	2.387	2.114	1.835	1.499	1.357
C = 8	48	.20	.30	.50	2.667	2.667	2.331	2,092	1.859	1.692	1.490	1.355
L = 56	49	.10	.20	.70	3.413	2.674	2.342	2.151	1.934	1.724	1.462	1.332
X = 12 $X' = 18$	$\frac{50}{51}$.10 .20	.30 .20	.60	2.667	$\frac{2.667}{3.125}$	$\frac{2.538}{2.740}$	$\frac{2.364}{2.513}$	$\frac{2.079}{2.257}$	$\frac{1.838}{1.988}$	$\frac{1.502}{1.575}$	$\frac{1.357}{1.405}$
C = 8	52	.20	.30	$.60 \\ .50$	$\frac{4.000}{2.667}$	$\frac{3.125}{2.667}$	$\frac{2.740}{2.331}$	$\frac{2.513}{2.179}$	1.957	1.757	1.560	1.403
L = 60	53			.70	3.413	2.674	2.342	2.273	2.008	1.825	$-^{1.535}_{1.527}$	1.374
X = 12	54	.10	.30	.60	2.667	2,667	2.538	2.481	2.188	1.957	1.577	1.404
X' = 20	55	.20	.20	.60	4.000	3.125	2,740	2.653	2.347	2.114	1.658	1.456
C = 8	56	.20	.30	.50	2.667	2.667	2.331	2.232	2.037	1.828	1.608	1.453
L = 64	57	.10	.20	.70	3.413	2.674	2.342	2.283	2.088	1.931	1.595	1.416
X = 12	58	.10	.30	.60	2.667	2.667	2.538	2.525	2.304	2.053	1.661	1.458
X' = 22	59	.20	.20	.60	4.000	3,125	2.740	2.667	2.439	2.242	1.751	1.511
$\mathbf{c} = \mathbf{s}$	60	.20	.30_	50	2.667	2.667	2.331	2.232	2.096	1.905	1.650	1.506
L = 68	61	.10	.20	.70	3.413	2.674	2.342	2.283	2.174	1.988	1.672	1.464
X = 12	62	.10	.30	.60	2.667	2.667	2.538	2.525	2,415	2.155	1.754	1.513
X' = 24 $C = 8$	63 64	.20 $.20$.20 .30	.60	4.000	$\frac{3.125}{2.667}$	$2.740 \\ 2.331$	$\frac{2.667}{2.232}$	$2.538 \\ 2.160$	$\frac{2.320}{1.984}$	$\frac{1.852}{1.695}$	1.570
L = 56	65			50	2.667	2.674						$\frac{1.563}{1.307}$
X = 16	66	.10 .10	.20	.70 .60	$\frac{3.413}{2.667}$	2.667	$\frac{2.342}{2.660}$	$\frac{2.041}{2.222}$	$\frac{1.825}{1.969}$	$\frac{1.634}{1.724}$	$1.425 \\ 1.453$	1.326
X' = 16	67	.20	.20	.60	4.000	3.125	2.740	2.387	2.114	1.880	1.548	1.323
$\dot{\mathbf{c}} = \frac{13}{8}$	68	.20	.30	.50	2.667	2.667	2.660	2.315	2.004	1.789	1.546	1.391
L = 60	69	.10	.20	.70	3.413	2.674	2.342	2.151	1.934	1.724	1.486	1.348
$\ddot{X} = 16$	70	.10	.30	.60	2.667	2.667	2.740	2.381	2.079	1.842	1.524	1.372
X' = 18	71	.20	.20	.60	4.000	3.125	2.740	2.513	2.257	1.988	1.629	1.437
$\mathbf{c} = 8$	72	.20	.30	.50	2.667	2.667	2.660	2.427	2.119	1.862	1.623	1.441
L = 64	73	.10	.20	.70	3.413	2.674	2.342	2.232	2.008	1.825	1.550	1.389
X = 16	74	.10	.30	.60	2.667	2.667	2.740	2.564	2.188	1.972	1.603	1.422
X' = 20	75	.20	.20	.60	4.000	3.125	2.740	2.653	2.347	2.114	1.715	1.490
c = 8	76	.20	30 _	.50	2.667	2.667	2.660	2.451	2.198	1.942	1.669	1,495
L = 68	7 7	.10	.20	.70	3.413	2.674	2.342	2.283	2.088	1.931	1.616	1.435
X = 16 X' = 22	78	.10	.30	.60	2.667	2.667	2.740	2.667	2.304	2.083	1.689	1.475
$\overset{\mathbf{A}}{\mathbf{C}} = \overset{22}{8}$	79 80	$.20 \\ .20$.20 .30	.60 $.50$	$\frac{4.000}{2.667}$	$\frac{3.125}{2.667}$	$2.740 \\ 2.660$	$2.667 \\ 2.451$	$\frac{2.439}{2.273}$	$\frac{2.252}{2.028}$	$\frac{1.815}{1.718}$	$1.548 \\ 1.550$
L = 72	81	.10	.20	.70	3.413	2.674	2.342	2.283	2.174	1.988	1.678	1.481
$\mathbf{X} = 16$	82	.10	.30	.60	$\frac{3.413}{2.667}$	$\frac{2.674}{2.667}$	$\frac{2.342}{2.740}$	2.283 2.667	$\frac{2.174}{2.433}$	$\frac{1.988}{2.169}$	1.786	$\frac{1.481}{1.531}$
$\ddot{\mathbf{X}}' = 24$	83	.20	.20	.60	4,000	3.125	2.740	2.667	2.538	2.320	1.927	1.610
C = 8	84	.20	.30	.50	2.667	2.667	2.660	2.451	2.342	2.123	1.767	1.610
L = 76	85	.10	.20	.70	3.413	2,674	2.342	2.283	2.252	2.053	1.748	1.534
X = 16	86	.10	.30	.60	2.667	2.667	2.740	2.667	2.577	2.262	1.880	1.592
X' = 26	87	.20	.20	.60	4.000	3.125	2.740	2.667	2.632	2.398	2.016	1.678
C = 8	88	.20	30	.50_	2.667	2,667	2.660	2.451	2.342	2,183	1.818	1.645
L = 80	89	.10	.20	.70	3.413	2.674	2.342	2.283	2.252	2.119	1.821	1.587
X = 16 X' = 28	90	.10	.30	.60	2.667	2.667	2.740	2.667	2.632	2.358	1.980	1.658
C = 8	$\frac{91}{92}$.20 .20	.20 .30	.60	4.000	$\frac{3.125}{2.667}$	2.740	2.667	2.632	2.475	2.105	1.751
				.50	2.667		2.660	2.451	2.342	2.242	1.873	1.678
$ \begin{array}{l} \mathbf{L} = 84 \\ \mathbf{X} = 16 \end{array} $	93 94	.10 .10	.20	.70 .60	3.413	$\frac{2.674}{2.667}$	$2.342 \\ 2.740$	$\frac{2.283}{2.667}$	2.252	$2.188 \\ 2.469$	$\frac{1.901}{2.079}$	$\frac{1.647}{1.730}$
X' = 30	95	.20	.20	.60	$\frac{2.667}{4.000}$	3.125	2.740	2.667	$\frac{2.632}{2.632}$	2.469	2.208	1.750 1.832
$\ddot{\mathbf{c}} = \ddot{\mathbf{s}}$	96	.20	.30	.50	2.667	2.667	2.660	2.451	2.342	$\frac{2.338}{2.278}$	1.931	1.715
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Table 11.14

SUMMARY OF GROSS LOADS REQUIRED FOR TYPE 3-S2-3 TRUCKS TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS A STANDARD H TRUCK WEIGHING ONE KIP



Eighty-four variations in the Type 3-S2-3 truck are given in this Table. Each truck number, from 1 to 84, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

All dimensions are in feet.

Gross loads are in kips.

a1, a2, and a3-Represent the ratio of gross vehicle weight on axles.

Wheel Base and Axle Spacing	Truck No.	I	oad O Axles Kips					Span-F	'eet	,		
Feet	T	aı	a 2	a 3	10	20	30	40	50	60	80	100
L = 44	1	.05	.20	.75	4.167	2.941	2.304	1.894	1.608	1.447	1.292	1.217
X = 8	2	.05	.30	.65	4.167	$\frac{2.994}{3.145}$	$2.283 \\ 2.433$	$\frac{1.969}{2.012}$	$\frac{1.667}{1.704}$	$1.484 \\ 1.508$	$1.314 \\ 1.326$	$\frac{1.232}{1.241}$
X' = 8 C = 8	3 4	.10 .10	$.20 \\ .30$.70 $.60$	$\frac{4.464}{4.167}$	3.021	$\frac{2.433}{2.278}$	$\frac{2.012}{1.976}$	1.733	1.529	1.320 1.339	1.241
$\frac{C = 8}{L = 48}$	5	05	20 -	75^{-}	4.167	2,941	2.433	2.058	1.730	1.538	1.344	1.252
$\ddot{\mathbf{x}} = \ddot{8}$	6	.05	.30	.65	4.167	3.195	2.500	2.119	1.825	1.590	1.372	1.272
X' = 10	7	.10	.20	.70	4.464	3.145	2.597	2.203	1.838	1.610	1.383	1.279
$\mathbf{c} = 8$	8	10_	.30	60_	4.167	3.077	2.494	2.123	1.880	1.647	1.403	1.294
L = 52	9	.05	.20	.75	4.167	2.941	2.481	2.212	1.873	1.639	1.399	1.290
$X = \frac{32}{8}$	10	.05	.30	.65	4.167	3.195	2.755	2.278	1.996	1.712	1.437	1.316
X' = 12 $C = 8$	$\frac{11}{12}$.10 $.10$.20	.70 .60	$\frac{4.464}{4.167}$	$\frac{3.145}{3.077}$	$\frac{2.660}{2.681}$	$\frac{2.347}{2.252}$	$\frac{1.996}{1.984}$	$1.730 \\ 1.786$	$\frac{1.445}{1.475}$	1.321 1.340
C = 8 L = 56	13	.05	20 	.75	4.167	2.941	2.481	2.326	2.028	1.745	1.460	1.330
$\mathbf{x} = \frac{56}{8}$	14	.05	.30	.65	4.167	3.195	$\frac{2.481}{2.865}$	2.451	2.028	1.745	1.508	1.361
$ \begin{array}{c} \mathbf{X} = 8 \\ \mathbf{X}' = 14 \end{array} $	15	.10	.20	.70	4.464	3.145	2.660	2.481	2.169	1.855	1.515	1.366
$\ddot{\mathbf{c}} = \hat{s}$	16	.10	.30	.60	4.167	3.077	2.681	2.387	2.105	1.901	1.555	1.391
L = 60	17	.05	.20	.75	4,167	2.941	2.481	2.387	2.137	1.862	1.524	1.372
$\mathbf{x} = s$	18	.05	.30	.65	4.167	3.195	2.865	2.632	2.242	2.008	1.587	1.410
X' = 16	19	.10	.20	.70	4.464	3.145	2.660	2.558	2.288	1.984	1.590	1.412
C = 8	20	.10	30_	.60	4.167	3.077	2.681	2.545	2.232	1.992	1.642	1.445
L = 64	21	.05	.20	.75	4.167	2.941	2.481	$\frac{2.398}{2.770}$	$\frac{2,252}{2,370}$	1.996 2.105	$\frac{1.595}{1.672}$	$1.416 \\ 1.464$
$ \begin{array}{c} \mathbf{X} = 8 \\ \mathbf{X}' = 18 \end{array} $	$\frac{22}{23}$	$.05 \\ .10$.30 .20	.65 .70	$\frac{4.167}{4.464}$	$\frac{3.195}{3.145}$	$\frac{2.865}{2.660}$	2.770 2.571	2.392	2.132	1.672	1.464
$\mathbf{c} = 8$	24	.10	.30	.60	4.167	3.077	2.681	2.618	2.336	2.083	1.739	1.504
L = 68	25	.05	.20	.75	4.167	2.941	2.481	2.398	2.320	2.092	1.675	1.466
$\mathbf{x} = 8$	26	.05	.30	.65	4.167	3.195	2.865	2.770	2.513	2.208	1.770	1.522
X' = 20	27	.10	.20	.70	4.464	3.145	2.660	2.571	2.481	2.242	1.764	1.517
C = 8	28	10	30	.60	4.167	3.077	2.681	2.618	2,445	2.188	1.852	1.567
L = 48	29	.05	.20	.75	4.167	2.941	2.304	1.894	1.608	1.464	1.302	1.224
$\begin{array}{ccc} X = 12 \\ X' = 8 \end{array}$	30	.05	.30	$.65 \\ .70$	4.167	2.994	$\frac{2.320}{2.433}$	$\frac{1.972}{2.012}$	$\frac{1.672}{1.704}$	$\frac{1.502}{1.543}$	$\frac{1.323}{1.346}$	$\frac{1.238}{1.253}$
X' = 8 C = 8	$\frac{31}{32}$.10	.20	.60	$\frac{4.464}{4.167}$	$\frac{3.145}{3.021}$	$\frac{2.455}{2.370}$	$\frac{2.012}{2.079}$	1.704 1.776	1.545 1.565	1.346 1.359	1.263
L = 52	33	.05	20	75^{-}	4.167	2.941	2.433	2.058	1.730	1.548	1.353	1.259
X = 12	34	.05	.30	.65	4.167	3.289	$\frac{2.433}{2.532}$	2.119	1.825	1.608	1.383	1.279
X' = 10	35	.10	.20	.70	4.464	3.145	2.597	2.203	1.838	1.642	1.404	1.294
c = 8	36	.10	.30	.60	4.167	3.289	2.577	2.237	1.942	1.689	1.425	1.307
L = 56	37	.05	.20	.75	4.167	2.941	2.481	2.212	1.873	1.642	1.410	1.297
X = 12	38	.05	.30	.65	4.167	3.289	2.778	2.278	2.004	1.724	1.447	1.323
X'≈ 12	39	.10	.20	.70	4.464	3.145	2.660	2.347	1.996	1.742	1.468	1.335
c = s	40	10	30	.60	4.167	3.239	$-\frac{2.817}{}$	2.381	2.066	1.832	1.499	1.355
L = 60	41	.05	.20	.75	4.167	2.941	2.481	2.326	2.028	1.745	1.471	$\frac{1.337}{1.370}$
	$\frac{42}{43}$	$.05 \\ .10$.30 .20	$\frac{.65}{.70}$	$\frac{4.167}{4.464}$	$\frac{3.289}{3.145}$	$\frac{2.865}{2.660}$	$\frac{2.451}{2.481}$	$\frac{2.128}{2.169}$	$\frac{1.855}{1.855}$	$\frac{1.520}{1.538}$	1.370
$C = \frac{14}{8}$	44	.10	.30	.60	$\frac{4.464}{4.167}$	$\frac{3.145}{3.289}$	$\frac{2.660}{2.924}$	$\frac{2.481}{2.538}$	2.109	1.865 1.965	1.580	1.408
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Table 11.1	4 (Co	ntinu	ed)									
L = 64	45	.05	.20	.75	4.167	2.941	2.481	2.387	2.137	1.862	1.538	1.381
X = 12	46	.05	.30	.65	4.167	3.289	2.865	2.653	2.242	2.008	1.600	1.418
X' = 16	47	.10	.20	.70	4.464	3.145	2.660	2.558	2.288	1.984	1.616	1.431
c = s	48	.10	.30	.60	4.167	3.289	2.924	2.717	2.331	2.058	1.672	1.464
L = 68	49	.05	.20	.75	4.167	2.941	2.481	2.398	2.252	1.996	1.610	1.427
X = 12	50	.05	.30	.65	4.167	3.289	2.865	2.770	2.370	2.128	1.689	1.473
X' = 18	51	.10	.20	.70	4.464	3.145	2.660	2.571	2.392	2.132	1.704	1.481
C = 8	52	.10	.30	.60	4.167	3.289	2.924	2.786	2.445	2.160	1.773	1.524
L = 72	53	.05	.20	.75	4.167	2.941	2.481	2.398	2.320	2.092	1.684	1.475
X = 12	54	.05	.30	.65	4.167	3.289	2.865	2.770	2.513	2.222	1.786	1.531
X' = 20	55	.10	.20	.70	4.464	3.145	2.660	2.571	2.481	2.242	1.789	1.538
c = s	56	.10	.30	.60	4.167	3.289	2.924	2.786	2.571	2.273	1.890	1.590
L = 60	57	.05	.20	.75	4.167	2.941	2.481	2.212	1.873	1.642	1.420	1.304
X = 16	58	.05	.30	.65	4.167	3.289	2.778	2.278	2.004	1.724	1.460	1.330
X' = 12	59	.10	.20	.70	4.464	3.145	2.660	2.347	1.996	1.742	1.493	1.351
C = 8	60	.10	.30	.60	4.167	3.289	2.817	2.410	2.123	1.832	1.524	1.372
L = 64	61	.05	.20	.75	4.167	2.941	2.481	2.326	2.028	1.745	1.484	1.346
X = 16	62	.05	.30	.65	4.167	3.289	2.865	2.451	2.128	1.855	1.531	1.377
X'=14	63	.10	.20	.70	4.464	3.145	2.660	2.481	2.169	1.855	1.565	1.397
C = 8	64	10	.30	.60	4.167	3.289	3.030	2.604	2.247	1.976	1.608	1.425
L = 68	65	.05	.20	.75	4.167	2.941	2.481	2.387	2.137	1.862	1,546	1.389
X = 16	66	.05	.30	.65	4.167	3.289	2.865	2.653	2.242	2.008	1.613	1.429
X' = 16	67	.10	.20	.70	4.464	3.145	2.660	2.558	2.288	1.984	1.639	1.447
c = 8	68	.10	.30	.60	4.167	3.289	3.106	2.793	2.381	2.132	1.704	1.481
L = 72	69	.05	.20	.75	4.167	2.941	2.481	2.398	2,252	1.996	1.610	1.435
X = 16	70	.05	.30	.65	4.167	3.289	2.865	2.770	2.370	2.128	1.695	1.481
X' = 18	71	.10	.20	.70	4.464	3.145	2.660	2.571	2.392	2.132	1.712	1.502
C = 8	72	.10	.30	.60	4.167	3.289	3.106	2.967	2.525	2.242	1.805	1.543
L = 76	73	.05	.20	.75	4.167	2.941	2.481	2.398	2.320	2.092	1.684	1.484
X = 16	74	.05	.30	.65	4.167	3.289	2.865	2.770	2.513	2.222	1.786	1.541
X' = 20	75	.10	.20	.70	4.464	3.145	2.660	2.571	2,481	2,242	1.789	1.558
c = 8	76	.10	.30	60	4.167	3.289	3.106	2.967	2.681	2.336	1.905	$_{-1.610}$
$\underline{\mathbf{L}} = 80$	77	.05	.20	.75	4.167	2.941	2.481	2.398	2.353	2.183	1.764	1.538
X = 16	78	.05	.30	.65	4.167	3.289	2.865	2.770	2.667	2.326	1.890	1.605
X' = 22	79	.10	.20	.70	4.464	3.145	2.660	2.571	2.525	2.336	1.876	1.621
$\mathbf{c} = 8$	80	.10	.30	.60	4.167	3.289	3.106	2.967	2.849	2.469	2.016	1.684
L = 84	81	.05	.20	.75	4.167	2.941	2.481	2.398	2,353	2.273	1.848	1.595
X = 16	82	.05	.30	.65	4.167	3.289	2.865	2.770	2.717	2.433	2.004	1.675
X' = 24	83	.10	.20	.70	4.464	3.145	2.660	2.571	2.525	2.415	1.969	1.686
C = 8	_ 84	.10	.30	.60	4.167	3.289	3.106	2.967	2.849	2.591	2.096	1.764

12. EQUIVALENT CONCENTRATED LOAD REQUIRED TO PRODUCE SAME MOMENT AS HEAVY VEHICLE TYPES OF UNIT WEIGHT ON SIMPLE SPAN BRIDGES

Tables 12.1-12.14 give the magnitude of a single concentrated load that will produce the same moment on a given span as that produced by each of the 1303 variants of the 14 heavy vehicle types of unit weight shown in identification index Tables 6.1-6.14.

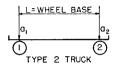
The table numbers corresponding to each of the 14 heavy vehicle types shown in Figure 6.1 are as follows:

Table	Vehicle	Table	Vehicle
No.	Type	No.	Туре
12.1	2	12.8	3-S3
12.2	3	12.9	2-2
12.3	2-S1	12.10	2-3
12.4	2-S2	12.11	3-2
12.5	2-S3	12.12	3-3
12.6	3-S1	12.13	2-S1-2
12.7	3-S2	12.14	3-S2 - 3

The use of these tables for converting any particular heavy vehicle type and loading into an equivalent concentrated load on a given span is explained in Article 5.

Table 12.1

SUMMARY OF EQUIVALENT CONCENTRATED LOADS REQUIRED TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY TYPE 2 TRUCKS WEIGHING ONE KIP EACH



Thirty-six variations in the Type 2 truck are given in this Table. Each truck number, from 1 to 36, represents a different combination of wheel base length, and ratios of gross vehicle weight on each axle.

All dimensions are in feet.

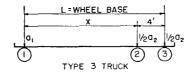
Equivalent concentrated loads are in kips.

a1 and a2-Represent the ratios of gross vehicle weight on axles.

Wheel Base	Truck No.	A :	d On xles ips				Span-Fe	et			
Feet	Tr	a ₁	a ₂	10	20	30	40	50	60	80	100
	1	.45	.55	.550	.601	.722	.788	.828	.856	.891	.912
	2	.40	.60	.600	.640	.751	.810	.846	.872	.903	.922
	3	.35	.65	.650	.681	.780	.833	.865	.887	.915	.931
L = 10	4	.30	.70	.700	.723	.810	.856	.884	.903	.927	.941
	5	.25	.75	.750	.766	.840	.879	.902	.919	.939	.951
	6	.20	.80	.800	.810	.871	.903	.922	.935	.951	.960
	7	.45	.55	.550	.550	.672	.748	.796	.828	.870	.895
	8	.40	.60	.600	.600	.705	.774	.818	.847	.884	.906
	9	.35	.65	.650	.650	.739	.801	.839	.865	.898	.918
L = 12	10	.30	.70	.700	.700	.774	.828	.861	.884	.912	.929
	11	.25	.75	.750	.750	.810	.856	.884	.903	.927	.941
	12	.20	.80	.800	.800	.846	.884	.906	.922	.941	.952
	13	.45	.55	.550	.550	.624	.710	.764	.802	.849	.878
	14	.40	.60	.600	.600	.661	.740	.789	.822	.865	.891
	15	.35	.65	.650	.650	.700	.770	.814	.844	.882	.904
L = 14	16	.30	.70	.700	.700	.739	.801	.839	.865	.898	.918
	17	.25	.75	.750	.750	.780	.833	.865	.887	.915	.931
	18	.20	.80	.800	.800	.822	.865	.891	.909	.931	.945
	19	.45	.55	.550	.550	.577	.672	.733	.775	.828	.861
	20	.40	.60	.600	.600	.619	.706	.760	.798	.847	.876
	21	.35	.65	.650	.650	.661	.740	.789	.822	.865	.891
L = 16	22	.30	.70	.700	.700	.705	.774	.818	.847	.884	.906
	23	.25	.75	.750	.750	.751	.810	.846	.872	.903	.922
	24	.20	.80	.800	.800	.800	.846	.876	.896	.922	.937
	25	.45	.55	.550	.550	.550	.636	.702	.748	.808	.844
	26	.40	.60	.600	.600	.600	.672	.733	.775	.828	.861
	27	.35	.65	.650	.650	.650	.710	.764	.802	.849	.878
L = 18	28	.30	.70	.700	.700	.700	.748	.796	.828	.870	.895
	29	.25	.75	.750	.750	.750	.788	.828	.856	.891	.912
	30	.20	.80	.800	.800	.800	.828	.861	.884	.912	.929
	31	.45	.55	.550	.550	.550	.601	.672	.723	.788	.828
	32	.40	.60	.600	.600	.600	.640	.706	.752	.810	.846
	33	.35	.65	.650	.650	.650	.681	.740	.780	.833	.865
L = 20	34	.30	.70	.700	.700	.700	.723	.774	.810	.856	.884
	35	.25	.75	.750	.750	.750	.766	.810	.840	.879	.902
	36	.20	.80	.800	.800	.800	.810	.846	.872	.903	.922

Table 12.2

SUMMARY OF EQUIVALENT CONCENTRATED LOADS REQUIRED TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY TYPE 3 TRUCKS WEIGHING ONE KIP EACH



Forty-two variations in the Type 3 truck are given in this Table. Each truck number, from I to 42, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

All dimensions are in feet.

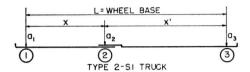
Equivalent concentrated loads are in kips.

a1 and a2-Represent the ratio of gross vehicle weight on axles.

Wheel Base and Axle Spacing	Truck No.	A	d On xles ips				Span-Fe	et			
Feet	Ę	a ₁	a 2	10	20	30	40	50	60	80	100
	1	.40	.60	.400	.500	.662	.745	.795	.829	.872	.897
	2	.35	.65	.416	.532	.685	.763	.810	.842	.881	.904
	3	.30	.70	.448	.567	.709	.782	.825	.854	.891	.912
L = 14	4	.25	.75	.480	.608	.734	.801	.841	.867	.900	.920
X = 10	5	.20	.80	.512	.648	.760	.820	.856	.880	.910	.928
	6	.15	.85	.544	.689	.786	.840	.872	.894	.920	.936
	7	.10	.90	.576	729	.814	.860	888	907	.930_	.944
	8	.40	.60	.400	.486	.614	.708	.765	.804	.852	.881
	9	.35	.65	.416	.533	.643	.730	.783	.820	.864	.891
Y 10	10	.30	.70	.448	.567	.672	.753	.802	.835	.876	.900
$ \begin{array}{l} L = 16 \\ X = 12 \end{array} $	$\frac{11}{12}$.25	.75	.480	.608	.702	.776	.821 $.840$.851 $.867$.888	.910
X = 12		.20 $.15$.80 .85	.512	.648 $.689$	$.734 \\ .766$	$.800 \\ .825$.840 $.860$.884	.900 $.913$.930
	$\frac{13}{14}$.10	.89	.544 $.576$.729	.800	.850	.880	.804	.915	.940
		.40	.60			.568	.672	-736	779		
	$\frac{15}{16}$.35	.65	.400 .416	$.486 \\ .527$.601	.698	.757	.719	.847	.866 .877
	17	.30	.70	.448	.567	.635	.725	.779	.816	.862	.889
L = 18	18	.25	.75	.480	.608	.671	.753	.802	.835	.876	.900
X = 14	19	.20	.80	.512	.648	.708	.781	.825	.854	.891	.912
A - 14	20	.15	.85	.544	.689	.747	.810	.848	.874	.905	.924
	21	.10	.90	.576	.729	.787	.840	.872	.894	.920	.936
		.40	.60	.400	.486	.523	.637	.707	.754	.815	.851
	23	.35	.65	.416	.527	.566	.667	.731	.776	.831	.864
	24	.30	.70	.448	.567	.610	.697	.757	.797	.847	.877
L = 20	25	.25	.75	.480	.608	.653	.729	.782	.819	.864	.891
X = 16	26	.20	.80	.512	.648	.697	.762	.809	.841	.881	.904
	27	.15	.85	.544	.689	.740	.795	.836	.864	.898	.918
	28	.10	.90	.576	.729	.784	.830	.864	.887	.915	.932
	29	.40	.60	.400	.486	.523	.603	.678	.730	.796	.836
	30	.35	.65	.416	.527	.566	.636	.706	.754	.814	.850
	31	.30	.70	.448	.567	.610	.670	.734	.778	.833	.866
L = 22	32	.25	.75	.480	.608	.653	.706	.764	.803	852	.881
X = 18	33	.20	.80	.512	.648	.697	.743	.794	.828	.871	.896
	34	.15	.85	.544	.689	.740	.781	.825	.854	.890	.912
	35	10	90	.576	.729	784	820	.856_	880	910_	928
	36	.40	.60	.400	.486	.523	.569	.650	.706	.778	.821
	37	.35	.65	.416	.527	.566	.605	.681	.733	.798	.837
T - C1	38	.30	.70	.448	.567	.610	.643	.712	.760	.819	.854
$L = 24 \\ X = 20$	39	.25	.75 .80	.480 .512	.608 .648	.653 $.697$.683 $.724$.745 $.778$.787 $.815$.840 $.861$.871 .888
X = 20	40	.20	.80 .85			.697		.813	.815	.883	.906
	$\frac{41}{42}$.15 .10	.85	.544 .576	.689 $.729$.740	.767 $.812$.848	.844	.883	.924
	44	.10			.129		014	.040		.500	.024

Table 12.3

SUMMARY OF EQUIVALENT CONCENTRATED LOADS REQUIRED TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY TYPE 2-S1 TRUCKS WEIGHING ONE KIP EACH



One hundred twenty-six variations in the Type 2-S1 truck are given in this Table. Each truck number, from 1 to 126, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

All dimensions are in feet

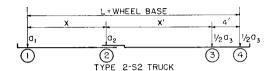
a1, a2, and a3-Represent the ratios of gross vehicle weight on axles.

Wheel Base and Axle Spacing	Truck No.	I	Load C Axles Kips					Span-F	eet			
Feet	H	a ₁	\mathbf{a}_2	\mathbf{a}_3	10	20	30	40	50	60	80	100
	1	.10	.30	.60	.600	.600	.676	.740	.789	.822	.865	.891
	2	.10	.40	.50	.500	.500	.609	.689	.746	.787	.837	.869
L = 20	3	.10	.45	.45	.450	.473	.610	.703	.760	.800	.848	.878
$\mathbf{x} = 8$	4	.10	.50	.40	.500	.523	.644	.730	.782	.818	.863	.890
X' = 12	5	.20	.30	.50	.500	.500	.578	.656	.719	.763	.819	.854
	6	.20	.40	.40	.400	.450	.585	.686	.748	.790	.842	.873
	7	.20	.50	.30	.500	.549	.658	.743	.794	.828	.871	.896
	8	.10	.30	.60	.600	.600	.609	.676	.733	.775	.828	.861
	9	.10	.40	.50	.500	.500	.524	.609	.679	.729	.792	.832
L = 24	10	.10	.45	.45	.450	.473	.512	.626	.696	.745	.806	.844
$\mathbf{x} = 8$	11	.10	.50	.40	.500	.523	.555	.660	.725	.769	.825	.859
X' = 16	12	.20	.30	.50	.500	.500	.512	.578	.653	.706	.774	.817
	13	.20	.40	.40	.400	450	.498	.614	.689	.740	.804	.842
	14	.20	.50	.30	.500	.549	.597	.686	.748	.790	.842	.873
	15	.10	.30	.60	.600	.600	.600	.625	.679	.729	.792	.832
	16	.10	.40	.50	.500	.500	.500	.544	.615	.673	.748	.796
L = 28	17	.10	.45	.45	.450	.473	.498	.552	.635	.692	.766	.811
$\mathbf{x} = 8$	18	.10	.50	.40	.500	.523	.548	.592	.669	.721	.788	.829
X'=20	19	.20	.30	.50	.500	.500	.500	.528	.590	.651	.731	.781
	20	.20	.40	.40	.400	.450	.498	.546	.632	.692	.766	.812
	21	.20	.50	.30	.500	.549	.597	.632	.704	.752	.813	.850
	22	.10	.30	.60	.600	.600	.600	.600	.635	.684	.757	.803
	23	.10	.40	.50	.500	.500	.500	.500	.557	.619	.706	.760
L = 32	24	.10	.45	.45	.450	.473	.498	.511	.576	.641	.726	.778
$\mathbf{X} = 8$ $\mathbf{X'} = 24$	25	.10	.50	.40	.500	.523	.548	.561	.615	.675	.752	.800
$\Lambda - 24$	26 27	.20	.30	.50 $.40$.500	.500	.500	.500	.538	.598	.689	.746
	28	.20	$.40 \\ .50$.30	.400	$.450 \\ .549$	$.498 \\ .597$.523 .622	.578 $.661$.645 $.716$	$.730 \\ .785$.782 .827
			177 17	200.0								
	29	.10	.30	.60	.600	.600	.600	.600	.600	.642	.723	.774
T - 00	30	.10	.40	.50	.500	.500	.500	.500	.508	.568	.664	.726
$\mathbf{L} = 36$ $\mathbf{X} = 8$	31	.10	.45	.45	.450	.473	.498	.511	.520	.592	.687	.746
$\mathbf{X} = 8$ $\mathbf{X'} = 28$	32	.10	.50	.40	.500	.523	.548	.561	.568	.630	.717	.771
$\Lambda - 28$	33 34	.20 .20	.30 .40	$.50 \\ .40$.500 .400	.500 $.450$.500 $.498$.500	.500	.548 $.599$	$.648 \\ .694$.712 .753
	35	.20	.50	.30	.500	.549	.597	.523 .622	.538	.680	.757	.805
	36	.10	.30	.60	.600	.676	.747	.792	.832	.859	.893	.914
r - 00	37	.10	.40	.50	.500	.608	.699	.757	.803	.835	.874	.899
$egin{array}{l} L=20 \ X=12 \end{array}$	38 39	.10	.45	$.45 \\ .40$.450	.576	.686	.764	.810	.842	.881	.905
$X' = \frac{12}{8}$	40	.10 .20	.50	.50	.500	.608	.711	.783	.826	.855 $.798$	$.891 \\ .846$.912 $.876$
$\Lambda - \delta$.20	.30		.500 .400	.578 .512	.648 $.627$.706 $.720$	$.760 \\ .776$.814	.860	.888
	$\frac{41}{42}$.20	$.40 \\ .50$	$.40 \\ .30$.500	.578	.680	.760	.808	.840	.880	.904
	43	.10	.30	.60	.600	.600	.676	.729	.774	.810	.856	.884
T - 01	44	.10	.40	.50	.500	.500	.609	.676	.733	.775	.828	.861
L = 24	45	.10	.45	.45	.450	.450	.579	.681	.743	.785	.838	.870
X = 12	46	.10	.50	.40	.500	.500	.614	.708	.765	.804	.852	.881
X' = 12	47	.20	.30	.50	.500	.500	.578	.630	.692	.740	.801	.839
	48 49	.20	.40	.40	.400	.400	.526	.644	.714	.762	.821	.857
	49	.20	.50	.30	.500	.500	.601	.701	.761	.801	.850	.880

Table 12.5	3 (Co	ntinue	d)									
	50	.10	.30	.60	.600	.600	.609	.676	.719	.763	.819	.854
	51	.10	.40	.50	.500	.500	.524	.609	.666	.717	.783	.824
L = 28	52	.10	.45	.45	.450	.450	.484	.603	.678	.730	.796	.836
X = 12 $X' = 16$	$\frac{53}{54}$	$.10 \\ .20$	$.50 \\ .30$.40 .50	.500 .500	.500 $.500$.524 $.512$.637 $.578$.707 $.627$	$.755 \\ .684$.814	.851
11 — 10	55	.20	.40	.40	.400	.400	.451	.570	.654	.711	.757 $.783$.803 $.826$
	56	.20	.50	.30	.500	.500	.549	.644	.714	.762	.821	.857
	57	.10	.30	.60	.600	.600	.600	.625	.676	.717	.783	.824
L = 32	58 59	$.10 \\ .10$	$.40 \\ .45$	$.50 \\ .45$.500 $.450$	$.500 \\ .450$	$.500 \\ .473$.544 $.528$.608	.662	.740	.789
X = 12	60	.10	.50	.40	.500	.500	.523	.569	.616 $.650$.677 $.707$.755 .777	$.802 \\ .821$
X' = 20	61	.20	.30	.50	.500	.500	.500	.528	.578	.630	.714	.767
	$\frac{62}{63}$	$.20 \\ .20$.40	.40	.400	.400	.451	.500	.597	.662	.745	.795
	64	.10	.30	.60	.600	.600	.600	.588	.635	.724	.792	.833
	65	.10	.40	.50	.500	.500	.500	.500	.557	.676 $.609$.697	.753
L = 36	66	.10	.45	.45	.450	.450	.473	.492	.557	.626	.714	.769
$egin{array}{l} X = 12 \ X' = 24 \end{array}$	$\frac{67}{68}$.10 .20	$.50 \\ .30$.40	.500	.500	.523	.542	.596	.659	.741	.791
A - 24	69	.20	.40	$.50 \\ .40$.500 .400	.500 $.400$	$.500 \\ .451$.500 $.486$.538 $.541$.578 $.615$.672 $.708$.733 $.765$
	70	.20	.50	.30	.500	.500	.549	.585	.625	.687	.764	.810
	71	.10	.30	.60	.600	.600	.600	.600	.600	.642	.714	.767
L = 40	$\frac{72}{73}$	$.10 \\ .10$	$.40 \\ .45$	$.50 \\ .45$.500 .450	.500 $.450$	$.500 \\ .473$	$.500 \\ .492$.508 $.503$.566	.656	.719
X = 12	74	.10	.50	.40	.500	.500	.523	.492 $.542$.553	$\substack{.576 \\ .615}$.675 $.706$.737 .762
X' = 28	75	.20	.30	.50	.500	.500	.500	.500	.500	.545	.632	.699
	$\frac{76}{77}$	$\frac{.20}{.20}$.40	.40	.400	.400	.451	.486	.508	.568	.672	.736
	78	.10	.50	.60	.600	.600	.600	.585	.607	.650	.681	$\frac{.788}{.740}$
	79	.10	.40	.50	.500	.500	.500	.500	.500	.524	.616	.686
$ \mathbf{L} = 44 \\ \mathbf{X} = 12 $	80	.10	.45	.45	.450	.450	.473	.492	.503	.529	.637	.705
$X = 12 \\ X' = 32$	81 82	$.10 \\ .20$.50	.40	.500	.500	.523	.542	.553	.571	.671	.733
A - 02	83	.20	.30 $.40$	$.50 \\ .40$.500 .400	.500 $.400$	$\substack{.500 \\ .451}$.500 .486	$.500 \\ .508$.512 $.524$	$.593 \\ .637$.666
	84	.20	.50	.30	.500	.500	.549	.585	.607	.623	.708	.765
	85	.10	.30	.60	.600	.676	.747	.784	.817	.847	.884	.906
T 0.4	$\frac{86}{87}$	$.10 \\ .10$.40	.50	.500	.608	.699	.747	.789	.822	.865	.891
L = 24 X = 16	88	.10	$.45 \\ .50$	$.45 \\ .40$.450 $.500$	$.576 \\ .608$.676 $.699$.743 $.762$	$.794 \\ .809$.828 $.841$.871 $.880$.896 .904
$\mathbf{x}' = 8$	89	.20	.30	.50	.500	.578	.648	.685	.733	.775	.828	.861
	$\frac{90}{91}$.20 .20	.40 .50	$.40 \\ .30$.400 .500	.512 $.578$	$.601 \\ .648$	$.680 \\ .720$.744 $.776$.787 $.814$.840 $.860$.872 .888
	92	.10	.30	60	.600	.600	.676	.729	.762	$-\frac{.514}{.798}$.846	.876
	93	.10	.40	.50	.500	.500	.609	.676	.719	.763	.819	.854
L = 28	94	.10	.45	.45	.450	.450	.576	.659	.726	.771	.827	.861
$X = 16 \\ X' = 12$	95 96	.10 .20	$.50 \\ .30$.40 .50	.500 .500	.500 .500	$.609 \\ .578$.686 $.630$.748 $.666$	$.790 \\ .717$.842 $.783$.873 $.824$
11 12	97	.20	.40	.40	.400	.400	.512	.602	.681	.734	.800	.840
	98	.20	.50	30	.500	.500	.578	.660	.728	.774	.830	.864
	$\frac{99}{100}$.10	.30	.60	.600	.600	.609	.676	.718	.752	.810	.846
L = 32	101	.10 .10	$.40 \\ .45$.50 $.45$.500 .450	.500 $.450$.524 $.484$.609 $.580$	$.662 \\ .661$.706 $.716$.774 $.785$.817 $.827$
X = 16	102	.10	.50	.40	.500	.500	.524	.614	.689	.740	.804	.842
X' = 16	103	$.20 \\ .20$.30	.50	.500	.500	.512	.578	.620	.662	.740	.789
	$\frac{104}{105}$.20	$.40 \\ .50$.40 .30	.400 .500	.400 $.500$	$.430 \\ .512$.526 $.602$.620 $.681$.683 $.734$.762 $.800$.809 .840
	106	.10	.30	.60	.600	.600	.600	.625	.676	.711	.774	.817
	107	.10	.40	.50	.500	.500	.500	.544	.608	.653	.731	.781
$egin{array}{c} \mathbf{L} = 36 \ \mathbf{X} = 16 \end{array}$	108	.10	.45	.45	.450	.450	.450	.506	.598	.662	.744	.793
$X = 16 \\ X' = 20$	$\frac{109}{110}$.10 .20	.50 $.30$	$.40 \\ .50$.500 .500	.500 $.500$.500 $.500$	$.546 \\ .528$.632 $.578$.692 $.613$.766 $.697$.812 $.753$
22 20	111	.20	.40	.40	.400	.400	.406	.454	.561	.633	.724	.778
	112	.20	.50	.30	.500_	500	.503	.549	.635	.696	.771	.817
	113	.10	.30	.60	.600	.600	.600	.600	.635	.676	.740	.789
L = 40	$\frac{114}{115}$.10 .10	$.40 \\ .45$	$.50 \\ .45$	$.500 \\ .450$	$.500 \\ .450$	$.500 \\ .450$	$.500 \\ .473$.557 $.538$.609 $.611$	$.689 \\ .703$.745 $.760$
X = 16 X' = 24	116	.10	.50	.40	.500	.500	.500	.523	.578	.645	.730	.782
X' = 24	117	.20	.30	.50	.500	.500	.500	.500	.538	.578	.656	.719
	$\frac{118}{119}$.20 .20	.40 .50	$.40 \\ .30$.400 $.500$	$.400 \\ .500$.406 $.503$.451	.504	.585	.686	.748
	$\frac{115}{120}$.10	.30	.60	.600	.600	.600	.600	.600	.658_	.743	.794
	121	.10	.40	.50	.500	.500	.500	.500	.508	.566	.648	.712
L = 44	122	.10	.45	.45	.450	.450	.450	.473	.488	.561	.664	.728
$X = 16 \\ X' = 28$	$\frac{123}{124}$	$.10 \\ .20$.50 $.30$	$.40 \\ .50$.500 .500	$.500 \\ .500$.500	.523	.538	.599	.694	.753
1 - 40	125	.20	.40	.40	.400	.400	$.500 \\ .406$	$.500 \\ .451$	$.500 \\ .479$.545 $.538$	$\begin{array}{c} .616 \\ .650 \end{array}$.686 .718
	126	.20	.50	.30	.500	.500	.503	.549	.578	.621	.714	.771

Table 12.4

SUMMARY OF EQUIVALENT CONCENTRATED LOADS REQUIRED TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY TYPE 2-S2 TRUCKS WEIGHING ONE KIP EACH



One hundred eight variations in the Type 2-S2 truck are given in this Table. Each truck number, from 1 to 108, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

All dimensions are in feet.

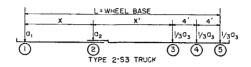
a1, a2, and a3-Represent the ratio of gross vehicle weight on axles.

					-							
Wheel Base and Axle Spacing	Truck No.]	Load C Axles Kips					Span-F	'eet			
Feet	T.	aı	\mathbf{a}_2	a 3	10	20	30	40	50	60	80	100
	1	.10	.30	.60	.384	.544	.662	.745	.795	.829	.871	.897
	2	.10	.40	.50	.400	.494	.633	.721	.775	.812	.858	.886
L = 20	3	.10	.50	.40	.500	.562	.691	.766	.812	.843	.882	.905
$ \begin{array}{l} L = 20 \\ X = 8 \\ X' = 8 \end{array} $	4	.20	.30	.50	.320	.466	.583	.683	.744	.786	.838	.870
$\mathbf{X}' = 8$	5	.20	.40	.40	.400	.480	.633	.724	.778	.815	.861	.889
	6	.20	.50	.30	.500	.571	.695	.771	.817	.848	.885	.908
	7	.10	.30	.60	.384	.486	.587	.672	.736	.779	.833	.866
	8	.10	.40	.50	.400	.423	.531	.634	.703	.751	.811	.848
L=24	9	.10	.50	.40	.500	.523	.599	.694	.753	.793	.844	.874
$\mathbf{x} = 8$	10	.20	.30	.50	.320	.405	.503	.597	.673	.726	.792	.832
X' = 12	11	.20	.40	.40	.400	.450	.538	.650	.718	.765	.823	.858
	12	.20	.50	30	.500	.549	.623	.714	.771	.809	.856	.885
	13	.10	.30	.60	.384	.486	.523	.609	.678	.730	.796	.836
t - 00	14	.10	.40	.50	.400	.423	.448	.552	.635	.692	.766	.811
$ \begin{array}{l} \text{L} = 28 \\ \text{X} = 8 \end{array} $	15	.10	.50	.40	.500	.523	.548	.626	.696	.745	.806	.844
$\mathbf{X}' = 16$	16	.20 $.20$.30	$.50 \\ .40$.320	.405	.435	.521	.606	.668	.747	.795
A - 10	$\frac{17}{18}$.20	.40	.30	.400 .500	$.450 \\ .549$.498	.580	.661	.716	.785	.827
			.50				.597	.659	.726	.771	.827	.861
	19	.10	.30	.60	.384	.486	.523	.556	.623	.683	.759	.806
T 99	$\frac{20}{21}$.10 .10	.40	$.50 \\ .40$.400 $.500$.423	.448	.484	.570	.636	.721	.774
L = 32 X = 8	$\frac{21}{22}$.20	.50 .30	.50	.320	.523 $.405$	$.548 \\ .435$.568 $.470$	$.642 \\ .541$.698 $.612$.770 .703	.814
$\mathbf{X}' = 20$	23	.20	.40	.40	.400	.405	.435	.525	.605	.668	.748	.759 $.797$
A - 20	$\frac{23}{24}$.20	.50	.30	.500	.549	.597	.622	.682	.734	.799	.839
	25	.10	$-\frac{.30}{.30}$.60	.384	.486	.523	.542	.580	.637	.723	
	26 26	.10	.40	.50	.384	.486 $.423$.523	.461	.580 $.509$.582		.776
L = 36	27	.10	.50	.40	.500	.523	.548	.461	.589	.653	.678 $.734$.737 .785
$\ddot{\mathbf{x}} = \ddot{\mathbf{s}}$	28	.20	.30	.50	.320	.405	.435	.451	.491	.558	.660	.724
$\ddot{\mathbf{X}}' = 24$	29	.20	.40	.40	.400	.450	.498	.523	.551	.622	.712	.768
25 - 24	30	.20	.50	.30	.500	.549	.597	.622	.644	.698	.771	.816
	31	.10	.30	.60	.384	.486	.523	.542	.553	.596	.688	.748
	32	.10	.40	.50	.400	.423	.448	.461	.353	.530	.637	.704
L = 40	33	.10	.50	.40	.500	.523	.548	.561	.568	.609	.700	.757
$\ddot{\mathbf{x}} = \ddot{\mathbf{s}}$	34	.20	.30	.50	.320	.405	.435	.451	.461	.506	.618	.689
$\mathbf{X}' = 28$	35	.20	.40	.40	.400	.450	.498	.523	.538	.577	.677	.739
20	36	.20	.50	.30	.500	.549	.597	.622	.637	.662	.744	.793
	37	.10						.726				.889
	38			.50	.384	.544	.662 $.626$.780	.817	.862	.889
L = 24	აგ 39	.10	.40 $.50$.40	.400 .500	$.494 \\ .549$.626	.701 $.745$.759 $.795$.799 $.829$.848 .871	.878
X = 12	40	.20	.30	.50	.320	.466	.662 $.576$.648	.795	.829	.820	.855
$\mathbf{X}' = \mathbf{X}'$	41	.20	.40	.40	.400	.450	.576	.682	.716	.788	.840	.872
A - 0	42	.20	.50	.30	.500	.535	.640	.682 $.730$.784	.821	.865	.892
	44	.40	.00	.50	.500	.000	.040	. (50	.104	.041	.000	.094

Table 12.	.4 (Co	ntinue	d)									
	43	.10	.30	.60	.384	.486	.587	.664	.721	.767	.824	.858
	44	.10	.40	.50	.400	.405	.531	.620	.687	.738	.801	.840
$\mathbf{L} = 28$	45	.10	.50	.40	.500	.500	.568	.672	.736	.779	.833	.866
$ \begin{array}{l} L = 28 \\ X = 12 \\ X' = 12 \end{array} $	$\frac{46}{47}$.20 .20	$.30 \\ .40$.50 .40	.320 $.400$.405 $.400$.503 $.480$.575 .606	.646 $.684$.702 $.737$.774 $.802$.817 $.841$
A - 12	48	.20	.50	.30	.500	.500	.570	.672	.084	.781	.836	.868
			.30	.60		.486	.523					
	49 50	.10 .10	.40	.50	.384 .400	.486	.523	.609 $.550$.666 $.619$.718 $.679$.786 $.756$.828 $.803$
L = 32	51	.10	.50	,40	.500	.500	.523	.603	.678	.730	.796	.836
$\ddot{\mathbf{x}} = 12$	52	.20	.30	.50	,320	.405	.435	.521	.579	.645	.729	.781
$X' = \overline{16}$	53	.20	.40	.40	.400	.400	.451	.534	.625	.687	.764	.810
	54	.20	.50	.30	.500	.500	.549	.616	.692	.743	.806	.845
	55	.10	.30	.60	.384	.486	.523	.556	.622	.671	.750	.798
	56	.10	.40	.50	.400	.405	.435	.484	.562	.623	.711	.766
1' = 36	57	.10	.50	.40	.500	.500	.523	.546	.623	.683	.759	.806
$\begin{array}{c} X = 12 \\ Y' = 20 \end{array}$	58	$.20 \\ .20$.30	.50	.320	.405	.435	.470	.532	.590	.685	.745
J. — 20	59 60	.20	.40 $.50$	$.40 \\ .30$.400 .500	$.400 \\ .500$.451 $.549$	$.486 \\ .585$	$.568 \\ .647$	$.638 \\ .705$.726 $.778$	$.780 \\ .822$
	61	.10	.30	.60	.384	.486	.523	.542	.580	.631	.714	.769
	62	.10	.40	.50	.400	.400	.435	.451	.509	.570	.668	.731
$I_{\cdot} = 40$	63	.10	.50	.40	.500	.500	.523	.542	.566	.637	.723	.776
Y = 12	64	.20	.30	.50	.320	.405	.435	.451	.491	.540	.643	.710
X' = 24	65	.20	.40	.40	.400	.400	.451	.486	.515	.591	.690	.750
	66	.20	.50	.30	.500	.500	.549	.585	.611	.668	.750	.799
	67	.10	.30	.60	.384	.486	.523	.542	.553	.596	.680	741
	68	.10	.40	.50	.400	.405	.435	.451	.461	.526	.627	.696
I = 44	69	.10	.50	.40	.500	.500	.523	.542	.553	.593	.688	.748
X = 12 X = 28	$\frac{70}{71}$.20	$.30 \\ .40$.50 .40	.320	$.405 \\ .400$.435	.451	.461	.506	$.602 \\ .654$.676
.1 - 20	$\frac{71}{72}$.20	.50	.30	.400 .500	.500	$.451 \\ .549$.486 $.585$.508 $.607$	$.546 \\ .632$.722	.721 $.776$
	73			60	.384	.544	.662	.721	.765	.804	.852	.881
	74	.10	.40	.50	.400	.494	.626	.694	.744	.786	.838	.870
X = 28	75	.10	.50	.40	.500	.549	.653	.724	.778	.815	.861	.889
3 = 16	76	.20	.30	.50	.320	.466	.576	.632	.687	.738	.801	.840
x = 8	77	.20	.40	.40	.400	.450	.555	.640	.712	.761	.820	.856
	78	.20	.50	.30	.500	.535	.612	.670	.736	.780	.835	.868
	79	.10	.30	.60	.384	.486	.587	.664	.710	.755	.814	.851
r - 00	80	.10	.40	.50	.400	.405	.531	.620	.674	.726	.792	.832
$ \mathbf{L} = 32 \\ \mathbf{X} = 16 $	$\frac{81}{82}$.10 .20	.50 $.30$.40 .50	.500 $.320$	$.500 \\ .405$	$.565 \\ .503$	$.650 \\ .575$	$.718 \\ .619$	$.765 \\ .679$.823 $.756$.858 $.803$
X' = 10 X' = 12	83	.20	.40	.40	.400	.400	.470	.564	.650	.709	.781	.825
	84	.20	.50	.30	.500	.500	.544	.631	.704	.754	.815	.852
	85	.10	.30	.60	.384	.486	.523	.609	.666	.707	.777	.821
	86	.10	.40	.50	.400	,405	.443	.550	.617	.668	.747	.795
$\Gamma = 36$	87	.10	.50	.40	.500	.500	.503	.580	.661	.716	.785	.827
X = 16 $X' = 16$	88	.20	.30	.50	.320	.405	.435	.521	.575	.623	.711	.766
X' = 16	89	.20	.40	.40	.400	.400	.406	.490	.590	.658	.743	.794
	90	.20	.50	.30	500	.500	.503	.573	.658	.715	786	.828
	91	.10	.30	.60	.384	.486	.523	.556	.622	.668	.741	.791
L = 40	$\frac{92}{93}$.10 .10	.40 .50	.50 .40	.400 .500	$.405 \\ .500$	$.435 \\ .500$.484 $.525$	$.562 \\ .605$	$.615 \\ .668$.703 $.748$.759 $.797$
X = 16	94	.20	.30	.50	.320	.405	.435	.470	.532	.576	.668	.731
X'= 20	95	.20	.40	.40	.400	.400	.406	.451	.533	.609	.705	.763
	96	.20	.50	.30	.500	.500	.503	.549	.613	.677	.757	.805
	97	.10	.30	.60	.384	.486	.523	.542	.580	.631	.706	.762
	98	.10	.40	.50	.400	.405	.435	.451	.509	.570	.660	.724
L = 44	99	.10	.50	.40	.500	.500	.500	.523	.551	.622	.712	.768
X = 16	100	.20	.30	.50	.320	.405	.435	.451	.491	.540	.627	.696
X' ≔ 24	101	.20	.40	.40	.400	.400	.406	.451	.481	.561	.688	.733
	102	.20	.50	.30	.500	.500_	503	549	.578	.640	.728	.782
	103	.10	.30	.60	.384	.486	.523	.542	.553	.596	.671	.733
T - 40	104	.10	.40	.50	.400	.405	.435	.451	.461	.526	.618	.689
$ \mathbf{L} = 48 \\ \mathbf{X} = 16 $	$\frac{105}{106}$.10 $.20$	$.50 \\ .30$.40 .50	.500 $.320$.500 $.405$.500 $.435$.523 $.451$	$.538 \\ .461$.577 $.506$.677 $.586$.739 $.662$
X = 16 X' = 28	107	.20	.40	.40	.400	.400	.406	.451	.479	.515	.632	.662
	108	.20	.50	.30	.500	.500	.503	.549	.578	.603	.700	.759
-												

Table 12.5

SUMMARY OF EQUIVALENT CONCENTRATED LOADS REQUIRED TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY TYPE 2-S3 TRUCKS WEIGHING ONE KIP EACH



Ninety variations in the Type 2-S3 truck are given in this Table. Each truck number, from 1 to 90, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

All dimensions are in feet.

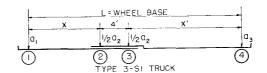
a1, a2, and a3-Represent the ratio of gross vehicle weight on axles.

Wheel Base and Axle Spacing	Truck No.	I	oad Or Axles Kips	n				Span-Fe	et			
Feet	Ë	aı	\mathbf{a}_2	a3	10	20	30	40	50	60	80	100
	1	.10	.225	.675	.315	.495	.609	.695	.756	.797	.848	.878
	2	.10	.30	.60	.300	.440	.580	.682	.745	.788	.840	.872
L = 24	3	.10	.40	.50	.400	.454	.576	.677	.739	.781	.834	.867
$\mathbf{x} = 8$	4	.20	.20	.60	.280	.440	.541	.644	.714	.762	.821	.857
$\mathbf{X'} = 8$	5	.20	.30	.50	.300	.374	.514	.632	.703	.752	.813	.850
	6	.20	.40	.40	.400	.468	.585	.687	.748	.790	.842	.873
	7	.10	.225	.675	.315	.495	.556	.639	.706	.755	.816	.852
T 00	8	.10	.30	.60	.300	.440	.502	.606	.684	.737	.802	.841
$ \begin{array}{l} L = 28 \\ X = 8 \end{array} $	$\frac{9}{10}$.10	$.40 \\ .20$.50 $.60$.400 .280	.423 $.440$.488 $.494$.592 $.570$.668 $.654$.721 $.711$.788 $.783$.829 $.826$
X = 0 $X' = 12$	11	.20	.30	.50	.300	.366	.434	.545	.632	.691	.766	.812
A - 12	12	.20	.40	.40	.400	.451	.520	.615	.690	.740	.804	.843
	13	.10	.225	-675	.315		.555	.599			.784	.827
	14	.10	.30	.60	.300	.440	.493	.544	.625	.687	.764	.810
L = 32	15	.10	.40	.50	.400	.423	.448	.513	.602	.664	.743	.792
$\mathbf{x} = 8$	16	.20	.20	.60	.280	.440	.493	.533	.597	.662	.745	.795
X' = 16	17	.20	.30	.50	.300	.366	.411	.467	.564	.633	.721	.775
	18	.20	.40	.40	.400	.451	.498	.554	.633	.692	.767	.812
	19	.10	.225	.675	.315	.495	.555	.585	.625	.673	.753	.802
	20	.10	.30	.60	.300	.440	.493	.520	.570	.638	.726	.780
L = 36	21	.10	.40	.50	.400	.423	.448	.466	.538	.608	.699	.756
X = 8 $X' = 20$	$\frac{22}{23}$.20 .20	.20 .30	.60 .50	.280	.440 $.366$.493 $.411$.520 $.433$.556 $.499$.615 $.577$.708 $.677$.765 .739
A - 20	24	.20	.40	.40	.400	.451	.411	.523	.578	.645	.730	.783
	25	10-	.225	$\frac{-30}{.675}$.315	.495	.555	.585	.603	.643	.723	.777
	26	.10	.30	.60	.319	.440	.493	.520	.536	.591	.690	.750
L = 40	27	.10	.40	.50	.400	.423	.448	.461	.484	.555	.657	.721
$ \begin{array}{c} L = 40 \\ X = 8 \end{array} $	28	.20	.20	.60	.280	.440	.493	.520	.536	.571	.672	.736
$\ddot{X}' = 24$	29	.20	.30	.50	.300	.366	.411	.433	.447	.523	.634	.703
	30	.20	.40	.40	.400	.451	.498	.523	.543	.600	.695	.754
*	31	.10	.225	.675	.315	.495	.609	.680	.740	.784	.838	.870
	32	.10	.30	.60	.300	.440	.580	.663	.730	.775	.831	.864
L = 28	33	.10	.40	.50	.400	.441	.555	.654	.721	.767	.823	.858
$\overline{\mathbf{x}} = 12$	34	.20	.20	.60	.280	.440	.541	.606	.684	.737	.802	.841
$\mathbf{x}' = 8$	35	.20	.30	.50	.300	.366	.507	.592	.672	.726	.793	.834
	36	.20	.40	.40	.400	.432	529	.644	.715	.762	.821	.857
	37	.10	.225	.675	.315	.495	.556	.639	.690	.742	.806	.845
_	38	.10	.30	.60	.300	.440	.502	.601	.669	.724	.792	.833
L = 32	39	.10	.40	.50	.400	.400	.457	.569	.650	.706	.777	.820
$X = 12 \\ X' = 12$	40	.20	.20	.60	.280	.440	.494	.568	.625	.687	.764 $.746$.810 .796
A - 12	$\frac{41}{42}$.20 .20	$.30 \\ .40$.50 .40	.300 .400	.366 $.400$	$.430 \\ .467$.522 $.571$	$.600 \\ .655$	$.665 \\ .712$.783	.196
	444	.20	.40	.40	.400	.400	.401	.011	.000	.114	.100	.040

Table 12.5	5 (Cor	ntinue	d)									
	43	.10	.225	.675	.315	.495	.555	.599	.657	.701	.775	.819
	44	.10	.30	.60	.300	.440	.493	.544	.615	.675	.754	.803
L = 36	45	.10	.40	.50	.400	.400	.423	.493	.583	.648	.732	.784
X = 12	46	.20	.20	.60	.280	.440	.493	.533	.584	.638	.726	.780
X' = 16	47	.20	.30	.50	.300	.366	.411	.466	.532	.607	.701	.759
	48_	.20	.40	.40	.400	.400	.451	.511	.597	663	.745	795
	49	.10	.225	.675	.315	.495	.555	.585	.625	.669	.744	.795
	50	.10	.30	.60	.300	.440	.493	.520	.570	.627	.717	.773
L = 40	51	.10	.40	.50	.400	.400	.423	.444	.518	.592	.688	.747
$X = 12 \\ X' = 20$	52	.20	.20	.60	.280	.440	.493	.520	.556	.595	.690	.750
X = 20	53	.20	.30	.50	.300	.366	.411	.433	.488	.550	.657	.723
***	54	.20	.40	.40	.400	.400	.451	.486	.541	.615	.709	.765
	55	.10	.225	.675	.315	.495	.555	.585	.603	.643	.714	.770
T - 11	56	.10	.30	.60	.300	.440	.493	.520	.536	.587	.681	.743
L = 44 X = 12	57	.10	$.40 \\ .20$.50	.400	.400	.423	.442	.465	.539	.645	.712
X' = 24	58 59	.20 .20	.30	$.60 \\ .50$	$.280 \\ .300$	$.440 \\ .366$.493 $.411$.520 $.433$	$.536 \\ .447$.571 $.503$	$.654 \\ .614$.721 .687
A - 44	60	.20	.40	.40	.400	.400	.451	.486	.510	.569	.673	.736
	61	.10	.225	.675	.315	.495	.609	.680	.725	.771	.828	.862
								.660			.828	
L = 32	62 63	.10 .10	.30 .40	.60 $.50$.300 $.400$.440 .441	.580 .555	.641	.714 $.703$.762 $.752$.813	.857 $.850$
X = 16	64	.20	.20	.60	.280	.440	.541	.605	.654	.711	.783	.826
X' = 8	65	.20	.30	.50	.300	.366	.507	.580	.643	.701	.774	.819
11	66	.20	.40	.40	.400	.432	.512	.602	.681	.735	.801	.840
	67	.10	.225	.675	.315	.495	.556	.639	.690	.729	.796	.837
	68	.10	.30	.60	.300	.440	.502	.601	.661	.711	.783	.826
L = 36	69	.10	.40	.50	.400	.400	.456	.565	.632	.691	.766	.812
X = 16	70	.20	.20	.60	.280	.440	.494	.568	.613	.662	.745	.795
X' = 12	71	.20	.30	.50	.300	.366	.430	.522	.577	.641	.728	.781
	72	.20	.40	.40	.400	.400	.441	.527	.621	.684	.762	.809
	73	.10	.225	.675	.315	.495	.555	.599	.657	.697	.765	.812
	74	.10	.30	.60	.300	.440	.493	.544	.615	.662	.745	.795
L = 40	75	.10	.40	.50	.400	.400	.411	.493	.573	.633	.721	.775
X = 16	76	.20	.20	.60	.280	.440	.493	.533	.584	.619	.708	.765
X' = 16	77	.20	.30 $.40$	$.50 \\ .40$.300	.366	.411	.466	.532	.584	.683	.745
	78	.20			.400	.400	.406	468	.562	.634	.724	779
	79	.10	.225	.675	.315	.495	.555	.585	.625	.669	.735	.787
L = 44	80	.10	.30	$.60 \\ .50$.300	.440 $.400$.493	.520 $.433$.570	.624 $.578$	$.708 \\ .677$.765 $.739$
X = 16	81 82	$.10 \\ .20$	$.40 \\ .20$.60	$.400 \\ .280$.440	.411 $.493$.520	.516 $.556$.595	.672	.736
$\mathbf{X}' = 10$	83	.20	.30	.50	.300	.366	.411	.433	.488	.539	.640	.709
A = 20	84	.20	.40	.40	.400	.400	.406	.451	.507	.586	.687	.748
	85	.10	.225	.675	.315	.495	.555	.585	.603	.643	.705	.762
	86	.10	.30	.60	.300	.440	.493	.520	.536	.587	.672	.736
L = 48	87	.10	.40	.50	.400	.400	.411	.433	.462	.532	.634	.703
X = 16	88	.20	.20	.60	.280	.440	.493	.520	.536	.571	.637	.707
X' = 24	89	.20	.30	.50	.300	.366	.411	.433	.447	.503	.597	.674
	90	.20	.40	.40	.400	.400	.406	.451	.479	.539	.650	.719

Table 12.6

SUMMARY OF EQUIVALENT CONCENTRATED LOADS REQUIRED TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY TYPE 3-S1 TRUCKS WEIGHING ONE KIP EACH



Ninety variations in the Type 3-S1 truck are given in this Table. Each truck number, from 1 to 90, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

All dimensions are in feet.

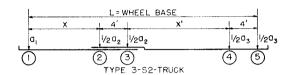
a1, a2, and a3-Represent the ratio of gross vehicle weight on axles.

Wheel Base and Axle Spacing	Truck No.	1	⊿oad O Axles Kips	n				Span-Fe	æŧ			
Feet	Ē	a ₁	\mathbf{a}_2	as	10	20	30	40	50	60	80	100
	1	.10	.40	.50	.500	.500	.565	.642	.706	.752	.810	.846
	2	.10	.50	.40	.400	.420	.541	.654	.723	.769	.826	.861
L = 24	3	.10	.60	.30	.384	.501	.601	.701	.761	.801	.850	.880
$\mathbf{X} = 8$ $\mathbf{X}' = 12$	4	.20	.40	.40	.400	.400	.470	.602	.681	.734	.800	.840
X' = 12	5	.20	.50	.30	.320	.441	.533	.650	.720	.767	.825	.860
	6	.20	.534	.266	.342	.468	.556	.666	.733	.778	.833	.867
	7	.10	.40	.50	.500	.500	.503	.576	.640	.695	.766	.810
	8	.10	.50	.40	.400	.420	.480	.581	.663	.719	.788	.830
L = 28	9	.10	.60	.30	.384	.501	.567	.644	.714	.762	.821	.857
$ \begin{array}{c} $	10	.20	.40	.40	.400	.400	.441	.526	.620	.683	.762	.809
X' = 16	11	.20	.50	.30	.320	.441	.527	.591	.673	.727	.795	.836
	12	.20	.534	.266	.342	.468	.556	.614	.691	.743	807	.845
	13	.10	.40	.50	.500	.500	.500	.514	.582	.640	.723	.774
	14	.10	.50	.40	.400	.420	.480	.511	.605	.670	.750	.799
L = 32	15	.10	.60	.30	.384	.501	.567	.600	.669	.724	.792	.833
X = 8 $X' = 20$	16	.20	.40	.40	.400	.400	.441	.481	.561	.633	.724	.778
X - 20	17 18	.20	.50	$.30 \\ .266$.320	.441	.527	.570	.627	.689	.766 $.780$.813
		.20	.534		.342	.468	.556	601_{-}	.649	.708	and an an an an an an an an an an an an an	.824
	19	.10	.40	.50	.500	.500	.500	.500	.532	.588	.681	.740
L = 36	20	.10	.50	.40	.400	.420	.480	.510	.550	.622	.714	.769
L - 36	$\frac{21}{22}$	$.10 \\ .20$	$.60 \\ .40$.30 .40	.384 $.400$	$.501 \\ .400$.567 $.441$.600 $.481$.625 $.504$.687 .585	$.764 \\ .686$.810 .748
	23	.20	.50	.30	.320	.441	.527	.570	.596	.651	.737	.789
A - 24	24	.20	.534	,266	.342	.468	.556	.601	.627	.674	.755	.803
-	25	.10	.40	.50	.500	.500	.500	.500	.500	.545	.640	.706
	26	.10	.50	.40	,400	.420	.480	.510	.528	.546	.678	.740
L = 40	$\frac{26}{27}$.10	.60	.30	.384	.501	.567	.600	.620	.650	.736	.788
$\mathbf{Y} = 8$	28	.20	.40	.40	.400	.400	.441	.481	.504	.538	.650	.718
	29	.20	.50	.30	.320	.441	.527	.570	.596	.614	.709	.767
	30	.20	.534	.266	.342	.468	.556	.601	.627	.646	.729	.783
-	31	.10	.40	.50	.500	.500	.565	.642	.692	.740	.801	.839
	32	.10	.50	.40	.400	.405	.531	.633	.706	.755	.816	.852
T. == 28	33	.10	.60	.30	.384	.486	.587	.680	.744	.787	.840	.872
$egin{array}{l} \mathbf{L} = 28 \ \mathbf{X} = 12 \end{array}$	34	.20	.40	.40	.400	.400	.470	.560	.648	.707	.780	.824
$\ddot{X}' = 12$	35	.20	.50	.30	.320	.405	.503	.610	688	.741	.805	.844
	36	.20	.534	.266	.342	.433	.522	.627	.702	.752	.813	.851
	37	.10	.40	.50	.500	.500	.503	.576	.635	684	.757	
	38	.10	.50	.40	.400	.405	.453	.559	.646	.704	.777	.821
L = 32	39	.10	.60	.30	.384	.486	.540	.623	.698	.748	.811	.848
$\ddot{\mathbf{X}} = 12$	40	.20	.40	.40	.400	.400	.406	.484	.586	.655	.741	.793
X' = 16	41	.20	.50	.30	.320	.405	.476	.550	.640	.700	.775	.820
	42	.20	.534	.266	.342	.433	.505	.573	.658	.716	.787	.829
	42	.20	.534	.266	.342	.433	.505	,573	.658	.716	.787	829

	43	10	.40	.50	.500	.500	.500	.514	.582	.631	.714	.767
	44	.10	.50	.40	.400	.405	.453	.490	.588	.655	.740	.791
L = 36	45	.10	.60	.30	.384	.486	.540	.580	.652	.710	.782	.825
X = 12	46	.20	.40	.40	.400	.400	.400	.443	.526	.605	.703	.762
X'=20	47	.20	.50	.30	.320	.405	.476	.532	.593	.661	.746	.796
	48	.20	.534	.266	.342	.433	.505	.562	.616	.680	.760	.808
	49	.10	.40	.50	.500	.500	.500	.500	.532	.587	.672	.733
	50	.10	.50	.40	.400	.405	.453	.490	.532	.607	.703	.761
L = 40	51	.10	.60	.30	.384	-486	.540	.580	.608	.672	.753	.802
X = 12	52	.20	.40	.40	.400	.400	.400	.443	.474	.556	.665	.731
X' = 24	53	.20	.50	.30	.320	.405	.476	.532	.565	.623	.716	.778
	54	.20	.534	.266	.342	433	.505	.562	596	.646	.734	.787
	55	.10	.40	.50	.500	.500	.500	.500	.500	.545	.632	.699
,	56	.10	.50	.40	.400	.405	.453	.490	.512	.561	.667	.731
L = 44	57	.10	.60	.30	.384	.486	.540	.580	.604	.636	.725	.779
$ \begin{array}{l} X = 12 \\ X' = 28 \end{array} $	58	.20	.40	.40	.400	.400	.400	.443	.474	.508	.628	.701
X = 28	59 60	.20	.50 $.534$	$.30 \\ .266$.320 $.342$	$.405 \\ .433$.476 $.505$.532 $.562$.565 $.596$.588 .619	.688 $.708$.750 .766
	61	.10	.40	.50	.500	.500	.565	.642	.690	.729	.792	.832
L = 32	62 63	.10	.50 $.60$.40	.400	$.405 \\ .486$.531 $.587$	$.620 \\ .664$.689 $.728$.741 .774	.806 $.830$.844
X = 16	64	.20	.40	.30 .40	.384 .400	.400	.470	.545	,616	.680	.760	.808
X = 10 X' = 12	65	.20	.50	.30	.320	.405	.503	.575	.657	.714	.785	.828
A - 12	66	.20	.534	.266	.342	.433	.522	.590	.671	.726	.794	.835
	67	.10	.40	.50	.500	.500	.503	.576	.635	.676	.748	.796
	68	.10	.50	.40	.400	.405	.443	.550	.629	.690	.767	.813
L = 36	69	.10	.60	.30	.384	.486	.523	.609	.681	.734	.800	.840
X = 16	70	.20	.40	.40	.400	.400	.406	.481	.553	.628	.720	.776
X' = 16	71	.20	.50	.30	.320	.405	.435	.521	.608	.674	.755	.804
	72	.20	.534	.266	.342	.433	.465	.541	.627	.689	.767	.813
	73	.10	.40	.50	.500	.500	.500	.514	.582	.631	.706	.760
	74	.10	.50	.40	.400	.405	.435	.484	.570	.641	.729	.783
L = 40	75	.10	.60	.30	.384	.486	.523	.560	.635	.696	.771	.817
X = 16	76	.20	.40	.40	.400	.400	.400	.421	.492	.576	.682	.745
X' = 20	77	.20	.50	.30	.320	.405	.435	.494	.560	.634	.725	.780
	78	.20	.534	.266	.342	.433	.465	.524	.584	.653	.740	.792
	79	.10	.40	.50	.500	.500	.500	.500	.532	.587	.664	.726
	80	.10	.50	.40	.400	.405	.435	.470	.513	.592	.692	.752
L = 44 $X = 16$	81	.10	.60	.30	.384	.486	.523	.560	.590	.658	.743	.794
X' = 24	82 83	.20 $.20$.40 .50	.40 $.30$.400 .320	.400 $.405$	$.400 \\ .435$.406 $.494$.444 $.535$.527 $.595$.644 .696	.714 .756
A - 24	84	.20	.534	.266	.342	.433	.465	.524	.566	.618	.713	.771
				50		.500	:465 .500					.692
	85 86	.10 .10	.40 .50	.50	.500 .400	.500 $.405$.500 $.435$.500 $.470$.500 $.496$.545 $.546$.625 .656	.692
L = 48	87	.10	.60	.30	.384	.405	.523	.560	.588	.621	.714	.773
X = 16	88	.20	.40	.40	.400	.400	.400	.406	.444	.478	.606	.684
X' = 28	89	.20	.50	.30	.320	.405	.435	.494	.535	.562	.667	.733
	90	.20	.534	.266	.342	.433	.465	.524	.566	.594	.687	.750

Table 12.7

SUMMARY OF EQUIVALENT CONCENTRATED LOADS REQUIRED TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY TYPE 3-S2 TRUCKS WEIGHING ONE KIP EACH



One hundred twelve variations in the Type 3-S2 truck are given in this Table. Each truck number, from 1 to 112, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

All dimensions are in feet.

Equivalent concentrated loads are in kips.

a1, a2, and a3-Represent the ratio of gross vehicle weight on axles.

Wheel Base and Axle Spacing	Truck No.	I	oad O Axles Kips	n				Span-F	eet			
Feet	F	a ₁	\mathbf{a}_2	\mathbf{a}_3	10	20	30	40	50	60	80	100
L = 28	1 2 3	.10 .10 .10	.30 .40 .45	.60 .50 .45	.384 .320 .288	.486 .405 .380	.551 .486 .460	.636 .585 .591	.700 .660 .671	.749 .714 .725	.810 .783 .793	.847 .825 .834
$ \begin{array}{c} 12 \\ 12 \\ 12 \end{array} $	4 5	.10 .20	$.50 \\ .30$.40	.320 .320	.420 .405	$.493 \\ .467$.617 $.548$.693 $.626$.744 $.685$.807 $.760$.845 $.806$
	$-\frac{6}{7}$.20 .20 .10	$\frac{.40}{.50}$.40 .30 .60	.256 .320	.363 .441 .486	.441 .527	.564 .620	.650 .696	.709 .747	.781 .810 .773	.825 .848
L = 32	9 10 11	.10 .10 .10	.40 .45 .50	.50 .45 .40	.320 .288 .320	.405 .380 .420	.435 .437 .480	.517 .513 .546	.592 .606 .634	.656 .670 .694	.738 .751 .769	.788 .800 .815
$ \bar{\mathbf{X}} = 8 \\ \mathbf{X}' = 16 $	12 13 14	.20 .20 .20	.30 .40 .50	.50 .40 .30	.320 .320 .256 .320	.405 .363 .441	.435 .441 .527	.495 .490 .574	.560 .590 .650	.628 .658 .708	.716 .743 .781	.770 .794 .824
	15 16		.30 .30 .40	.60	.384 .320	.486 .405	.523 .435	.543 .458	.601 .535	.654 .601	.737 .694	.787 .752
$ \begin{array}{l} L = 36 \\ X = 8 \\ X' = 20 \end{array} $	17 18 19	.10 .10 .20	.45 .50 .30	.45 .40 .50	.288 .320 .320	.380 .420 .405	.437 $.480$ $.435$.465 $.510$ $.454$.544 .577 .512	.617 .646 .574	.710 .732 .673	.766 .784 .734
	$\frac{20}{21}$.20	.40 50 30	.40 .30	.256 .320	.363 .441	.441 .527	.481 .570	.533 .606	.609 .670	.705 .752	.763 .801 .758
L = 40 X = 8	$\frac{23}{24}$	$.10 \\ .10$	$\frac{.40}{.45}$	$.50 \\ .45$.320 .288	$.405 \\ .380$	$.435 \\ .437$	$.451 \\ .465$	$.483 \\ .485$.548 $.566$.651 $.669$.717 .733
$\mathbf{X} = 8 \\ \mathbf{X}' = 24$	25 26 27 28	.10 .20 .20 .20	.50 .30 .40	.40 .50 .40	.320 .320 .256 .320	.420 .405 .363	.480 .435 .441 .527	.510 .451 .481 .570	.528 .471 .504 .596	.599 .523 .561 .632	.696 .631 .668 .723	.755 .700 .733 .778
	29 30	.10 .10	.30 .40	.60 .50	.384 .320	.441 .486 .405	.523 .435	.542 .451	.553 .461	.579 .504	.667 .610	.730 .683
$ \begin{array}{l} \mathbf{L} = 44 \\ \mathbf{X} = 8 \\ \mathbf{X'} = 28 \end{array} $	31 32 33	.10 .10 .20	.45 .50 .30	.45 $.40$ $.50$.288 .320 .320	.380 .420 .405	.437 .480 .435	.465 $.510$ $.451$.482 .528 .461	.516 .554 .489	.630 .660 .590	.701 .726 .666
	34 35 36	$\frac{.20}{.20}$.40 .50 .30	.40 .30	.256 .320	.363 .441 .510	.441 .527	.481 .570	.504 .596	.521 .614 .785	.632 .695 .838	.704 .755
L = 28 $X = 12$	37 38 39	.10 .10	.40 .45	.50 .45 .40	.320 .288 .320	.441 .413 .441	.578 .556 .578	.656 .653 .671	.716 .722 .737	.763 .768 .781	.820 .826 .835	.855 .860 .868
$\mathbf{X} = 12$ $\mathbf{X}' = 8$	40 41 42	.20 .20 .20	.30 .40 .50	.50 .40 .30	.320 .320 .256 .320	.430 .363 .430	.539 .494 .539	.603 .600	.666 .680	.720 .734 .761	.787 .800 .820	.829 .840

.20 .20 .20

111

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.40

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.40

Table 12.7	(Co	ntinue	ed)									
Table 12.1						400		000		=0.0		
	43	.10	.30	.60	.384	.486	.551	.636	.688	.736	.800	.839
	44	.10	.40	.50	.320	.405	.486	.585	.646	.702	.774	.817
$\mathbf{L} = 32$	45	.10	.45	.45	.288	.365	456	.569	.654	.711	.782	.825
X = 12	46	.10	.50	.40	.320	.405	.486	.596	.676	.730	.796	.837
X' = 12	47	.20	.30	.50	.320	.405	.467	.548	.599	.662	.742	.792
	48	.20	.40	.40	.256	.324	.405	.522	.617	.681	.760	.808
	49	.20	.50	.30	.320	.405	.476	.580	.664	.720	.790	.832
	50	.10	.30	.60	.384	.486	.523	.582	.644	.689	.764	.809
	51	.10	.40	.50	.320	.405	.435	.517	.589	.645	.729	.781
$\Gamma = 36$	52	.10	.45	.45	.288	.365	.410	.490	.589	.655	.740	.791
$ \widetilde{\mathbf{X}} = 12 \\ \widetilde{\mathbf{X}}' = 16 $	53	.10	.50	.40	.320	.405	.453	.523	.616	.680	.758	.806
X' = 16	54	.20	.30	.50	.320	.405	.435	.495	.554	.606	.693	.756
	55	.20	.40	.40	.256	.324	.391	.446	.556	.630	.722	.777
	56	.20	.50	.30	.320	.405	.476	.532	.617	.681	.760	.808
	57	.10	.30	.60	.384	.486	.523	.543	.601	.649	.728	.780
	58	.10	.40	.50	.320	.405	.435	.458	.535	.592	.685	.745
L = 40	59	.10	.45	.45	.288	.365	.410	.445	.526	.602	.699	.758
$\bar{\mathbf{x}} = \tilde{1}$	60	.10	.50	.40	.320	.405	.453	.490	.559	.631	.721	.776
$\mathbf{\tilde{X}}' = \mathbf{\tilde{20}}$	61	.20	.30	.50	,320	.405	.435	.454	.512	.558	.656	.720
	62	.20	.40	.40	.256	.324	.391	.443	.497	.580	.684	.746
	63	.20	.50	.30	.320	.405	.476	.532	.572	.642	.731	.785
	64	.10	.30	.60	.384	.486	.523	.542	.561	.614	.693	.751
	65	.10	.40	.50	.320	.405	.435	.451	.483	.548	.643	.710
L = 44	66	.10	.45	.45	.288	.365	.410	.445	.466	.550	.658	.725
$\tilde{X} = 12$	67	.10	.50	.40	.320	.405	.453	.490	.512	.584	.685	.746
$\hat{\mathbf{X}}' = \hat{2}\hat{4}$	68	.20	.30	.50	.320	.405	.435	.451	.471	.523	.614	.686
	69	.20	.40	.40	.256	.324	.391	.443	.474	.532	.646	.716
	70	.20	.50	.30	.320	.405	.476	.532	.565	.604	.702	.761
	71	.10	.30	.60	.384	.486	.523	.542	.553	.579	.658	.723
	$7\overline{2}$.10	.40	.50	.320	.405	.435	.451	.461	.504	.602	.676
L = 48	73	.10	.45	.45	.288	.365	.410	.445	.466	.500	.619	.692
X = 12	74	.10	.50	.40	.320	.405	.453	.490	.512	.538	.649	.717
$\mathbf{X}' = \frac{12}{28}$	75^{-14}	.20	.30	.50	.320	.405	.435	.451	.461	.489	.574	.652
A - 20	76	.20	.40	.40	.256	.324	.391	.443	.474	.495	.610	.686
	77	.20	.50	.30	.320	.405	.476	.532	.565	.588	.674	.738
	78											
		.10	.30	.60	.384	.486	.551	.636	.688	.724	.791	.832
	79	.10	.40	.50	.320	.405	.486	.585	.645	.691	.765	.810
L = 36 X = 16	80	.10	.45	.45	.288	.365	.456	.560	.637	.697	.772	.817
X = 16	81	.10	.50	.40	.320	.405	.486	.585	.659	.716	.786	.829
X'=12	82	.20	.30	.50	.320	.405	.467	.548	.597	.639	.724	.777
	83	.20	.40	.40	.256	.324	.405	.498	.584	.654	.740	.792
	_84	.20	.50	.30	.320	.405	.467	.548	.632	.694	.770	.816
	85	.10	.30	.60	.384	.486	.523	.582	.644	.686	.755	.802
	86	.10	.40	.50	.320	.405	.435	.517	.589	.639	.720	.774

		• • • •	.00	.00	*00 x	•400	.020	.00	.011	.000	. 100	.002
	86	.10	.40	.50	.320	.405	.435	.517	.589	.639	.720	.774
L = 40	87	.10	.45	.45	.288	.365	.392	.486	.571	.641	.729	.783
X = 16	88	.10	.50	.40	.320	.405	.435	.517	.599	.665	.748	.798
X'=16	89	.20	.30	.50	.320	405	.435	.495	.554	.594	.681	.741
	90	.20	.40	.40	.256	.324	.348	.432	.522	.602	.701	.761
	91	.20	.50	.30	.320	.405	.435	.495	.584	.654	.740	.792
	92	.10	.30	.60	.384	.486	.523	.543	.601	.649	.719	.773
	93	.10	.40	.50	.320	.405	.435	.458	.535	.592	.677	.738
L = 44	94	.10	.45	.45	.288	.365	.392	.426	.508	.587	.688	.749
X = 16	95	.10	.50	.40	.320	.405	.435	.470	.541	.616	.710	.767
X' = 20	96	.20	.30	.50	.320	.405	.435	.454	.512	.558	.639	.706
	97	.20	.40	.40	.256	.324	.348	.406	.462	.551	.663	.730
	98	.20	.50	.30	.320	.405	.435	.494	.539	.614	.710	.768
	99	.10	.30	.60	.384	.486	.523	.542	.561	.614	.684	.744
	100	.10	.40	.50	.320	.405	.435	.451	.483	.548	.635	.703
L = 48	101	.10	.45	.45	.288	.365	.392	.426	.450	.535	.647	.709
X = 16	102	.10	.50	.40	.320	.405	.435	.470	.496	.569	.674	.737
X' = 24	103	.20	.30	.50	.320	.405	.435	.451	.471	.523	.598	.672
	104	.20	.40	.40	.256	.324	.348	.406	.444	.502	.625	.699
	105	.20	.50	.30	.320	.405	.435	.494	.535	.576	.681	.745
	106	.10	.30	.60	.384	.486	.523	.542	.553	.579	.656	.716
	107	.10	.40	.50	.320	.405	.435	.451	.461	.504	.596	.669
L = 52	108	.10	.45	.45	.288	.365	.392	.426	.450	.485	.608	.683
X = 16	109	.10	.50	.40	.320	.405	.435	.470	.496	.523	.638	.708
$\mathbf{X'} = 28$	110	.20	.30	.50	.320	.405	.435	.451	.461	.489	.563	.639
	111	.20	.40	.40	.256	.324	3.48	406	444	470	593	669

.324

.405

.348

.405

.320 .256 .320

.406

.494

.444

.535

.470

.562

.563 .588

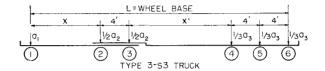
.653

.669

.722

Table 12.8

SUMMARY OF EQUIVALENT CONCENTRATED LOADS REQUIRED TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY TYPE 3-S3 TRUCKS WEIGHING ONE KIP EACH



One hundred five variations in the Type 3-S3 truck are given in this Table. Each truck number, from 1 to 105, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

All dimensions are in feet.

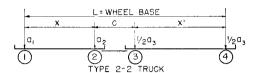
a1, a2, and a3-Represent the ratio of gross vehicle weight on axles.

Wheel Base	No.		oad O	_								
and	Ä	1	oad O Axles	11				Span-Fe	et			
Axle	l G		Kips									
Spacing Feet	Truck	a1	a ₂	a ₃	10	20	30	40	50	60	80	100
	1	.10	.30	.60	.280	.440	.493	.572	.647	.705	.778	.822
	2	.10	.36	.54	.252	.396	.445	.546	.627	.688	.764	.811
L = 32	3	.10	.40	.50	.256	.366	.411	.529	.614	.677	.756	.804
$\mathbf{x} = 8$	4	.10	.50	.40	.320	.420	.480	.582	.664	.719	.788	.830
X' = 12	5	.20	.30	.50	.233	.366	.411	.494	.580	.647	.733	.785
	6	.20	.40	.40	.256	.363	.441	.527	.621	.684	.762	.809
	7	.20	.50	.30	.320	.441	.527	.596	.673	.728	.795	.836
	- 8	.10	.30	.60	.280	.440	.493	.528	.592	.656	.740	.791
	9	.10	.36	.54	.252	.396	.444	.481	.563	.633	.722	.776
$\tilde{L} = 36$	10	.10	.40	.50	.256	.366	.411	.459	.546	.618	.710	.766
$\mathbf{X} = 8$ $\mathbf{X}' = 16$	11	.10	.50	.40	.320	.420	.480	.522	.606	.670	.751	.800
X = 16	12	.20	.30	.50	.233	.366	.411	.442	.512	.590	.688	.748
	13	.20	.40	.40	.256	.363	.441	.483	.562	.634	.724	.779
	14	.20	.50	.30	,320	.441	.527	.572	.627	.689	.766	.813
	15	.10	.30	.60	.280	.440	.493	.520	.549	.609	.704	.761
	16	.10	.36	.54	.252	.396	.444	.468	.512	.580	.681	.742
$\mathbf{L} = 40$	17	.10	.40	.50	.256	.366	.411	.433	.489	.563	.666	.730
X = 8	18	.10	.50	.40	.320	.420	.480	.510	.550	.623	.714	.770
X'=20	19	.20	.30	.50	.233	.366	.411	.433	.467	.534	.644	.712
	20	.20	.40	.40	.256	.363	.441	.481	.512	.586	.687	.748
	21	.20	.50	.30	.320	.441	.527	570	.684	.651	737	.789
	22	.10	.30	.60	.280	.440	.493	.520	.536	.569	.668	.732
T - 11	$\frac{23}{24}$.10	.36	.54	.252	.396	.444	.468	.482	.532	.640	.709
$\mathbf{L} = 44$	24 25	.10	.40	.50 .40	.256	.366	.411	.433	.447	.509 $.577$.623	.695
X = 8 $X' = 24$	26	.10 .20	.50 .30	.50	.320 .233	.420 $.366$.480 .411	.510 $.433$.528 $.447$.485	.678 .602	.740 .677
A - 24	26	.20	.40	.40	.256	.363	.411	.481	.504	.539	.650	.719
	28	.20	.50	.30	.320	.303	.527	.570	.596	.694	.709	.767
	29	.10	.30	.60	.280	.440	.493	.520	.536	.547	.633	.703
T - 40	30	.10	.36	.54	.252	.396	.444	.468	.482	.493	.601	.677
L = 48 X = 8	$\frac{31}{32}$.10	.40	.50 .40	.256 $.320$.366 $.420$.411 .480	.433	.447 $.528$.465 $.540$.581 $.643$.660 $.712$
$\mathbf{X}' = 28$	33	$.10 \\ .20$.50	.50	.233			.510 $.433$.447	.456		
A - 20	34	.20	.30 .40	.40	.256	.366 $.363$.411 .441	.481	.504	.521	.560 $.615$.643 $.690$
	35	.20	.50	.30	.320	.441	.527	.670	.596	.614	.681	.744
	36	.10	.30	.60	.280	.440	.493	.572	.637	.693	.768	.814
T 90	37	.10	.36	.54	.252	.396	.445	.546	.616	.676	.755	.803
L = 36 $ X = 12$	$\frac{38}{39}$.10	.40	.50	.256 $.320$.366	.411	.529	.602	.665 $.705$.746 .778	.796 $.822$
X = 12 X' = 12		.10	.50	.40 .50		.405	.462	.560	.646	.624	.778	.822
A - 12	40	$.20 \\ .20$.30		.233 .256	.366	.411	.494 $.484$.554 $.587$.656	.715	.793
	41 42	.20	.40 .50	.40 .30	.320	-324	.391	.484	.640	.700	.775	.820
	44	.20	.00	.30	.520	.405	.476	.555	,040	.100	.110	.040

Table 12.	8 (Coi	ntinue	d)									
	43	.10	.30	.60	.280	.440	.493	.528	.592	.644	.731	.784
	44	.10	.36	.65	.252	.396	.444	.481	.563	.621	.713	.769
L = 40	45	.10	.40	.50	.256	.366	.411	.459	.544	.607	.701	.759
$ \widetilde{\mathbf{X}} = 12 \\ \widetilde{\mathbf{X}}' = 16 $	46	.10	.50	.40	.320	.405	.453	.500	.588	.656	.740	.791
X'=16	47	.20	.30	.50	.233	.366	.411	.442	.510	.567	.670	$.73\overline{4}$
	48 49	.20	.40	.40	.256	.324	.391	.443	.527	.605	.703	.762
		.20	.50_	30_	.320	.405	.476	.532	.608	.661	.746	.796
	50	.10	.30	.60	.280	.440	.493	.520	.549	.606	.695	.754
T 44	51	.10	.36	.54	.252	.396	.444	.468	.512	.575	.650	.718
L = 44 $X = 12$	52 53	$.10 \\ .10$	$.40 \\ .50$.50	.256	.366	.411	.433	.488	.554	.657	.723
$\mathbf{X}' = 12$	54	.20	.30	.40 .50	.329 .233	$.405 \\ .366$.453 $.411$.490	.533	.608	.703	.761
21 - 20	55	.20	.40	.40	.256	.324	.391	.433 $.443$	$.467 \\ .479$.521	.627	.698
	56	.20	.50	.30	.320	.405	.476	.532	.568	.556 $.623$	$.665 \\ .716$.731 $.773$
	57	.10	.30	.60	.280	.440	.493	.520				
	58	.10	.36	.54	.252	.396	.444	.468	$.536 \\ .482$.569 $.532$.659 $.632$.725
L = 48	59	.10	.40	.50	.256	.366	.411	.433	.447	.509	.614	$.702 \\ .687$
L = 48 X = 12 X' = 24	60	.10	.50	.40	,320	.405	.453	.490	.512	.561	.667	.732
X'=24	61	.20	.30	.50	.233	.366	.411	.433	.447	.485	.584	.663
	62	.20	.40	.40	.256	.324	.391	.443	.474	.509	.629	.702
	63	.20	.50	.30	.320	.405	.476	.532	.565	.594	.688	.750
	64	.10	.30	.60	.280	.440	.493	.520	.536	.547	.624	.696
	65	.10	.36	.54	.252	.396	.444	.468	.482	.493	.593	.670
L = 52	66	.10	.40	.50	.256	.366	.411	.433	.447	.464	.572	.652
X = 12	67	.10	.50	.40	.320	.405	.453	.490	.512	.527	.632	.703
X' = 28	68	.20	.30	.50	.233	.366	.411	.433	.447	.456	.544	.629
	69	.20	.40	.40	.256	.324	.391	.443	.474	.495	.593	.672
	70	.20	.50	.30	.320	.405	.476	.532	.565	.588	.660	.727
	71	.10	.30	.60	.280	.440	.493	.572	.637	.681	.759	.807
* - 40	72	.10	.36	.54	.252	.396	.445	.546	.616	.664	.746	.796
L = 40	$\frac{73}{74}$.10	.40	.50	.256	.366	.411	.529	.602	.653	.737	.789
	75	.10 .20	.50 .30	.40 .50	.320	.405	.462	.551	.629	.691	.767	.813
A - 12	76	.20	.40	.40	.233 .256	.366 $.324$	$.411 \\ .379$	$.494 \\ .465$.555 $.554$.601 $.628$.696	.755
	77	.20	.50	.30	.320	.405	.453	.521	.592	.660	.721 $.745$.777 .796
	78	.10	.30	.60	.280	.440		.528				
	79	.10	.36	.54	.252	.396	.493 $.444$.481	.592 $.563$	$.643 \\ .618$.722 .704	.776 .761
$T_4 = 44$	80	.10	.40	.50	.256	.366	.411	.459	.544	.602	.692	.752
$L = 44 \\ X = 16 \\ X' = 16$	81	.10	.50	.40	.320	.405	.435	.491	.571	.641	.729	.783
X' = 16	82	.20	.30	.50	.233	.366	.411	.442	.510	.558	.652	.719
	83	.20	.40	.40	.256	.324	.348	.406	.493	.577	.682	.745
	84	.20	.50	.30	.320	.405	.435	.494	.560	-634	.725	.780
	85	.10	.30	.60	.280	.440	.493	.520	.549	.606	.686	.747
	86	.10	.36	.54	.252	.396	.444	.468	.512	.574	.663	.728
$\mathbf{L} = 48$	87	.10	.40	.50	.256	.366	.411	.433	.488	.554	.648	.715
$\mathbf{X} = 16$ $\mathbf{X}' = 20$	88	.10	.50	.40	.320	.405	.435	.470	.516	.593	.692	.753
$\lambda = 20$	89 90	$.20 \\ .20$.30	.50 .40	.233	.366	.411	.433	.467	.521	.610	.684
	91	.20	$.40 \\ .50$.30	.256 ,320	$.324 \\ .405$.348 $.435$.496 $.494$	$.446 \\ .536$.527	.644	.715
	92									.595	.696	.756
	92 93	.10 .10	.30 .36	.60 .54	.280 .252	.440 $.396$	$.493 \\ .444$.520	.536	.569	.650	.718
L = 52	94	.10	.40	.50	.256	.366	.411	.468 $.433$.482 $.447$.532 $.509$.623	.695
$\ddot{\mathbf{x}} = 16$	95	.10	.50	-40	.320	.405	.435	.470	.496	.546	$.605 \\ .656$	$.680 \\ .723$
$\mathbf{X'} = 24$	96	.20	.30	.50	.233	.366	.411	.433	.447	.485	.568	.649
	97	.20	.40	.40	.256	.324	.348	.406	.444	.479	.607	.685
	98	.20	.50	30	.320	.405	.435	.494	.535	.567	.667	.733
	99	.10	.30	.60	.280	.440	.493	,520	.536	.547	.623	.689
	100	.10	.36	.54	.252	.396	.444	.468	.482	.493	.589	.663
L = 56	101	.10	.40	.50	.256	.366	.411	.433	.447	.464	.567	.646
X = 16	102	.10	.50	.40	.320	.405	.435	.470	.496	.514	.621	.694
X' = 28	103	.20	.30	.50	.233	.366	.411	.433	.447	.456	.534	.615
	104	.20	.40	.40	.256	.324	.348	.406	.444	.470	.571	.655
	105	.20	.50	.30	.320	.405	.435	.494	.535	.562	.638	.710

Table 12.9

SUMMARY OF EQUIVALENT CONCENTRATED LOADS REQUIRED TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY TYPE 2-2 TRUCKS WEIGHING ONE KIP EACH



One hundred forty-four variations in the Type 2-2 truck are given in this Table. Each truck number, from 1 to 144, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

All dimensions are in feet.

a1, a2, and a3-Represent the ratio of gross vehicle weight on axles.

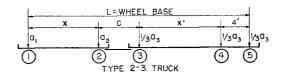
Wheel Base and Axle	Truck No.	I	oad O Axles Kips					Span-Fe	eet			
Spacing Feet	Ë	aı	\mathbf{a}_2	a 3	10	20	30	40	50	60	80	100
	1	.10	.20	.70	.350	.464	.608	.681	.744	.787	.840	.872
X = 28	2	.10	.30	.60	.300	.420	.580	.663	.730	.775	.831	.864
X = 12	3	.10	.40	.50	.400	.465	.555	.654	.721	.767	.824	.858
X' = 8	4	.20	.20	.60	.300	.402	.534	.606	.684	.737	.802	.841
$\mathbf{c} = 8$	5	.20	.30	.50	.300	.368	.507	.592	.672	.726	.793	.834
	6	.20	.40	.40	.400	.451	.534	.644	.714	.762	.821	.857
	7	.10	.20	.70	.350	.402	,522	.615	.688	.741	.805	.844
L = 32	8	.10	.30	.60	.300	.384	.502	.601	.680	.734	.800	.840
X = 12	9	.10	.40	.50	.400	.465	.537	.611	.685	.736	.800	.839
X' = 12	10	.20	.20	.60	.300	.353	.459	.543	.634	.695	.771	.816
$\mathbf{c} = \mathbf{s}$	11	.20	.30	.50	.300	.368	.457	.543	.632	.693	.768	.814
	12	.20	.40	.40	.400	.451	.534	.606	.684	.737	.802	.841
	13	.10	.20	.70	.350	.402	.448	.551	.634	.695	.771	.816
$\Gamma = 36$	14	.10	.30	.60	.300	.384	.462	.544	.632	.694	.770	.816
X = 12	15	.10	.40	.50	.400	.465	.537	.591	.650	.707	.777	.821
X' = 16	16	.20	.20	.60	.309	.353	.399	.488	.584	.654	.740	.792
$\mathbf{c} = 8$	17	.20	.30	.50	.300	.363	.457	.530	.597	.662	.745	.795
	18	.20	.40	.40	.400	.451	.534	.601	.654	.711	.783	.826
	19	.10	.20	.70	.350	.402	.448	.490	.581	.650	.737	.789
L = 40	20	.10	.30	.60	.300	.384	.462	.521	.585	.654	.740	.792
X = 12	21	.10	.40	.50	.400	.465	.537	.591	.622	.677	.755	.802
X' = 20	22	.20	.20	.60	.300	.353	.399	.460	.536	.614	.710	.768
C = 8	23	.20	.30	.50	.300	.368	.457	.530	.574	.632	.722	.776
	24	.20	.40	.40	.400	.451	.534	.601	.640	.687	.764	.810
	25	.10	.20	.70	.350	.448	.553	.640	.698	.748	.811	.848
L = 32	26	.10	.30	.60	.300	.384	.502	.601	.669	.724	.792	.833
X = 12	27	.10	.40	.50	.400	.400	.475	.569	.650	.706	.777	.821
$\mathbf{X'} = 8$	28	.20	.20	.60	.300	.384	.480	.560	.625	.687	.764	.810
C = 12	29	.20	.30	.50	.300	.320	.430	.522	.600	.665	.746	.79€
	30	.20	.40	.40	,400	.400	.480	.570	.654	.711	.783	.826
	31	.10	.20	.70	.350	.350	.464	.572	.640	.700	.775	.820
L = 36	32	.10	.30	.60	.300	.300	.420	.540	.618	.682	.761	.809
X = 12	33	.10	.40	.50	.400	.400	.475	.543	.616	.677	.755	.802
X' = 12	34	.20	.20	.60	.300	.300	.402	.501	.573	.644	.732	.785
C = 12	35	.20	.30	.50	.300	.300	.390	.480	.561	.632	.722	.776
	36	.20	.40	.40	.400	.400	.480	.560	.625	.687	.764	.810
	37	.10	.20	.70	.350	.350	.401	.507	.584	.654	.740	.792
L = 40	38	.10	.30	.60	.300	.300	.389	.481	.569	.641	.730	.784
X = 12	39	.10	.40	.50	.400	.400	.475	.543	.584	.649	.732	.784
X' = 16	40	.20	.20	.60	.300	.300	353	.445	.522	.602	.701	.761
C = 12	41	.20	.30	.50	.300	.300	.390	.480	.534	.603	.699	.758
	42	.20	.40	.40	.400	.400	.480	.560	.608	.662	.745	.795

Table 12.) (Cor	ntinue	d)									
	43	.10	.20	.70	.350	.350	.401	.445	.533	.608	.706	.764
$egin{array}{c} \mathbf{L} = 44 \ \mathbf{X} = 12 \end{array}$	44	.10	.30	.60	.300	.300 .400	.389 $.475$	$.465 \\ .543$	$.520 \\ .584$.600 .620	$.700 \\ .710$	$.760 \\ .766$
X' = 12	$\frac{45}{46}$	$.10 \\ .20$.40 .20	.50 .60	$.400 \\ .300$.300	.353	.401	.473	.561	.670	.736
C = 12	47	.20	.30	.50	.300	.300	.390	.480	.534	.574	.677	.739
	48	.20	.40	.40	.400_	.400	.480	.560	.608	.640	.726	.780
	49	.10	.20	.70	.350	.464	.608	.681	.729	.774	.830	.864
L = 32	50	.10	.30	.60	.300	.420	.580	.660	.714	$.762 \\ .752$.821 $.813$.858 $.850$
X = 16 X' = 8	$\frac{51}{52}$	$.10 \\ .20$.40 .20	.50 .60	.400 .300	$.465 \\ .402$.555 $.534$.641 $.601$.704 $.654$.711	.783	.826
$\hat{\mathbf{c}} = 8$	53	.20	.30	.50	.300	.368	.507	.580	.643	.701	.774	.819
	54	.20	.40	.40	.400	.451	.512	.602	.681	.734	.800	.840
	55	.10	.20	.70	.350	.402	.522	.615	.672	.727	.795	.836
L = 36	56	.10	.30	.60	.300	.384	.502	.601	.665	.721	.790	.832
$\mathbf{X} = 16$ $\mathbf{X'} = 12$	57	$.10 \\ .20$	$.40 \\ .20$.50 .60	.400 .300	$.465 \\ .353$.523 $.459$.590 $.543$	$.668 \\ .603$.722 $.669$.790 .751	.831 $.801$
$C = \frac{12}{8}$	58 59	.20	.30	.50	.300	.368	.440	.530	.599	.665	.748	.798
0 - 0	60	.20	.40	.40	.400	.451	.498	.564	.650	.709	.781	.825
	61	.10	.20	.70	.350	.402	.448	.551	.619	.681	.760	.808
L = 40	62	.10	.30	.60	.300	.384	.451	.544	.616	.680	.760	.808
X = 16 X' = 16	63	.10	.40	.50	.400	.465	.523	.570	.632	.692	.766	.812 $.776$
$\mathbf{X'} = 16$ $\mathbf{C} = 8$	$\frac{64}{65}$.20 .20	.20 .30	.60 .50	.300 .300	.353 $.368$	$.399 \\ .425$.488 .491	.553 .561	.628 $.633$.720 $.724$.778
U 0	66	.20	.40	.40	.400	.451	.498	.562	.620	.683	.762	.809
	67	.10	.20	70	.350	.402	.448	.490	.569	.636	.726	.781
L = 44	68	.10	.30	.60	.300	.384	.451	.501	.570	.641	.730	.784
$\bar{x} = 16$	69	.10	.40	.50	.400	.465	.523	.570	.606	.662	.744	.793
	70	.20	.20	.60	.300	.353	.399	.435	.506	.587	.690	.752
$\mathbf{c} = 8$	$\begin{array}{c} 71 \\ 72 \end{array}$.20	$.30 \\ .40$.50	$.300 \\ .400$.368 $.451$.425 $.498$	$.491 \\ .562$.543 .609	$\frac{.603}{.658}$.700 $.743$.759 $.794$
		.20		.40		.448	.553	.640	.692	.735	.801	.841
L = 36	$\frac{73}{74}$	$.10 \\ .10$	$.20 \\ .30$.70 .60	.350 .300	.384	.502	.601	.661	.711	.783	.826
$\ddot{\mathbf{x}} = 16$	75	.10	.40	.50	.400	.400	.465	.566	.632	.692	.766	.812
$\mathbf{X'} = 8$	76	.20	.20	.60	.300	.384	.480	.560	.608	.662	.745	.795
C = 12	77	.20	.30	.50	.300	.320	.430	.522	.577	.641	.728	.781
	78	.20	.40	40	.400	.400	.451	.526	.620	.683	.762	.809
T - 10	79	.10	.20	.70	.350	.350 $.300$.464 $.420$.572 $.540$.637 .612	.687 $.669$.765 $.751$.812 $.801$
$\mathbf{L} = 40$ $\mathbf{X} = 16$	$\frac{80}{81}$	$.10 \\ .10$.30 .40	.60 .50	.300 .400	.400	.465	.522	.598	.662	.744	.793
	82	.20	.20	.60	.300	.300	.402	.501	.561	.619	.713	.770
C = 12	83	.20	.30	.50	.300	.300	.368	.470	.536	.604	.701	.760
	84	.20	.40	.40	.400_	.400	.451	.521	.590	.658	.743	.794
T - 11	85	.10	.20	.70	.350	.350	.401	.507	.585	.640	.730 $.720$.784 .776
L = 44 Y = 16	86 87	.10 .10	$.30 \\ .40$.60 .50	.300 .400	.300 $.400$.384 $.465$.481 $.522$	$.565 \\ .567$	$.628 \\ .633$.721	.775
$egin{array}{l} \mathbf{X} = 16 \\ \mathbf{X'} = 16 \end{array}$	88	.20	.20	.60	.300	.300	.353	.445	.515	.576	.682	.745
C = 12	89	.20	.30	.50	.300	.300	.368	.440	.502	.573	.677	.741
	90	.20	.40	.40	.400	.400	.451	.521	.576	.633	.724	.778
Y 10	91	.10	.20	.70	.350	.350	.401	.445	.533	.595	.696 $.690$.756 $.752$
$\mathbf{L} = 48$ $\mathbf{X} = 16$	$\frac{92}{93}$.10 .10	$.30 \\ .40$	$.60 \\ .50$.300 .400	.300 $.400$	$.384 \\ .465$	$.444 \\ .522$.519 $.567$.587 $.605$.699	.757
$\mathbf{x}' = \mathbf{z}_0$	94	.20	.20	.60	.300	.300	.353	.390	.470	.535	.651	.720
C = 12	95	.20	.30	.50	.300	.300	.368	.440	.502	.544	.655	.722
	96	.20	.40	.40	.400	.400	.451	.521	.576	.614	.705	.763
	97	.10	.20	.70	.350	-448	.608	.681	.725	.761	.820	.856
$\mathbf{L} = 36$ $\mathbf{v} = 20$	98 99	.10	.30	.60 .50	.300	$.420 \\ .465$.580 $.555$	$.660 \\ .641$.708 $.693$.749 $.738$	$.811 \\ .803$.849 $.842$
$\mathbf{x} = 20 \\ \mathbf{x'} = 8$	100	$.10 \\ .20$	$.40 \\ .20$.60	.400 $.300$.402	.534	.601	.640	.687	.764	.810
$\ddot{\mathbf{c}} = \ddot{\mathbf{s}}$	101	.20	.30	.50	.300	.368	.507	.580	.624	.677	.756	.804
	102	.20	.40	.40	.400	.451	.512	.578	.648	.707	.780	.824
	103	.10	.20	.70	.350	.402	.522	.615	.671	.714	.785	.828
$\mathbf{L} = 40$	104	.10	.30	.60	.300	.384	.502	.601	.661	.708	.780	.824 $.823$
$\mathbf{X} = 20$ $\mathbf{X'} = 12$	$\frac{105}{106}$.10 .20	$.40 \\ .20$.50 .60	.400 .300	.465 $.353$.523 $.459$.590 $.543$.652 $.594$.707 $.644$.779 $.732$.785
$\hat{\mathbf{C}} = \frac{12}{8}$	107	.20	.30	.50	.300	.368	.440	.530	.584	.641	.729	.783
•	108	.20	.40	.40	.400	.451	.498	.545	.617	.681	.760	.808
	109	.10	.20	.70	.350	.402	.448	.551	.619	.667	.750	.800
$egin{array}{c} \mathbf{L} = 44 \ \mathbf{X} = 20 \end{array}$	110	.10	.30	.60	.300	.384	.451	.544	.615	.667	.750	.800
$\mathbf{X} = 20$	111	.10	.40	.50	.400	.465	.523	.554	.614	.677	.756	.804
$\mathbf{X'} = 16$ $\mathbf{C} = 8$	$\frac{112}{113}$.20 .20	.20 .30	$.60 \\ .50$.300 .300	.353 $.368$.399 $.425$.488 $.482$.549 $.545$.602 $.605$.701 $.703$	$.761 \\ .762$
0 – 0	114	.20	.40	.40	.400	.451	.423	.525	.586	.655	.741	.793
	115	.10	.20	.70	.350	.402	.448	.490	.569	.623	.716	.773
L = 48	116	.10	.30	.60	.300	.384	.451	.489	.570	.627	.720	.776
$\mathbf{\ddot{X}} = 20$ $\mathbf{X'} = 20$	117	.10	.40	.50	.400	.465	.523	.554	.590	.647	.733	.785
X' = 20	118	.20	.20	.60	.300	.353	.399	.435	.506	.561	.670	.736
$\mathbf{c} = 8$	$\begin{array}{c} 119 \\ 120 \end{array}$	$.20 \\ .20$	$.30 \\ .40$	$.50 \\ .40$.300 .400	$.368 \\ .451$.425 $.498$.455 $.525$.512 $.579$.574 $.630$	$.679 \\ .722$.743 .777
	140	.40	.40	.40	.400	.401	.450	.040	.010	.000		

Table 12.	9 (Co	ntinue	d)									
	121	.10	.20	.70	.350	.448	.553	.640	.692	.727	.791	.833
L = 40	122	.10	.30	.60	.300	.384	.502	.601	.661	.701	.773	.818
X = 20	123	.10	.40	.50	.400	.400	.465	.566	.632	.677	.756	.804
$\mathbf{x'} = 8$	124	.20	.20	.60	.300	.384	.480	.560	.603	.640	.726	.780
C = 12	125	.20	.30	.50	.300	.320	.430	.522	.577	.618	.710	.766
	126	.20	.40	.40	.400	.400	.451	.512	.586	.655	.741	.793
	127	.10	.20	.70	.350	.350	.464	.572	.637	.681	.755	.804
L = 44	128	.10	.30	.60	.300	.300	.420	.540	.612	.660	.742	.793
X = 20	129	.10	.40	.50	.400	.400	.465	.512	.589	.647	.733	.785
X' = 12	130	.20	.20	.60	.300	.300	.402	.501	.561	.601	.694	.755
C = 12	131	.20	.30	.50	.300	.300	.368	.470	.536	.581	.683	.745
	132	.20	.40	.40	.400	.400	.451	.486	.556	.630	.722	.777
	133	.10	.20	.70	.350	.350	.401	.507	.585	.637	.720	.776
L = 48	134	.10	.30	.60	.300	.300	.384	.481	.565	.621	.711	.768
X = 20	135	.10	.40	.50	.400	.400	.465	.509	.551	.618	.710	.766
X' = 16	136	.20	.20	.60	.300	.800	.353	.445	.515	.562	.663	.730
C = 12	137	.20	.30	.50	.300	.300	.368	.420	.496	.547	.656	.724
	138	.20	.40	.40	.400	.400	.451	.486	.545	.605	.703	.762
	139	.10	.20	.70	.350	.350	.401	.445	.533	.593	.685	.748
L = 52	140	.10	.30	.60	.300	.300	.384	.434	.519	.582	.680	.744
X = 20	141	.10	.40	.50	.400	.400	.465	.509	.551	.589	.688	.748
X' = 20	142	.20	.20	.60	.300	.300	.353	.390	.470	.525	.631	.705
C = 12	143	.20	.30	.50	.300	.300	.368	.410	.471	.517	.633	.705
	144	.20	.40	.40	.400	.400	.451	.486	.545	.588	.684	.746

Table 12.10

SUMMARY OF EQUIVALENT CONCENTRATED LOADS REQUIRED TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY TYPE 2-3 TRUCKS WEIGHING ONE KIP EACH



Ninety variations in the Type 2-3 truck are given in this Table. Each truck number, from 1 to 90, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

All dimensions are in feet.

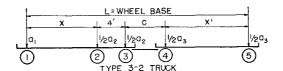
a1, a2, and a3-Represent the ratio of gross vehicle weight on axles.

Wheel Base and Axle Spacing	Truck No.	Load On Axles Kips			Span-Feet									
Feet	Ę	aı	\mathbf{a}_2	\mathbf{a}_3	10	20	30	40	50	60	80	100		
	1	.10	.20	.70	.299	.424	.521	.612	.670	.725	.794	.835		
L = 32	2	.10	.30	.60	.300	.363	.476	.582	.664	.720	.790	.832		
X = 12	3	.10	.40	.50	.400	.441	.498	.597	.674	.726	.793	.833		
$\mathbf{X}' = 8$	4	.20	.20	.60	.256	.363	.449	.533	.617	.681	.760	.808		
C = 8	5	.20	.30	.50_	.300	.343	.420	.529	.620	.683	.761	.808		
	6	.10	.20	.70	.299	.378	.457	.537	.606	.665	.748	.798		
L = 36	7	.10	.30	.60	.300	.353	.413	.507	.601	.667	.750	.800		
X = 12 X' = 12	8 9	.10	.40	.50	.400	.441	.498	.549	.628	.687	.762	.808		
C = 8	10	.20 .20	.20 .30	.60 .50	.256 $.300$.324 $.343$	$.391 \\ .420$.465 $.484$.552 $.573$.627 $.642$.720 $.730$.776 $.783$		
<u> </u>														
L = 40	11 12	.10 .10	.20 .30	.70 .60	.299 .300	.378 .353	.407 $.413$.474 $.460$.547 $.539$.607 .616	.704 $.711$.762 .769		
X = 12	13	.10	.40	.50	.400	.441	.413	.540	.583	.649	$.711 \\ .732$.784		
X' = 16	14	.20	.20	.60	.256	.324	.348	.406	.489	.574	.680	.744		
$\hat{c} = \hat{s}$	15	.20	.39	.50	.300	.343	.420	.481	.528	.603	.699	.758		
	16	.10	.20	.70	.299	.424	.515	.577	.639	.685	.763	.811		
L = 36	17	.10	.30	.60	.300	.363	.441	.520	.602	.668	.751	.800		
$\tilde{\mathbf{x}} = 12$	18	.10	.40	.50	,400	.400	.454	.520	.605	.668	.747	.796		
X' = 8	19	.20	.20	.60	.256	.363	.441	.498	.556	.630	.722	.777		
C = 12	20	.20	.30	.50	.300	.302	.374	.453	.550	.623	.714	.770		
	21	.10	.20	.70	.299	.378	.457	.517	.579	.630	.717	.774		
L = 40	22	.10	.30	.60	.300	.324	.391	.443	.536	.614	.710	.768		
X = 12	23	.10	.40	.50	.400	.400	.454	.507	.561	.630	.717	.772		
X = 12	24	.20	.20	.60	.256	.324	.391	.443	.500	.574	.680	.744		
C = 12	25	.20	.30	.50	.300	.300	.374	.447	.505	.584	.684	.746		
	26	.10	.20	.70	.299	.378	.407	.474	.521	.580	.672	.737		
L = 44	27	.10	.30	.60	.300	.324	.363	.422	.474	.561	.670	.736		
X = 12	28	.10	.40	.50	.400	.400	.454	.507	.539	.593	.688	.748		
X' = 16	29	.20	.20	.60	.256	.324	.348	.406	.448	.520	.640	.712		
C = 12	30	.20	.30	.50	.300	.300	.374	.447	.491	546_	.655	.721		
	31	.10	.20	.70	.299	.424	.521	.612	.668	.712	.783	.827		
L = 36	32	.10	.30	.60	.300	.363	.476	.582	.648	.707	.780	.824		
X = 16	33	.10	.40	.50	.400	.441	.491	.574	.656	.712	.782	.825		
X' = 8 $C = 8$	34	.20	.20	.60	.256	.363	.449	.533	.586	.655	.741	.793		
$\mathbf{c} = 8$	35	.20	.30	.50	.300	.343	.419	.514	.586	.654	.739	.791		
	36	.10	.20	.70	.299	.378	457	.537	.606	.653	.738	.790		
L = 40	37	.10	.30	.60	.300	.353	.391	.507	.585	.654	.740	.792		
$ \begin{array}{l} X = 16 \\ X' = 12 \end{array} $	38	.10	.40	.50	.400	.441	.481	.527	.609	.672	.751	.800		
$\mathbf{C} = 12$	39 40	.20 .20	.20 .30	.60 .50	.256 $.300$.324 $.343$	$.391 \\ .382$	$.465 \\ .451$.528 $.537$	$.601 \\ .613$.700 $.708$.760 $.766$		
<u> </u>	40	.20	.30	.ev	.800	.045	.3čZ	.401	.557	.619	.108	.706		

Table 12.	10 (C	ontinu	ed)									
	41	.10	.20	.70	.299	.378	.407	,474	.547	.603	.693	.754
L = 44	42	.10	.30	.60	.360	.353	.391	.440	.526	.602	.701	.761
X = 16	43	.10	.40	.50	.400	.441	.481	.520	.564	.633	.721	.775
X' = 16	44	.20	.20	.60	.256	.324	.348	.406	.474	.547	.660	.728
C = 8	45	.20	.30	.50	.300	.343	.382	.443	.494	.573	.677	.741
	46	.10	.20	.70	.299	.424	.515	.577	.639	.681	.753	.803
L = 40	47	.10	.30	.60	.300	.363	.441	.520	.596	.655	.741	.793
X = 16	48	.10	.40	.50	.400	.400	.441	.497	.587	.653	.736	.787
X' = 8	49	.20	.20	.60	.256	.363	.441	.498	.556	.605	.703	.762
C = 12	50	.20	.30	.50	.300	.302	.367	.453	.523	.593	.693	.753
	51	.10	.20	.70	.299	.378	.457	.517	.579	.630	.707	.765
L = 44	52	.10	.30	.60	.300	.324	.391	.443	.534	.601	.700	.760
X = 16	53	.10	.40	.50	.400	.400	.441	.487	.542	.614	.706	.763
X' = 12	54	.20	.20	.60	.256	.324	.391	.443	.500	549	.661	.729
C = 12	55	.20	.30	.50	.300	.300	.343	.408	.470	.554	.662	.728
T - 10	56	.10	.20	.70	.299	.378	.407	.474	.521	.580	.662	.729
L = 48	57	.10	.30	.60	.300	.324	.353	.406	.474	.547	.660	.728
X = 16	58	.10	.40	.50	.400	.400	.441	.487	.523	.577	.677	.739
X' = 16 $C = 12$	59	.20	.20	.60	.256	.324	.348	.406	.448	.503	.620	.696
C 12	60	.20	30	50	.300	.300	.343	408	.460	.515	.632	.704
* 40	61	.10	.20	.70	.299	.424	.521	.612	.668	.706	.773	.819
L = 40	62	.10	.30	.60	.300	.363	.476	.582	.645	.694	.770	.816
X = 20	63	.10	.40	.50	.400	.441	.491	.573	.639	.697	.771	.816
X' = 8 $C = 8$	64	.20	.20	.60	.256	.363	.449	.533	.584	.630	.722	.777
C = 8	65	.20	.30	50	.300	.343	.419	.514	571	.629	.720	.776
T - 44	66	.10	.20	.70	.299	.378	.457	.537	.606	.653	.727	.782
L = 44 X = 20	67	.10	.30	.60	.300	.353	.391	.507	.585	.640	.730	.784
X = 20 X' = 12	68 69	.10 .20	.40 .20	.50	$.400 \\ .256$.441	.481	.519	.591	.657	.740	.791
$C = \frac{12}{8}$	70	.20	.30	.60 .50	.236	.324 $.343$.391 $.382$.465 $.451$.528 $.520$	$.641 \\ .584$	$.680 \\ .687$.744 .749
<u> </u>	${71}^{.0}$ $-$.20	$-\frac{.50}{.70}$.299				.547	.603		.746
L = 48	$\frac{71}{72}$.10	.30	.60	.299	.378	.407	.474 $.436$.547	.588	.682 $.691$.746
$X = \frac{10}{20}$	73	.10	.40	.50	.400	.353 .441	.391 $.481$.502	.546	.618	.710	.766
X' = 20 X' = 16	74	.20	.20	.60	.256	.324	.348	.406	.474	.525	.640	.712
c = 8	75	.20	.30	.50	.300	.343	.382	.407	.471	.544	.656	.724
0 0	76	.10	.20	.70	.299	.424	.515	.577	.639	.681	.743	.795
L = 44	77	.10	.30	.60	.300	.363	.441	.520	.596	.647	.731	.785
$\ddot{X} = 20$	78	.10	.40	.50	.400	.400	.441	.495	.576	.638	.725	.779
$\mathbf{x}' = \mathbf{z}'$	79	.20	.20	.60	.256	.363	.441	.498	.556	.595	.684	.746
$\overset{\mathbf{C}}{\mathbf{C}} = 1\overset{\circ}{2}$	80	.20	.30	.50	.300	.302	.367	.453	.523	,569	.674	.738
	81	.10	.20	.70	.299	.378	.457	.517	.579	.630	.697	.757
L = 48	82	.10	.30	.60	.300	.324	.391	.443	.534	.595	.690	.752
$\tilde{X} = 20$	83	.10	.40	.50	.400	,400	.441	.471	.523	.599	.695	.745
X' = 12	84	.20	,20	.60	.256	.324	.391	.443	.500	.548	.642	.713
C = 12	85	.20	.30	.50	.300	.300	.343	.388	.470	.525	.640	.711
	86	.10	.20	.70	.299	.378	.407	.474	.521	.580	.656	.721
L = 52	87	.10	.30	.60	.300	.324	.353	.406	.474	.544	.650	.720
X = 20	88	.10	.40	.50	.400	.400	.441	.471	.507	.561	.666	.730
X' = 16	89	.20	.20	.60	.256	.324	.348	.406	.448	.503	.600	.680
C = 12	90	.20	.30	.50	.300	.300	.343	.372	.429	.485	.610	.686

Table 12.11

SUMMARY OF EQUIVALENT CONCENTRATED LOADS REQUIRED TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY TYPE 3-2 TRUCKS WEIGHING ONE KIP EACH



Ninety variations in the Type 3-2 truck are given in this Table. Each truck number, from 1 to 90, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

All dimensions are in feet.

a1, a2, and a3-Represent the ratio of gross vehicle weight on axles.

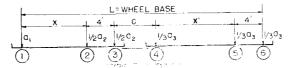
					<u> </u>									
Wheel Base and Axle Spacing	Truck No.	Load On Axles Kips			Span-Feet									
Feet	Ē	aı	\mathbf{a}_2	\mathbf{a}_3	10	20	30	40	50	60	80	100		
	1	.10	.40	.50	.256	.376	.466	.551	.632	.693	.768	.814		
$\Gamma = 36$	2	.10	.50	.40	.320	.441	.527	.596	.676	.730	.796	.837		
X = 12 X' = 12	$\frac{3}{4}$.10 .20	.60 .40	.80	.384	.510	.590	.652	.721	.768	.825	.860 .808		
C = 8	5	.20	.50	$.40 \\ .30$.256 $.320$.363 $.430$.441 $.503$.525 $.590$.617 $.664$.681 $.720$.760 $.790$.832		
	6	.10	.40	.50	.256	.376	.466	.530	.597	.662	.745	.795		
L = 40	7	.10	.50	.40	.320	.441	.527	.591	.646	.704	.777	.821		
X = 12	8	.10	.60	.30	.384	.510	.590	.652	.698	.748	.811	.848		
X' = 16	9	.20	.40	.40	.256	.363	.441	.525	.586	.655	.741	.793		
C = 8	10	.20	.50	.30	.320	.430	.503	.590	.642	.700	.775	.820		
	11	.10	.40	.50	.256	.376	.466	.530	.574	.632	.722	.776		
$ \mathbf{L} = 44 \\ \mathbf{X} = 12 $	12	.10	.50	.40	.320	.441	.527	.591	.632	.680	.758	.806		
$X = 12 \\ X' = 16$	$\frac{13}{14}$	$.10 \\ .20$.60 .40	.30	.384 $.256$.510 $.363$	$.590 \\ .441$.652 $.525$	$.691 \\ .579$.729 $.630$.796 $.722$.837 $.777$		
$\mathbf{C} = \frac{10}{8}$	15	.20	.50	.30	.320	.430	.503	.590	.642	.681	.760	.808		
	16	.10	.40	.50	.256	.324	.405	.480	.561	.632	.722	.776		
L = 40	17	.10	.50	.40	.320	.405	.476	.550	.616	.680	.758	.806		
$\mathbf{X} = 12$ $\mathbf{X'} = 12$	18	.10	.60	.30	.384	.486	.550	.621	.675	.729	.796	.837		
X' = 12	19	.20	.40	.40	.256	-324	.391	.482	.556	.630	.722	.777		
C = 12	20	.20	.50	.30	.320	.405	.476	.561	.618	.681	.760	.808		
	21	.10	.40	.50	.256	.324	.405	.480	.534	.603	.699	.758		
L = 44	22	.10	.50	.40	.320	.405	.476	.550	.600	.655	.740	.791		
$X = 12 \\ X' = 16$	$\frac{23}{24}$.10	.60	.30	.384	.486	.550	.621	.666	.710	.782	.825		
C = 12	24 25	.20 .20	.40 .50	.40	.256 $.320$.324 $.405$	$.391 \\ .476$.482 $.561$.545 $.618$	$.605 \\ .661$.703 $.746$	$.762 \\ .796$		
0 - 12	26	.10	.40	.50	.256	,324	.405	.480	.534	.574				
L = 48	27	.10	.50	.40	.320	.324 $.405$.476	.550	.600	.634	.677 .721	.739 $.776$		
X = 12	28	.10	.60	.30	.384	.386	.550	.621	.666	.697	.767	.813		
	29	.20	.40	.40	.256	.324	.391	.482	.545	.588	.684	.746		
C = 12	30	.20	.50	.30	.320	.405	.476	.561	.618	.657	.731	.785		
	31	.10	.40	.50	.256	.376	.466	.551	.620	.679	.758	.806		
L = 40	32	.10	.50	.40	.320	441	.527	.585	.659	.716	786	.829		
X = 16	33	.10	.60	.30	.384	.510	.590	.636	.704	.754	.815	.852		
X' = 12	34	.20	.40	.40	.256	.363	.441	.498	.584	.654	.740	.792		
c = s	35	.20	.50	.30	.320	.430	.503	.550	.632	.694	.770	.816		
	36	.10	.40	.50	.256	.376	.466	.511	.580	.648	.734	.787		
$\mathbf{L} = 44$	37	.10	.50	.40	.320	.441	.527	.572	.629	.690	.767	.813		
X = 16	38	.10	.60	.30	.384	.510	.590	.633	.681	.734	.800	.840		
X' = 16 C = 8	$\frac{39}{40}$.20 $.20$.40 .50	.40 .30	.256 $.320$	$.363 \\ .430$.441 $.503$.488 $.550$.553 $.610$.628 $.674$.720 .755	.776 $.804$		
0 = 0	41	.10	.40	.50	.256	.376	.466	.511	.558	.618	.711	.768		
L = 48	42	.10	.50	.40	.320	.441	.527	.572	.617	.665	.711 $.748$.768		
X = 16	43	.10	.60	.30	.384	.510	.590	.633	.676	.715	.786	.828		
X' = 20	44	.20	.40	.40	.256	.363	.441	.488	.549	.602	.701	.761		
C = 8	45	.20	.50	.30	.320	.430	.503	.550	.610	.654	.740	.792		

Table 12.	11 (C	ontinu	(ed									
	46	.10	.40	.50	.256	.324	.405	.475	.559	.618	.711	.768
L = 44	47	.10	.50	.40	.320	.405	.476	.532	.599	.665	.748	.798
X = 16	48	,10	.60	.30	.384	.486	.550	.601	.658	.715	.786	.828
X' = 12	49	.20	.40	.40	.256	.324	.391	.445	.522	.602	.701	.761
$\mathbf{c} = 12$	50	.20	.50	.30	.320	.405	.464	.511	.584	.654	.740	.792
	51	.10	.40	.50	,256	.324	.405	.465	.518	.588	.688	.749
L = 48	52	.10	.50	.40	.320	.405	.476	.532	.584	.641	.729	.783
X = 16	53	.10	.60	.30	.384	.486	.550	.601	.651	.696	.771	.817
X' = 16	54	.20	.40	.40	.256	.324	.391	.445	.515	.576	.682	.745
C = 12	55	.20	.50	.30	.320	.405	.464	.511	.570	.634	.725	.780
	56	.10	.40	.50	.256	.324	.405	.465	.518	.559	.666	.731
L = 52	57	.10	.50	.40	.320	.405	.476	.532	.584	.620	.710	.767
X = 16	58	.10	.60	.30	.384	.486	.550	.601	.651	.684	.757	.805
X' = 20	59	.20	.40	.40	.256	.324	.391	.445	.515	.562	.663	.730
C = 12	60	.20	.50	.30	.320	.405	.464	.511	.570	.617	.710	.768
	61	.10	.40	.50	.256	.376	.466	.551	.620	.667	.748	.798
L = 44	62	.10	.50	.40	.320	.441	.527	.585	.645	.702	.776	.820
X = 20	63	.10	.60	.30	.384	.510	.590	.636	.688	.741	.805	.844
X' = 12	64	.20	.40	.40	.256	.363	.441	.498	.556	.627	.720	.776
c = 8	65	.20	.50	.30	.320	.430	.503	.548	.601	.668	.750	.800
	66	.10	.40	.50	.256	.376	.466	.511	.580	.634	.724	.778
L = 48	67	.10	.50	.40	.320	.441	.527	.570	.617	.676	.756	.805
X = 20	68	.10	.60	.30	.384	.510	.590	.630	.666	.721	.790	.832
X' = 16	69	.20	.40	.40	.256	,363	.441	.481	.528	.601	.700	.760
c = 8	70	.20	.50	.30	.320	.430	.503	.540	.579	.647	.735	.788
	71	.10	.40	.50	.256	.376	.466	.511	.543	.603	.700	.759
L = 52	72	.10	.50	.40	.320	.441	.527	.570	.602	.651	.737	.789
X = 20	73	.10	.60	.30	.384	.510	.590	.630	.661	.701	.776	.820
$\mathbf{x}' = 20$	74	.20	.40	.40	.256	.363	.441	.481	.520	.574	.680	.744
$\mathbf{c} = 8$	75	.20	.50	.30	.320	.430	.503	.541	.579	.627	.720	.776
	76	.10	.40	.50	.256	.324	.405	.475	.559	.616	.701	.760
L = 48	77	.10	.50	.40	.320	.405	.476	.532	.589	.651	.737	.789
X = 20	78	.10	.60	.30	.384	.486	.550	.600	.644	.701	.776	.820
X' = 12	79	.20	.40	.40	.256	.324	.391	.443	.500	.574	.680	.744
C = 12	80	.20	.50	.30	.320	.405	.464	.511	.554	.627	.720	.776
_	81	.10	.40	.50	.256	.324	.405	.465	.517	.581	.677	.741
L = 52	82	.10	.50	.40	.320	.405	.476	.532	.568	.626	.718	.774
X = 20	83	.10	.60	.30	.384	.486	.550	.600	.636	.682	.761	.809
X' = 16	84	.20	.40	.40	.256	.324	.391	.443	.485	.549	.661	.729
C = 12	85	.20	.50	.30	.320	.405	.464	.511	.554	.607	.705	.764
T	86	.10	.40	.50	.256	.324	.405	.465	.502	.547	.655	.722
L = 56	87	.10	.50	.40	.320	.405	.476	.532	.568	.607	.700	.759
X = 20	88	.10	.60	.30	.384	.486	.550	.600	.636	.671	.746	.797
X'=20 $C=12$	89	.20 .20	.40	.40	.256 .320	.324	.391	.443	.485	.537	.642	.713
U 12	90	.20	.50	.30	.320	.405	.464	.511	.554	604	.690	.752

Table 12.12

SUMMARY OF EQUIVALENT CONCENTRATED LOADS REQUIRED TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED

BY TYPE 3-3 TRUCKS WEIGHING ONE KIP EACH



Ninety variations in the Type 3-3 truck are given in this Table. Each truck number, from 1 to 90, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

All dimensions are in feet.

Equivalent concentrated loads are in kips.

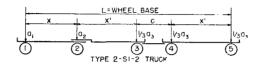
a1, a2, and a3-Represent the ratio of gross vehicle weight on axles.

					- 0-							
Wheel	6	Ι.	1.0									
Base	No.	ļ 1	oad O	n				Span-Fe	e t			
and			Axles					opan-r				
Axle	ä		Kips									
Spacing Feet	Truck	a ₁	a ₂	a 3	10	20	30	40	50	60	80	100
1 000	1	.10	.30	.60	.256	.363	.441	.492	.572	.636	.726	.781
L = 40	$\hat{2}$.10	.40	.50	.256	.324	.383	.457	.550	.623	.714	.770
	3	.10	.50	.40	,320	.405	.460	.525	.607	.671	.752	.801
X' = 8	4	.20	.30	.50	.213	.302	.367	.424	.499	.577	.681	.744
C = 12	5	.20	.40	.40	.256	.324	.391	.467	.546	.621	.715	.772
	6	.10	.30	.60	.256	.324	.391	.443	.509	.581	.685	.748
L = 44	7	.10	.40	.50	.256	.324	.383	.447	.568	.584	.684	.746
X = 12	8	.10	.50	.40	.320	.405	.460	.524	.573	.639	.727	.781
X' = 12	9	.20	.30	.50	.213	.270	.326	.384	.446	.531	.646	.715
C = 12	10	.20	.40	.40	.256	.324	.391	.467	.520	.588	.690	.751
	11	.10	.30	.60	.256	.324	.348	.406	.448	.514	.635	.708
L = 48	12	.10	.40	.50	.256	.324	.383	.447	.491	.546	.655	.721
	13	.10	.50	.40	.320	.405	.460	.524	.566	.607	.703	.761
X' = 16	14	.20	.30	50	.213	.270	.307	.384	.441	.492	.616	.691
C = 12	15	.20	.40	.40	.256	.324	.391	.467	.520	.556	.665	.731
	16	.10	.30	.60	.256	.363	.441	.481	.525	.588	.688	.750
L = 44	17	.10	.40	.50	.256	.324	.367	.414	.485	,565	.669	.733
$\bar{\mathbf{x}} = 12$	18	.10	.50	.40	.320	.405	.453	.497	.553	.623	.715	.771
X' = 8 $C = 16$	19	.20	.30	.50	.213	.302	.367	.400	.453	.516	.633	.705
C = 16	20	.20	40	.40	.256	.324	.391	.443	.499	.572	.677	.741
	21	.10	.30	.60	.256	.324	.391	.443	.474	.534	.646	.717
$\mathbf{L} = 48$	22	.10	.40	.50	.256	.324	.367	.414	.464	.527	.640	.709
X = 12	23	.10	.50	.40	.320	.405	.453	.497	.544	.592	.690	.751
X' = 12	24	.20	.30	.50	.213	.270	.326	.369	.415	.473	.601	.679
C = 16	25	.20	.40	.40	.256	.324	.391	.443	.499	.539	.653	.721
	26	.10	.30	.60	.256	.324	,348	.406	.444	.481	.605	.684
$ \begin{array}{l} \text{L} = 52 \\ \text{X} = 12 \end{array} $	27	.10	.40	.50	.256	.324	.367	.414	.464	.498	.611	.686
X = 12	28	.10	.50	.40	.320	.405	.453	.497	.544	.576	.666	.731
X' = 16	29	.20	.30	.50	.213	.270	.307	.354	.415	.457	.571	.654
C = 16	30	.20	.40	.40	.256	.324	.391	.443	.499	.538	.628_	.701
	31	.10	.30	.60	.256	.363	.441	.492	.572	.627	.717	.773
L = 44	32	.10	.40	.50	.256	.324	.383	.457	.545	,608	.703	.762
X = 16	33	.10	.50	.40	.320	.405	.460	.512	.589	.657	.741	.793
X' = 8	34	.20	.30	.50	.213	.302	.367	.424	.499	.551	.660	.727
C = 12	35	.20	.40	.40	.256	.324	.374	.427	.512	.593	.694	.755
	36	.10	.30	.60	.256	.324	.391	.443	.509	.574	.676	.740
L = 48	37	.10	.40	.50	.256	.324	.383	.428	.490	.569	.673	.737
X = 16	38	.10	.50	.40	.320	.405	.460	.505	.556	.624	.716	.772
X' = 12	39	.20	.30	.50	.213	.270	.326	.369	.446	.505	.624	.698
C = 12	40	.20	.40	.40	.256	.324	.374	.427	.488	.560	.669	.735
	41	.10	.30	.60	.256	.324	.348	.406	.448	.523	.635	.708
L = 52	42	.10	.40	.50	.256	.324	.383	.428	.475	.531	.643	.713
X = 16	43	.10	.50	.40	.320	.405	.460	.505	.550	.592	.692	.752
X' = 16	44	.20	.30	.50	.213	.270	.298	.343	.408	.462	.594	.674
C = 12	45	.20	.40	.40	.256	.324	.374	.427	.488	.529	.644	.714

Table 12.	12 (C	ontinu	ed)									
	46	.10	.30	.60	.256	.363	.441	.481	.525	.588	.679	.743
L = 48	47	.10	.40	.50	.256	.324	.367	.400	.485	.554	.658	.725
X = 16	48	.10	.50	.40	.320	.405	.435	.478	.536	.608	.704	.762
$\mathbf{x'} = 8$	49	.20	.30	.50	.213	.302	.367	.400	.453	.511	.615	.690
C = 16	50	.20	.40	.40	.256	.324	.348	.406	.467	.543	.656	.724
	51	.10	.30	.60	.256	.324	.391	.443	.474	.534	.637	.709
L=52	52	.10	.40	.50	.256	.324	.348	.397	.448	.512	.629	.700
X = 16	53	.10	.50	.40	.320	.405	.435	.478	.528	.577	.680	.742
X'=12	54	.20	.30	.50	.213	.270	.326	.369	.398	.465	.579	.661
C = 16	55	.20	.40	.40	.256	.324	.348	.406	.467	.512	.631	.704
-	56	.10	.30	.60	.256	.324	.348	.406	.444	.481	.596	.676
L = 56	57	.10	.40	.50	.256	.324	.348	.397	.448	.485	.600	.677
X = 16	58	.10	.50	.40	.320	.405	.435	.478	.528	.563	.655	.723
X' = 16	59	.20	.30	.50	.213	.270	.290	.338	.382	.429	.549	.637
C = 16	60	.20	.40	.40	.256	.324	.348	.406	.467	.511	.606	.684
	61	.10	.30	.60	,256	.363	.441	.492	.572	.627	.707	.765
L = 48	62	.10	.40	.50	.256	.324	.383	.457	.545	.604	.693	.753
X = 20	63	.10	.50	.40	.320	.405	.460	.512	.580	.643	.731	.784
$\mathbf{x}' = 8$	64	.20	.30	.50	.213	.302	.367	.424	.499	.549	.642	.712
C = 12	65	.20	.40	.40	.256	.324	.374	.425	.492	.566	.674	.739
	66	.10	.30	.60	.256	.324	.391	.443	.509	.574	.666	.732
L = 52	67	.10	.40	.50	.256	.324	.383	.428	.490	.558	.662	.728
$\mathbf{X} = 20$	68	.10	.50	.40	.320	.405	.460	.504	.544	.610	.706	.764
X' = 12	69	.20	.30	.50	.213	.270	,326	.369	.446	.505	.606	.683
C = 12	70	.20	.40	.40	.256	.324	.374	.414	.457	.531	.648	.718
	71	.10	.30	.60	.256	.324	.348	.406	.448	.523	.625	.700
L = 56	72	.10	.40	.50	.256	.324	.383	.428	.460	.515	.632	.704
X = 20	73	.10	.50	.40	.320	.405	.460	.504	.535	.577	.681	.744
X' = 16	74	.20	.30	.50	.213	.270	.298	.339	.394	.461	.572	.656
C = 12	75	.20	.40	.40	.256	.324	.374	.414	.457	.503_	.622	.698
	76	.10	.30	.60	.256	.363	.441	.481	.525	.588	.670	.735
L = 52	77	.10	.40	.50	.256	.324	.367	.400	.485	.554	.647	.716
X = 20	78	.10	.50	.40	.320	.405	.435	.478	.526	.594	.693	.754
$\mathbf{x}' = 8$	79	.20	.30	.50	.213	.302	.367	.400	.453	.511	.598	.675
C = 16	80	.20	.40	.40	.256	.324	.348	.389	.440	.515	.635	.708
	81	.10	.30	.60	.256	.324	.391	.443	.474	.534	.627	.701
L = 56	82	.10	.40	.50	.256	.324	.348	.397	.432	.507	.617	.692
X = 20	83	.10	.50	.40	.320	.405	.435	.478	.513	.562	.669	.734
X' = 12	84	.20	.30	.50	.213	.270	.326	.369	.398	.465	.560	.646
C = 16	85	.20	.40	.40	.256	.324	.348	.389	.435	.485	.610	.687
	86	.10	.30	.60	.256	.324	.348	.406	.444	.481	.586	.668
$\mathbf{L} = 60$	87	.10	.40	.50	.256	.324	.348	.397	.432	.472	.588	.668
X = 20	88	.10	.50	.40	.320	.405	.435	.478	.513	.550	.644	.714
X' = 16	89	.20	.30	.50	.213	.270	.290	.338	.370	.420	.527	.619
C = 16	90	.20	.40	.40	.256	,324	.348	.389	.435	.485	.585	.667

Table 12.13

SUMMARY OF EQUIVALENT CONCENTRATED LOADS REQUIRED TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY TYPE 2-S1-2 TRUCKS WEIGHING ONE KIP EACH



Ninety-six variations in the Type 2-S1-2 truck are given in this Table. Each truck number, from 1 to 96, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

All dimensions are in feet.

Equivalent concentrated loads are in kips.

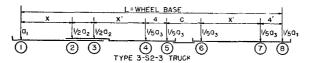
a1, a2, and a3-Represent the ratio of gross vehicle weight on axles.

Wheel Base and Axle	Truck No.	I	oad O Axles Kips					Span-Fe	eet			
Spacing Feet	Ę	a ₁	\mathbf{a}_2	a ₃	10	20	30	40	50	60	80	100
L = 36	1	.10	.20	.70	.234	.299	.421	.517	.607	.673	.754	.803
X = 8 $X' = 10$	2	.10	.30	.60	.300	.326	.416	.500	.600	.667	.750	.800
C = 8	3 4	.20 $.20$.20 .30	$.60 \\ .50$.200 .300	.256 $.353$	$.360 \\ .449$	$.460 \\ .527$.568 $.587$	$.640 \\ .652$.730 $.736$.784 .787
$\frac{C=3}{L=40}$	- 5	10	.20	.70	.234	.299	.391	.474	.565	.637	.727	782
$\mathbf{x} = \frac{10}{8}$	6	.10	.30	.60	.300	.324	.391	.465	.552	.627	.720	.776
X' = 12	7	.20	.20	.60	.200	.256	.334	.418	.520	.601	.700	.760
c = 8	8	.20	.30	.50	.300	.353	.427	.497	.563	.614	.706	.763
L = 44	9	.10	.20	.70	.234	.299	.361	.445	.523	.602	.701	.760
$\mathbf{x} = 8$	10	.10	.30	.60	.300	.324	.367	.432	.504	.587	.690	.752
$X' = 14 \\ C = 8$	$\frac{11}{12}$	$.20 \\ .20$.20	.60	.200	.256 $.253$.309	.385	.473	.561	.670	.736
			.30	.50	.300_		.405	.471	.539	.587	.677	.739
L = 48 X = 8	13 14	$.10 \\ .10$.20	.70	.234 .300	.299 $.324$.351 $.348$.424 .406	.488 $.474$.566 $.547$.674 $.660$.739 $.728$
$\mathbf{X}' = 16$	15	.20	.20	.60	.200	.256	.300	.363	.436	.521	.640	.712
$\ddot{c} = \frac{18}{8}$	16	.20	.30	.50	.300	.253	.399	.455	.515	.567	.648	.715
L = 52	17	.10	.20	.70	.234	.299	.351	.402	.461	.530	.647	.718
$\bar{\mathbf{x}} = 8$	18	.10	.30	.60	.300	.324	.348	.388	.448	.507	.630	.704
X' = 18	19	.20	.20	.60	.200	.256	.300	.344	.410	.481	.611	.688
$\overline{c} = 8$	20	.20	.30	.50	.300	.253	.399	.439	.492	.547	.620	.692
L = 56	21	.10	.20	.70	.234	.299	.351	.381	.444	.499	.621	.696
$\mathbf{x} = 8$	22	.10	.30	.60	.300	.324	.348	.371	.423	.480	.600	.680
$X' = 20 \\ C = 8$	$\frac{23}{24}$.20 .20	.20 .30	.60 .50	.200 .300	.256 $.253$	$.300 \\ .399$.326 $.423$.384 $.471$.449 $.527$.581 $.601$.665 .669
L = 60	25	.10	.20	.70		.299	.351	.379	.426	.471	.594	.675
$\mathbf{x} = 8$	26 26	.10	.30	.60	.234 .300	.324	.348	.361	.426	.471	.571	.656
$\mathbf{X}' = 22$	27	.20	.20	.60	.200	.256	.300	.324	.365	.427	.551	.641
$\tilde{c} = 8$	28	.20	.30	.50	.300	.253	.399	.423	.459	.508	.586	.646
$I_{*} = 64$	29	.10	.20	.70	,234	.299	.351	.379	.410	.457	.567	.654
$\mathbf{X} = 8$ $\mathbf{X}' = 24$	30	.10	.30	.60	.300	.324	.348	.361	.387	.438	.541	.633
	31	.20	.20	.60	.200	.256	.300	.324	.351	.406	.522	.617
c = 8	32	20	.30	.50	.300	.253	.399	.423	.446	.489	.571	.624
L = 40	33	.10	.20	.70	.234	.299	.421	.517	.593	.659	.744	.795
X = 12	34	.10	.30	.60	.300	.320	.396	.493	.584	.654	.740	.792
X' = 10 C = 8	35 36	$.20 \\ .20$.20 .30	.60 .50	.200 .300	.256 $.315$	$.360 \\ .396$.448 .484	.537 $.553$.614 $.623$.710 .714	.768 .770
$\frac{C-s}{L=44}$												
L = 44 X = 12	37 38	.10 .10	.20 .30	.70 .60	.234 .300	.299	.391 $.363$.474 $.444$.558 $.536$.623 $.614$.717 $.710$.774 .768
X' = 12	39	.20	.20	.60	.200	.256	.334	.444	.489	.574	.680	.744
C = 8	40	.20	.30	.50	.300	.300	.374	.453	.528	.584	.684	.745

Table 12.1	13 (C	ontinu	ed)									
L = 48	41	.10	.20	.70	.234	.299	.361	.445	.523	.585	.642	.713
X = 12	42	.10	.30	.60	.300	.300	.338	.416	493	.574	.680	.744
X' = 14	43	.20	.20	.60	.200	.256	.309	.382	.453	.535	.651	.720
c = 8	44	.20	.30	.50	.300	.300	.353	.430	.504	558	.654	.721
L = 52	45	.10	.20	.70	.234	.299	.351	.424	.488	.557	.664	.731
X = 12 X' = 16	46	.10	$.20 \\ .20$.60	.300 $.200$.300	.324	.389	.455	.534 $.495$.650	.720 $.697$
C = 8	47 48	.20 $.20$.30	.60 .50	.300	$.256 \\ .300$	$.300 \\ .353$.363 $.414$.421 $.479$.495	$.621 \\ .625$.697
		~~										
$egin{array}{l} L = 56 \ X = 12 \end{array}$	49 50	.10 .10	.20 .30	.70 .60	.234 $.300$.299 .300	$.351 \\ .324$	$.402 \\ .366$	$.461 \\ .429$.528 $.494$.637 $.620$.710 .696
X' = 18	51	.20	.20	.60	.200	.256	.300	.344	.395	.457	.591	.673
c = 8	52	.20	.30	.50	.300	.300	.353	.397	.456	.517	.597	.674
L = 60	53	.10	.20	.70	.234	.299	.351	.381	.444	.499	.610	.688
X = 12	54	.10	.30	.60	.300	.300	.324	.348	.407	.465	.591	.672
$\tilde{\mathbf{x}}' = \tilde{20}$	55	.20	.26	.60	.200	.256	.300	.326	.380	.430	.562	.649
C = 8	56	.20	.30	.50	.300	.300	.353	.387	.438	.497	.579	.650
L = 64	57	.10	.20	.70	.234	.299	.351	.379	.426	.471	.584	.667
X = 12	58	.10	.30	.60	.300	.300	.324	.342	.386	.443	.561	.649
X' = 22	59	.20	.20	.60	.200	.256	.300	.324	.365	.406	.532	.625
c = s	60	.20	.30	.50	.300	.300	.353	.387	.425	.478	.564	.628
L = 68	61	.10	.20	.70	.234	.299	.351	.379	.410	.457	.557	.646
X = 12	62	.10	.30	.60	.300	.300	.324	.342	.369	.422	.531	.625
X'=24	63	.20	.20	.60	.200	.256	.300	.324	.351	.392	.503	.602
c = 8	64	.20	.30	.50	.300	.300	.353	.387	.412	.459	.549	.605
L = 56	65	.10	.20	.70	.234	.299	.351	.424	.488	.557	.654	.723
$\mathbf{X} = 16$ $\mathbf{X}' = 16$	66	.10	.30	.60	.300	.300	.309	.389	.453	.528	.640	.712
$\mathbf{c} = \frac{8}{16}$	$^{67}_{68}$.20 .20	.20 .30	.60	.200 .300	.256 $.300$	008.309	$.363 \\ .374$.421 .444	.484 .509	$.602 \\ .603$.681 $.680$
$\Gamma = 60$	69	.10	.20		.234				.461	.528	.627	.701
$\mathbf{X} = 16$	70	.10	.30	.70 .60	.300	.299 $.300$.351 $.300$	$.402 \\ .363$.428	.494	.611	.688
X' = 18	71	.20	.20	.60	.200	.256	.300	.344	.395	.457	.572	.657
c = 8	$7\overline{2}$.20	.30	.50	.300	.300	.309	.357	.420	.488	.574	.656
L = 64	73	.10	.20	.70	.234	.299	.351	.388	.444	.499	.600	.680
X = 16	74	.10	.30	.60	.300	.300	.300	.337	.407	.461	.581	.665
X' = 20	75	.20	.20	.60	.200	.256	.300	.326	.380	.430	.543	.634
C = 8	76	.20	.30	.50	.300	.300	.309	.353	.405	.468	.558	.632
L = 68	77	.10	.20	.70	.234	.299	.351	.379	.426	.471	.577	.659
X = 16	78	.10	.30	.60	.300	.300	.300	.324	.386	.437	.551	.641
X' = 22	79	.20	.20	.60	.200	.256	.300	.324	.365	.404	.513	.610
C = 8	80	.20	.30_	.50	.300	.300	.309	.353	.392	.448	.542	.609
L = 72	81	.10	.20	.70	.234	.299	.351	.379	.410	.457	.555	.637
X = 16 X' = 24	82	.10 .20	.30 .20	.60	.300	.300	.300	.324	.366	.419	.522	.617
$\mathbf{c} = \mathbf{c} = \mathbf{s}$	83 84	.20	.30	.60 .50	.200 .300	.256 $.300$	$.300 \\ .309$.324 $.353$.351 $.380$.392 $.428$.484 $.527$.586 $.587$
$\frac{c}{L = 76}$	85	.10	.20	70^{-}	.234	.299		.379	.395	.443	.533	.616
X = 16	86	.10	.30	.60	.300	.300	.351 $.300$.324	.346	.402	.555	.593
$\mathbf{X}' = 26$	87	.20	.20	.60	.200	.256	.300	.324	.339	.380	.462	.563
$\vec{c} = \vec{s}$	88	.20	.30	.50	.300	.300	.309	.353	.380	.416	.512	.575
L = 80	89	.10	.20	.70	.234	.299	.351	.379	.395	.429	.511	.595
X = 16	90	.10	.30	.60	.300	.300	.300	.324	.339	.385	.470	.570
X'=28	91	.20	.20	.60	.200	.256	.300	.324	.339	.368	.442	.539
C = 8	92	.20	.30	.50	.300	.300	.309	353	.380	.406	.497	.563
L = 84	93	.10	.20	.70	.234	.299	.351	.379	.395	.415	.490	.573
X = 16	94	.10	.30	.60	.300	.300	.300	.324	.339	.369	.448	.546
X' = 30 $C = 8$	95 96	.20 .20	.20 .30	.60 .50	.200 .300	.256 $.300$	$.300 \\ .309$.324	.339 .380	.356 $.399$	$.422 \\ .482$.516
<u> </u>	- 50	.40	.00	.50	.000	.000	.000	.353	.000	.000	.404	.551

Table 12.14

SUMMARY OF EQUIVALENT CONCENTRATED LOADS REQUIRED TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY TYPE 3-S2-3 TRUCKS WEIGHING ONE KIP EACH



Eighty-four variations in the Type 3-S2-3 truck are given in this Table. Each truck number, from 1 to 84, represents a different combination of wheel base length, axle spacings, and ratios of gross vehicle weight on each axle.

All dimensions are in feet.

Equivalent concentrated loads are in kips.

a1, a2, and a3-Represent the ratio of gross vehicle weight on axles.

Wheel Base and Axle Spacing	Truck No.	I	oad O Axles Kips	n				Span-F	cet			
Feet	ΙĒ	aı	\mathbf{a}_2	\mathbf{a}_3	10	20	30	40	50	60	80	100
L = 44	1	.05	.20	.75	.192	.272	.357	.457	.554	.628	.721	.776
$\mathbf{x} = 8$	2	.05	.30	.65	.192	.267	.360	.439	.534	.612	.709	.767
$\mathbf{X'} = 8$	3	.10	.20	.70	.179	.254	.337	.430	.523	.603	.702	.762
$\mathbf{c} = 8$	4	.10	.30	,60	.192	265	.360	.437	.514	.595	.696	.756
$\mathbf{L} = 48$	5	.05	.20	.75	.192	.272	.338	.420	.515	.591	.693	.754
$\mathbf{X} = 8$ $\mathbf{X}' = 10$	6	.05	.30	.65	.192	.250	.329	.408	.488	.572	.679	.743
C = 8	7 8	.10 .10	.20 .30	.70 .60	.179 $.192$.254 $.260$	$.316 \\ .330$.392 $.407$.485 $.474$.564 $.552$.673 $.664$.738 $.731$
$\frac{C = 3}{L = 52}$	9	.05	.30	.75	.192	.272	.331		.475	.555		.732
X = 8	10	.05	.30	.75	.192	.250	.298	$.391 \\ .380$.415	.531	$.666 \\ .648$.718
$\mathbf{x}' = 12$	11	.10	.20	.70	.179	.254	.309	.368	.447	.526	,644	.715
$\overline{\mathbf{c}} = 8$	12	.10	.30	.60	.192	.260	.307	.384	.449	.509	.631	.705
L = 56	13	.05	.20	.75	.192	.272	.331	.372	.440	.521	.639	.711
$\overline{\mathbf{x}} = 8$	14	.05	.30	.65	.192	.250	.287	.353	.422	.490	.618	.694
X' = 14	15	.10	.20	.70	.179	.254	.309	.349	.410	.490	.615	.692
C = 8	16	.10	.30	.60	.192	.260	.307	.362	.424	.478	.599	.679
$ \begin{array}{r} L = 60 \\ X = 8 \\ X' = 16 \end{array} $	17	.05	.20	.75	.192	.272	.331	.362	.417	.488	.611	.689
$\mathbf{x} = 8$	18	.05	.30	.65	.192	.250	.287	.328	.397	.453	.587	.670
$\mathbf{C} = \begin{array}{c} \mathbf{X'} = 16 \\ \mathbf{C} = 8 \end{array}$	19	.10	.20	.70	.179	.254	.309	.339	.389	.459	.586	.669
	20	.10	.30	.60	.192	.260	.307	.340	.399	.457	.567	.654
L = 64	21	.05	.20	.75	.192	.272	.331	.361	.396	.455	.584	.667
$\mathbf{X} = 8$ $\mathbf{X}' = 18$	$\frac{22}{23}$.05	.30	.65	.192	.250	.287 $.309$.313	.376	.432 $.427$.557	.645
C = 8	$\frac{23}{24}$	$.10 \\ .10$.20 .30	.70 .60	.179 $.192$.254 $.260$.307	.337 $.330$.372 $.382$.436	.557 $.535$	$.646 \\ .628$
$\frac{C - 6}{L = 68}$	25	.05	.20	.75		.272						
$\mathbf{x} = 8$	26 26	.05	.30	.75	.192 .192	.272	.331 $.287$	$.361 \\ .313$.384 $.355$	$.435 \\ .412$.556 $.526$	$.645 \\ .621$
$\mathbf{X} = 0$ $\mathbf{X}' = 20$	27	.10	.20	.70	.179	.254	.309	.337	.359	.406	.528	.622
C = 8	28	.10	.30	.60	.192	.260	.307	.330	.364	.416	.503	.602
L = 48	29	.05	.20	.75	.192	.272	.357	.457	.554	.621	.716	.772
$\ddot{\mathbf{X}} = 12$	30	.05	.30	,65	.192	.267	.355	.438	.533	.606	.704	.763
$\ddot{\mathbf{x}}' = \ddot{8}$	31	.10	.20	.70	.179	.254	.337	.430	.523	.590	.692	.754
C = 8	32	.10	.30	.60	.192	.265	.347	.416	.502	.581	.686	.748
L = 52	33	.05	.20	.75	.192	.272	.338	.420	.515	.587	.688	.750
	34	.05	.30	.65	.192	.243	.325	.408	.488	.565	.674	.739
	35	.10	.20	.70	.179	.254	.316	.392	.485	.554	.663	.730
c = s	36	.10	.30	.60	.192	.243	.319	.387	.459	.538	.653	.723
L = 56	37	.05	.20	.75	.192	.272	.331	.391	.475	.554	.661	.728
X = 12	38	.05	.30	.65	.192	.243	.296	.380	.444	.528	.643	.714
X' = 12	39	.10	.20	.70	.179	.254	.309	.368	.447	.522	.634	.707
C = 8	40	.10	.30	.60	.192	.243	.292	.363	.431	.496	.621	.697
L = 60	41	.05	.20	.75	.192	.272	.331	.372	.440	.521	.633	.706
X = 12	42	.05	.30	.65	.192	.243	.287	.353	.419	.490	.613	.690
X' = 14 C = 8	43	.10	.20	.70	.179	.254	.309	.349	.410	.490	.605 $.589$.684 $.671$
C = 8	44	.10	.30	.60	.192	.243	.281	.341	.406	.463	.569	.011

Table 12.1	14 (Ce	ontinu	ed)									
L = 64	45	.05	.20	.75	.192	.272	.331	.362	.417	.488	.606	.684
X = 12	46	.05	.30	.65	.192	.243	.287	.326	.397	.453	.582	.666
X' = 16	47	.10	.20	.70	.179	.254	.309	.339	.389	.459	.576	.661
c = s	48	.10	.30	.60	.192	.243	.281	.318	.382	.442	.557	.646
L = 68	49	.05	.20	.75	.192	.272	.331	.361	.396	.455	.578	.663
X = 12	50	.05	.30	.65	.192	.243	.287	.313	.376	.427	.552	.641
X' = 18	51	.10	.20	.70	.179	.254	.309	.337	.372	.427	.547	.638
c = s	52	.10	.30	.60	.192	.243	281	.311	.364	.427	.525	.620
L = 72	53	.05	.20	.75	.192	.272	.331	.361	.384	.421	.553	.641
X = 12	54	.05	.30	.65	.192	.243	.287	.313	.355	.409	.521	.617
X' = 20	55	.10	.20	.70	.179	.254	.309	.337	.359	.406	.520	.614
$\mathbf{c} = 8$	56	.10	.30	.60	.192	.243	.281	.311	.347	.400	.493	.594
L = 60	57	.05	.20	.75	.192	.272	.331	.391	.475	.554	.656	.724
X = 16	58	.05	.30	.65	.192	.243	.296	.380	.444	.528	.638	.710
X' = 12	59	.10	.20	.70	.179	.254	.309	.368	.447	.522	.624	.699
c = s	60	.10	.30	.60	.192	.243	.292	.359	.420	.496	.611	.689
L = 64	61	.05	.20	.75	.192	.272	.331	.372	.440	.521	.628	.702
X = 16	62	.05	.30	.65	.192	.243	.287	.353	.419	.490	.608	.686
X' = 14	63	.10	.20	.70	.179	.254	.309	.349	.410	.490	.595	.676
$\mathbf{c} = 8$	64	.10	.30	.60	.192	.243	.271	.332	.396	.460	.579	.663
L = 68	65	.05	.20	.75	.192	.272	.331	.362	.417	.488	.603	.680
X = 16	66	.05	.30	.65	.192	.243	.287	.326	.397	.453	.577	.662
X' = 16	67	.10	.20	.70	.179	.254	.309	.339	.389	.459	.568	.653
C = 8	68	.10	.30	.60	.192	.243	.265	.310	.375	.427	.547	.638
L = 72	69	.05	.20	.75	.192	.272	.331	.361	.396	.455	.578	.658
X = 16	70	.05	.30	.65	.192	.243	.287	.313	.376	.427	.549	.637
X' = 18	71	.10	.20	.70	.179	.254	.309	.337	.373	.427	.544	.630
c = 8	72	.10	.30	.60	.192	.243	.264	.292	.353	.406	.516	.612
L = 76	73	.05	.20	.75	.192	.272	.331	.361	.384	.435	.553	.636
X = 16	74	.05	.30	.65	.192	.243	.287	.313	.355	.409	.521	.613
X' = 20	75	.10	.20	.70	.179	.254	.309	.337	.359	.406	.520	.606
c = 8	76	.10	.30	.60	.192	.243	.264	.292	.332	.390	.489	.586
L = 80	77	.05	.20	.75	.192	.272	.331	.361	.378	.417	.528	.615
X = 16	78	.05	.30	.65	.192	.243	.287	.313	.334	.391	.493	.589
X' = 22	79	.10	.20	.70	.179	.254	.309	.337	.353	.389	.497	.583
$\mathbf{c} = \mathbf{s}$	80	.10	.30	.60	.192	.243	.264	.292	.313	.368	.462	.561
L = 84	81	.05	.20	.75	.192	.272	.331	.361	.378	.400	.504	.593
X = 16	82	.05	.30	.65	.192	.243	.287	.313	.328	.374	.465	.564
X'=24	83	.10	.20	.70	.179	.254	.309	.337	.353	.376	.473	.560
$\mathbf{c} = 8$	84	.10	.30	.60	.192	.243	.264	.292	.313	.351	.444	.535

13. CONVERSION COEFFICIENTS FOR EQUIVALENT LOADINGS ON SIMPLE SPANS OF VARIOUS LENGTHS

Owing to the fact that an H truck, an H-S truck, and a single concentrated load weighing one kip each produce maximum moments, respectively, on a given span which are definite values, their relative magnitudes may be fully described by the ratios that each one bears to the other two. Thus, if these ratios are known for a given span, they may be thought of as coefficients which may be used for converting any one of the above loadings into equivalent loadings measured in terms of either or both of the other two. These ratios or coefficients for certain selected spans up to 100 feet in length are given in Table 13.1 and shown graphically for all intermediate spans in Figure 13.1.

In the second column of Table 13.1, for example, it will be seen that the coefficient for converting an equivalent H truck loading into an equivalent H-S truck loading on a 50-foot span is given as 1.28. This means that an H truck of given weight will produce 1.28 times as much moment as an H-S truck of equal weight on a 50-foot span. It also means that an H truck of given weight will produce as much moment as an H-S truck weighing 1.28 times as much on a 50-foot span. More specifically, suppose a given heavy vehicle has been found to produce the same moment of a 50-foot span as an H20 truck and rated accordingly as an equivalent H20 truck loading. Now suppose it is desired to convert the given heavy vehicle into an equivalent H-S truck loading. This may be done by noting that $1.28 \times 20 = 25.6$ tons would be required on an H-S truck to produce the same moment as the given vehicle on a 50-foot span. The given vehicle, therefore, would be rated as an equivalent 25.6 (ton) H-S truck loading or an equivalent 51.2 (kip) H-S truck loading.

Table 13.1

CONVERSION COEFFICIENTS FOR EQUIVALENT LOADINGS
ON SIMPLE SPANS OF VARIOUS LENGTHS

For					SP	AN				
Converting	10	20	30	40	50	60	70	80	90	100
EHT to EHST	1.80	1.80	1.57	1.38	1.28	1.22	1.18	1.15	1.13	1.12
EHST to EHT	.56	.56	.64	.72	.78	.82	.85	.87	.88	
EHT to ECL	$\frac{.80}{1.25}$.80	.82	.86	.89	.91	.92	.93	.94	.94
ECL to EHT		1.25	1.22	1.16	1.12	1.10	1.09	1.07	1.07	1.06
EHT to EHD	1.00	1.00	1.00	1.00	1.00	.98	.91	.85	.80	.76
EHD to EHT	1.00	1.00	1.00	1.00	1.00	1.02	1.10	1.17	1.25	1.32
EHT to EHSD	1.80	1.80	1.57	1.38	1.28	1.22	1.18	1.15	1.13	1.12
EHSD to EHT	.56	.56	.64	.72	.78	.82	.85	.87	.88	.90
EHST to ECL	.44	.44	.52	.62	.70	.75	.78	.81	$\frac{.83}{1.21}$.85
ECL to EHST	2.25	2.25	1.91	1.60	1.43	1.34	1.28	1.24		1.18
EHST to EHD	$\frac{.56}{1.80}$.56	.64	.72	.78	.80	.77	.74	.71	.68
EHD to EHST		1.80	1.57	1.38	1.28	1.25	1.29	1.35	1.41	1.48
EHST to EHSD	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
EHSD to EHST	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ECL to EHD EHD to ECL	1.25 .80	$\frac{1.25}{.80}$	1.22 .82	1.16 .86	1.12 .89	1.08 .93	.99 1.01	.92 1,09	.85 1.17	.80 1.25
ECL to EHSD	2.25	2.25	1.91	1.60	1.43	1.34	1.28	1.24	1.21	1.18
EHSD to ECL	.44	.44	.52	.62	.70	.75	.78	.81	.83	.85
EHD to EHSD	1.80	1.80	1.57	1.38	1.28	1.25	1.29	1.35	1.41	1.48
EHSD to EHD	.56	.56	.64	.72	.78	.80		.74	.71	.67

EHT—Equivalent H Truck Loading EHD—Equivalent H Design Loading EHST—Equivalent H-S Truck Loading EHSD—Equivalent H-S Design Loading ECL—Equivalent Concentrated Load

CONVERSION COEFFICIENTS FOR EQUIVALENT LOADINGS

ON SIMPLE SPANS OF VARIOUS LENGTHS.

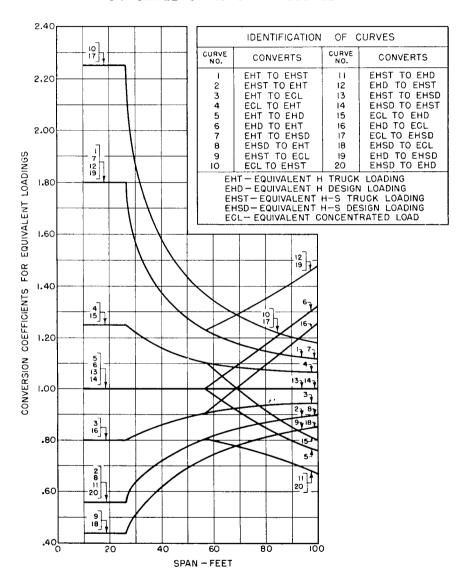


Figure 13-1

In a similar manner, if it were desired to convert an equivalent 51.2 (kip) H-S truck loading into an equivalent H truck loading on a 50-foot span, it would be done by multiplying the H-S truck rating by the coefficient 0.78 as shown in the third column of Table 13.1, or $51.2 \times .78 = 40.0$ kips. This means that the given vehicle could be rated as either an equivalent 51.2 (kip) H-S truck loading, or an equivalent 40.0 (kip) H truck loading on a 50-foot span.

Similarly, an equivalent 40.0 (kip) H truck loading may be converted into an equivalent concentrated load on a 50-foot span by multiplying the H truck rating by the coefficient 0.89 as shown in the fourth column of Table 13.1, or $40.0 \times .89 = 35.6$ kips. This means that the given vehicle would be rated as an equivalent 35.6 (kip) concentrated load on a 50-foot span.

From these illustrative examples, it will be seen that any given equivalent loading may be converted into any other loading equivalency simply by multiplying the rating of the given equivalent loading by the appropriate coefficient indicated for the span under consideration by either Table 13.1 or Figure 13.1.

Part III

METHOD FOR CALCULATING RELATIVE FREQUENCIES OR FREQUENCY DISTRIBUTION OF VARIOUS INTENSITIES OF EQUIVALENT VEHICLE LOADINGS

14. CALCULATED FREQUENCIES OF EQUIVALENT VEHICLE LOAD-INGS BASED ON THE POISSON FREQUENCY DISTRIBUTION FOR-MULA

14.1 General

Although it was pointed out in Article 1.1, it might be well to reiterate here that the over-all objective of this bulletin is to develop a simple and accurate mathematical procedure for the rating of heavy motor vehicle types and loadings—such as those reported by a loadometer survey—in terms of equivalent H truck loadings, equivalent concentrated loads, or some other conveniently standardized loading equivalents; and to show how the frequency distributions of these equivalent loads provide a rational means for measuring the levels or level of heavy motor vehicle operation corresponding to given traffic conditions. It was also pointed out that, in order to accomplish these ends, it is first necessary to find a satisfactory way for converting a given heavy vehicle loading into an equivalent load. It was then shown that the maximum moment produced by a given vehicle on a given span provided a convenient means for converting it into any type of equivalent loading as might be desired simply by finding the magnitude of the equivalent load that would be required to produce the same maximum moment on the given span as that caused by the vehicle under consideration. For example, if a given heavy vehicle produced a maximum moment of 259.5 kip-feet on a 40-foot span, it would be found by consulting an AASHO moment table to be the same as that caused by an H15 truck and, therefore, the given vehicle would be rated as an equivalent H15 truck loading on a 40-foot span. Similarly, if it were desired to convert the given vehicle into an equivalent concentrated load it would be found that a single concentrated load of 25.95 kips would be required to produce the same moment on that span and, therefore, the given vehicle would be rated as an equivalent 25.95 (kip) concentrated load on a 40-foot span.

The ratings of heavy vehicle types and loadings in terms of equivalent H truck loadings, equivalent H-S truck loadings, or equivalent concentrated loads—by the procedure outlined in the preceding articles of this bulletin—not only provide the means for determining permissable vehicle weights for bridges of given lengths and design designations, but they also provide a convenient means for analyzing the frequency distributions of various intensities of heavy vehicle loading equivalents on bridges of different lengths. Once all of the heavy vehicles reported by a loadometer survey have been converted into equivalent loads for a given span, the relative frequencies of various intensities of these loading equivalents for the given span may then be obtained rather simply by arranging them into groups or cells of increasing magnitudes and computing the percentage of vehicles thus found in each cell respectively.

Frequency distributions such as these, which have been determined from the heavy vehicle data reported by a given loadometer survey, not only furnish a quantitative measure for evaluating the level or levels of heavy motor vehicle operation corresponding to the traffic conditions at those stations or on those routes covered by the given survey, but they also furnish certain statistical measures or indices which should prove to be of value for correlating the various levels of heavy motor vehicle operation with minimum standards for highway and bridge provision. By way of specific illustration, the frequency distributions and other results obtained from analyses of the heavy vehicle data reported by the special loadometer survey of 1942 are given and discussed in Parts IV and V. For ready comparison, the observed and calculated frequency studies given in Part IV are based on equivalent H truck loadings and those given in Part V are based on equivalent concentrated loads.

Among the more interesting and, potentially, perhaps the most useful of the results obtained from these studies is that the frequency distributions of gross vehicle weights and equivalent loads were found to arrange themselves into statistical patterns which can be mathematically defined with sufficient accuracy to provide satisfactory answers to many of the practical problems associated with heavy vehicle loads and their effects on highway structures. In fact, the observed frequencies of equivalent loads obtained from the heavy vehicle data reported by the 1942 loadometer survey bear such a strong resemblance to the theoretical frequency curves commonly employed for statistical studies in biology, economics, and other branches of science, that one would suspect that the frequencies of various intensities of these loads actually occur in accordance with some mathematical law which is closely approximated by one or another of these theoretical frequency distribution curves.

From a practical standpoint, therefore, the fact that the frequencies of heavy vehicle loading equivalents can be estimated rather accurately on a mathematical basis should prove to be a most powerful tool for the practicing engineer who is concerned with either the actual or relative frequencies of heavy vehicle loads and their effects on highway structures. This means, for example, that with a sufficient backlog of observed heavy vehicle frequency data in a given geographical area, the engineer is provided with a rational procedure for estimating the level of heavy vehicle operation that would likely obtain at a new location or on a new route for which no observed loadometer data were available.

Several of the more commonly used statistical methods for defining theoretical frequencies were investigated in an effort to determine the one best suited to the needs of the practicing engineer for dealing with problems relating to the frequencies of heavy vehicle loads. Although it was found that comparable results might be obtained from any one of the several methods, it was decided that the Poisson frequency distribution formula would provide the most satisfactory procedure for solving these problems, mainly because it would likely prove to be the simplest to apply by those who have had but little or no training in the use of standard statistical methods. Another comparatively simple method that might be used, however, consists merely of plotting the cumulative frequencies of equivalent loadings on probability paper. For the benefit of those who would like to investigate the use of this method further, a complete explanation of its development and use may be obtained from most any standard text on elementary statistical methods.

Owing to the fact that the Poisson distribution is based on discrete variables, some objection might be raised on purely technical grounds concerning its application to a continuous variable such as equivalent vehicle loads. It is believed, however, that this objection may be overcome for practical purposes by grouping the loads having approximately the same magnitudes into cells to which discrete values are assigned. For example, if the gross weights of a given vehicle were found to be within one-half ton, plus or minus, of say 15 tons, it could be defined for practical purposes as a 15-ton load. As to whether this is justifiable or not is a matter on which some mathematicians are not in full agreement. Be this as it may, the above definition provides the means for solving practical problems which are of interest to the practicing engineer.

The rather close agreement between the observed and calculated frequencies given in Parts IV and V is not altogether surprising, however, owing to the fact that both the Binomial and the Poisson distributions have been used successfully as a mathematical means for analyzing and solving a wide range and variety of frequency distribution problems encountered in the several fields of science, industry, statistics, and engineering. The Binomial distribution, for example, has been used successfully for many years in the fields of biology and genetics, and is certainly among the most powerful of the mathematical tools employed in those branches of science. And at the present time, both the Binomial and Poisson distribution furnish a considerable portion of the mathematical background material used in that comparatively recently developed branch of industrial management commonly known as "quality control." At any rate, however, the agreement between the observed and calculated frequencies obtained from the 1942 loadometer data is close enough to justify the conclusion that the Poisson distribution yields mathematical answers which are sufficiently accurate for estimating the frequencies of various intensities of highway loads and evaluating their stress producing effects on simple span bridges and other highway structures.

Fortunately, though, it is not necessary for one to understand the mathematical developments upon which these distributions are based in order to use them for analyzing and solving many of the practical frequency problems to which they may be appropriately applied. Tables are available which greatly simplify the work involved in applying either the Binomial¹⁶ or the Poisson¹⁷ distributions to the solution of practical frequency problems such as those associated with heavy motor vehicle operation as discussed herein. Once the routine procedure has been acquired, these tables may be used in the same way as other mathematical tables. In the case of trigonometric tables, for example, it is not necessary for one to know or understand the mathematical procedures involved in deriving these functions in order to become proficient in their use.

And though a detailed knowledge of the derivations of the Binomial and Poisson distributions is not essential to their use as a mathematical tool for analyzing certain problems, a brief discussion of some of the more elementary considerations involved in their development should contribute toward a better understanding of how they may be applied to the study of heavy motor vehicle frequency problems. Such a discussion is undertaken in the following article. However, it should be explained that the discussion of these distributions is in no sense intended to be complete; nor is it intended to be in the precise language of the mathematician. These reservations are made because only the fundamental concepts of probability theory are considered; and these, in turn, are applied to but a few simple situations which are discussed in everyday language and in such a way as to appeal to the common sense or intuitive judgement of the layman or engineer who is mainly concerned with the solution of practical problems rather than a rigorous mathematical proof of the theorems on which those solutions are based.

14.2 Fundamental Concepts Associated With the Laws of Chance or Probability

Meaning and Measure of Probability—If an urn contains 3 white balls and 5 black balls which are identical except for their color and one ball is drawn out at random, what is the probability that this ball is white?

The event in question is said to happen if a white ball is drawn, and to fail if a black ball is drawn. Since there are 8 balls in the urn and the drawing of any one is just as likely as that of another, the total number of possible ways in which the event in question may happen and fail is 8. Of

T. C. Fry, "Probability and Its Engineering Uses," D. Van Nostrand Co., New York, 1928.
 E. C. Molina, "Poisson's Exponential Binomial Limit," D. Van Nostrand Co., New York, 1943.

these 8 ways, 3 are favorable to the drawing of a white ball; or the number of ways in which the event may happen is 3. For this reason, 3/8 is said to be the probability of drawing a white ball. This illustrates the following definition of mathematical probability.

Definition of Mathematical Probability—There are a number of different ways in which mathematical probability has been defined, but in each case the fundamental notions are substantially the same. The following three alternate definitions are typical and, after reading all three, the reader may take his choice or perhaps compose another one that incorporates the same basic ideas which will be more to his liking.

Definition 1(a) Mathematical Probability—If all the happenings and failings of an event can be analyzed into r+s possible ways each of which is equally likely; and if in r of these ways the event will happen, and in s of them fail, the probability that the event will happen is r/(r+s) and the probability that it will fail is s/(r+s).

Definition 1(b) Mathematical Probability—If an experiment can produce n different results all of which are equally likely and if r of these results are defined as favorable, the probability of a favorable result is r/n.

Definition 1(c) Mathematical Probability—If, consistent with a given set of conditions, there are n exhaustive, mutually exclusive, and equally likely cases, and r of them are favorable to an event A, then the mathematical probability of A is defined as the ratio r/n.

From these it will be seen that, in general, the mathematical probability of an event is defined to be the fraction obtained by dividing the number of cases favorable to the event by the total number of equally likely cases. The probability of an impossible event is obviously 0, since there would be no favorable cases; and the probability of an event that is certain to happen is 1, since all the cases would be favorable.

In each of these definitions, it will be noted that the expression "equally likely" cases or events has been used. But what does one mean by equally likely or equally probable events? This is a troublesome question because when one deals with purely mathematical probability, the expression "equally likely cases" is, admittedly, an undefined concept owing to the fact that it is intuitive. It cannot be defined, just as other intuitive concepts such as the theoretical "points" and "lines" of geometry, or time, cannot be defined. From this discussion, it will be seen that only through experience and judgement can one decide whether or not the occurrence of actual events conform to the theory.

In dealing with mathematical probability, therefore, the first step is to answer the question: When may two contingent events be considered equally probable or equally likely? But since the term "equally likely" is not and cannot be defined on a rigorous mathematical basis, the final answer to this question must be decided on the basis of good common sense, intuition, and judgement. In making a decision of this kind in any actual situation, though, it might be helpful to remember that equally likely results have the same expected frequencies and that this notion is consistent with the idea that probability is proportional to expected frequency. In a more formal statement, one may infer the following criterion.

"Two contingent events are considered as equally probable if, after taking into consideration all relevant evidence, one of them cannot be expected in preference to the other."

This criterion for equally probable or equally likely events may be illustrated by applying it to certain practical situations such as those described by the following examples.

¹⁸ J. V. Uspensky, "Introduction to Mathematical Probability," McGraw-Hill Book Co., New York, 1937, p. 5.

Example 14.1

Suppose that it is desired to know the probability of throwing a 4 when when a single die is cast.

If the die is a true cube and made of a homogeneous material, and there are no other reasons for believing that any one of the 6 numbers would appear more often than another, one would say that there would be a total of 6 equally likely cases. And of these 6 equally likely cases, only 1 of them would be favorable to throwing a 4; therefore, the ratio 1/6 would be defined as the mathematical probability of the event in question—or, simply, the probability of throwing a 4 when a single die is cast.

Comment

This is a simple case, of course, but it illustrates the point that, in order to determine the mathematical probability of a given event, one must not only be able to arrive at the total number of equally likely cases but also the number of these cases that are favorable to the event under consideration. Once this has been done, the mathematical probability of the event under consideration may be determined by evaluating the ratio of the number of favorable cases to the total number of equally likely cases. When two dice are cast at the same time, however, the determination of the probabilities of the various events becomes a little more involved. Yet, by following the simple rules discussed above, the mathematical probabilities of the various events which may occur when two dice are thrown can be found quite easily as will be seen in the following example.

Example 14.2

Suppose it is desired to know the probability of throwing a 4 if two perfectly true dice are cast at the same time.

In solving this problem, it will be helpful if one die is assumed to be red and the other green. Now, the red die, when considered by itself, can fall in 6 different ways and, by hypothesis, each of these ways is considered equally probable or equally likely since any one way is as likely to happen as any other. Similarly, the green die can fall in 6 different ways and again, by hypothesis, each of these ways is also considered equally likely. Therefore, for each of the 6 ways in which the red die can fall, it may be accompanied by any one of the 6 ways in which the green die can fall when both dice are cast at the same time. This means that the two dice, when cast at the same time, can fall in 6×6 or 36 different ways and again by hypothesis each of these ways is considered equally likely. Therefore, the probability that they will fall in any particular one of these ways when cast simultaneously—for example, the appearance of 3 on the red die and 6 on the green die—would be 1/36 since there would be but 1 of the 36 cases favorable to the occurrence of the specified event.

The next step in the solution of this problem is to determine the number of ways favorable to throwing a 4 when both dice are cast at the same time. This may be done by enumerating all possible combinations of the numbers on each die whose sum is 4, as follows:

Red die	Green die	Total
1	3	4
2	2	4
3	1	4

Since 3 of the 36 ways are favorable to the event in question, 3/36 would be

defined as the mathematical probability of throwing a 4 when 2 dice are cast simultaneously.

By the same process of reasoning, the probability of throwing any one of the 11 numbers, from 2 to 12, with a pair of dice may be determined as shown in the following example.

Example 14.3

Suppose it is desired to know the probability of throwing each of the 11 numbers, from 2 to 12, with a pair of dice.

Perhaps the simplest way for solving this problem is to enumerate each of the 36 ways in which a pair of dice—one red and one green—can fall and from this enumeration determine the number of ways favorable to the throwing of each of the 11 numbers, from 2 to 12, that can result. The sum that results from each of the 36 ways in which a pair of dice can fall, may be enumerated as shown in the following table:

Table 14.1

Number of Points That Result for
Each of the 36 Ways In Which a Pair of Dice Can Fall

No.			Numb	er on G	reen D	ie
Red Die	1	2	3	4	5	6
1	2	3	4	5	6	$\overline{7}$
2	3	4	5	6	7	8
3	4	5	6	7	8	9
4	5	6	7	8	9	10
5	6	7	8	9	10	11
6	7	8	9	10	11	12

From this table, it will be seen that the number of ways in which the various sums, from 2 to 12, may be obtained and the mathematical probability for obtaining each of the 11 sums is as follows:

Table 14.2

Number of Ways and the Mathematical Probability
for Obtaining Any Possible Sum on a Single Throw of a Pair of Dice

Sum	2	3	4	5	6	7	8	9	10	11	12
No. of	1	2	3	4	5	6	5	4	3	2	1
Ways Math. Prob.	$\frac{1}{36}$	$\frac{2}{36}$	$\frac{3}{36}$	$\frac{4}{36}$	$\frac{5}{36}$	$\frac{6}{36}$	$\frac{5}{36}$	$\frac{4}{36}$	$\frac{3}{36}$	$\frac{2}{36}$	$\frac{1}{36}$

Comment

From this table, it will be seen that a 7 would be expected to appear more often than any of the other numbers, from 2 to 12, when a pair of dice are cast at the same time. This is owing to the fact that 6 of the 36 ways

in which a pair of dice can fall are favorable to the throwing of a 7; whereas, the number of ways favorable to any one of the other numbers is less than 6. And since the probability of throwing a 7—which is 6/36—is greater than that for any other number, it would be expected to appear more frequently than any other number. For this reason, 7 is said to be the "most probable" number to appear when 2 dice are cast simultaneously. Similarly, the 2 and 12 would be said to be the least probable numbers since the probability of either would be less than any of the other numbers.

The above table, therefore, shows the relative frequencies or frequency distribution of the various numbers that would be expected to appear if a pair of dice were cast a large number of times. And if these frequencies were represented in the form of a bar chart or histogram—similar to those shown in Parts IV and V—it would be seen that the distribution would be symmetrical about the 7.

The frequency distribution of the numbers expected from the throwing of a pair of dice illustrates an important point which no doubt should be emphasized. It was shown, for example, that the probability of throwing a 4 is 3/36 because 3 of the 36 ways a pair of dice can fall are favorable to that event. Similarly, the probability of throwing a 7 is 6/36 because 6 of the 36 ways are favorable to that event. Now the important point to note here is that even though there are 36 equally likely ways in which a pair of dice can fall, the numbers that result are not all equally likely.

Statistical Probability

In each of the preceding examples, the mathematical probability for the occurrence of a particular event under consideration was determined by enumerating all of the equally likely cases and then evaluating the ratio of the number of favorable cases to the total number of cases. There are many practical situations encountered in the several fields of science, industry, statistics, and engineering, however, for which mathematical probabilities cannot be determined in accordance with the definition and procedure used in the preceding problems owing to the fact that these situations are of such nature that it would be impossible either to enumerate all of the equally likely cases or to find the exact number of cases favorable to the event under consideration.

In situations of this kind, therefore, resort is made to what is known as "statistical probability," which is based on the fundamental concept that equally likely results have the same expected frequencies and that this notion is consistent with the idea that probability is proportional to expected frequencies. On this basis, therefore, it is possible to estimate the probability for the occurrence of a given event from a sufficiently large number of independent trials or observations by the procedure outlined in the following definition.

Definition of Statistical Probability—If it be observed that an event E has happened n times in m independent observations, trials, or cases (provided m is a large number); then, in the absence of further knowledge, it is assumed that the best estimate of the probability that the event E will happen on a given occasion in question is the ratio n/m, and that confidence in this estimate increases as m increases.

Estimates of probability obtained from observed data in accordance with this definition are of immense practical value in many types of statistical and engineering problems. For example, suppose that a particular loadometer station on a given highway had been operated in such a way as to reflect average traffic conditions at that location; and that of the 634 heavy vehicles weighed, during the previous year, 76 of them were found to have a gross vehicle weight of 50,000 pounds or more. Now, on the basis of this information, suppose it is desired to know the probability that the next heavy vehicle to be weighed would have a gross weight of 50,000 pounds or more.

Since 76 of the 634 heavy vehicles weighed during the previous year had a gross weight of 50,000 pounds or more, the best estimate available of the probability that the next heavy vehicle weighed would exceed 50,000 pounds would be the ratio 76/634. This means that approximately 12 percent of the heavy vehicle reported weighed 50,000 pounds or more. Therefore, on the basis of this information, the best estimate of the probability that the next heavy vehicle weighed would equal or exceed 50,000 pounds would be approximately .12, or about 12 chances out of 100.

Another illustration of statistical probability could be selected in connection with life insurance which might be of interest. For example, according to the American Experience Mortality Table, of 78,106 men living at the age of 40, the number living 10 years later is 69,804. Therefore, the probability that a man of age 40 will live the next 10 years is taken to be 69,804/ 78,106 or about .894, which means that on the average in approximately 894 cases in 1,000, a man at the age of 40 would be expected to live during the next ten years. In other words, the probability that he will live during the next 10 years would be taken as .894.

Comment

The fundamental concepts associated with the laws of chance or probability discussed in the preceding paragraphs provide the basis for certain definitions and rules which may be used in the solution of practical problems. Some of the more elementary of these definitions and theorems, and how they are associated with the Binomial and Poisson distributions are given and briefly discussed in the following article.

Basic Theorems for Calculating Simple and Compound Probabilities The fundamental theorems for calculating simple and compound probabilities are fully explained and illustrated in most any book on college algebra. 19-20 For this reason, it will only be necessary here to state these theorems and illustrate how they may be applied to a few simple situations in order to show how they lead more or less automatically to the Binomial and Poisson frequency distributions. Special emphasis is placed on the Poisson distribution because it is the simpler of the two to use in dealing with the frequency distribution of equivalent vehicle loadings, and is the one upon which the frequency distributions of the loading equivalents given in Parts IV and V are based.

Definitions and Theorems

Events of a set are usually classified as being independent, dependent, or mutually exclusive. The definitions and theorems corresponding to these classifications may be stated as follows:

(a) Independent Events—Events of a set are said to be independent if the happening of any one of the events does not affect the happening of the others.

Theorem 1—The probability that all of a set of independent events will happen on a given occasion when each of them is possible is the product of their separate probabilities of occurrence.

(b) Dependent Events—Events of a set are said to be dependent if the occurrence of a first event affects the probability of a second event happening, in which case the second event is said to be dependent on the first event.

Theorem 2—If the probability of a first event is P₁ and if, after this has happened, the probability of a second event is P_2 ; then the probability that

William L. Hart, "Brief College Algebra," D. C. Heath and Co., New York, 1932.
 C. I. Palmer and W. L. Miser, "College Algebra," McGraw-Hill Book Co., New York, 1937.

both events will happen in the order specified is $P_1 \times P_2$ or simply P_1P_2 (the obvious extension of this theorem to m events would result to probability of $P_1P_2 \dots P_m$).

(c) Mutually Exclusive Events—Events of a set are said to be mutually exclusive if the happening of any one excludes the happening of any other.

Theorem 3—The probability that one or the other of a set of mutually exclusive events will occur is the sum of the probabilities of occurrence for the separate events.

14.4 The Binomial Distribution

The Binomial distribution is given by the successive terms of the expansion of the Binomial:

$$(q+p)^m = C_m^m q^m p^o + C_m^{m^{-1}} q^{m^{-1}} p^1 + C_m^{m^{-2}} q^{m^{-2}} p^2 + ... + C_m^o q^o p^m14.1$$

in which p = probability of success on any one trial

q = probability of failure on any one trial

and m = number of trials (sample size or lot size)

also
$$p < 1$$
, and $q = 1 - p$

In this Binomial expansion, the symbol C_m^n means the number of combinations of m things taken n at a time. This may be expressed algebraically as follows:

$$C_{m}^{n} = \frac{m!}{n!(m-n)!}$$
14.2

This may be illustrated by inquiring the number of 3 letter combinations that can be obtained from the 4 letters; a, b, c, and d. This may be done in the following 4 ways:

abe, abd, acd, and bed

and by the above algebraic expression, this would be determined as follows:

$$C_{m}^{n} = C_{4}^{3} = \frac{4.3 \cdot 2.1}{3.2.1(1)} = 4.$$
 14.2a

With this in mind, it may now be explained that each term in the above Binomial expansion (Equation 14.1) gives the probability of exactly n successes in a set of m trials and each term may be written thus:

in which the symbol $P_{m}(n)$ means the probability of n successes in a given

sample of m trials where n=0,1,2,3,...,m. In other words, the first term gives the probability of no successes in m trials; the second term, the probability of 1 success in m trials; and so on to the last term which gives the probability of m successes in m trials. In this connection, it should be noted that any given sequence or set of m trials each may be thought of as a sample of size m or a lot of size m.

Perhaps the simplest way to explain the development and meaning of the Binomial distribution is to apply it to the tossing of one or more coins. On a single toss of a coin it can fall in 2 ways, either a head or a tail, each of which is equally likely. Now if 2 coins are tossed at the same time (or one coin tossed twice in succession), they may fall in any one of the following 4 equally likely ways:

Here, it will be noted that 1 of the 4 ways is favorable to 2 tails (no heads); 2 of the 4 ways are favorable to 1 head and 1 tail (one head); and 1 of the 4 ways is favorable to 2 heads.

Now if the tossing of a head is considered a success and a tail considered a failure, then according to the above nomenclature

$$p = .5$$
 and $q = .5$

and according to Theorem 2, the probability of throwing 2 tails (2 failures) in 2 successive tosses of a single coin (or when 2 coins are tossed at the same time) would be

$$P(TT) = q \cdot q = .5 \times .5 = .25$$

and similarly

$$\begin{array}{c} P(TH) = q \cdot p = .5 \times .5 = .25 \\ P(HT) = p \cdot q = .5 \times .5 = .25 \\ P(HH) = p \cdot p = .5 \times .5 = .25 \end{array}$$

and

In this case the 2 successive tosses of a single coin constitute 2 successive trials or the number of trials per sample m=2 (it would amount to the same thing if 2 coins were tossed simultaneously; in either case the sample size or lot size would be m=2). From this it will be seen that the Binomial expansion

$$(q + p)^2 = q^2 + 2qp + p^2$$

gives the same results as were obtained by enumerating all the different combinations that could be obtained from the tossing of a single coin twice in succession (or the tossing of 2 coins simultaneously). The first term of this expansion means that the probability of no successes (2 tails) is q^2 ; the probability of 1 success (1 head and 1 tail) is 2pq; and the probability of 2 successes (no tails) is p^2 . In symbols this would be expressed for m=2 as follows:

By the same process of reasoning, the probabilities of obtaining no heads, 1 head, 2 heads, and 3 heads in any 3 tosses of a single coin (or a single toss of 3 coins) would be given by the 4 respective terms of the Binomial expansion for 3 trials per sample or sample size of m = 3, thus:

$$(q + p)^3 = q^3 + 3q^2p + 3qp^2 + p^3$$

= .125 + .375 + .375 + .125

This means that the probability of getting no heads (3 tails) in any 3 successive tosses of a single coin is .125 or once in 8 sequences of 3 trials each; the probability of getting 1 head is .375; the probability of 2 heads is .375; and the probability of getting 3 heads is .125.

From this discussion, it will be readily seen that there is an indefinitely large number of specific Binomial distributions, differing according to the values of p and m in the Binomial. It will also be seen that the use of the Binomial distribution requires calculations which are easily made if the sample size or lot size, m, is small. However, the calculation of values for the successive terms in the expansion of a Binomial becomes quite a laborious process when m is large. This is owing to the fact that the number of terms in a Binomial expansion is always equal to m + 1, or one more than the number of trials per sample. Perhaps a better appreciation of the time involved in making such calculations might be obtained by examining the binomial expansions for several of the smaller values of m, as follows:

- (1) $(q + p)^1 = q + p$ (2) $(q + p)^2 = q^2 + 2qp + p^2$
- (3) $(q + p)^3 = q^3 + 3q^2p + 3qp^2 + p^3$ (4) $(q + p)^4 = q^4 + 4q^3p + 6q^2p^2 + 4qp^3 + p^4$ (5) $(q + p)^5 = q^5 + 5q^4p + 10q^3p^2 + 10q^2p^3 + 5qp^4 + p^5$

Now if the number of trials or sample size, m, were increased, to say 100, it will be readily seen that the time required to evaluate the 101 terms of such a Binomial distribution would be considerable to say the least. It is for this reason that resort is made to approximations of the Binomial distribution in many practical problems where the number of trails per sample or sample size is large.

The Poisson distribution, for example, is used in many practical situations to approximate the values of a specific Binomial distribution, particularly in cases where the sample size is large. The agreement between the Binomial and the Poisson distributions, however, increases as the sample size increases. In fact, the Binomial distribution tends to approach the Poisson distribution as a limit as the number of trials or sample size becomes very This relationship between the Binomial and Poisson distributions will be discussed in more detail in the following article which is devoted to the development and use of the Poisson distribution.

Before going into the development of the Poisson distribution, however, a few simple illustrations involving the use of Binomial distributions should pave the way toward a better understanding of how some of the fundamental concepts of probability may be applied to the frequency distributions of heavy vehicle loadings and loading equivalents such as those that would result from the analysis of data reported by a loadometer survey. The first illustration in the following is a simple sampling problem which may seem somewhat artificial at first. On further consideration, though, it will be found that the idealized conditions upon which it is based will be very closely approximated in many types of practical sampling situations. Certain of these practical situations will be discussed later.

Example 14.4 Use of Binomial Distribution For Sampling

In order to simulate a continuous process, suppose that a large bin is continuously being supplied or filled as needed with balls which are identical in every respect except that 80 percent of them are white and 20 percent of them are black. Now, if these balls are withdrawn at random from the bin and put into boxes containing 5 balls each, what proportion of the boxes would be expected to contain n black balls, where n = 0.1, 2, 3, 4, and 5 respectively?

If the balls in this bin were well mixed and a single ball is withdrawn, the probability of its being black by hypothesis would be p=.2, and similarly by hypothesis the probability of its being white would be q=.8. Under these conditions, the expected frequency of appearance of 0,1,2,3,4, and 5 black balls among the boxes of 5 balls each (sample size m=5) can be calculated by evaluating the successive terms of the expansion of the Binomial.

$$(q + p)^m = (.8 + .2)^5 = .8^5 + 5x.8^4x.2 + \frac{5.4}{1.2}x .8^3x.2^2 + ... + 5x.8x.2^4 + .2^5$$

If the 6 terms of this distribution are evaluated to 4 decimal places, the results would be as follows:

$$(.8 + .2)^5 = .3277 + .4096 + .2048 + .0512 + .0064 + .0003$$

This means that 32.77 percent of the boxes would be expected to contain no black balls; 40.96 percent would be expected to contain 1 black ball; 20.48 percent, 2 black balls; 5.12 percent, 3 black balls; 0.64 percent, 4 black balls; and only about 3 boxes of each 10,000 boxes would be expected to contain 5 black balls.

Comment

In connection with this problem, if the drawing of a black ball is considered a success, and the letter K is used to indicate the number of successes per sample or box of 5 balls each, then

which means that the average number of successes (black balls) per sample would be 1. In general, this means that the average number of successes, K, expected per sample is equal to the probability of success on a single trial, p, times the number of trials per sample or sample size m.

Perhaps the most important thing to note in Example 14.4 is that the frequency distribution is very highly skewed to the right. That is: the distribution is not symmetrical but is very short (one cell) to the left of the average, K=1, and extends a long way (4 cells) to the right of the average. And owing to the fact that this distribution is so highly skewed, it might be worthy of note also that even though the average number of black balls is K=1 per sample, nearly 1/3 of all samples (32.77 percent) would contain no black balls at all.

In dealing with the Binomial distribution, it is important to have an appreciation for the type and extent of the changes that would be expected in a given distribution as a result of certain variations in the probability of success, p, on a single trial; the size of sample, m; and the average number of successes, K, per sample. The following example will show, to some extent, the effect of sample size on a frequency distribution.

Example 14.5 Use of Binomial Distribution For Sampling

In order to simulate a continuous process—which is the same as for Example 14.4 except for sample size—suppose that a large bin is being continuously supplied or filled as needed with balls which are identical except that 80 percent of them are white and 20 percent of them are black. Now, if these balls are withdrawn at random from the bin and put into boxes containing 10 balls each, what proportion of the boxes would be expected to contain n black balls, where n=0,1,2,3,4,5,6,7,8,9, and 10, respectively?

By the same process of reasoning discussed in Example 14.4, the expected frequency of appearance of 0,1,2,3,...,10 black balls among the boxes of 10 balls each (sample size m=10) would be given by the successive terms of the expansion of the Binomial

$$(q+p)^m = (.8+.2)^{10} = .8^{10} + 10x.8^0x.2 + \frac{10.9}{1.2}x.8^8x.2^2 + ... + 10x.8x.2^0 + .2^{10}$$

If the 11 terms of this distribution are evaluated to 4 decimal places, the result would be as follows:

$$(.8 + .2)^{10} = .1074 + .2684 + .3020 + .2013 + .0881 + .0264 + .0055 + .0008 + .0001 + .0000 + .0000$$

for n = 0 1 2 3 4 5 6 7 8 9 10

This means that about 10.74 percent of the boxes would be expected to contain no black balls; 26.84 percent would be expected to contain 1 black ball, and so on. But it will be noted that the probability of getting a box with either 9 or 10 black balls is so small that it does not show up in the 4 decimal places. Actually, though, a box containing 9 black balls would be expected to occur about 4 times for each 1,000,000 boxes, and a box containing 10 black balls would be expected to occur but 1 time for each 10,000,000 boxes.

Comment

In this example, it will be noted that the average number of black balls per box (or per sample of 10 balls each) is equal to

$$K = mp = 10 \times .2 = 2$$

It will be noted also that even though the most probable number of black balls (the term of the Binomial expansion having the greatest probability value) in a given box is 2, as would be expected, only about 30 percent of the boxes would actually be expected to contain exactly 2 black balls.

Much more could be said, of course, concerning the development and uses of the Binomial distributions in connection with practical sampling problems. However, it is believed that the preceding discussion and examples will suffice to indicate the theoretical background and justification for applying such distributions to many types of practical situations where systematic sampling procedures are required. In the preceding problems, for exampling procedure, it would back balls were used to illustrate a sampling procedure, it would require but little revision in the description of the physical situation for the method outlined to stimulate a continuous manufacturing process.

The principal difficulty involved in the use of the Binomial distribution, however, is owing to the fact that the time and labor required for evaluating the successive terms of a specific Binomial expansion become almost prohibitive when the number of trials or sample size m is large. In most practical sampling problems, though, this difficulty may be overcome by use of the Poisson distribution since tables21,22 are available which cover most of the values ordinarily required for practical work, particularly where the sample size is relatively large, as is generally the case when dealing with heavy vehicle loads reported by a loadometer survey. The development and use of the Poisson distribution for analyzing the frequencies of heavy vehicle loadings and loading equivalents will now be discussed in more detail in the following article.

14.5 Development of the Poisson Distribution

In the preceding article, it was shown that the Binomial distribution is given by successive terms of the expansion of the Binomial:

$$(q+p)^m = C_m^m q^m p^o + C_m^{m^{-1}} q^{m^{-1}} p^{\scriptscriptstyle 1} + C_m^{m^{-2}} q^{m^{-2}} p^{\scriptscriptstyle 2} + ... + C_m^o q^o p^m14.1$$

in which p = probability of success on any one trial q = probability of failure on any one trial m = number of trials (sample size or lot size) and

also
$$p < 1$$
, and $q = 1 - p$

It was also explained that each term in this Binomial expansion (Equation 14.1) gives the probability of exactly n successes in a set of m trials and may be written thus:

²¹E. C. Molina, "Poisson's Exponential Binomial Limit," D. Van Nostrand Co., New York, 1943. 22T. C. Fry, "Probability and Its Engineering Uses," D. Van Nostrand Co., New York, 1928.

$$P_{m}(n) = C_{m}^{n} q^{m-n} p^{n}$$
 14.3

in which the symbol $P_m(n)$ means the probability of n successes in a given sample of m trials where n = 0.1.2, ..., m.

In the case of the Binomial Law, it has already been shown that the average number of successes, K, expected per sample (expectation of n) is equal to

$$K = mp$$
14.4

With this information it can now be shown that the Binomial distribution approaches the Poisson distribution as a limit as the number of trials m become very large. This development is accomplished by first noting that the probability p may be determined from Equation 14.4, thus:

$$p = \frac{K}{m}$$
 14.5

and if this value of p is now substituted in Equation 14.3, remembering that q = (1-p), it becomes:

$$P_{m}(n) = C_{m}^{n} \left(\frac{K}{m}\right)^{n} \left(1 - \frac{K}{m}\right)^{m-n}.....14.6$$

Now if the operations indicated by the first 2 factors on the right of Equation 14.6 are carried out, they would become:

$$C_{m}^{n}(\frac{K}{m})^{n} = \frac{m!}{n!(m-n)!} \cdot \frac{K^{n}}{m^{n}} = \frac{m!}{(m-n)! m^{n}} \cdot \frac{K^{n}}{n!}$$

$$= \frac{m(m-1)(m-2) \cdot \cdot \cdot \cdot [m-(n-1)]}{m^{n}} \cdot \frac{K^{n}}{n!}$$

$$=\frac{m}{m} \cdot \frac{m-1}{m} \cdot \frac{m-2}{m} \cdot \cdots \cdot \frac{m-(n-1)}{m} \cdot \frac{K^n}{n!}$$

$$=(1-\frac{1}{m})(1-\frac{2}{m})\cdot \cdot \cdot (1-\frac{n-1}{m})\cdot \frac{K^{n}}{n!}$$

If the third factor on the right of Equation 14.6 is now separated into its 2 parts, they would be written as follows:

$$\left\lceil \left(1 - \frac{K}{M}\right)^{m} \right\rceil \left\lceil \left(1 - \frac{K}{M}\right)^{-n} \right\rceil$$

Now if all of these right hand factors are collected and rearranged, Equation 14.6 would be written as follows:

$$P_{m}(n) = \left[\left(1 - \frac{1}{m} \right) \left(1 - \frac{2}{m} \right) \cdot \cdot \cdot \cdot \left(1 - \frac{n-1}{m} \right) \right] x \left[\left(1 - \frac{K}{m} \right)^{-n} \right] \left[\left(1 - \frac{K}{m} \right)^{m} \right] \frac{K^{n}}{n!}$$
 14.6 σ

By remembering that p is supposed to be rather small, it is obvious that only those values of n are of consequence which are very small as compared to m which is very large. On this basis, therefore, each of the factors enclosed within the first set of brackets become approximately equal to unity, as m becomes larger and larger compared with n. The same is true of the quantity 1-K/m which occurs in the second and third brackets, because K/m, or p, is very small. Therefore, since there are comparatively few of these factors in the first 2 sets of brackets, it follows that their product is also not greatly different from unity and actually approaches unity as m becomes very large compared with n.

The same line of reasoning cannot be applied to the factor within the third bracket, however, owing to the fact that the quantity 1 - K/m is raised to a very large power. By consulting most any test on algebra or calculus, it will be found that the expression in the third bracket is equal to e^{-K} , or

$$(1-\frac{K}{m})^m = e^{-K}$$

in which e = 2.71828 (Base of Napierian or natural logarithms).

On the basis of this line of reasoning, therefore, one would be justified in concluding that Equation 14.6 is equivalent to

$$P_{m}(n) = \frac{K^{n}e^{-K}}{n!}$$

which is known as the Poisson distribution, and in the limit as m becomes very large it actually becomes

The important thing to note here is that if p is small enough and m is large enough, the Binomial Law reduces approximately to the form given by Equation 14.7, which is exactly the Poisson Law. It should be emphasized also that the Binomial Law approaches the Poisson Law as a limit as m becomes very large.

In other words, the Poisson distribution for any given value of K=mp is the limiting form of the Binomial distribution as m increases while mp remains constant. The successive terms of the Binomial expansion are given by Equation 14.1 as follows:

$$(q+p)^m = C_m^m q^m p^o + C_m^{m-1} q^{m^{-1}} p^1 + C_m^{m^{-2}} q^{m^{-2}} p^2 + ... + C_m^o q^o p^m = 1......14.1$$

and have as their limits the corresponding terms in the Poisson distribution, as follows:

$$P(n) = e^{-K} + Ke^{-K} + \frac{K^2}{2!} \cdot e^{-K} + \frac{K^3}{3!} \cdot e^{-K} + \dots = 1......14.7a$$
for $n = 0$ 1 2 3 ...

The successive terms in this series, which are interpreted as the probabilities that 0,1,2,3,... occurrences should appear, give the Poisson distribution. They may be interpreted also as the proportion of samples in which 0,1,2,3,... of some specified event would be expected to occur when the average number of occurrences per sample, as given by Equation 14.4, is K = mp.

Comment

One of the principal advantages of using the Poisson distribution as an approximation to a specific Binomial distribution—particularly when p is small and m is large—is the comparative ease with which the successive

terms of the Poisson series, as given in Equation 14.7a, may be evaluated. Actually, though, there is rarely ever any occasion for making such calculations since tables $^{23-24}$ are available that cover a wide range of values for K=mp (average number of occurrences per sample) which are sufficiently close to any particular value of K to result in a distribution which is sufficiently close to the desired distribution to satisfy the requirements for accuracy in most practical situations.

On the other hand, it would not be at all practical to undertake to develop a satisfactory set of tables that might be used for the Binomial distribution. This is due to the fact that a separate distribution would be required for each pair of the values m and p, as will be seen in Equation 14.1. In other words a satisfactory table for the Binomial distribution would have to include a large number of values for m and p which are covered by a single value of K in the Poisson distribution tables. For example, the distribution given by the Poisson tables for, say K=4, covers all possible values of m and p whose product mp = 4, such as:

m	\mathbf{x}	р	=	K	m	\mathbf{x}	р	==	\mathbf{K}	m	x	р	===	K
10	\mathbf{x}	.400		4	60	\mathbf{x}	.667	=	4	200	\mathbf{x}	.020	=	4
20	\mathbf{x}	.200		4	70	\mathbf{x}	.572	=	4	300	\mathbf{x}	.013	==	4
30	\mathbf{x}	.133	=	4	80	\mathbf{x}	.500	=	4	400	\mathbf{x}	.010	=	4
40	\mathbf{x}	.100		4	90	\mathbf{x}	.444		4	500	х	.008	_	4
50	x	.080	===	4	100	x	.040	=	4	800	x	005		4

which represent but a few of the possible values for m and p whose product mp = 4. The same thing would be true for any and every other value of K.

14.6 Comparison of The Binomial and Poisson Distributions

As previously pointed out, the Binomial Law approaches the Poisson Law as a limit as the sample size m becomes larger and larger while the value of K=mp remains constant. From a practical standpoint, however, it would be quite informative to know just how rapidly the Binomial distributions approach this limit and how they are affected by the values of m and p. A reasonable satisfactory answer to this would be to the effect that Binomial distribution approach the Poisson form so rapidly as m is increased that the approximations indicated by the Poisson series may be considered very good for practical purposes when p=.1, and excellent when p=.01 or less. The validity of this statement is illustrated by the distributions shown in the following table.

Table~14.3 COMPARISONS OF BINOMIAL AND POISSON DISTRIBUTIONS FOR DIFFERENT VALUES~OF~m~AND~CONSTANT~VALUES~OF~K~=~mp

Number of		Poisson with K = 1			
Term	m = 5 $p = .2$	$m = 10 \\ p = .1$	m = 25 p = .04	m = 100 p = .01	Limit as m→∝
0	.3277	.3487	.3604	.3660	.3679
1	.4096	.3874	.3754	.3697	.3679
2	.2048	.1937	.1877	.1849	.1839
3	.0512	.0574	.0600	.0610	.0613
4	.0064	.0112	.0137	.0149	.0153
5	.0003	.0015	.0024	.0029	.0031
6		.0001	.0003	.0005	.0005

 ^{2&}lt;sup>3</sup>T. C. Fry, "Probobility and Its Engineering Uses," D. Van Nostrand Co., New York, 1928.
 2⁴E. C. Molina, "Poisson's Exponential Binomial Limit," D. Van Nostrand Co., New York, 1948.

Number of		Poisson with K = 2			
Term	m = 10 $p = .2$	$ \begin{array}{r} m = 20 \\ p = .1 \end{array} $	$m = 50 \\ p = .04$	$m = 200 \\ p = .01$	Limit as m→∝
0	.1074	.1216	.1299	.1340	.1353
1	.2684	.2702	.2706	.2707	.2707
2	.3020	.2852	.2762	.2720	.2707
3	.2013	.1901	.1842	.1814	.1804
4	.0881	.0898	.0902	.0902	.0902
5	.0264	.0319	.0346	.0357	.0361
6	.0055	.0089	.0108	.0117	.0120
7	.0008	.0020	.0028	.0033	.0034
8	.0001	.0004	.0006	.0008	.0009
9	.0000	.0001	.0001	.0002	.0002

14.7 Use of Poisson Distributions For Analyzing Frequencies of Heavy Vehicle Loadings

In order to illustrate a typical type of physical situation to which the Binomial Law might be applied for determining the relative frequencies with which certain specified events would be expected to occur, it was assumed in Examples 14.4 and 14.5 that a large bin was continuously being supplied or filled as needed with balls which were identical in every respect except that 80 percent of them were white and 20 percent of them were black. In Example 14.4, it was then shown that, if these balls were withdrawn at random from the bin and put into boxes containing 5 balls each (sample size, m=5), the relative frequencies with which 0,1,2,3,4, and 5 black balls would be expected among these boxes would be given by the successive terms of the expansion of the Binomial

for
$$q = (q + p)^m = (.8 + .2)^5 = .3277 + .4096 + .2048 + .0512 + .0064 + .0003 = 0 1 2 3 4 5$$

Then, by way of illustrating the effect of sample size on the frequencies with which the various numbers of black balls would be expected to occur among different size samples withdrawn from the same bin—or parent population of 80 percent white and 20 percent black balls—it was shown in Example 14.5 that if the sample size were 10 instead of 5, the relative frequency with which n=0,1,2,3,...,9, and 10 black balls respectively, would be expected among these samples would be given by the successive terms of the expansion of the Binomial

Both of the preceding Binomial distributions are given in Column 2 of Table 14.3 where the probability of success (in this case, the drawing of a black ball) on a single trial, p = .2, is held constant. The upper part of Column 2 gives the distribution expected for samples of size m = 5, and the lower part gives the distribution expected for samples of size m = 10. Columns 3, 4, and 5 of Table 14.3 will also give some idea of the distributions which result from similar variations in sample size for 3 additional values of probability, namely, p = .1, .04, and .01 respectively.

In the upper part of Table 14.3, it will also be noted that the combinations of sample size, m, and probability, p, are such that the average number of specified events per sample mp=1, and in the lower part, the combinations of m and p are such that the average number of specified events per sample mp=2. And perhaps the most important thing to note in connection with these distributions is that after the sample size exceeds about 25, for a constant value K=mp, the expected frequencies given by the successive terms of the Binomial expansion are rather closely approximated by the

corresponding terms of the Poisson series as shown in the right hand column of Table 14.3.

In order to illustrate how the Binomial Law might be used for analyzing or predicting the results that would be expected from a continuous sampling procedure in Examples 14.4 and 14.5, it was assumed that the composition of the parent population was known in advance. More specifically, it was assumed that the parent population was known to consist of 80 percent white and 20 percent black balls. In most practical situations, however, the composition of the parent population is not known in advance. This is not a serious handicap though because the value of p may be estimated within rather narrow limits, simply by taking a large number of samples of size m and determining the average number of successes, $K = \mathrm{mp}$, per sample. When determined in this manner, the estimated value of the probability of success on a single trial, $p = \mathrm{K/m}$, is known as "statistical probability."

For example, suppose that the output of an automatic machine consists of small metal rivets which are put into boxes of 100 rivets each. Now suppose that after 150 of these boxes had been inspected for defectives, it was found that they contained a total of 150 defective rivets or an average of 1 defective rivet per box. On this basis the best estimate of the probability that any rivet selected at random would be a defective would be the statistical probability p = K/m = 1/100 = .01. If the output of this machine were now analyzed by means of the Binomial and Poisson distributions, the situation would be as given in the following example.

Example 14.6 Binomial and Poisson Distributions For K = mp = 1

If the output of an automatic machine consists of small metal rivets which are put into boxes of 100 rivets each, and it has been determined from previous sampling that 1 percent of this machine's production was defective, what proportion of the boxes would be expected to contain 0,1,2,3,4,... defective rivets respectively, according to both the Binomial and Poisson distributions?

According to the Binomial Law, the expected frequency of occurrence of 0,1,2,3,... defectives among the boxes (for m=100 and p=.01) would be given by the successive terms (to 4 decimal places) of the expansion of the Binomial (see upper part of Column 5 of Table 14.3)

for
$$\begin{array}{c} (.99+.01)^{100} = .3660+.3697+.1849+.0610+.0149+.0029+.0005\\ n = 0 & 1 & 2 & 3 & 4 & 5 \end{array}$$

and according to the Poisson Law (for K=mp=1) the corresponding distribution would be given by the successive terms of the Poisson series (see upper right hand column of Table 14.3).

By comparing these two distributions, it will be seen that the values indicated by the Poisson series are sufficiently close to those given by the Binomial expansion to provide a satisfactory basis for a practical procedure for sampling the product of the machine under consideration or analyzing the quality level of its performance.

Comment

The Poisson distribution as shown above is also given for K=1 in Table 14.4 which is a reference table that covers all practical values of K from 0.1 to 15.0. For each of these values of K, Table 14.4 gives both the individual and cumulative terms indicated by the Poisson Law. The individual terms shown in Table 14.4 give the proportion of samples that would be

expected to contain 0,1,2,3,... specified events when the average number per sample was K=mp. The cumulative terms may be explained rather simply by referring to the distribution for K=1 in Table 14.4; the top right hand figure means that 100 percent of the samples contain none or more specified events; the second figure means that 63.21 percent of the samples would be expected to contain 1 or more events; the third figure means that 26.42 percent of the samples would be expected to contain 2 or more events, and so on. Table 14.4, therefore, will provide a convenient reference for analyzing future problems.

Application of Poisson Law To Loadometer Survey Data of 1942

In each of the preceding examples only a discrete number of events could occur in a particular sample. In the case of the automatic machine whose output consisted of small metal rivets, the number of defectives in a given box of 100 rivets would of necessity have to be either 0,1,2,3,... because one could not say that a given box contained, say, 2½ defectives. There are other types of problems though where the variable under consideration is continuous, as would be the case if one were considering the variations in weight of heavy motor vehicles. This difficulty may be overcome, however, by dividing the weight scale up into cells of convenient range. In dealing with heavy vehicle weights and heavy vehicle loading equivalents, for example, it has been found convenient for each cell to cover a range of 1 ton or 2,000 pounds. On this basis, a heavy vehicle with a gross weight between 19.50 and 20.49 tons would be put into the 20 ton cell, and one with a gross weight between 20.50 and 21.49 tons would be put into the 21 ton cell, and so on.

Perhaps the simplest way to illustrate how the Poisson Law may be used for analyzing the frequencies of various intensities of heavy vehicle loading equivalents would be to discuss the frequency distribution of equivalent H truck loadings for some particular vehicle type on a given span which has already been determined from the heavy vehicle data reported by the 1942 loadometer survey. For example, Table 16.1a shows that the observed frequencies of equivalent H truck loadings on a 60-foot span for the 171 Type 2 trucks reported were found to be as follows:

Equivalent H Truck Loading Tons		Observed Relative Frequency Per cent
11 12 13 14 15 16 17 18		7.0 14.6 24.2 23.0 17.0 8.2 3.9 2.1
Total	=	100.0

Maximum equiv. H truck loading	=	18.0
Average equiv. H truck loading	=	13.8
Minimum equiv. H truck loading	=	11.0
Range from maximum to minimum	=	7.0
Poisson coefficient K	=	2.8
Standard deviation ²⁵ D	=	1.67

From these results it will be seen that the variation in H truck loading equivalents is from 11.0 tons to 18.0 tons rather than starting with 0,1,2,3,... and so on as was the case in the preceding examples. This simply means

²⁵For explanation of Standard Deviation see Article 15.2.

that the variation in H loading equivalents starts with the 11.0 ton cell and covers a total range of 8 cells between the 11.0 and 18.0 ton cells, inclusive.

It will be noted also that the average equivalent H truck loading of 13.8 tons is 2.8 tons or 2.8 cells greater than the 11.0 ton minimum cell. Insofar as applying the Poisson Law to the analysis of these observed frequencies, this means that the 11 ton cell would be considered the zero term; the 12 ton cell would be considered the first term; the 13 ton cell would be considered the second term and so on. In other words, the number of tons that would correspond to the successive terms of the Poisson series would be 11.0 + n where n = 0,1,2,3,... and so on. And since the average gross weight per vehicle is 13.8 tons, or 2.8 tons greater than the 11.0 ton minimum, the Poisson distribution would correspond to that found in Table 14.4 for K = 2.8. This Poisson distribution, K = 2.8, is the one whose average is 2.8 cells greater than the zero cell and is, therefore, the one which would correspond to the given situation. On this basis, a comparison of the observed frequencies, of equivalent H truck loadings for the Type 2 trucks on a 60-foot span, with those given by the Poisson distribution would be as follows:

Equivalent H Truck Loading Tons	Observe Relativ Frequen Percen	e Relative cy Frequency	Cumulative
$\begin{array}{c} 11 \\ 12 \end{array}$	$7.0 \\ 14.6$	$\substack{6.1\\17.0}$	$100.0 \\ 93.9$
13	24.2	23.8	76.9
$\begin{array}{c} 14 \\ 15 \end{array}$	$\frac{23.0}{17.0}$	$22.2 \\ 15.6$	$53.1 \\ 30.9$
$\begin{array}{c} 16 \\ 17 \end{array}$	$8.2 \\ 3.9$	$8.7 \\ 4.1$	$\begin{array}{c} 15.3 \\ 6.6 \end{array}$
18	2.1	1.6	2.5
$\begin{array}{c} 19 \\ 20 \end{array}$.0	$\overset{.6}{.2}$.9 .3
21	.0	.1	.1
Total	= 100.0	100.0	

A comparison of these distributions will show that the Poisson Law provides a convenient mathematical tool for analyzing the relative frequencies of various intensities of heavy vehicle loads and loading equivalencies that would be expected to obtain for given traffic conditions such as those indicated by the heavy vehicle data²⁶ reported by the special loadometer survey of 1942 from which this illustration was taken.

The above frequencies of equivalent H truck loadings for the Type 2 trucks on a 60-foot span were selected for this illustration because of the very excellent agreement between the observed and calculated distributions. And though the agreement between some of the other observed and calculated frequencies given in Parts IV and V is not so close as those shown above, a brief review of these data will show that the Poisson Law provides a simple yet reasonably accurate mathematical procedure for analyzing and estimating the relative frequencies of various intensities of heavy vehicle loads or loading equivalencies that would be expected to obtain for any given or anticipated traffic conditions.

14.8 Use of Poisson Law For Converting Frequency Distribution of One Type of Loading Into That of Another

In the preceding article, the observed and calculated frequencies of equivalent H truck loadings for a 60-foot span are shown for the 171 Type 2

²⁰Henson K. Stephenson and A. A. Jakkula, "Highway Loads and Their Effects on Highway Structures Based on Traffic Data of 1942," Texas Engineering Experiment Station Bulletin No. 116, 1950.

trucks reported by the special loadometer survey of 1942. These observed and calculated frequency distributions were taken from Tables 16.1a and 16.1b, respectively.

Once such a frequency distribution has been determined—say on the basis of equivalent H truck loadings—it would not be necessary to go through all the detailed work of rating the vehicles again in order to arrive at a different type of frequency distribution based on another type of loading. If the original distribution was based, say, on equivalent H truck loadings, it could very easily be converted into a distribution based on equivalent H-S truck loadings, equivalent concentrated loads, equivalent H design loadings, or any other loading equivalencies as may be desired. The coefficients for converting any one of these equivalent loadings into any one of the others on various span lengths are given in Table 13.1 and the use of them is explained in Article 13. The procedure for converting a given frequency distribution based on one type of loading equivalency into its corresponding distribution based on a different type of equivalent loads will be illustrated in the following example.

Example 14.6 Conversion of Equivalent H Truck Loading Distribution Into Equivalent Concentrated Loading Distribution

The observed and calculated frequencies of equivalent H truck loadings on a 60-foot span for the 171 Type 2 trucks reported by the 1942 loadometer survey are given in the preceding article (Article 14.7) and are identical with the distributions shown for this case in Tables 16.1a and 16.1b, respectively. Suppose now that this distribution of equivalent H truck loadings had been determined and it was then desired to have a frequency distribution for these same vehicles and span based on equivalent concentrated loadings.

In Table 13.1, it will be seen that a conversion coefficient of .91 will convert a given equivalent H truck loading into its equivalent concentrated loading on a 60-foot span. What this conversion coefficient actually means is that a single concentrated load having a weight equal to 91 percent of the weight of a given H truck will produce the same maximum moment on a 60-foot span as the given H truck. On this basis, the average and minimum equivalent concentrated loads for this distribution would be 91 percent, respectively, of those for the equivalent H truck loadings as follows:

Average equivalent concentrated load = $13.8 \times .91 = 12.6$ Minimum equivalent concentrated load = $11.0 \times .91 = 10.0$ Poisson coefficient for ECL distribution, K = 2.6

The Poisson distribution for K=2.6 will be found in Table 14.4 which results in the following frequency distribution of equivalent concentrated loads for the above mentioned 171 Type 2 trucks on a 60-foot span.

Equivalent		Observed	Calculated	Calculated
Concentrated	i	Relative	Relative	Cumulative
\mathbf{Load}		Frequency	Frequency	Frequency
Tons		Percent	$\operatorname{Percent}$	Percent
10		7.0	7.4	100.0
11		17.9	19.3	92.6
12		26.3	25.1	73.3
13		24.2	21.8	48.2
14		14.4	14.1	26.4
15		6.4	7.4	12.3
16		2.7	3.2	4.9
17		1.1	1.2	1.7
18		0.0	.4	.5
19		0.0	.1	.1
Total		100.0	100.0	

The observed frequencies of equivalent concentrated loads for these 171 Type 2 trucks on a 60-foot span are also shown as they appear in Table 23.1a in order to provide a direct comparison with the above theoretical frequencies which were arrived at by applying the conversion coefficient of .91—as given by Table 13.1 for this situation—to the distribution of equivalent H truck loadings. Incidentally, the observed frequencies shown in Table 23.1a were obtained by converting each of the 171 Type 2 trucks into equivalent concentrated loads for each of the 8 span lengths considered.

Comment

This example will serve to show how simple it is to use the Poisson Law for converting relative frequencies based on one type of equivalent loadings into those of another. Although the conversion illustrated in this example is but one of several that might be desired, it is typical and the same procedure would apply for any of the conversions indicated by Table 13.1 or Figure 13.1 and discussed in Article 13.

Table 14.4

INDIVIDUAL AND CUMULATIVE TERMS OF THE POISSON DISTRIBUTION FORMULA

n -K

	n –K K e									
	P(n) =									
						n!				
	Ind. Terms	Cum. Terms	Ind. Terms	Cum. Terms	Ind. Terms	Cum. Terms	Ind. Terms		Ind. Terms	Cum. Terms
n	K =	: 0.1	K =	- 0.2	K =	= 0.3	K =	= 0.4	K = 0.5	
0 1 2 3 4	.9048 .0905 .0045 .0002	1.0000 .0952 .0047 .0002	.8187 .1638 .0164 .0010 .0001	1.0000 .1813 .0175 .0011 .0001	.7408 .2223 .0333 .0033 .0003	1.0000 .2592 .0369 .0036 .0003	.6703 .2681 .0537 .0071 .0007	1.0000 .3297 .0616 .0079 .0008	.6065 .3033 .0758 .0126 .0016	1.0000 .3935 .0902 .0144 .0018
ъ							.0001	.0001	.0002	.0002
n 0 1 2 3 4 5	K = .5488 .3293 .0988 .0197 .0030 .0004	= 0.6 1.0000 .4512 .1219 .0231 .0034 .0004	K = .4966 .3476 .1217 .0283 .0050 .0007 .0001	= 0.7 1.0000 .5034 .1558 .0341 .0058 .0008	K = .4493 .3595 .1438 .0383 .0077 .0012 .0002	= 0.8 1.0000 .5507 .1912 .0474 .0091 .0014	K = .4066 .3659 .1646 .0494 .0112 .0020 .0003	= 0.9 1.0000 .5934 .2275 .0629 .0135 .0023 .0003	.3679 .3679 .1839 .0613 .0153	= 1.0 1.0000 .6321 .2642 .0803 .0190 .0037 .0006
7									.0001	.0001
n	K =		K =		K =			= 1.4		== 1.5
0 1 2 3 4	.3329 .3661 .2014 .0739 .0203	1.0000 .6671 .3010 .0996 .0257	.3012 .3614 .2169 .0867 .0261	1.0000 .6988 .3374 .1205 .0338	.2725 .3543 .2303 .0998 .0324	1.0000 .7275 .3732 .1429 .0431	.2466 .3452 .2417 .1128 .0394	1.0000 .7534 .4082 .1665 .0537	.2231 .3347 .2510 .1256 .0470	1.0000 .7769 .4422 .1912 .0656
5 6 7 8	.0044 .0009 .0001	.0054 .0010 .0001	.0062 .0012 .0003	.0077 .0015 .0003	.0085 .0018 .0003	.0107 .0022 .0004 .0001	.0111 .0026 .0005 .0001	.0143 .0032 .0006 .0001	.0141 .0036 .0007 .0002	.0186 .0045 .0009 .0002
n	K =	= 1.6	К =	= 1.7	К :	= 1.8	К :	= 1.9	К:	= 2.0
0 1 2 3 4	.2019 .3230 .2585 .1378 .0551	1.0000 .7981 .4751 .2166 .0788	.1827 .3105 .2640 .1496 .0636	1.0000 .8173 .5068 .2428 .0932	.1653 .2975 .2678 .1607 .0723	1.0000 .8347 .5372 .2694 .1087	.1496 .2841 .2700 .1710 .0812	1.0000 .8504 .5663 .2963 .1253	.1353 .2707 .2707 .1804 .0902	1.0000 .8647 .5940 .3233 .1429
5 6 7 8 9	.0177 .0047 .0010 .0003	.0237 .0060 .0013 .0003	.0216 .0061 .0015 .0003	.0296 .0080 .0019 .0004 .0001	.0260 .0078 .0020 .0005 .0001	.0364 .0104 .0026 .0006 .0001	.0309 .0098 .0026 .0006 .0002	.0441 .0132 .0034 .0008	.0361 .0121 .0034 .0009 .0002	.0527 .0166 .0045 .0011 .0002

Table 14.4 (Continued)

	Ind. Terms	Cum. Terms	Ind. Terms	Cum. Terms	Ind. Terms	Cum. Terms	Ind. Terms	Cum. Terms	Ind. Terms	Cum. Terms
n	w -	= 2.1	w -	= 2.2	v -	= 2.3	1 27 —	= 2.4	T7	= 2.5
0	.1225	1.0000	.1108	1.0000	.1003	1.0000	.0907	1.0000	.0821	1.0000
1	.2571	.8775	.2438	.8892	.2306	.8997	.2177	.9093	.2052	.9179
2	.2700	.6204	.2681	.6454	.2651	.6691	.2613	.6916	.2565	.7127
3	.1890	.3504	.1967	.3773	.2033	.4040	.2090	.4303	.2138	.4562
4	.0993	.1614	.1081	.1806	.1169	.2007	.1254	.2213	.1336	.2424
5	.0417	.0621	.0476	.0725	.0538	.0838	.0602	.0959	.0668	.1088
6	.0145	.0204	.0174	.0249	.0206	.0300	.0241	.0357	.0278	.0420
7 8	.0044 $.0012$.0059 .0015	.0055 $.0015$.0075 $.0020$.0068	.0094	.0083	.0116	.0100	.0142
9	.0012	.0013	.0013	.0020	.0020	.0026 .0006	.0024 $.0007$	0033	.0031 $.0008$	0042
$\frac{10}{11}$.0001	.0001	.0001	.0001	.0001	.0001	.0002	.0002	.0002	.0003
11									.0001	.0001
n	K =	= 2.6	K =	= 2.7	K =	2.8	K =	= 2.9	K =	= 3.0
0	.0743	1.0000	.0672	1.0000	.0608	1.0000	.0550	1.0000	.0493	1.0000
1	.1931	.9257	.1815	.9328	.1703	.9392	.1596	.9450	.1493	.9502
2	.2510	.7326	.2449	.7513	.2384	.7689	.2314	.7854	.2241	.8009
$\frac{3}{4}$.2176 $.1414$.4816 $.2640$.2205 $.1488$	$.5064 \\ .2859$.2224	.5305	.2236	.5540	.2240	.5768
					.1558	.3081	.1622	.3304	.1681	.3528
5	.0736	.1226	.0804	.1371	.0872	.1523	.0940	.1682	.1008	.1847
6 7	.0318 $.0119$.0490 $.0172$	$.0361 \\ .0140$.0567 $.0206$.0407 $.0163$.0651 $.0244$.0455 .0188	0742 0287	.0504 $.0216$.0839 $.0335$
8	.0038	.0053	.0047	.0206	.0057	.0244	.0188	.0099	.0216	.0333
9	.0011	.0015	.0014	.0019	.0017	.0024	.0022	.0033	.0027	.0038
10	.0003	.0004	.0004	-6005	.0005	.0007	.0007	.0009	.0008	.0011
11	.0003	.0004	.0004	.0003	.0003	.0007	.0001	.0009	.0008	.0003
12	.0001	.0001	.0001	.0001	.0002	.0002	.0001	.0001	.0001	.0001
n		= 3.1		= 3.2		= 3.3		= 3.4		= 3.5
0	.0450	1.0000	.0408	1.0000	.0369	1.0000	.0334	1.0000	.0302	1.0000
$\frac{1}{2}$.1397 $.2165$.9550 $.8153$.1304 $.2087$.9592 $.8288$.1217 $.2008$.9631 $.8414$.1134 $.1929$.9666 $.8532$.1057	.9698 $.8641$
3	.2236	.5988	.2226	.6201	.2209	.6406	.2187	.6603	.1849 .2158	.6792
4	.1734	.3752	.1781	.3975	.1823	.4197	.1858	.4416	.1888	.4634
5	.1075	.2018	.1140	.2194	.1203	.2374	.1263	.2558	,1322	.2746
6	.0555	.0943	.0608	.1054	.0661	.1171	.0716	.1295	.0771	.1424
7	.0246	.0388	.0278	.0446	.0312	.0510	.0348	.0579	.0386	.0653
8	.0095	.0142	.0111	.0168	.0129	.0198	.0148	.0231	.0168	.0267
9	.0033	.0047	.0039	.0057	.0047	.0069	.0055	.0083	.0066	.0099
n	к =	= 3.1	К =	= 3.2	к =	= 3.3	К =	= 3.4	K =	= 3.5
10	.0010	.0014	.0013	.0018	.0016	.0022	.0019	.0027	.0023	.0033
11	.0003	.0004	.0004	.0005	.0004	.0006	.0006	.0008	.0007	.0010
12	.0001	.0001	.0001	.0001	.0002	.0002	.0001	.0002	.0002	.0003
13							.0001	.0001	.0001	.0001
n	к =	= 3.6	К =	= 3.7	к –	= 3.8	к -	= 3.9	к –	= 4.0
0	.0273	1.0000	.0247	1.0000	.0224	1.0000	.0202	1.0000	.0183	1.0000
í	.0213	.9727	.0915	.9753	.0850	.9776	.0790	.9798	.0733	.9817
2	.1770	.8743	.1692	.8838	.1615	.8926	.1539	.9008	.1465	.9084
3	.2125	.6973	.2088	.7146	.2046	.7311	.2001	.7469	.1954	.7619
4	.1912	.4848	.1930	.5058	.1943	.5265	.1952	.5468	.1953	.5665
5	.1377	.2936	.1429	.3128	.1478	.3322	.1522	.3516	.1563	.3712
6	.0826	.1559	.0881	.1699	.0935	.1844	.0989	.1994	.1042	.2149
7	.0425	.0733	.0466	.0818	.0508	.0909	.0551	.1005	.0596	.1107
8	.0191	.0308	.0215	.0352	.0241	.0401	.0269	.0454	.0297	.0511
9	.0077	.0117	.0089	.0137	.0102	.0160	.0116	.0185	.0133	.0214
10	.0027	.0040	.0032	.0048	.0039	.0058	.0046	.0069	.0053	.0081
11	.0009	.0013	.0011	.0016	.0013	.0019	.0016	.0023	.0019	.0028
12	.0003	.0004	.0004	.0005	.0004	.0006	.0005	.0007	.0006	0009
$\frac{13}{14}$.0001	.0001	.0001	.0001	.0002	.0002	.0001 $.0001$	0002	.0002 $.0001$.0003
n		4.1		= 4.2		4.3		= 4.4		4.5
0	.0166	1.0000	.0150	1.0000	.0136	1.0000	.0123	1.0000	.0111	1.0000
1	.0679	.9834	.0630	.9850	.0583	.9864	.0540	.9877	.0500	.9889
2	.1393	.9155	.1322	.9220	.1255	.9281	.1188	.9337	.1125	.9389
3 4	.1904 .1951	.7762 $.5858$.1852 $.1944$.7898 .6046	.1798 $.1932$.8026 $.6228$.1743 $.1918$.8149 $.6406$.1687 $.1898$.8264 $.6577$
4	1661	.0000	.1344	.0040	.1302	,0240	.1010	.0400	.1020	.0011

Table 14.4 (Continued)

	Ind. Terms	Cum. Terms	Ind. Terms	Cum. Terms	Ind. Terms	Cum. Terms	Ind. Terms	Cum. Terms	Ind. Terms	Cum. Terms
n		= 4.1	К =	= 4.2	K :	= 4.3	K :	= 4.4	K =	= 4.5
5	.1600	.3907	.1633	.4102	.1663	.4296	.1687	.4488	.1708	.4679
6 7	.1093	.2307 $.1214$.1144 $.0686$.2469 $.1325$.1191 $.0732$.2633 $.1442$.1237 $.0778$.2801 $.1564$.1282 $.0823$.2971 $.1689$
8	.0328	.0573	.0360	-0639	.0393	.0710	.0428	.0786	.0463	.0866
9	.0150	.0245	.0168	.0279	.0188	.0317	.0209	.0358	.0232	.0403
10	.0061	.0095	.0070	.0111	.0081	.0129	.0092	.0149	.0104	.9171
11	.0023	.0034	.0027	.0041	.0031	.0048	.0037	.0057	.0043	.0067
12	.0008	.0011	.0010	.0014	.0012	.0017	.0013	.0020	.0016	.0024
$\frac{13}{14}$	0002	.0003 $.0001$	0003	.0004 $.0001$	0003 0002	.0005 $.0002$	0005 0002	.0007 $.0002$	0005 0002	.0008 8000.
	.0001	.0001	.0001	.0001	.0002	.0002	.0002	.0002		
15									.0001	.0001
n	K =	= 4.6	K =	= 4.7	K =	= 4.8	K =	= 4.9	K =	= 5.0
0	.0101	1.0000	.0091	1.0000	.0082	1.0000	.0074	1.0000	.0067	1.0000
1	.0462	.9899	.0427	.9909	.0395	.9918	.0365	.9926	.0337	.9933
$\frac{2}{3}$.1063 .1631	.9437 $.8374$.1005 $.1574$.9482 $.8477$.0948 .1517	.9523 $.8575$.0894 $.1460$.9561 $.8667$.0843 $.1403$.9596 $.8753$
4	.1875	.6743	.1849	.6903	.1821	.7058	.1789	.7207	.1755	.7350
5	.1726	.4868	.1738	.5054	.1747	.5237	.1753	.5418	.1755	.5595
6	.1322	.3142	.1362	.3316	.1398	.3490	.1432	.3665	.1462	.3840
7	.0869	.1820	.0914	.1954	.0959	.2092	.1002	.2233	.1044	.2378
8	.0500	.0951	.0537	.1040	.0575	.1133	.0613	.1231	.0653	.1334
9	.0256	.0451	.0281	.0503	.0307	.0558	.0335	.0618	.0363	.0681
$\frac{10}{11}$.0117 $.0049$	0.0195 0.0078	0.0132 0.056	.0222 $.0090$.0147 $.0064$.0251 $.0104$	0.0163 0.0073	.0283 $.0120$.0181 $.0082$.0318 $.0137$
12	.0049	.0029	.0022	.0034	.0026	.0104	.0030	.0120	.0035	.0157
13	.0007	.0010	.0008	.0012	.0009	.0014	.0011	.0017	.0013	.0020
14	.0002	.0003	.0003	.0004	.0004	.0005	.0004	.0006	.0005	.0007
15	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0002	.0001	.0002
16							.0001	.0001	.0001	.0001
n	K =	= 5.2	K =	= 5.4	K =	= 5.6	К =	= 5.8	K =	= 6.0
0	.0055	1.0000	.0045	1.0000	.0037	1.0000	.0030	1.0000	.0025	1.0000
1	.0287	.9945	.0244	.9955	.0207	.9963	.0176	.9970	.0149	.9975
$\frac{2}{3}$.0746 $.1293$.9658 $.8912$.0659 $.1185$.9711 $.9052$.0580 $.1082$.9756 $.9176$.0509 .0985	.9794 $.9285$.0446 $.0892$.9826 $.9380$
4	.1680	.7619	.1600	.7867	.1515	.8094	.1427	.8300	.1339	.8488
5	.1748	.5939	.1728	.6267	.1698	.6579	.1656	.6873	.1606	.7149
6	.1515	.4191	.1556	.4539	.1584	.4881	.1601	.5217	.1606	.5543
7	.1125	.2676	.1200	.2983	.1267	.3297	.1326	.3616	.1377	.3937
8 9	0732 0422	.1551 $.0819$.0809 $.0486$.1783	.0887	.2030	.0962	.2290	.1032	.2560
-				.0974	.0552	.1143	.0620	.1328	.0689	.1528
$\frac{10}{11}$.0220 $.0104$	0397 0177	.0263 $.0129$.0488 $.0225$	0309	.0591 $.0282$.0359 $.0189$.0708 $.0349$.0413 $.0225$.0839 $.0426$
12	.0045	.0073	.0058	.0096	.0074	.0125	.0092	.0160	.0113	.0201
13	.0018	.0028	.0024	.0038	.0031	.0051	.0041	.0068	.0052	.0088
14	.0007	.0010	.0009	.0014	.0013	.0020	.0017	.0027	.0022	.0036
15	.0002	.0003	.0003	.0005	.0005	.0007	.0006	.0010	.0009	.0014
$\frac{16}{17}$.0001	.0001	.0001	.0002	.0001	.0002	.0003	.0004	.0003	.0005
18			.0001	.0001	.0001	.0001	.0001	.0001	.0001 $.0001$.0002 $.0001$
n		≃ 6.2		= 6.4		= 6.6		= 6.8		= 7.0
$0 \\ 1$.0020 $.0126$	1.0000 $.9980$.0017 $.0106$	$1.0000 \\ .9983$.0014 $.0089$	1.0000 $.9986$	0.0011 0.0076	1.0000 $.9989$.0009 $.0064$	1.0000 $.9991$
2	.0390	.9854	.0340	.9877	.0297	.9897	.0257	.9913	.0223	.9927
3	.0806	.9464	.0726	.9537	.0652	.9600	.0584	.9656	.0522	.9704
4	.1250	.8658	.1162	.8811	.1075	.8948	.0992	.9072	.0912	.9182
5	.1549	.7408	.1486	.7649	.1420	.7873	.1350	.8080	.1277	.8270
$\frac{6}{7}$.1601	.5859	.1586	.6163	.1561	.6453	.1529	.6730	.1490	.6993
8	.1418 .1099	.4258 $.2840$.1450 .1160	.4577 $.3127$.1473 .1215	.4892 $.3419$.1486 .1263	.5201 $.3715$.1490 .1304	.5503 $.4013$
9	.0757	.1741	.0825	.1967	.0890	.2204	.0954	.2452	.1014	.2709
10	.0470	.0984	.0528	.1142	.0588	.1314	.0649	.1498	.0710	.1695
11	.0264	.0514	.0307	.0614	.0353	.0726	.0401	.0849	.0451	.0985
12	.0137	.0250	.0164	.0307	.0194	.0373	.0227	.0448	.0264	.0534
$\frac{13}{14}$	0065	.0113 $.0048$.0080 $.0037$.0143 $.0063$.0099 $.0046$.0179 $.0080$.0119 $.0058$.0221 $.0102$.0142 $.0071$.0270 $.0128$
7.4	.0020	.0040	.0001	.0000	.0040	.0000	.0008	.0102	.0011	.0140

Table 14.4 (Continued)

	$_{\rm Terms}^{\rm Ind.}$	Cum. Terms	Ind. Terms	Cum. Terms	Ind. Terms	Cum. Terms	Ind. Terms	Cum. Terms	Ind. Terms	Cum. Terms
n	K =	= 6.2	K =	= 6.4	К :	= 6.6	K =	= 6.8	K :	= 7.0
15	.0012	.0019	.0016	.0026	.0020	.0034	.0026	.0044	.0033	.0057
$\frac{16}{17}$.0004 $.0002$.0007 $.0003$.0006	.0010 $.0004$	0009	.0014 $.0005$.0011 .0004	.0018 $.0007$.0014 $.0006$.0024 $.0010$
18	.0002	.0003	.0003	.0001	.0003	.0005	.0004	.0003	.0008	.0010
19					.0001	.0001	.0001	.0001	.0001	.0001
n		7.2		7.4		= 7.6		= 7.8		= 8.0
0 1	0007 0054	1.0000 $.9993$	0006 0045	1.0000 $.9994$.0005 $.0038$	$1.0000 \\ .9995$	0.0004 0.0032	1.0000 $.9996$.0003 $.0027$	1.0000
2	.0194	.9939	.0168	.9949	.0145	.9957	.0125	.9964	.0108	.9970
3	.0464	.9745	.0413	.9781	.0366	.9812	.0324	.9839	.0286	.9862
4	.0836	.9281	.0763	.9368	.0695	.9446	.0632	.9515	.0572	.9576
5 6	.1204 $.1445$.8445 .7241	.1131 $.1394$.8605 $.7474$.1058 $.1339$.8751 $.7693$	0986 1281	.8883 $.7897$.0916 $.1222$.9004 $.8088$
7	.1485	.5796	.1473	.6080	.1454	.6354	.1428	.6616	.0396	.6866
8	.1338	.4311	.1364	.4607	.1382	.4900	.1392	.5188	.1395	.5470
9	.1069	.2973	.1120	.3243	.1167	.3518	.1207	.3796	.1241	.4075
$\frac{10}{11}$.0771 $.0504$.1904 $.1133$.0830 $.0558$.2123 $.1293$	$\substack{.0886 \\ .0613}$.2351 $.1465$.0941 $.0668$.2589 $.1648$	0993 0722	.2834 .1841
12	.0304	.0629	.0344	.0735	.0388	.0852	.0434	.0980	.0481	.1119
13	.0168	.0327	.0196	.0391	.0226	.0464	.0260	.0546	.0296	.0638
14	.0086	.0159	.0103	.0195	.0124	.0238	.0145	.0286	.0169	.0342
15	.0042	.0073	.0051	.0092	.0062	.0114	.0075	.0141	.0091	.0173
$\frac{16}{17}$.0018	.0031	.0024	.0041	.0030 $.0013$	$0052 \\ 0022$	0.0037 0.0017	.0066	.0045 $.0021$.0082
18	.0003	.0005	.0004	.0007	.0005	.0009	.0007	.0012	.0009	.0016
19	.0001	.0002	.0002	.0003	.0003	.0004	.0003	.0005	.0004	.0007
20	.0001	.0001	.0001	.0001	.0001	.0001	.0001	0002	.0002	.0003
21							.0001	10001	.0001	.0001
n	K =	= 8.2	K =	: 8.4	K =	= 8.6	К =	= 8.8	К =	= 9.0
0	.0003	1.0000	.0002	1.0000	.0002	1.0000	.0002	1.0000	.0001	1.0000
$\frac{1}{2}$	0022	.9997 $.9975$.0019	.9998 .9979	.0016 $.0068$.9998 $.9982$.0013 $.0058$.9998 $.9985$.0011 $.0050$.9999
3	.0252	.9882	.0223	.9900	.0068	.9982 $.9914$.0058	.9927	.0150	.9938
4	.0517	.9630	.0466	.9677	.0420	.9719	.0377	.9756	.0338	.9788
5	.0849	.9113	.0784	.9211	.0721	.9299	.0663	.9379	.0607	.9450
6 7	$.1160 \\ .1358$.8264 $.7104$.1097 $.1317$.8427 $.7330$.1035 $.1271$.8578 $.7543$.0972 $.1222$.8716 $.7744$.0910 $.1172$.8843 .7933
8	.1393	.5746	.1382	.6013	.1366	.6272	.1345	.6522	.1318	.6761
9	.1268	.4353	.1290	.4631	.1306	.4906	.1314	.5177	.1317	.5443
$\frac{10}{11}$.1040 $.0776$.3085 $.2045$.1084 .0828	.3341 $.2257$.1122	.3600	.1157	.3863 $.2706$.1186	.4126
$\frac{11}{12}$.0530	.2045 $.1269$.0828 $.0579$.1429	.0878 $.0629$.2478 $.1600$.0926 $.0678$.1780	$0970 \\ .0728$.2940 $.1970$
13	.0334	.0739	.0374	.0850	.0416	.0971	.0460	.1102	.0503	.1242
14	.0196	.0405	.0225	.0476	.0256	.0555	.0289	.0642	.0324	.0739
$\frac{15}{16}$	0.0107 0.0055	.0209 $.0102$.0126 $.0066$	$.0251 \\ .0125$.0147 $.0078$.0299	.0169 $.0093$	0353 0184	.0195 $.0109$.0415
17	.0026	.0047	.0032	.0059	.0040	.0152 $.0074$.0093	.0091	.0058	.0220
18	.0012	.0021	.0016	.0027	.0019	.0034	.0024	.0043	.0029	.0053
19	.0006	.0009	.0006	.0011	.0009	.0015	.0011	.0019	.0013	.0024
$\frac{20}{21}$.0002	.0003	0003 0001	0005	.0004	.0006	0005	0008	0007	.0011 $.0004$
22	.0001	.0001	.0001	.0002	.0001	.0002 $.0001$.0002	.0003	.0002	.0004
$\frac{1}{23}$.0001	10001	.0001	.0001	.0001	.0001	.0001	.0001
n	к =	= 9.2	К =	= 9.4	K =	= 9.6	ΚΞ	= 9. 8	к:	= 10.0
0	.0001	1.0000	.0001	1.0000	.0001	1.0000	.0001	1.0000		
1	.0009	.9999	.0008	.9999	.0006	.9999	.0005	.9999	.0005	1.0000
$\frac{2}{3}$.0043	.9990 .9947	.0036	.9991	.0031	.9993	.0027 $.0087$.9994 $.9967$	0023 0075	.9995 .9972
3 4	.0131 $.0302$.9947 $.9816$.0115 $.0269$.9955 $.9840$.0100 .0240	.9962 $.9862$.0087	.9880	.0190	.98972
5	.0555	.9514	.0506	.9571	.0460	.9622	.0417	.9667	.0378	.9707
6	.0851	.8959	.0792	.9065	.0736	.9162	.0683	.9250	.0630	.9329
7 8	.1118 .1286	.8108 .6990	.1065 $.1250$.8273 $.7208$.1010 $.1212$.8426 $.7416$.0955 $.1170$.8567 $.7612$.0901 $.1126$.8699 .7798
9	.1315	.5704	.1307	.5958	.1293	.6204	.1274	.6442	.1251	.6672

Table 14.4 (Continued)

Tabi	. 11.1	(Continued)	,							
	Ind.	Cum.	Ind.	Cum.	Ind.	Cum.	Ind.	Cum.	Ind.	Cum.
	Terms	Terms	Terms	Terms	Terms	Terms	Terms	Terms	Terms	Terms
n	K	= 9.2	K = 9.4		K = 9.6		K = 9.8		K = 10.0	
10	.1209	.4389	.1227	.4651	.1240	.4911	.1248	.5168	.1251	.5421
11	.1012	.3180	.1050	.3424	.1083	.3671	.1113	.3920	.1138	.4170
12	.0775	.2168	.0822	.2374	.0867	.2588	.0908	.2807	.0948	.3032
13	.0549	.1393	.0594	.1552	.0640	.1721	.0685	.1899	.0729	.2084
14	.0361	.0844	.0399	.0958	.0438	.1081	.0479	.1214	.0520	.1355
15	.0221	.0483	.0250	.0559	.0281	.0643	.0313	.0735	.0348	.0835
16	.0127	.0262	.0147	.0309	.0168	.0362	.0192	.0422	.0217	.0487
17	.0069	.0135	.0081	.0162	.0096	.0194	.0111	.0230	.0127	.0270
18	.0035	.0066	.0043	.0081	.0050	.0098	.0060	.0119	.0071	.0143
19	.0017	.0031	.0021	.0038	.0026	.0048	.0031	.0059	.0037	.0072
20 21 22 23 24	.0008 .0004 .0001 .0001	.0014 .0006 .0002 .0001	.0009 .0005 .0002 .0001	.0017 .0008 .0003 .0001	.0012 .0006 .0002 .0001 .0001	.0022 .0010 .0004 .0002 .0001	.0015 .0008 .0003 .0001 .0001	.0028 .0013 .0005 .0002 .0001	.0019 .0009 .0004 .0002 .0001	.0035 .0016 .0007 .0003 .0001
n	K :	= 11.0	K =	12.0	K =	: 13.0	K =	: 14.0	K =	15.0
1 2 3 4	.0002 .0010 .0037 .0102	1.0000 .9998 .9988 .9951	.0001 .0004 .0018 .0053	1.0000 .9999 .9995 .9977	.0002 .0008 .0027	1.0000 .9998 .9990	.0001 .0004 .0013	1.0000 .9999 .9995	.0002 .0007	1.0000 .9998
5	.0224	.9849	.0127	.9924	.0070	.9963	.0037	.9982	.0019	.9991
6	.0411	.9625	.0255	.9797	.0152	.9893	.0087	.9945	.0048	.9972
7	.0646	.9214	.0437	.9542	.0281	.9741	.0174	.9858	.0104	.9924
8	.0888	.8568	.0655	.9105	.0458	.9460	.0305	.9684	.0194	.9820
9	.1085	.7680	.0874	.8450	.0660	.9002	.0473	.9379	.0325	.9626
10	.1194	.6595	.1048	.7576	.0859	.8342	.0663	.8906	.0486	.9301
11	.1194	.5401	.1144	.6528	.1015	.7483	.0843	.8243	.0663	.8815
12	.1094	.4207	.1144	.5384	.1099	.6468	.0985	.7400	.0828	.8152
13	.0926	.3113	.1055	.4240	.1099	.5369	.1059	.6415	.0956	.7324
14	.0727	.2187	.0905	.3185	.1021	.4270	.1060	.5356	.1025	.6368
15	.0534	.1460	.0724	.2280	.0885	.3249	.0990	.4296	.1024	.5343
16	.0367	.0926	.0543	.1556	.0719	.2364	.0865	.3306	.0960	.4319
17	.0237	.0559	.0383	.1013	.0550	.1645	.0713	.2441	.0848	.3359
18	.0145	.0322	.0256	.0630	.0397	.1095	.0554	.1728	.0706	.2511
19	.0084	.0177	.0161	.0374	.0271	.0698	.0409	.1174	.0557	.1805
20	.0046	.0093	.0097	.0213	.0177	.0427	.0286	.0765	.0418	.1248
21	.0024	.0047	.0055	.0116	.0109	.0250	.0191	.0479	.0299	.0830
22	.0013	.0023	.0031	.0061	.0065	.0141	.0121	.0288	.0204	.0531
23	.0005	.0010	.0016	.0031	.0036	.0076	.0074	.0167	.0132	.0327
24	.0003	.0005	.0008	.0015	.0020	.0040	.0043	.0093	.0083	.0195
25 26 27 28 29	.0001 .0001	.0002 .0001	.0004 .0002 .0001	.0007 .0003 .0001	.0010 .0005 .0003 .0001 .0001	.0020 .0010 .0005 .0002 .0001	.0024 .0013 .0007 .0003 .0002	.0050 .0026 .0013 .0006 .0003	.0050 .0029 .0016 .0008 .0005	.0112 .0062 .0033 .0017 .0009
30 31 32							.0001	.0001 .0001	.0002 .0001 .0001	.0004 .0002 .0001

Part IV

OBSERVED AND CALCULATED FREQUENCIES OF EQUIVA-LENT H TRUCK LOADINGS ON SIMPLE SPAN BRIDGES FOR THE HEAVY VEHICLES REPORTED BY THE SPECIAL LOADOMETER SURVEY OF 1942

15. FREQUENCY ANALYSIS OF EQUIVALENT H TRUCK LOADINGS

15.1 General

Owing to the fact that the procedures for arriving at the observed and calculated frequencies or frequency distributions of equivalent H truck loadings given by the tables and figures in the following articles of Part IV (Articles 16 through 21) have already been explained in some detail in Part III, only a brief discussion of them will be needed here to facilitate their interpretation. Before proceeding with the discussion of the tables and figures in these articles, however, a list of their titles will not only serve for convenient reference, but, since they are somewhat self explanatory, they will also serve to indicate the nature of the material presented in each. They are as follows:

Article 16 Observed and Calculated Frequencies of Equivalent (Tables 16.1—16.12) H Truck Loadings on Simple Span Bridges Based on Gross Vehicle Weights

Article 17
(Figures 17.1—17.13)

Maximum, Minimum, and Average Equivalent H
Truck Loadings on Simple Span Bridges Based on
Gross Vehicle Weights

Article 18
(Figures 18.1—18.12)

Histograms Showing Frequency Distributions of Equivalent H Truck Loadings on Simple Span Bridges Based on Gross Vehicle Weights

Article 19 Observed and Calculated Frequencies of Equivalent (Tables 19.1—19.11) Truck Loadings on Simple Span Bridges Based on Vehicles Weighing One Kip Each

Article 20 Frequency Distributions of Equivalent H Truck (Figures 20.1—20.11) Endings on Simple Span Bridges Based on Vehicles Weighing One Kip Each

Article 21 Histograms Showing Frequency Distribution of (Figures 21.1—21.11) Equivalent H Truck Loadings on Simple Span Bridges Based on Vehicles Weighing One Kip Each

From these titles, it will be noted that the tables and figures given in Articles 16, 17, and 18 are concerned with the frequency analysis of equivalent H truck loadings based on gross vehicle weights and those in Articles 19, 20, and 21 are concerned with a similar frequency analysis of equivalent H truck loadings based on vehicles of unit weight or vehicles weighing one kip each. The observed and calculated frequencies of equivalent H truck loadings based on gross vehicle weights, as given by the tables and figures in Articles 16, 17, and 18, provide a convenient means for analyzing the range and frequencies of the actual live load bending moments that would result on various span lengths from the heavy vehicle loadings reported by the 1942 loadometer survey. Incidentally, if a similar frequency analysis of the heavy vehicle data reported by the loadometer surveys for each succeeding year since 1942 were presently available, it would provide the basic information needed for evaluating the long time trend in heavy motor vehicle operation, measured in terms of its stress producing effects, and how this trend in operation may be related to the minimum standards which presently obtain for highway and

bridge provision throughout the several geographical regions of the Nation. Such a study is now in progress as a continuation of the present investigation, and it is hoped that the results will be ready for publication in the not too distant future.

Owing to the fact, however, that the actual bending moments indicated by the above mentioned equivalent H truck loadings include the effect of gross vehicle weights, they do not reflect the stress producing characteristics of the vehicles themselves.

In order to investigate or analyze the stress producing characteristics of the heavy vehicle types and loadings actually found on the highways, therefore, it is necessary to eliminate gross vehicle weight as a variable by holding it constant. This may be accomplished by considering each heavy vehicle investigated to have a gross weight of one kip as was done in the case of the 1303 variations of wheel base, number and spacing of axles, and percentage distribution of load among the axles for the 14 heavy vehicle types given by the identification index Tables 6.1—6.14. The moments produced by these vehicles of unit weight on spans of various length (see Tables 6.1—6.14 and 7.1—7.14, and Figures 9.1—9.14) not only provide a simple means for comparing the stress producing characteristics of one vehicle with those of another but also for comparing or measuring the stress producing effects of any given vehicle type and loading, on a given span, in terms of a standard H truck loading, H design loading, single concentrated load, or any other type of loading as may be desired for use as a basis of comparison.

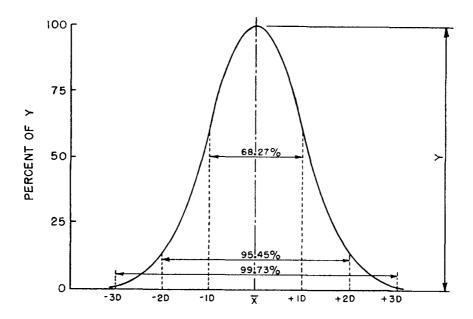
In the case of measuring the stress producing effects of a given vehicle on a given span, in terms of the standard H truck or a single concentrated load, however, it is simpler to obtain this information directly from Tables 10.1—10.14 and Tables 12.1—12.14, respectively, than by comparing the moments given by Figures 9.1—9.14. For example, if it were desired to rate the stress producing characteristics of a Type 2-S1 truck—with axle spacings of 12 and 24 feet, making an over all wheel-base length of 36 feet, and a percentage distribution of load from front to rear of 10, 45, and 45 percent, respectively—in terms of an equivalent H truck loading on a 60-foot span, it will be found in Table 10.3 that this vehicle (2-S1-66) of unit weight will produce but 68.8 percent as much moment as an H truck of unit weight on this 60-foot span. Therefore, the stress producing effects of this 2-S1-66 truck would be rated at .688 of a standard H truck of equal weight.

An analysis of the stress producing characteristics of the 11 more numerous heavy vehicle types, reported by the 1942 loadometer survey, is given by Tables 19.1a—19.11a and Tables 19.1b—19.11b which present the observed and calculated frequencies of equivalent H truck loadings for these vehicles on a unit weight basis on spans up to 100 feet in length. In Table 19.1a, for example, it will be seen that, of the 171 Type 2 trucks reported, 25.5 percent of them produced as much moment as an H truck of equal weight on a 50-foot span. In the same column for the 50-foot span, it will also be seen that 28.6 percent of them produced 95 percent as much moment as an H truck of equal weight, and so on. At the bottom of this table, however, it will be seen that the average Type 2 truck reported produced 93 percent as much moment as an H truck of equal weight on a 50-foot span. This is but another way of saying that the Type 2 truck is definitely not adapted to the transport of heavy loads because, by comparing its stress producing characteristics with the other vehicle types given by the tables and figures in Articles 19, 20, and 21, it will be found that the Type 2 truck, for a given gross vehicle weight, is the most severe stress producer of all the vehicle types employed for heavy motor vehicles operation in present day highway traffic.

It would appear, therefore, that the maximum use to which this information pertaining to the stress producing characteristics of vehicle types could be put, would be to establish ranges of gross vehicle weight which would be appropriate for any one vehicle type operating under any given level of bridge capacity and, with respect to other heavy vehicle types, where any one of these might be operated with greater propriety in some other range of gross vehicle weight. And though the actual establishment of such ranges and the verification of their correlation with varying levels of bridge capacity is beyond the scope of the present bulletin, it is believed that this method for analyzing the stress producing characteristics of heavy vehicle types and loading distributions provides a rational approach to the accomplishment of those objectives.

In each of the tables in Articles 16 and 19, and the figures in Articles 17 and 20, the maximum, average, and minimum equivalent H truck loadings for each span are given and also the range; the range being the maximum spread of these loadings or the difference between the maximum and minimum. The Poisson coefficient K for each frequency distribution and the standard deviation D for each calculated frequency distribution are also given. The Poisson coefficient K, as explained in Article 14, is equal to the difference

NORMAL FREQUENCY DISTRIBUTION



AREA UNDER FREQUENCY CURVE EQUALS 100% OF ITEMS DISTRIBUTED

STANDARD DEVIATIONS FROM X AVERAGE

Figure 15.1

in the number of cells between the average and minimum loading equivalents. The standard deviation, D \sqrt{K} , is a statistical index associated with a given distribution which provides a measure for determining just how usual or unusual a given loading equivalent might be considered. Its meaning and use are briefly discussed in the following article.

15.2 Interpretation of Standard Deviation For A Poisson Distribution

The reason for introducing the idea of standard distribution here is to point out how this statistical device or measure may be used to advantage in connection with many types of frequency studies similar to the frequency distributions of equivalent H truck loadings given in the remaining sections of Part IV and those based on equivalent concentrated loads given in Part V. In Figure 18.6 (also see Table 16.6b), for example, it will be noted that the dashed curve, showing the calculated frequency distribution of the Type 3-S2 trucks on an 80-foot span, bears a strong resemblance to the familiar symmetrical bell-shaped curve known as the "Normal Frequency Distribution" as shown in Figure 15.1. Consequently, the variations from the average for a symmetrical "Normal Frequency Distribution" will provide a reasonably accurate estimate for interpreting the meaning of 1 or more standard deviations when used in connection with a Poisson distribution, which is but slightly skewed (unsymmetrical) for the larger values of the coefficient K; say, those equal to about 5 or more.

If the area under the normal curve is equal to unity or 100 percent of the distribution, and it is divided according to standard deviations on either side of the average or mean value, the area under the curve would be divided as follows:

from + 1D to - 1D accounts for 68.27 percent of all items distributed from + 2D to - 2D accounts for 95.45 percent of all items distributed from + 3D to - 3D accounts for 99.75 percent of all items distributed

Therefore, if the normal distribution is used as a guide for interpreting the frequency distributions of gross vehicle weights or heavy vehicle loading equivalents on a given span, it would mean that about 70 percent of all the gross weights or loading equivalents would be expected to be within the plus and minus 1D range (tons or kips) of the average. Similarly, about 95 percent would be expected to be within the plus and minus 2D range, and practically all within the plus and minus 3D range. Although these divisions may not be exact in a mathematical sense for any particular Poisson distribution, they do provide a rather simple and reasonably accurate statistical measure for determining just how far any particular gross vehicle weight or loading equivalent deviates from the average.

In other words, the number of deviations that a particular vehicle varies from the average is a measure of just how usual or unusual that vehicle would be considered or how often it would be expected to occur in relation to all the vehicles under consideration. From Figure 15.1, it will be seen that a vast majority (about 95 percent) of all the gross vehicle weights or loading equivalents in a given frequency distribution would be expected to fall within 2 deviations of the average, and practically all of them (about 99.73 percent) within 3 deviations of the average. On this basis, therefore, any gross vehicle weight or equivalent loading that might fall outside of the 3 deviation range would be considered most unusual.

15.3 Observed Frequencies of Equivalent H Truck Loadings Based on Three Item Moving Averages

The observed frequencies of equivalent H truck loadings given in Tables 16.1a—16.12a and shown graphically in the histograms of Figures 18.1—18.12 are based on three item moving averages. The use of moving averages is a

common statistical device for smoothing out the local irregularities or unavoidable local fluctuations in observed data. Moving averages are more commonly used in statistical studies of time series which are of a seasonal or cyclical nature wherein the number of items used for determining the moving averages usually corresponds with the number of cells or items included in the length of the time cycle. Moving averages, however, are quite often used in the statistical analysis of other types of observed data than those of a seasonal or cyclical nature.

In the present case, the three item moving average was used in order to smooth out the local irregularities from one cell to the next because few, if any, of the equivalent H truck loading designations fell at the mid-point of a given cell. This tendency toward unbalance within a given cell resulted mainly from the fact that most of the sample sizes were small, and therefore only a few vehicles would fall in each individual cell. For this reason, it was felt that the average of each three adjacent cells represented a better estimate of the value of the center cell than that indicated by the raw data. The practical effect of smoothing the raw data in this way is to establish a frequency value for each cell which would be more nearly representative of the parent truck population, and more closely approximate the value that would result from a much larger sample. Insofar as the present studies are concerned, it should be explained that the use of these three item moving averages in no way changes the statistical characteristics of the resulting frequency distributions. Each of the distributions shown have the same center of gravity, and Poisson coefficient K, as those of the raw observed data.

The following example will serve to illustrate the points brought out in the above discussion concerning the use of three item moving averages for smoothing the observed data. The information shown in Table 15.1 was taken directly from the original calculations for the observed frequencies shown in Table 16.2a for the Type 3 truck on a 40-foot span.

Table 15.1
CALCULATIONS OF THREE ITEM MOVING AVERAGES

OBSERVED FREQUENCIES OF EQUIVALENT H TRUCK LOADINGS BASED ON MOMENTS PRODUCED BY THE 381 TYPE 3 TRUCKS REPORTED BY THE 1942 LOADOMETER SURVEY

Equiv. H	Number	Percent	3-Item
Truck	of	of	Moving
Loading	Vehicles	Total	Average
			J
8	0	.00	.17 = $.69$ in cell H9
9	2 4	.52	.52
10	4	1.05	1.40
11	10	2.63	5.78
12	52	13.65	11.38
13	68	17.85	15.57
14	58	15.22	14.96
15	45	11.81	12.25
16	37	9.71	10.41
17	37	9.71	9.01
18	29	7.61	7.44
19	19	4.99	5.08
20	10	2.63	2.80
21	4	1.05	1.40
22	2	.52	.87
23	4	1.05	.52)
24	0	.00	.35 = .87 in cell H23
	381	100.00	100,00
Мах. Н Т		23.00	23.00
Avg. H T		14.93	14.93
Min. H T		9.0	9.0
Range		14.0	14.0
	Coefficient, K	5.93	5.93

16. OBSERVED AND CALCULATED FREQUENCIES OF EQUIVALENT H TRUCK LOADINGS ON SIMPLE SPAN BRIDGES BASED ON GROSS VEHICLE WEIGHTS

Since the procedures for arriving at the observed and calculated frequency distributions of equivalent H truck loadings given by the tables in this article are adequately explained elsewhere in the bulletin, only a brief discussion of them will be needed here to facilitate their interpretation.

Tables 16.1a—16.11a and Tables 16.1b—16.11b, respectively, give the observed and calculated frequencies of equivalent H truck loadings, on simple spans up to 100 feet in length, for each of the 11 more numerous heavy vehicle types reported by the 1942 loadometer survey. Also Table 16.12a and Table 16.12b, respectively, give similar observed and calculated frequencies for all of the 4531 heavy vehicles reported, including the 11 heavy vehicle types whose individual frequencies are given in Tables 16.1a—16.11a and Tables 16.1b—16.11b. As explained in Article 15, the observed frequencies shown in these tables are based on 3-item moving averages which has the effect of smoothing the data from one cell to the next.

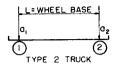
The observed and calculated frequencies of Equivalent H Truck Loadings for each of the 11 more numerous heavy vehicle types reported, and also for all heavy vehicles reported are given in the following tables:

Heavy	Number	Table Number					
Vehicle	of Vehicles	Observed	Calculated				
Type	Reported	Frequencies	Frequencies				
$\frac{2}{3}$	171	16.1a	16.1b				
3	381	16.2a	16.2b				
2-S1	2855	16.3a	16.3b				
2-S2	508	16.4a	16.4b				
3-S1	9	16.5a	16.5b				
3-S2	142	16.6a	16.6b				
3-S3	14	16.7a	16.7b				
2-2	99	16.8a	16.8b				
2-3	24	16.9a	16.9b				
3-2	68	16.10a	16.10b				
3-3	176	16.11a	16.11b				
All	4531	16.12a	16.12b				

Each of these tables gives either the observed or calculated frequencies of equivalent H truck loadings on span lengths of 10, 20, 30, 40, 50, 60, 80, and 100 feet, respectively. In addition to these distributions, it will be noted that the frequencies shown in the right hand column are for an infinite span, which is just another way of saying that they represent the frequency distribution of gross vehicle weights. This may be more readily explained perhaps if the discussion were confined to some particular vehicle having a gross weight of, say, 20 tons. A Type 2-S1 truck weighing 20 tons, for example, irrespective of its wheel-base length or distribution of load among its axles, would produce the same maximum moment on an infinite span as a standard H20 truck. Therefore, the equivalent H truck loading for this vehicle would be the same as its gross vehicle weight, or simply an equivalent H20 truck loading.

Table 16.1a

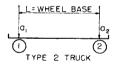
OBSERVED FREQUENCIES OF EQUIVALENT H TRUCK LOADINGS BASED ON MOMENTS PRODUCED BY THE 171 TYPE 2 TRUCKS REPORTED BY THE 1942 LOADOMETER SURVEY



Equivalent					Span-F	'eet			
H Truck Loadings	10	20	30	40	50	60	80	100	Infinite G.V.W.
9	1.4	1.4	2.0						
10	6.4	6.4	4.5	4.3					
11	13.8	13.8	10.3	8.4	7.4	7.0			
12	21.2	20.8	19.3	19.3	16.4	14.6	14.0	12.7	
13	22.0	22.0	23.1	24.1	24.9	24.2	22.8	21.6	22.8
14	17.4	17.4	20,1	21.6	23.2	23.0	26.3	26.4	26.4
15	9.7	10.1	11.3	12.1	15.6	17.0	20.3	20.5	25.1
16	4.7	4.7	5.1	5.7	7.2	8.2	9.9	11.0	15.0
17	2.0	2.0	2.7	3.3	3.7	3.9	4.3	4.7	6.6
18	1.4	1.4	1.6	1.2	1.6	2.1	2.4	3.1	2.7
19									1.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Max H Truck	18	18	18	18	18	18	18	18	19
Avg H Truck	12.9	12.9	13.2	13.3	13.7	13.8	14.1	14.2	14.6
Min H Truck	9	9	9	10	11	11	12	12	13
Range	9	9	9 9	8	7	7	6	6	6
Poisson's									
Coef. K	3.9	3.9	4.2	3.3	2.7	2.8	2.1	2,2	1.6

Table 16.1b

CALCULATED FREQUENCIES OF EQUIVALENT H TRUCK LOADINGS OF THE 171 TYPE 2 TRUCKS REPORTED BY THE 1942 LOADOMETER SURVEY, BASED ON POISSON'S DISTRIBUTION LAW



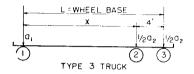
Equivalent H truck loadings which occur less than 1% in 1000, or account for less than 0.1% of total heavy truck traffic, are not shown in this table.

Equivalent	Span-Feet									
H Truck Loadings	10	20	30	40	50	60	80	100	Infinite	
9	2.0	2.0	1.6							
10	7.9	7.9	6.3	3.7						
11	15.4	15,4	13.2	12.2	6.7	6.1				
12	19.9	19.9	18.5	20.1	18.1	17.0	12.2	11.1		
13	19.5	19.5	19.4	22.0	24.5	23.8	25.7	24.4	20.2	
14	15.2	15.2	16.3	18.2	22.0	22.2	27.0	26.8	32.3	
15	9.9	9.9	11.4	12.0	14.9	15.6	18.9	19.7	25.8	
16	5.5	5.5	6.9	6.6	8.0	8.7	9.9	10.8	13.8	
17	2.7	2.7	3.6	3.1	3.6	4.1	4.2	4.8	5.5	
18	1.2	1.2	1.7	1.3	1.4	1.6	1.5	1.7	1.8	
19	.5	.5	.7	.5	.5	.6	.4	.5	.5	
20	.2	.2	.3	.2	.2	.2	.1	.2	.1	
21	.ī	.1	.1	.1	.1	.1	.1			
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Max H Truck	21	21	21	21	21	21	21	20	20	
Avg H Truck	12.9	12.9	13.2	13.3	13.7	13.8	14.1	14.2	14.6	
Min H Truck	9	9	9	10	11	11	12	12	13	
Range	12	12	12	11	10	10	9	8	7	
Poisson's	_		_	_	-	•		_		
Coef. K	3.9	3.9	4.2	3.3	2.7	2.8	2.1	2,2	1.6	
Std. Dev. D	1.97	1.97	2.05	1.82	1.64	1.67	1.45	1.48	1.26	

Equivalent H truck loadings based on moments produced by gross vehicle weights.

Table 16.2a

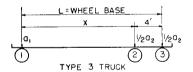
OBSERVED FREQUENCIES OF EQUIVALENT H TRUCK LOADINGS BASED ON MOMENTS PRODUCED BY THE 381 TYPE 3 TRUCKS REPORTED BY THE 1942 LOADOMETER SURVEY



Equivalent	Span-Feet									
H Truck Loadings	10	20	30	40	50	60	80	100	Infinite G.V.W	
7	4.0									
8	8.4	.8	.4							
9	17.0	1.5	.9	.7	.3					
10	19.3	8.0	2.3	1.4	.7	.4				
11	19.3	13.1	7.4	5.8	4.6	4.6	2.0	1.1		
12	13.6	16.3	13.0	11.4	10.2	9.9	7.8	6.2		
13	9.6	14.5	16.5	15.5	14.8	14.8	13.7	13.0	15.3	
14	5.1	13.9	15.9	14.9	15.2	14.4	15.7	16.0	15.1	
15	1.9	12.3	12.8	12.3	13.2	12.2	13.7	14.2	14.5	
16	1.1	8.8	10.7	10.4	10.2	10.1	11.0	10.9	10.8	
17	.7	4.6	7.0	9.0	9.3	9.5	10.0	9.7	9.9	
18		2.7	5.3	7.4	7.0	8.1	8.2	8.8	8.8	
19		1.6	3.0	5.1	6.3	6.4	6.5	7.0	7.4	
20		1.1	2.3	2.9	3.3	3.8	4.4	5.4	6.1	
21		.8	1.4	1.4	2.2	2.4	3.0	3.3	4.6	
22			1.1	.9	1.0	1.3	1.8	1.8	3.3	
23				.9	.8	1.0	1.1	1.1	1.6	
24					.9	1.1	1.1	.8	1.1	
25					•-			.7	8	
26									.8 .7	
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Max H Truck	17	21	22	23	24	24	24	25	26	
Avg H Truck	10.7	13.4	14.4	14.9	15.3	15.4	15.8	16.0	16.5	
Min H Truck	7	8	8	9	9	10	11	11	13	
Range	10	13	14	14	15	14	13	14	13	
Poisson's										
Coef. K	3.7	5.4	6.4	5.9	6.3	5.4	4.8	5.0	3.5	

Table 16.2b

CALCULATED FREQUENCIES OF EQUIVALENT H TRUCK LOADINGS OF THE 381 TYPE 3 TRUCKS REPORTED BY THE 1942 LOADOMETER SURVEY, BASED ON POISSON'S DISTRIBUTION LAW



Equivalent H truck loadings which occur less than 1 in 1000, or account for less than 0.1% of total heavy truck traffic, are not shown in this table.

Equivalent	Span-Feet									
Ĥ Truck Loadings	10	20	30	40	50	60	80	100	Infinite	
7	2.5									
8	9.1	.5	.2							
9	16.9	2.4	1.1	.3	.2					
10	20.9	6.6	3.4	1.6	1.2	.5				
11	19.3	11.9	7.3	4.8	3.6	2.4	.8	.7		
12	14.3	15.9	11.6	9.4	7.7	6.6	4.0	3.4		
13	8.8	17.2	14.8	13.8	12.1	11.9	9.5	8.4	3.0	
14	4.7	15.6	15.8	16.3	15.2	16.0	15.1	14.0	10.6	
15	2.2	12.0	14.5	16.0	15.8	17.2	18.2	17.6	18.5	

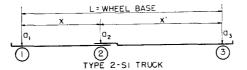
Table 16.2b (Continued)

Equivalent					Span-Fe	et			
H Truck Loadings	10	20	30	40	50	60	80	100	Infinit
16	.9	8.1	11.6	13.5	14.4	15.5	17.4	17.6	21.5
17	.3	4.9	8.2	10.0	11.3	12.0	14.0	14.6	18.9
18	.1	2.6	5.3	6.5	7.9	8.1	9.6	10.4	13.2
19		1.3	3.1	3.9	5.0	4.9	5.8	6.5	7.7
20		.6	1.6	2.1	2.9	2.6	3.1	3.6	3.9
21		.2	.8	1.0	1.5	1.3	1.5	1.8	1.7
22		.1	.4	.5	.7	.6	.6	.9	.7
$2\overline{3}$.1	.2	.2	.3	.2	.3	.3	.2
24			.1	.1	.1	.1	.1	.1	$^{.2}_{.1}$
25					.1	.1		.1	- -
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Max H Truck	18	23	24	24	25	25	24	25	24
Avg H Truck	10.7	13.4	14.4	14.9	15.3	15.4	15.8	16.0	16.5
Min H Truck	7	8	8	9	9	10	11	11	13
Range	11	15	16	15	16	15	13	14	11
Poisson's									
Coef. K	3.7	5.4	6.4	5.9	6.3	5.4	4.8	5.0	3.5
Std. Dev. D	1.92	2.32	2.53	2.43	2.51	2.32	2.19	2.24	1.87

Equivalent H truck loadings based on moments produced by gross vehicle weights.

Table 16.3a

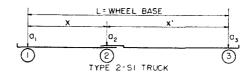
OBSERVED FREQUENCIES OF EQUIVALENT H TRUCK LOADINGS BASED ON MOMENTS PRODUCED BY THE 2855 TYPE 2-S1 TRUCKS REPORTED BY THE 1942 LOADOMETER SURVEY



Equivalent	Span-Feet									
H Truck Loadings	10	20	30	40	50	60	80	100	Infinite G.V.W.	
9	11.4	10.0	5.4							
10	20.5	19.9	13.9	5.7	.6					
11	23.7	24.0	21.6	10.7	4.0	.9				
12	19.9	20.6	22.8	20.1	10.8	4.4	.5			
13	10.9	11.5	16.0	21.2	18.8	13.2	3.4	1.1		
14	6.6	6.8	9.7	18.8	21.0	19.1	13.1	6.4		
15	3.5	3.6	4.5	10.2	17.9	20.9	19.4	14.6		
16	1.7	1.7	3.0	6.2	11.2	15.6	21.4	20.8		
17	1.0	1.1	1.4	3.1	6.9	10.9	15.3	19.6	16.7	
18	.4	.4	.8	1.6	3.7	6.3	10.4	14.4	18.9	
19	.2	.2	.4	1.0	2.1	3.4	6.6	8.8	19.3	
20	.1	.1	.2	.6	1.1	1.9	3.7	5.4	14.5	
21	0	0	.1	.4	.7	1.2	2.1	2.9	10.0	
22	0	0	.1	.2	.6	.8	1.3	1.9	6.8	
23	0	0	.1	.4 .2 .1	.3	.6	1.0	1.4	4.2	
24	.1	.1		.1	.1	.4	.7	1.0	2.8	
25					.1	.2 .1	.5	.7	2.0	
26					.0	.1	.3	.4	1.4	
27					.1	0	.1	.3	1.1	
28						.1	.1	.1	.7	
29							0	.1	.5	
30							.1	0	.3	
31								.1	.3	
32									.7 .5 .3 .3 .2 .1	
33									.1	
34									.1	
35									.ī	
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Max H Truck	24	24	23	24	27	28	30	31	35	
Avg H Truck	11.5	11.6	12.1	13.3	14.5	15.4	16.5	17.3	19.8	
Min H Truck	9	9	9	14	10	11	12	13	17	
Range	15	15	14	10	17	17	18	18	18	
Poisson's										
Coef. K	$^{2.5}$	2.6	3.1	3.3	4.5	4.4	4.5	4.3	2.8	

Table 16.3b

CALCULATED FREQUENCIES OF EQUIVALENT H TRUCK LOADINGS OF THE 2855 TYPE 2-S1 TRUCKS REPORTED BY THE 1942 LOADOMETER SURVEY, BASED ON POISSON'S DISTRIBUTION LAW



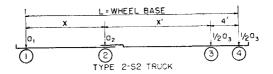
Equivalent H truck loadings which occur less than 1 \sin 1000, or account for less than 0.1% of total heavy truck traffic, are not shown in this table.

Equivalent	Span-Feet									
H Truck Loadings	10	20	30	40	50	60	80	100	Infinite	
9	8.2	7.4	4.5					••••		
10	20.5	19.3	14.0	3.7	1.1					
11	25.6	25.1	21.6	12.2	5.0	1.2				
12	21.4	21.8	22.4	20.1	11.2	5.4	1.1			
13	13.4	14.1	17.3	22.0	16.9	11.9	5.0	1.4		
14	6.7	7.4	10.7	18.2	19.1	17.4	11.2	5.8		
15	2.8	3.2	5.6	12.0	17.1	19.1	16.9	12.5		
16	1.0	1.2	2.5	6.6	12.8	16.9	19.1	18.0		
17	.3	.4	1.0	3.1	8.2	12.4	17.1	19.3	6.1	
18	.1	.1	.3	1.3	4.6	7.8	12.8	16.6	17.0	
19			.1	.5 .2 .1	2.3	4.3	8.2	11.9	23.8	
20				.2	1.0	2.1	4.6	7.3	22.2	
21				.1	.4	.9	2.3	3.9	15.6	
22					.2	.4	1.0	1.9	8.7	
23					.2 .1	.1	.4	.9	4.1	
24						.1	.2	.3	1.6	
25							.2 .1	.1	.6 .2 .1	
26								.1	.2	
27									.1	
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Max H Truck	18	18	19	21	23	24	25	26	27	
Avg H Truck	11.5	11.6	12.1	13.3	14.5	15.4	16.5	17.3	19.8	
Min H Truck	9	9	9	14	10	11	12	13	17	
Range	9	9	10	11	13	13	13	13	10	
Poisson's										
Coef. K	2.5	2.6	3.1	3.3	4.5	4.4	4.5	4.3	2.8	
Std. Dev. D	1.58	1.61	1.76	1.82	2.12	2.10	2.12	2.07	1.67	

Equivalent H truck loadings based on moments produced by gross vehicle weights.

Table 16.4a

OBSERVED FREQUENCIES OF EQUIVALENT H TRUCK LOADINGS BASED ON MOMENTS PRODUCED BY THE 508 TYPE 2-S2 TRUCKS REPORTED BY THE 1942 LOADOMETER SURVEY



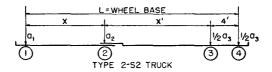
Span-Feet									
10	20	30	40	50	60	80	100	Infinite G.V.W.	
1.3									
3.6									
8.0	4.4	1.7	.5	.2					
13.8	6.5	3.2	1.7	.3	.2				
20.5	10.5	6.1	2.8	1.1	.3				
	1.3 3.6 8.0 13.8	1.3 3.6 8.0 4.4 13.8 6.5	1.3 3.6 8.0 4.4 1.7 13.8 6.5 3.2	1.3 3.6 8.0 4.4 1.7 .5 13.8 6.5 3.2 1.7	1.3 3.6 8.0 4.4 1.7 1.5 2 13.8 6.5 3.2 1.7 3	1.3 3.6 8.0 4.4 1.7 1.5 1.2 13.8 6.5 3.2 1.7 3.2	1.3 3.6 8.0 1.8 6.5 3.2 1.7 3.6 2.2 3.2 3.2	1.3 3.6 8.0 1.3 3.6 8.0 4.4 1.7 .5 .2 13.8 6.5 3.2 1.7 .3 .2	

Table 16.4a (Continued)

Equivalent	Span-Feet									
H Truck Loadings	10	20	30	40	50	60	80	100	Infinite G.V.W	
12	20.8	14.3	10.1	5.6	2.4	1.3	.3			
13	17.5	14.1	12.8	8.6	5.2	3.0	.7	.3		
14	8.7	13.1	14.1	12.9	8.6	5.6	2.3	1.4		
15	3.8	11.8	12.0	15.0	12.2	8.3	4.5	2.8		
16	.9	10.0	12.2	14.3	15.3	11.2	7.1	5.1		
17	.4	8.1	10.5	13.3	14.6	14.3	8.9	7.0	2.1	
18	.3	4.0	8,9	10.6	13.8	15.3	13.1	9.8	3.7	
19	.4	2.7	4.8	7.8	10.6	13.8	14.1	12.7	5.4	
20		.5	2.6	3.7	7.9	10.9	14.7	13.4	6.5	
21			1.0	1.6	4.1	7.2	11.4	12.9	7.9	
22					1.8	4.7	9.5	11.0	9.6	
23				.9 .7	1.1	2.1	6.4	9.5	9.6	
24				• •	.6	1.0	3.9	6.8	10.7	
25					.2	.5	1.8	4.2	10.8	
26						.3	.3	1.8	10.0	
27							.2	.7	7.7	
28								.3	4.9	
29								.3 .3	4.9	
30									3.1	
31									2.2	
32									.5	
33									.4	
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Max H Truck	19	20	21	23	25	26	28	29	33	
Avg H Truck	11.6	13.7	14.8	15.7	16.9	17.9	19.4	20.3	24.0	
Min H Truck	7	9	9	9	9	10	12	13	17	
Range	12	11	12	14	16	16	16	16	16	
Peisson's										
Coef. K	4.6	4.7	5.8	6.7	7.9	7.9	7.4	7.3	7.0	

Table 16.4b

CALCULATED FREQUENCIES OF EQUIVALENT H TRUCK LOADINGS OF THE 508 TYPE 2-S2 TRUCKS REPORTED BY THE 1942 LOADOMETER SURVEY, BASED ON POISSON'S DISTRIBUTION LAW



Equivalent H truck loadings which occur less than 1 in 1000, or account for less than 0.1% of total heavy truck traffic, are not shown in this table.

Equivalent					Span-F	eet			
H Truck Loadings	10	20	30	40	50	60	80	100	Infinite
7	1.0								
8	4.6								
9	10.6	.9	.3	.1	.1				
10	16.3	4.3	1.8	.8	,3	.1			
11	18.7	10.0	5.1	2.8	1.2	.3			
12	17.3	15.7	9.8	6.2	3.0	1.2	.1		
13	13.2	18.5	14.3	10.3	6.0	3.0	.5	.1	
14	8.7	17.4	16.5	13.8	9.5	6.0	1.7	.5	
15	5.0	13.6	16.0	15.5	12.5	9.5	4.1	1.8	
16	2.6	9.1	13.3	14.8	14.1	12.5	7.6	4.4	
17	1.2	5.4	9.6	12.4	13.9	14.1	11.3	8.0	.1
18	.5	2.8	6.2	9.2	12.2	13.9	13.9	11.7	.6
19	.2	1.3	3.6	6.2	9.7	12.2	14.8	14.2	2.3
20	.1	.6	1.9	3.8	6.9	9.7	13.6	14,7	5.2
21		.3	.9	2.1	4.6	6.9	11.2	13.5	9.1
22		.1	.4	1.1	2.8	4.6	8.3	11.0	12.8

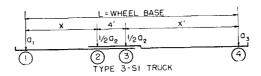
Table 16.4b (Continued)

Equivalent					Span-F	eet			
H Truck Loadings	10	20	30	40	50	60	80	100	Infinite
23			.2	.5	1.6	2.8	5.6	8.0	15.0
24			.1	.2	.8	1.6	3.4	5.3	14.9
25				.1	.4	.8	2.0	3.2	13.0
$\overline{2}6$.1	.2	.4	1.0	1.8	10.1
27					.1	.2	.5	.9	7.1
28					,1	.1	.2	.5	4.5
29						.1	.1	.2	2.6
30							.1	.1	1.4
31								.1	.7
32									.4
33									.4 .1
34									.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Max H Truck	20	22	24	26	28	29	30	31	34
Avg H Truck	11.6	13.7	14.8	15.7	16.9	17.9	19.4	20.3	24.0
Min H Truck	7	9	9	9	9	10	12	13	17
Range	13	13	15	17	19	19	18	18	17
Poisson's									
Coef. K	4.6	4.7	5.8	6.7	7.9	7.9	7.4	7.3	7.0
Std. Dev. D	2.14	2.17	2,41	2.59	2.81	2.81	2.72	2.70	2.65

Equivalent H truck loadings based on moments produced by gross vehicle weights.

Table 16.5a

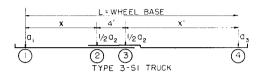
OBSERVED FREQUENCIES OF EQUIVALENT H TRUCK LOADINGS BASED ON MOMENTS
PRODUCED BY THE 9 TYPE 3-S1 TRUCKS REPORTED BY THE
1942 LOADOMETER SURVEY



Equivalent					Span-F	eet			
H Truck Loadings	10	20	30	40	50	60	80	100	Infinite G.V.W.
10	22.2	7.4							
11	26.0	3.7	7.4	7.4					
12	18.5	7.4	3.7	3.7	7.4				
13	22.2	11.1	0	0	3.7	7.4			
14	11.1	22.3	7.4	0	0	3.7			
15		18.5	18.6	7.4	0	0	7.4		
16		18.5	18.5	11.1	0	0	3.7	7.4	
17		11.1	18.5	18.6	7.4	0	0	3.7	
18			11.1	11.1	18.6	7.4	0	0	
19			14.8	18.5	18.5	18.6	7.4	0	
20				22.2	14.8	18.5	14.8	7.4	7.4
21					11.1	11.1	18.5	18.5	3.7
22					18.5	11.1	14.8	18.5	0
23						22.2	14.8	14.8	11.1
24							18.6	11.1	18.5
25								18.6	22.3
26									14.8
27									11.1
28									11.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Max H Truck	14	17	19	20	22	23	24	25	28
Avg H Truck	11.7	14.2	16.0	17.3	18.9	20.0	21.1	22.0	24.8
Min H Truck	10	10	11	11	12	13	15	16	20
Range	4	7	8	9	10	10	9	9	8
Poisson's									
Coef. K	1.7	4.2	5.0	6.3	6.9	7.0	6.1	6.0	4.8

Table 16.5b

CALCULATED FREQUENCIES OF EQUIVALENT H TRUCK LOADINGS OF THE 9 TYPE 3-S1 TRUCKS REPORTED BY THE 1942 LOADOMETER SURVEY, BASED ON POISSON'S DISTRIBUTION LAW



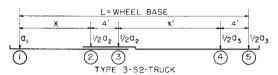
Equivalent H truck loadings which occur less than 1 in 1000, or account for less than 0.1% of total heavy truck traffic, are not shown in this table.

Equivalent					Span-F	eet			
H Truck Loadings	10	20	30	40	50	60	80	100	Infinite
10	18.3	1.5							
11	31.0	6.3	.7	.2					
12	26.3	13.2	3.4	1.2	.1				
13	15.0	18.5	8.5	3.6	.7	.1			
14	6.4	19.4	14.0	7.7	2.4	.1 .6			
15	2.2	16.3	17.5	12.1	5.5	2.3	.2		
16	.6	11.4	17.5	15.2	9.5	5.2	1.4	.2	
17	.1	6.9	14.7	15.8	13.1	9.1	4.2	1.5	
18	.1	3.6	10.4	14.4	15.1	12.8	8.5	4.5	
19		1.7	6.5	11.3	14.9	15.0	12.9	8.9	
20		.7	3.6	7.9	12.8	14.9	15.8	13.4	.8
21		.3	1.8	5.0	9.8	13.0	16.0	16.1	4.0
22		.1	.8	2.9	6.8	10.1	14.0	16.1	9.5
23		.1	.4	1.5	4.3	7.1	10.7	13.8	15.1
24			.1	.7	2.5	4.5	7.2	10.3	18.2
25			,1	.3	1.3	2.6	4.4	6.9	17.4
26				.1	.6	1.4	2.4	4.1	14.0
27				.1	.3	.7	1.2	2.2	9.6
28					.2	.4	.6	1.1	5.8
29					.1	.1	.3	.5	3.1
30						.1	.1	.2	1.5
31							.1	.1	.6
32								.1	.3
33									.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Max H Truck	18	23	25	27	29	30	31	32	33
Avg H Truck	11.7	14.2	16.0	17.3	18,9	20.0	21.1	22.0	24.8
Min H Truck	10	10	11	11	12	13	15	16	20
Range	-8	13	14	16	17	17	16	16	13
Poisson's									
Coef. K	1.7	4.2	5.0	6.3	6.9	7.0	6.1	6.0	4.8
Std. Dev. D	1.3	2.05	2,24	2.51	2.63	2.65	2.47	2.45	2.19

Equivalent H truck loadings based on moments produced by gross vehicle weights.

Table 16.6a

OBSERVED FREQUENCIES OF EQUIVALENT H TRUCK LOADINGS BASED ON MOMENTS PRODUCED BY THE 142 TYPE 3-S2 TRUCKS REPORTED BY THE 1942 LOADOMETER SURVEY



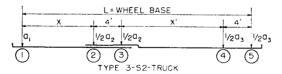
Equivalent	Span-Feet										
H Truck Loadings	10	20	30	40	50	60	80	100	Infinite G.V.W.		
6	3.5										
7	5.2	1.2									
8	8.7	2.6	1.4								
9	9.6	3.5	2.6	1.2							

Table 16.6a (Continued)

Equivalent					Span-F				
H Truck Loadings	10	20	30	10	50	60	80	100	Infinite G.V.W.
10	11.7	5.9	3.1	2.6	.9				
11	14.3	7.7	6.8	3.8	1.6	.9			
12	17.8	8.7	7.0	5.9	2.6	1.6			
13	14.6	10.1	8.9	6.8	4.0	1.9	1.4		
14	8.5	11.2	9.2	9.4	6.8	. 3.3	1.6	1.4	
15	2.8	14.9	11.5	9.6	8.9	4.9	1.9	1.4	
16	1.9	13.9	13.5	10.6	10.3	7.3	3.3	1.9	
17	1.4	9.9	12.2	10.7	8.2	9.2	4.2	3.1	1.2
18		4.9	9.2	10.3	9.2	9.6	5.6	3.5	1.2
19		1.9	5.6	8.9	10.8	9.2	6.1	4.9	1.4
20		1.9	3.1	6.3	10.6	9.9	9.6	5.2	1.7
21		1.7	2.8	5.4	9.4	11.0	8.9	7.3	2.6
22			1.7	3.8	5.2	9.6	10.4	8.9	2.8
23			1.4	2.6	5.2	7.3	8.9	9.8	2.6
24				1.2	2.6	4.9	10.9	10.0	2.1
25				.9	2.1	4.5	9.2	9.4	4.5
26					.9	2.8	7.0	9.6	5.6
27					.7	1.2	4.7	8.5	6.3
28 29						.9	3.1	6.1	6.1
30							1.6	$\frac{4.0}{2.1}$	6.8
30 31							.9 .7	1.4	8.7 8.8
32							-1		
33								.5 .5	$\frac{10.0}{8.0}$
34								.5	6.8
35								.5	4.2
36									3.8
37									2.4
38									1.9
39									$\frac{1.2}{.5}$
40									.0
41									ŏ
42									ñ
43									ŏ
44									ŏ
45									.2
46									0 0 0 .2 .5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Max H Truck	17	21	23	25	27	28	31	34	46
Avg H Truck	11.1	14.1	15.3	16.5	18.1	19.6	22.0	23.5	29.4
Min H Truck	6	7	8	9	10	11	13	14	17
Range	11.	14	15	16	17	17	18	20	29
Poisson's	5.1	7.1	7.3	7.5	8.1	8,6	9.0	9.5	12.4
Coef. K									

Table 16.6b

CALCULATED FREQUENCIES OF EQUIVALENT H TRUCK LOADINGS OF THE 142 TYPE 3-S2 TRUCKS REPORTED BY THE 1942 LOADOMETER SURVEY, BASED ON POISSON'S DISTRIBUTION LAW



Equivalent H truck loadings which occur less than 1 in 1000, or account for less than 0.1% of total heavy truck traffic, are not shown in this table.

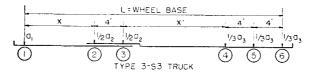
Equivalent	Span-Feet										
H Truck Loadings	10	20	30	40	50	60	80	100	Infinite		
6	.6										
7	3.1	.1									
8	7.9	.6	.1								
9	13.5	2.1	.5	.1							
10	17.2	4.9	1.8	.4	.1						
11	17.5	8.7	4.4	1.6	.2	.1					
12	14.9	12.4	8.0	3.9	1.0	.1					
13	10.9	14.7	11.7	7.3	2.7	.7					

Table 16.6b (Continued)

Equivalent					Span-F	eet			
H Truck Loadings	10	20	30	40	50	60	80	100	Infinite
14	6.9	14.9	14.2	10.9	5.4	2.0	.1		
15	3.9	13.2	14.7	13.7	8.8	4.2	.5	.1	
16	2.0	10.4	13.5	14.6	11.9	7.2	1.5	.3	
17	.9	7.4	11.0	13.7	13.8	10.3	3.4	1.1	
18	.4	4.8	8.0	11.4	13.9	12.7	6.1	2.5	
19	.2	2.8	5.3	8.6	12.6	13.6	9.1	4.8	.1
20	.1	1.5	3.2	5.9	10.2	13.0	11.7	7.6	.1
21		.8	1.8	3.7	7.5	11.2	13.2	10.4	.4
22		.4	.9	2.1	5.1	8.8	13.2	12.3	1.0
23		.2	.5	1.1	3.1	6.3	11.9	13.0	2.1
24		.1	.2	.5	1.8	4.1	9.7	12.3	3.7
25			.1	.3	1.0	2.6	7.3	10.7	5.7
26			.1	.1	.5	1.5	5.0	8.4	7.9
27				.1	.2	.8	3.2	6.2	9.8
28					.1	.4	1.9	4.2	11.0
29					.1	.2 .1	1.1	2.7	11.3
30						.1	.6	1.6	10.8
31						.1	.3	.9	9.6
32							.1	.5	7.9
33							.1	.2	6.2
34								.1 .1	4.5
35								.1	3.1
36									2.0
37			ıck loadin						1.3
38			ts produce	ed					.7
39	by gros	s vehicle	weights.						.4
40									.2
41									1.3 .7 .4 .2 .1
42									.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Max H Truck	20	24	26	27	29	31	33	35	42
Avg H Truck	11.1	14.1	15.3	16.5	18.1	19.6	22.0	23.5	29.4
Min H Truck	6	7	8	9	10	11	14	15	19
Range	14	17	18	18	19	20	19	20	23
Poisson's									
Coef. K	5.1	7.1	7.3	7.5	8.1	8.6	9.0	9.5	12.4
Std. Dev. D	2.26	2.66	2.70	2.74	2.85	2.93	3.00	3.08	3.52

Table 16.7a

OBSERVED FREQUENCIES OF EQUIVALENT H TRUCK LOADINGS BASED ON MOMENTS PRODUCED BY THE 14 TYPE 3-S3 TRUCKS REPORTED BY THE 1942 LOADOMETER SURVEY



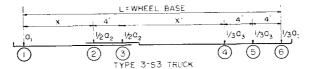
Equivalent		Span-Feet											
H Truck Loadings	10	20	30	40	50	60	80	100	Infinite G.V.W.				
5	4.8												
6	4.8												
7	4.8												
8	4.8	4.8											
9	11.9	4.8	4.8										
10	16.6	4.8	2.4	4.8									
11	23.7	4.8	2.4	4.8	4.8								
12	14.3	4.8	7.1	2.4	2.4	4.8							
13	9.5	7.1	7.1	7.2	- 0	2.4							
14	4.8	11.9	7.1	4.8	ŏ		4.8						
15	***	14.2	7.1	7.2	7.1	ŏ	2.4	4.8					
16		14.3	11.9	4.8	7.1	4.8	- 0	2.4					
17		9.5	14.3	7.1	7.1	7.1	ő	0					
18		7.1	11.9	4.8	2.4	7.1	4.8	ŏ	4.8				
19		4.8	9.5	4.8	7.1	2.4	7.1	2.4	2.4				
20		7.1	4.8	11.8	7.1	2.4	7.1	7.1	0				
21		1.1	4.8	14.2	9.5	9.5	2.4	7.1	ŏ				

Table 16.7a (Continued)

Equivalent					Span-F	'eet		-	
H Truck Loadings	10	20	30	40	50	60	80	100	Infinite G.V.W.
22			4.8	14.2	12.0	11.9	2.4	4.8	
23				7.1	14.4	14.3	7.1	0	0
24					11.9	11.9	7.1	7.1	7.2
25					7.1	9.5	9.5	7.1	7.2
26						7.1	11.9	9.5	7.2
27						4.8	14.4	7.1	0
28							11.9	12.0	0
29							7.1	12.0	4.8
30								9.5	7.2
31								7.1	9.4
32									4.8
33									9.4
34									9.4
35									9.4
36									4.8
37									2.4
38									2.4
39									0
40									ō
41									Õ
42									ō
43									2.4
44									4.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Max H Truck	14	20	22	23	25	27	29	31	44
Avg H Truck	10.2	14.6	16.1	17.9	20.0	21.4	23.8	25.3	31.0
Min H Truck	5	8	9	10	11	12	14	15	18
Range	9	12	13	13	14	15	15	16	26
Poisson's									
Coef. K	5.2	6.6	7.1	7.9	9.0	9.4	9.8	10.3	13.0

Table 16.7b

CALCULATED FREQUENCIES OF EQUIVALENT H TRUCK LOADINGS OF THE 14 TYPE 3-S3 TRUCKS REPORTED BY THE 1942 LOADOMETER SURVEY, BASED ON POISSON'S DISTRIBUTION LAW



Equivalent H truck loadings which occur less than 1 in 1000, or account for less than 0.1% of total heavy truck traffic, are not shown in this table.

Equivalent					Span-F	eet			
H Truck Loadings	10	20	30	40	50	60	80	100	Infinite
5	.6								
6	2.7								
7	7.5								
8	12.9	.1							
9	16.8	.9	.1						
10	17.5	3.0	.6						
11	15.2	6.5	2.1	.3					
12	11.3	10.8	4.9	1.2	.1				
13	7.3	14.2	8.7	3.0	.5	.1			
14	4.2	15.6	12.4	6.1	1.5	.4			
15	2.2	14.7	14.7	9.5	3.4	1.1	.1		
16	1.0	12.1	14.9	12.5	6.1	2.7	.3		
17	.5	8.9	13.2	14.1	9.1	5.1	.9	.2	
18	.2	5.9	10.4	13.9	11.7	7.9	2.1	.6	
19	.2 .1	3,5	7.4	12.2	13.2	10.6	4.2	1.6	
20	*-	1.9	4.8	9.7	13.2	12.5	6.8	3.2	
$\overline{2}1$		1.0	2.8	6.9	11.9	13.1	9.6	5.6	.1
22		.5	1.5	4.6	9.7	12.3	11,7	8.2	.3
23		,2	.8	2.8	7.3	10.5	12.7	10.6	.1 .3 .7
24		.1	.4	1.6	5.0	8.2	12.5	12.1	1.5
25		.î		.8	3.2	5.9	11.1	12.5	2.8
26		•-	.2 .1		1.9	4.0	9.1	11.7	4.6
$\overline{27}$			••	.4 .2	1.1	2.5	6.8	10.0	6.6

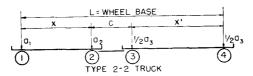
Table 16.7b (Continued)

Equivalent					Span-F	eet			
H Truck Loadings	10	20	30	40	50	60	80	100	Infinite
28				.1	.6	1.5	4.8	7.9	8.6
29				.1	.3	.8	3.1	5.8	10.1
30					.1	.4	1.9	4.0	11.0
31					.1	.2	1.1	2.6	11.0
32						.1	.6	1.6	10.2
33						.1	.3	.9	8.8
34							.2	.5	7.2
35	Equival	lent H tru	ıck loadin	gs			.1	.2	5.5
36	based o	n momen	ts produce	ed				.1	4.0
37	by gros	s vehicle '	weights.					.1	2.7
38									1.8
39									1.1
40 or greater									1.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Max H Truck	19	25	26	29	31	33	35	37	44
Avg H Truck	10.2	14.6	16.1	17.9	20.0	21.4	23.8	25.3	31.0
Min H Truck	5	8	9	11	12	13	15	17	21
Range	14	17	17	18	19	20	20	20	23
Poisson's									
Coef. K	5.2	6.6	7.1	7.9	9.0	9.4	9.8	10.3	13.0
Std. Dev. D	2.28	2.57	2.66	2.81	3.00	3.07	3.13	3.21	3.61

Equivalent H truck loadings based on moments produced by gross vehicle weights.

Table 16.8a

OBSERVED FREQUENCIES OF EQUIVALENT H TRUCK LOADINGS BASED ON MOMENTS PRODUCED BY THE 99 TYPE 2-2 TRUCKS REPORTED BY THE 1942 LOADOMETER SURVEY



Equivalent					Span-F	'eet			
H Truck Loadings	10	20	30	40	50	60	80	100	Infinite G.V.W.
6	2.0	1.4							
7	5.7	4.4							
8	12.8	9.1	3.4						
9	19.2	14.8	6.4	3.0					
10	24.7	19.8	8.4	5.4	2.4				
11	19.5	18.9	11.1	6.7	4.7	1.7			
12	12.1	16.8	15.2	9.1	7.8	4.4	.7		
13	3.0	8,4	18.8	12.5	7.4	7.7	3.0	1.7	
14	1.0	4.7	17.7	13.5	10.4	7.7	5.7	3.7	
15		.7	10.8	15.4	10.4	7.7	7.7	6.4	
16		1.0	5.1	12.8	13.8	9.1	7.1	6.7	
17			1.4	10.8	11.8	10.4	8.1	7.1	5.4
18			1.0	6.1	12.5	12.9	8.8	7.4	4.7
19			.7	2.4	9.1	12.1	11.1	9.8	6.1
20				1.7	5.7	12.8	10.8	10.1	5.1
21				.3	2.0	7.7	13.1	9.4	7.7
22				.3	1.0	3.4	11.1	11.7	8.8
23					1.0	1.0	7.8	10.8	9.1
24						1.4	0	9.4	7.4
25							1.0	3.4	4.7
26							1.0	1.7	8.1
27								.7	10.0
28								• • • • • • • • • • • • • • • • • • • •	11.4
29									6.7
30									3.4
31									1.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Max H Truck	14	16	19	22	23	24	26	27	31
Avg H Truck	9.9	10.5	12.6	14.4	15.9	17.3	19.0	20.0	23.9
Min H Truck	6	6	8	9	10	11	12	13	17
Range	8	10	11	13	13	13	14	14	14
Poisson's									
Coef. K	3.9	4.5	4.6	5.4	5.9	6.3	7.0	7.0	6.9

Table 16.8b

CALCULATED FREQUENCIES OF EQUIVALENT H TRUCK LOADINGS OF THE 99 TYPE 2-2 TRUCKS REPORTED BY THE 1942 LOADOMETER SURVEY, BASED ON POISSON'S DISTRIBUTION LAW

L = WHEEL BASE Q₁ Q₂ V₂Q₃ V₂Q₃, V₂Q₃, (4)

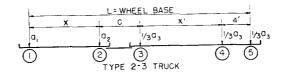
Equivalent H truck loadings which occur less than 1 in 1000, or account for less than 0.1% of total heavy truck traffic, are not shown in this table.

H Truck Loadings 6	Equivalent					Span-F	eet			
7	Ĥ Truck	10	20	30	40	50	60	80	100	Infinite
8					-					
9	7									
10										
11 15.2 17.1 16.3 6.6 1.6 .2 12 9.9 12.8 18.7 11.9 4.8 1.2 .1 13 5.5 8.2 17.3 16.0 9.4 3.6 .6 .1 14 2.7 4.7 13.2 17.2 13.8 7.7 2.3 .6 15 1.2 2.3 8.7 15.5 16.3 12.1 5.2 2.3 16 .5 1.0 5.0 12.0 16.0 15.2 9.1 5.2 17 .2 .4 2.6 8.1 13.5 15.8 12.8 9.1 18 .1 .2 1.2 4.9 10.0 14.4 14.9 12.8 19 .1 .5 2.6 6.5 11.3 14.9 14.9 20 .2 1.3 3.9 7.9 13.0 14.9 21 .1 .6 2.1 5.0 10.1 13.0 22 .2 1.3 3.9 7.9 13.0 14.9 23 .1 .5 1.5 1.5 1.5 4.6 7.1 1 24 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>										
12										
13										
14 2.7 4.7 13.2 17.2 13.8 7.7 2.3 6 15 1.2 2.3 8.7 15.5 16.3 12.1 5.2 2.3 16 .5 1.0 5.0 12.0 16.0 15.2 9.1 5.2 17 .2 .4 2.6 8.1 13.5 15.8 12.8 9.1 18 .1 .2 1.2 4.9 10.0 14.4 14.9 12.8 19 .1 .5 2.6 6.5 11.3 14.9 14.9 20 .2 1.3 3.9 7.9 13.0 14.9 21 .1 .6 2.1 5.0 10.1 13.0 22 .1 .6 2.1 5.0 10.1 13.0 22 .1 .5 1.5 1.5 4.6 7.1 10.1 13.0 22 .1 .5 1.5 1.5 4.6 7.1 10.1 1 23 .1 .2 .7 2.6 4.6 1 25 .1 .1 .3 1.4 2.6 1 28 .2 .3 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>										
15										
16 .5 1.0 5.0 12.0 16.0 15.2 9.1 5.2 17 .2 .4 2.6 8.1 13.5 15.8 12.8 9.1 18 .1 .2 1.2 4.9 10.0 14.4 14.9 12.8 19 .1 .5 2.6 6.5 11.3 14.9 14.9 20 .2 1.3 3.9 7.9 13.0 14.9 21 .1 .6 2.1 5.0 10.1 13.0 22 .2 1.0 2.9 7.1 10.1 13.0 23 .1 .5 1.5 1.5 4.6 7.1 1 24 .1 .5 1.5 1.5 4.6 7.1 1 25 .1 .3 1.4 2.6 1 26 .1 .7 1.4 2.7 2.6 4.6 1 27 .2 .3 .7 2.8 .2 .3 30 .1 .2 .3 .7 28 .2 .3 .1 .2 .3 30 .1 .2 .3 .1 .2										
19		1.2								
19		.5								
19		.2	.4							.1
20		.1	.2							.7
22			.1	.5						2.4
22				.2						5.5
23				.1	.6					9.5
24					.2					13.1
25					.1	.5				15.1
26 27 28 29 30 31 31 32 33 34 Total 100.0					.1	.2	.7			14.9
27 28 29 30 31 31 32 33 34 Total 100.0 10						.1	.3			12.8
30 31 31 32 33 34 Total 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 Max H Truck 18 19 21 24 25 27 29 30 3 Avg H Truck 9.9 10.5 12.6 14.4 15.9 17.3 19.0 20.0 2 Min H Truck 6 6 8 9 10 11 12 13 11 Range 12 13 13 15 15 16 17 17 17							.1	-1		9.9
30 31 31 32 33 34 Total 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 Max H Truck 18 19 21 24 25 27 29 30 3 Avg H Truck 9.9 10.5 12.6 14.4 15.9 17.3 19.0 20.0 2 Min H Truck 6 6 8 9 10 11 12 13 11 Range 12 13 13 15 15 16 17 17 17							-1	.8		6.8
30 31 31 32 33 34 Total 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 Max H Truck 18 19 21 24 25 27 29 30 3 Avg H Truck 9.9 10.5 12.6 14.4 15.9 17.3 19.0 20.0 2 Min H Truck 6 6 8 9 10 11 12 13 11 Range 12 13 13 15 15 16 17 17 17								.2	.3	4.3
31 32 33 34 Total 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 10 Max H Truck 18 19 21 24 25 27 29 30 3 Avg H Truck 9.9 10.5 12.6 14.4 15.9 17.3 19.0 20.0 2 Min H Truck 6 6 8 9 10 11 12 13 1 Range 12 13 13 15 15 16 17 17 1								•1	.4	$\frac{2.5}{1.3}$
32 33 34 Total 100.0									• • •	1.3
33 34 Total 100.0										.6 .3
34 Total 100.0 20.0 2 20.0										.1
Max H Truck 18 19 21 24 25 27 29 30 3 Avg H Truck 9.9 10.5 12.6 14.4 15.9 17.3 19.0 20.0 2 Min H Truck 6 6 8 9 10 11 12 13 1 Range 12 13 13 15 15 16 17 17 1										:i
Avg H Truck 9.9 10.5 12.6 14.4 15.9 17.3 19.0 20.0 2 Min H Truck 6 6 8 9 10 11 12 13 13 Range 12 13 13 15 15 16 17 17 1	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Avg H Truck 9.9 10.5 12.6 14.4 15.9 17.3 19.0 20.0 2 Min H Truck 6 6 8 9 10 11 12 13 13 Range 12 13 13 15 15 16 17 17 1		18	19		24	25	27	29	30	34
Min H Truck 6 6 8 9 10 11 12 13 1 Range 12 13 13 15 15 16 17 17 1		9.9	10.5	12.6	14.4	15.9				23.9
Range 12 13 13 15 15 16 17 17 1										17
								17		17
I DISSUII S	Poisson's						-	•		
Coef. K 3.9 4.5 4.6 5.4 5.9 6.3 7.0 7.0	Coef. K	3.9	4.5	4.6	5.4	5.9	6.3	7.0	7.0	6.9
Std. Dev. D 1.97 2.12 2.14 2.32 2.42 2.51 2.65 2.65	Std. Dev. D	1.97	2.12	2.14	2.32	2.42	2.51	2.65	2.65	2.63

Equivalent H truck loadings based on moments produced by gross vehicle weights.

Table 16.9a

OBSERVED FREQUENCIES OF EQUIVALENT H TRUCK LOADINGS BASED ON MOMENTS PRODUCED BY THE 24 TYPE 2-3 TRUCKS REPORTED BY THE 1942 LOADOMETER SURVEY

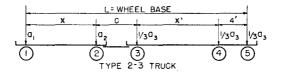


Equivalent					Span-F	'eet			
H Truck Loadings	10	20	30	40	50	60	80	100	Infinite G.V.W
6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37	4.2 5.6 9.7 13.9 19.3 16.7 15.3 8.3 7.0	4.2 4.2 7.0 11.1 13.8 16.6 12.5 5.6 1.4 2.8 2.8	5.6 4.2 6.9 13.9 18.0 12.5 4.2 2.8 4.2	5.6 5.6 9.7 15.2 18.0 13.8 2.8 4.2 4.2	5.6 4.2 5.6 5.6 8.3 13.8 15.2 13.8 4.2 2.8 2.8 2.8 2.8	4.2 4.2 4.2 4.2 5.6 8.3 13.8 12.8 2.8 2.8 2.8 2.8	2.8 4.2 2.8 5.6 4.2 9.7 12.4 12.5 9.7 8.3 6.9 2.8 2.8 2.8 2.8	2.8 4.2 2.8 5.6 5.6 11.1 12.4 12.4 12.4 11.4 8.3 9.7 8.3 5.6 2.8 1.4 1.4 1.4 2.8	2.8 2.8 2.8 2.8 5.6 9.7 11.1 11.0 6.9 5.3 9.7 6.9 1.4 1.4 1.4 1.4 2.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Max H Truck Avg H Truck Min H Truck Range Poisson's	14 10.3 6 8	18 11.1 6 12	18 12.1 7 11	20 13.5 8 12	23 15.1 9 14	25 17.0 10 15	28 19.4 12 16	30 20.9 13 17	37 26.5 17 20
Coef. K	4.3	5.1	5.1	5.5	6.1	7.0	7.4	7.9	9.5

Table 16.9b

CALCULATED FREQUENCIES OF EQUIVALENT H TRUCK LOADINGS OF THE 24 TYPE 2-3 TRUCKS REPORTED BY THE 1942 LOADOMETER SURVEY,

BASED ON POISSON'S DISTRIBUTION LAW

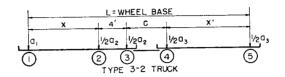


Equivalent H truck loadings which occur less than 1 in 1000, or account for less than 0.1% of total heavy truck traffic, are not shown in this table.

H Truck Loadings 6	uivalent	•			*	Span-F	eet			
7	Truck	10	20	30	40	50	60	80	100	Infinite
8		1.4	.6							
8	7	5.8	3.1	.6						
9	8	12.5	7.9	3.1	.4					
10		18.0	13.5		2.2	.2				
11	10	19.3	17.2		6.2	1.4	.1			
11.9			17.5							
18								7		
14										
15									.3	
16 .8 2.0 3.9 8.5 14.0 14.9 7.7 17 .3 .9 2.0 5.2 10.7 14.9 11.3 18 .1 .4 .9 2.9 7.2 13.0 13.9 19 .1 .2 .4 1.4 4.4 10.2 14.7 20 .1 .2 .7 2.4 7.1 13.6 21 .1 .3 1.2 4.5 11.2 22 .1 .6 2.6 8.3 23 .1 .3 1.5 5.6 24 .1 .7 3.4 25 .1 .7 3.4 25 .1 .1 .7 3.4 25 .1 .1 .7 3.4 26 .1 .1 .5 .1 .1 .1 28 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2 .2									1.2	
17										
18		.8							3.0	
19		.3							6.1	_
21		.1	.4						9.5	.1
21		.1	.2						12.5	.3
22			.1	.2					14.1	1.1
23				.1		1.2			13.9	2.5
23	22				.1	.6	2.6	8.3	12.2	4.8
24					.1				9.7	7.6
25									6.9	10.4
26 27 28 29 30 31 31 32 33 3									4.6	12.2
27 28 28 29 30 31 31 31 32 33 Equivalent H truck loadings 34 based on moments produced 35 by gross vehicle weights. 36 37 38 Total 100.0 100.0 100.0 100.0 100.0 100.0 100.0 Max H Truck 19 20 21 23 25 27 30 Avg H Truck 10.3 11.1 12.1 13.5 15.1 17.0 19.4 Min H Truck 6 6 6 7 8 9 10 12 Range 13 14 14 15 16 17 18						••			2.8	13.0
30 31 32 33							-;	1.0	1.6	12.4
30 31 32 33							••	.0	.8	10.7
30 31 32 33								.4	.4	8.4
31 32 33								•1	.4	
32 33								.1	.2	6.2
33 Equivalent H truck loadings 34 based on moments produced 35 by gross vehicle weights. 36 37 38 Total 100.0 100.0 100.0 100.0 100.0 100.0 100.0 Max H Truck 19 20 21 23 25 27 30 Avg H Truck 10.3 11.1 12.1 13.5 15.1 17.0 19.4 Min H Truck 6 6 7 8 9 10 12 Range 13 14 14 15 16 17 18									.1	4.2
34 based on moments produced by gross vehicle weights. 36 37 38 Total 100.0 100.0 100.0 100.0 100.0 100.0 100.0 Max H Truck 19 20 21 23 25 27 30 Avg H Truck 10.3 11.1 12.1 13.5 15.1 17.0 19.4 Min H Truck 6 6 6 7 8 9 10 12 Range 13 14 14 15 16 17 18									.1	2.7
35 by gross vehicle weights. 36 37 38 Total 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 Max H Truck 19 20 21 23 25 27 30 Avg H Truck 10.3 11.1 12.1 13.5 15.1 17.0 19.4 Min H Truck 6 6 6 7 8 9 10 12 Range 13 14 14 15 16 17 18										1.6
36 37 38 Total 100.0 100.0 100.0 100.0 100.0 100.0 100.0 Max H Truck 19 20 21 23 25 27 30 Avg H Truck 10.3 11.1 12.1 13.5 15.1 17.0 19.4 Min H Truck 6 6 7 8 9 10 12 Range 13 14 14 15 16 17 18					ed					.9
37 38 Total 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 Max H Truck 19 20 21 23 25 27 30 Avg H Truck 10.3 11.1 12.1 13.5 15.1 17.0 19.4 Min H Truck 6 6 7 8 9 10 12 Range 13 14 14 15 16 17 18		by gros	s vehicle	weights.						.5
38 Total 100.0										.2
Total 100.0 <th< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>.1</td></th<>										.1
Max H Truck 19 20 21 23 25 27 30 Avg H Truck 10.3 11.1 12.1 13.5 15.1 17.0 19.4 Min H Truck 6 6 7 8 9 10 12 Range 13 14 14 15 16 17 18	38									.1
Avg H Truck 10.3 11.1 12.1 13.5 15.1 17.0 19.4 Min H Truck 6 6 7 8 9 10 12 Range 13 14 14 15 16 17 18	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Min H Truck 6 6 7 8 9 10 12 Range 13 14 14 15 16 17 18									32	38
Range 13 14 14 15 16 17 18									20.9	26.5
				7	8				14	18
		13	14	14	15	16	17	18	18	20
Poisson's	oisson's									
Coef. K 4.3 5.1 5.1 5.5 6.1 7.0 7.4		4.3	5.1	5.1	5.5	6.1	7.0	7.4	7.9	9.5
Std. Dev. D 2.07 2.26 2.26 2.35 2.47 2.65 2.72									2.81	3.08

Table 16.10a

OBSERVED FREQUENCIES OF EQUIVALENT H TRUCK LOADINGS BASED ON MOMENTS PRODUCED BY THE 68 TYPE 3-2 TRUCKS REPORTED BY THE 1942 LOADOMETER SURVEY

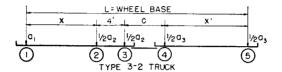


Equivalent					Span-F	eet			
H Truck Loadings	10	20	30	40	50	60	80	100	Infinite G.V.W.
5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38	4.4 7.4 14.2 14.7 16.2 15.7 14.2 9.3 2.9 1.0	6.4 7.4 10.3 12.7 11.8 10.8 13.6 13.2 8.8 2.5 1.0 1.5	3.9 6.4 7.8 11.3 10.8 11.3 9.3 12.2 8.3 2.9 1.0 .5 1.0	5.4 6.4 5.9 8.3 9.8 11.7 10.3 11.3 8.9 2.0 .5 .5 1.0	5.9 6.4 4.9 7.4 7.8 9.8 11.2 10.3 7.9 3.4 1.0 .5 1.0	4.9 5.4 4.9 8.3 7.4 10.8 8.8 10.7 8.8 10.8 5.4 2.0 1.0 1.0	2.9 4.4 4.9 6.4 7.4 9.3 10.2 7.8 8.8 7.4 2.0 1.0 5.5 1.0	2.5 4.4 4.4 4.9 7.4 9.7 8.7 8.7 8.7 8.9 3.0 1.5 1.0	3.9 4.9 5.4 4.4.9 5.4 5.4 5.3 8.3 7.8 8.3 6.4 2.9 2.0 1.5 2.9 2.5 1.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Max H Truck Avg H Truck Min H Truck Range Poisson's	14 9.1 5 9	18 11.6 7 11	22 13.4 8 14	24 14.7 9 15	26 16.1 10 16	28 17.4 11 17	31 19.4 12 19	32 20.8 13 19	38 25.5 17 21
Coef. K	4.1	4.6	5.4	5.7	6.1	6.4	7.4	7.8	8.5

Table 16.10b

CALCULATED FREQUENCIES OF EQUIVALENT H TRUCK LOADINGS OF THE 68 TYPE 3-2 TRUCKS REPORTED BY THE 1942 LOADOMETER SURVEY,

BASED ON POISSON'S DISTRIBUTION LAW

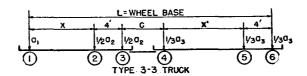


Equivalent H truck loadings which occur less than 1 in 1000, or account for less than 0.1% of total heavy truck traffic, are not shown in this table.

Equivalent					Span-Fe	eet			
H Truck Loadings	10	20	30	40	50	60	80	100	Infinite
5	1.7								
6	6.8								
7	13.9	1.0							
8	19.1	4.6	.5						
9	19.5	10.6	2.4	.3					
10	16.0	16.3	6.6	1.9	.2				
11	10.9	18.7	11.9	5.4	1.4	.2			
12	6.4	17.3	16.0	10.3	4.2	1.1	.1		
13	3.3	13.2	17.2	14.7	8.5	3.4	.5	.1	
14	1.5	8.7	15.6	16.9	12.9	7.3	1.7	.3	
15	.6	5.0	12.0	16.0	15.8	11.6	4.1	1.2	
16	.2	2.6	8.1	13.0	16.0	14.8	7.6	3.2	
17	.2 .1	1.2	4,9	9.2	14.0	15.8	11.3	6.3	
18	•	.5	2.6	5.9	10.7	14.5	13.9	9.9	. 2
19		.2	1.3	3.3	7.2	11.6	14.8	12.8	.2 .7
20		.ī	.6	1.7	4.4	8.2	13.6	14.2	2.1
21		••	.2	.8	2.4	5.3	11.2	13.9	4.4
22			.1	.4	1.2	3.1	8.3	12.1	7.5
23			••	.ī	.6	1.6	5.6	9.4	10.7
24				.î	.3	.8	3.4	6.7	12.9
25				••	.1	.4	2.0	4.3	13.7
26					.1	.2	1.0	2.6	13.0
27					••	.1	.5	1.5	11.0
28						.1	.2	.8	8.5
29							.1	.4	6.0
30							.1		4.0
31							•1	.2 .1	2.4
32	Fanina	lent H tru	ale loadin	~~				•1	1.4
33		n momen							.7
34				ea					
35	by gros	s vehicle	weights.						.4 .2 .1 .1
									.2
36									•1
37									
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Max H Truck	17	20	22	24	26	27	30	31	37
Avg H Truck	9.1	11.6	13.4	14.7	16.1	17.4	19.4	20.8	25.5
Min H Truck	5	7	8	9	10	11	12	13	18
Range	12	13	14	15	16	16	18	18	19
Poisson's		-		•					
Coef. K	4.1	4.6	5.4	5.7	6.1	6.4	7.4	7.8	8.5
Std. Dev. D	2.02	2.14	2.32	2.39	2.47	2.53	2.72	2.79	2.92

Table 16.11a

OBSERVED FREQUENCIES OF EQUIVALENT H TRUCK LOADINGS BASED ON MOMENTS PRODUCED BY THE 176 TYPE 3-3 TRUCKS REPORTED BY THE 1942 LOADOMETER SURVEY

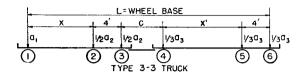


Equivalent					Span-F	eet			
H Truck Loadings	10	20	30	40	50	60	80	100	Infinite G.V.W
5	5.7								
6	5.3	4.2	1.3						
7	5.1	4.0	3.4	2.5					
8	5.9	4.4	4.2	3.6	2.5				
9	10.2	3.2	4.0	3.8	3.4	2.7			
10	19.1	4.0	3.0	3.4	3.8	3.2	• •		
11 12	$\frac{21.8}{16.5}$	$\frac{6.4}{12.3}$	2.8 4.9	3.0	$\frac{3.2}{2.5}$	3.6	3.2 3.2	0.0	
13	6.8	18.0	9.3	$\frac{3.4}{5.5}$	2.3	$\frac{2.5}{2.3}$	3.2 3.0	$\frac{2.3}{3.2}$	
14	1.9	19.2	15.2	8. 0	3.8	2.3	1.7	3.0	
15	1.7	12.9	19.3	11.7	6.4	2.9	1.7	2.3	
16	1.1	6.3	14.8	17.4	9.7	4.9	1.9	1.1	
17		2.1	9.5	15.9	13.4	7.8	2.3	1.5	3.6
18		1.5	3.2	11.9	14.9	10.6	2.8	1.7	3.4
19		1.5	2.3	4.0	13.7	11.6	4.2	2.7	2.3
20		1.0	1.5	2.3	9.5	12.8	5.7	2.8	1.3
21			1.3	1.5	5.1	11.8	8.1	4.2	.8
22				1.1	2.7	9.9	11.2	5.7	.8
23				1.0	1.1	5.1	12.2	8.0	1.0
24					.8	2.7	13.0	8.5	1.1
25					.4	.8	9.9	11.0	1.7
26					.4	.6	7.2	12.6	2.5
27					.4	.6	3.2	11.7	2.5
28						.6	1.7	7.8	4.0
29						.8	1.0	3.0	4.7
30							.6	1.9	5.5
31							.4	1.1	6.1
32							.8	1.0	7.5
33 34							1.0	1.0	11.1
35								.8 1.1	10.5 9.0
36								1.1	5.5
37									4.4
38									2.8
39									1.9
40					100		10 mg - 10 mg		1.0
41									.6
42									.4
43									1.1
44									1.0
45									1.1
46				_					.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Max H Truck	15	19	21	23	27	29	33	35	46
Avg H Truck	10.0	12.6	14.0	15.1	16.8	18.5	21.7	23.7	31.3
Min H Truck	5	6	6	7	8.	9	11	12	17
Range	10	13	15	16	19	20	22	23	29
Poisson's Coef. K	5.0	e e	8.0	8.1	2.0	. 0.5	10.7	11.7	149
Coer. K	0.0	6.6	ი.0	8.1	8.8	9.5	10.7	11.7	14.3

Table 16.11b

CALCULATED FREQUENCIES OF EQUIVALENT H TRUCK LOADINGS OF THE 176 TYPE 3-3 TRUCKS REPORTED BY THE 1942 LOADOMETER SURVEY,

BASED ON POISSON'S DISTRIBUTION LAW



Equivalent H truck loadings which occur less than 1 in 1000, or account for less than 0.1% of total heavy truck traffic, are not shown in this table.

Equivalent					Span-F	eet	****		
H Truck Loadings	10	20	30	40	50	60	80	100	Infinite
5	.7								
6	3.4	.1	.1						
7	8.4	.9	.2	.1					
8	14.0	3.0	1.1	.2	.1				
9	17.6	6.5	2.9	1.0	.1				
10	17.6	10.8	5.7	2.7	.6	.1			
11	14.7	14.2	9.1	5.4	1.7	.3			
12	10.4	15.6	12.2	8.8	3.8	1.1	.1		
13	6.5	14.7	13.9	11.9	6.6	2.5	.1		
14	.36	12.1	14.0	13. 8	9.7	4.8	.5	.1	
15	1.8	8.9	12.4	13.9	12.2	7.6	1.2	.2	
16	.8	5.9	9.9	12.6	13.4	10.4	2.6	.6	
17	.3	3.5	7.2	10.2	13.1	12.3	4.7	1.5	
18	.1 .1	1.9	4.8	7.5	11.6	13.0	7.2	3.0	
19	.1	1.0	3.0	5.1	9.3	12.3	9.6	4.9	
20		.5	1.7	3.1	6.8	10.7	11.4	7.2	_
21		.2	.9	1.8	4.6	8.4	12.1	9.4	.1
22		.1	.5	1.0	2.9	6.2	11.8	11.0	.3
23		.1	.2	.5	1.7	4.2	10.6	11.7	.7
24			.1 .1	.2	.9	2.7	8.7	11.4	1.5
25			.1	.1	.5	1.6	6.7	10.3	2.7
26 27				.1	.2	.9	$\frac{4.8}{3.2}$	$\frac{8.6}{6.7}$	4.2
28					.1	.5 .2	$\frac{3.2}{2.0}$	4.9	$\frac{6.1}{7.9}$
25 29					.1	.1	$\frac{2.0}{1.2}$	3.4	9.4
30						.1	1.2	2.2	10.3
31							.4	1.3	10.6
32							.2	.8	10.1
33							.1	.4	9.0
34							.1	.2	7.6
35							.1	.1	6.0
36	Equiva	lant H tr	ick loadin	ora .				.1	4.5
37			ts produce					••	3.2
38		s vehicle		cu					2.2
39	D) gros	a venicie	weignto.						1.5
40									.9
41 or more									1.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Max H Truck	19	23	25	26	28	30	34	36	45
Avg H Truck	10.0	12.6	14.0	15.1	16.8	18.5	21.7	23.7	$\frac{31.3}{21}$
Min H Truck	5	6	6	7	8	10	12	14	
Range	14	17	19	19	20	20	22	22	24
Poisson's	- 0			0.1		0.5	10.7	11.7	14.3
Coef. K Std. Dev. D	$\frac{5.0}{2.24}$	6.6 2.57	8.0 2.83	$\frac{8.1}{2.85}$	$\frac{8.8}{2.97}$	$\frac{9.5}{3.08}$	$\frac{10.7}{3.27}$	3.42	3.78
au. Dev. D	2.24	2.57	2.53	2,85	2.97	3.08	3.41	0.42	0.18

Table 16.12a

OBSERVED FREQUENCIES OF EQUIVALENT H TRUCK LOADINGS BASED ON MOMENTS
PRODUCED BY THE 4531 (ALL TYPES) TRUCKS REPORTED
BY THE 1942 LOADOMETER SURVEY

Equivalent	Span-Feet										
H Truck Loadings	10	20	30	40	50	60	80	100	Infinite G.V.W		
5	.4										
6	.6	.3	.1								
7	1.2	.4	.2	.1							
8	3.4	1.6	.6	.3	.1						
9	10.1	6.8	4.0	1.1	.3	.1					
10	18.6	15.2	10.1	3.7	.8	.3					
11	21.8	19.2	16.1	8.4	3.7	1.4	.4	.2			
12	18.8	18.3	18.4	15.8	9.0	4.7	1.6	1.0			
13	11.6	12.7	15.2	17.5	15.2	11.2	4.5	2.8	2.2		
14	6.8	9.3	11.5	16.6	17.1	15.2	11.1	6.9	2.3		
15	3.4	6.4	7.6	11.1	15.4	16.3	15.1	11.9	2.2		
16	1.6	4.2	6.0	8.3	11.3	13.2	16.1	15.5	4.3		
17	.9	2.7	4.0	6.0	8.3	10.6	12.2	14.6	9.4		
18		1.4	2.7	4.2	6.1	7.9	9.6	11.5	13.5		
19	.4	1.4	1.6	2.8	4.6	5.7	7.2	8.2	13.7		
20	.4 .2 .1 0	.8 .3	.9	1.7		4.3	5.5				
21	.1	.3	.5		3.1		5.5 4.1	6.1	10.6		
22	Ü		6.	1.0	2.0	3.2		4.5	7.9		
		.1	.3	.6	1.2	2.3	3.5	3.6	6.1		
23	0	0	.1	.4	.8	1.4	2.8	3.2	4.3		
24	.1	.1	.1	.2	.5	.9 .5	2.2	2.7	3.6		
25				.1	.3	.5	1.5	2.1	3.2		
26				.1	.1	.3	1.0	1.6	2.8		
27					.1	.3 .2 .1 .1	.6	1.3	2.3		
28						.1	.4 .2 .1	.9	1.9		
29						.1	.2	.5	1.7		
30						.1	.1	.3	1.4		
31							.1	.2	1.2		
32							.1	.1	1.0		
33							.1	.1 .1	1.1		
34								.1	.9		
35								.1	.7		
36									.5		
37									.4		
38									.2		
39									ĩ		
40									'n		
41									ĵ.		
42									ň		
43									ĭ		
44											
45									'1		
46									1.1 .9 .7 .5 .4 .2 .1 .1 .0 0		
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0		
Max H Truck	24	24	24	26	27	30	33	35	46		
Avg H Truck	11.4	12.2	13.0	14.1	15.2	16.1	17.4	18.2	21.1		
Min H Truck	5	6	6	7	8	9	11	11	13		
Range	5 19	18	18	19	19	21	22	24	33 .		
– .											
Poisson's											

Table 16.12b

CALCULATED FREQUENCIES OF EQUIVALENT H TRUCK LOADINGS OF THE 4531 (ALL TYPES) TRUCKS REPORTED BY THE 1942 LOADOMETER SURVEY, BASED ON POISSON'S DISTRIBUTION LAW

Equivalent H truck loadings which occur less than 1 in 1000, or account for less than 0.1% of total heavy truck traffic, are not shown in this table.

Equivalent					Span-F	eet			
H Truck Loadings	10	20	30	40	50	60	80	100	Infinite
5	.2								
6	1.1	.2	.1						
7	3.4	1.3	.7	.1					
8	7.3	3.9	2.2	.6	.1				
9	11.6	8.1	5.2	2.1	.5	.1			
10	14.7	12.5	9.1	4.9	1.9	.6			
11	15.9	15.4	12.8	8.7	4.6	2.1	.2	.1	
12	14.5	16.0	14.9	12.4	8.4	4.9	1.1	.5	
13	11.6	14.1	14.9	14.7	12.0	8.7	3.4	1.9	.1
14	8.2	11.0	13.0	14.9	14.4	12.4	7.3	4.6	.2
15	5.3	7.6	10.2	13.2	14.9	14.7	11.6	8.4	1.0
16	3.1	4.7	7.1	10.4	13.4	14.9	14.7	12.0	2.7
17	1.6	2.6	4.5	7.4	10.7	13.2	15.9	14.4	5.4
18	.8	1.4	2.6	4.8	7.7	10.4	14.5	14.9	8.8
19	.4	.7	1.4	2.8	5.0	7.4	11.6	13.4	11.9
20	.2	.3	.7	1.5	3.0	4.8	8.2	10.7	13.8
21	.1	.1 .1	.4	.8	1.7	2.8	5.3	7.7	13.9
22		.1	.1	.4 .2 .1	.9	1.5	3.1	5.0	12.6
23			.1	.2	.4	.8	1.6	3.0	10.2
24				.1	.2	.4	.8	1.7	7.5
25					.1	.2 .1	.4	.9	5.1
26					.1	.1	.2	.4	3.1
27							.1	.2	1.8
28								.1	1.0
29								.1	.5
30									.2
31									1.0 .5 .2 .1 .1
32			_						1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Max H Truck	21	22	23	24	26	26	27	29	32
Avg H Truck	11.4	12.2	13.0	14.1	15.2	16.1	17.4	18.2	21.1
Min H Truck	5	6	6	7	8	9	11	11	13
Range	16	16	17	17	18	17	16	18	19
Poisson's									
Coef K	6.4	6.2	7.0	7.1	7.2	7.1	6.4	7.2	8.1
Std. Dev. D	2.53	2.49	2.65	2.66	2.68	2.66	2.54	2.68	2.85

Equivalent H truck loadings based on moments produced by gross vehicle weights.

17. MAXIMUM, AVERAGE, AND MINIMUM EQUIVALENT H TRUCK LOADINGS ON SIMPLE SPAN BRIDGES BASED ON GROSS VEHICLE WEIGHT

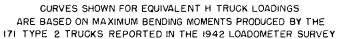
Figures 17.1—17.11 present a graphical representation of the maximum, average, and minimum equivalent H truck loadings on simple span bridges of various lengths for each of the 11 more numerous heavy vehicle types reported by the special loadometer survey of 1942. Figure 17.12 gives the same information for 83 truck-tractor semitrailer trailer combinations (6 different vehicle types) that did not occur in sufficient number to justify individual distributions; and Figure 17.13 gives the information for all heavy vehicles reported representing a combined total of 4531.

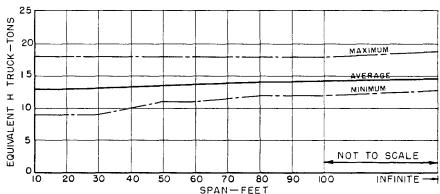
The upper part of each of these figures give the maximum, average, and minimum equivalent H truck loadings for each span length and the lower part shows the range, the Poisson coefficient K and the standard deviation

 \boldsymbol{D} for each corresponding span length. The figures on which all of these data are given are as follows:

Heavy Vehicle Type	Number of Vehicles Reported	Figure Number
2	171	17.1
3	381	17.2
2-S1	2855	17.3
2-82	508	17.4
3-S1	9	17.5
3-S2	142	17.6
3-S3	14	17.7
2-2	99	17.8
2-3	24	17.9
3-2	68	17.10
3-3	176	17.11
6 types of tractor-truck	22	4= 40
semitrailer trailer	83	17.12
combinations All	4531	17.13

MAXIMUM, MINIMUM, AND AVERAGE EQUIVALENT H TRUCK LOADINGS FOR TYPE 2 TRUCKS ON SIMPLE SPANS OF VARIOUS LENGTHS





NOTE: -GROSS VEHICLE WEIGHT IN TONS AND EQUIVALENT H TRUCK LOADINGS IN TONS ARE IDENTICAL AT INFINITE SPAN

RANGE, STANDARD DEVIATION, AND POISSON'S COEFFICIENT FOR FREQUENCY DISTRIBUTION OF EQUIVALENT H TRUCK LOADINGS ON SPANS OF VARIOUS LENGTHS

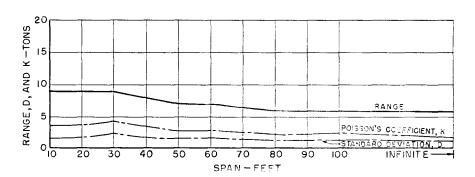


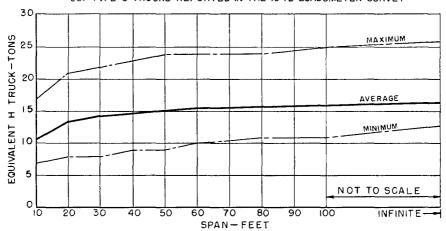
Figure 17.1

MAXIMUM, MINIMUM, AND AVERAGE EQUIVALENT H TRUCK LOADINGS FOR TYPE 3 TRUCKS ON SIMPLE SPANS OF VARIOUS LENGTHS

CURVES SHOWN FOR EQUIVALENT H TRUCK LOADINGS

ARE BASED ON MAXIMUM BENDING MOMENTS PRODUCED BY THE

381 TYPE 3 TRUCKS REPORTED IN THE 1942 LOADOMETER SURVEY



NOTE:-GROSS VEHICLE WEIGHT IN TONS AND EQUIVALENT H TRUCK LOADINGS IN TONS ARE IDENTICAL AT INFINITE SPAN

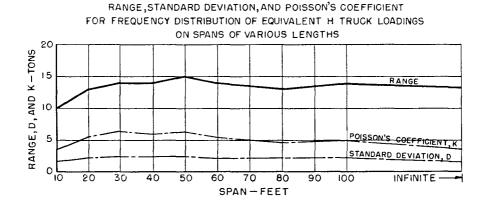
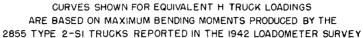
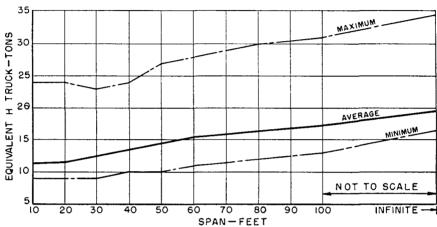


Figure 17.2

MAXIMUM, MINIMUM, AND AVERAGE EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-SI TRUCKS ON SIMPLE SPANS OF VARIOUS LENGTHS





NOTE: - GROSS VEHICLE WEIGHT IN TONS AND EQUIVALENT H TRUCK LOADINGS IN TONS ARE IDENTICAL AT INFINITE SPAN

RANGE, STANDARD DEVIATION, AND POISSON'S COEFFICIENT FOR FREQUENCY DISTRIBUTION OF EQUIVALENT H TRUCK LOADINGS

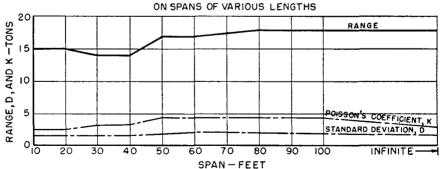
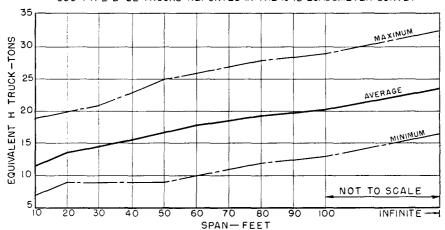


Figure 17.3

MAXIMUM, MINIMUM, AND AVERAGE EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-S2 TRUCKS ON SIMPLE SPANS OF VARIOUS LENGTHS

CURVES SHOWN FOR EQUIVALENT H TRUCK LOADINGS
ARE BASED ON MAXIMUM BENDING MOMENTS PRODUCED BY THE
508 TYPE 2-S2 TRUCKS REPORTED IN THE 1942 LOADOMETER SURVEY



NOTE: - GROSS VEHICLE WEIGHT IN TONS AND EQUIVALENT H TRUCK LOADINGS
IN TONS ARE IDENTICAL AT INFINITE SPAN

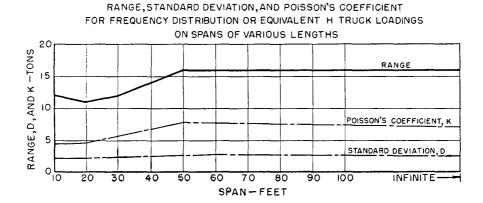


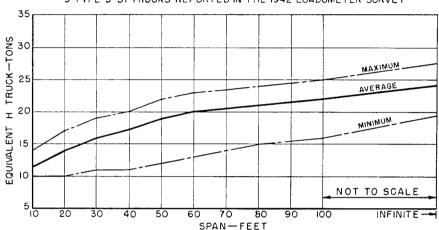
Figure 17.4

MAXIMUM, MINIMUM, AND AVERAGE EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-SI TRUCKS ON SIMPLE SPANS OF VARIOUS LENGTHS

CURVES SHOWN FOR EQUIVALENT H TRUCK LOADINGS

ARE BASED ON MAXIMUM BENDING MOMENTS PRODUCED BY THE

9 TYPE 3-SI TRUCKS REPORTED IN THE 1942 LOADOMETER SURVEY



NOTE: - GROSS VEHICLE WEIGHT IN TONS AND EQUIVALENT H TRUCK LOADINGS
IN TONS ARE IDENTICAL AT INFINITE SPAN

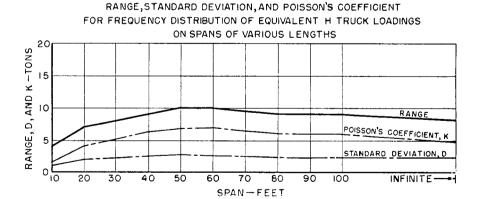
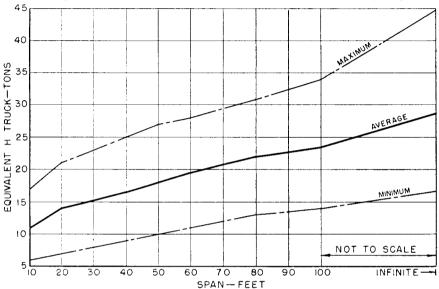


Figure 17.5

MAXIMUM, MINIMUM, AND AVERAGE EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-S2 TRUCKS ON SIMPLE SPANS OF VARIOUS LENGTHS

CURVES SHOWN FOR EQUIVALENT H TRUCK LOADINGS

ARE BASED ON MAXIMUM BENDING MOMENTS PRODUCED BY THE
142 TYPE 3-S2 TRUCKS REPORTED IN THE 1942 LOADOMETER SURVEY



RANGE, STANDARD DEVIATION, AND POISSON'S COEFFICIENT FOR FREQUENCY DISTRIBUTION OF EQUIVALENT H TRUCK LOADINGS

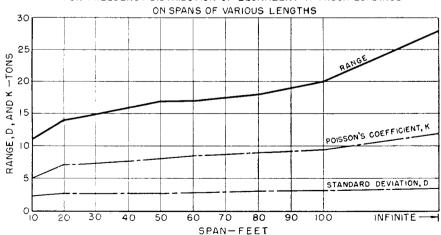
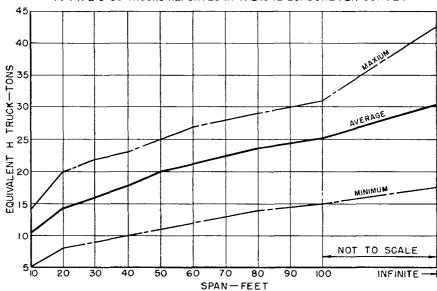


Figure 17.6

MAXIMUM, MINIMUM, AND AVERAGE EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-S3 TRUCKS ON SIMPLE SPANS OF VARIOUS LENGTHS

CURVES SHOWN FOR EQUIVALENT H TRUCK LOADINGS ARE BASED ON MAXIMUM BENDING MOMENTS PRODUCED BY THE 14 TYPE 3-S3 TRUCKS REPORTED IN THE 1942 LOADOMETER SURVEY



RANGE, STANDARD DEVIATION, AND POISSON'S COEFFICIENT FOR FREQUENCY DISTRIBUTION OF EQUIVALENT H TRUCK LOADINGS

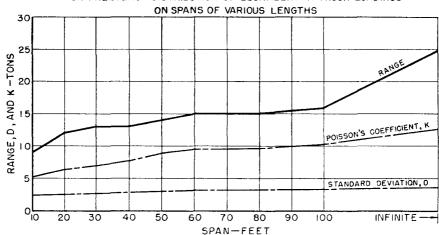
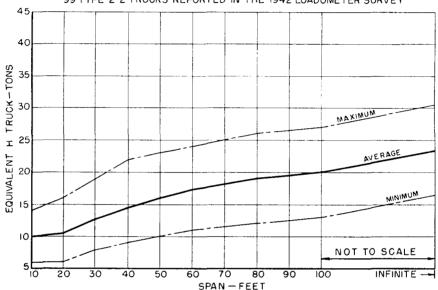


Figure 17.7

MAXIMUM, MINIMUM, AND AVERAGE EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-2 TRUCKS ON SIMPLE SPANS OF VARIOUS LENGTHS

CURVES SHOWN FOR EQUIVALENT H TRUCK LOADINGS
ARE BASED ON MAXIMUM BENDING MOMENTS PRODUCED BY THE
99 TYPE 2-2 TRUCKS REPORTED IN THE 1942 LOADOMETER SURVEY



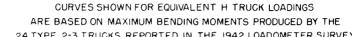
NOTE: - GROSS VEHICLE WEIGHT IN TONS AND EQUIVALENT H TRUCK LOADINGS IN TONS ARE IDENTICAL AT INFINITE SPAN

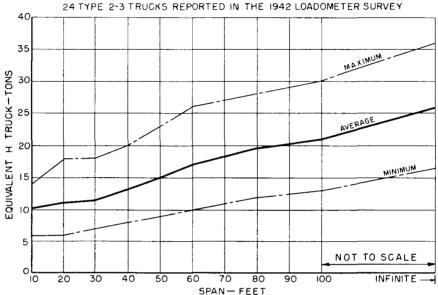
RANGE, STANDARD DEVIATION, AND POISSON'S COEFFICIENT

FOR FREQUENCY DISTRIBUTION OF EQUIVALENT H TRUCK LOADINGS ON SPANS OF VARIOUS LENGTHS 20 RANGE, D, AND K-TONS 15 10 POISSON'S COEFFICIENT, K 5 STANDARD DEVIATION, D 0 INFINITE 20 30 40 70 80 100 SPAN-FEET

Figure 17.8

MAXIMUM, MINIMUM, AND AVERAGE EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-3 TRUCKS ON SIMPLE SPANS OF VARIOUS LENGTHS





NOTE: -- GROSS VEHICLE WEIGHT IN TONS AND EQUIVALENT H TRUCK LOADINGS IN TONS ARE IDENTICAL AT INFINITE SPAN

RANGE, STANDARD DEVIATION, AND POISSON'S COEFFICIENT FOR FREQUENCY DISTRIBUTION OF EQUIVALENT H TRUCK LOADINGS

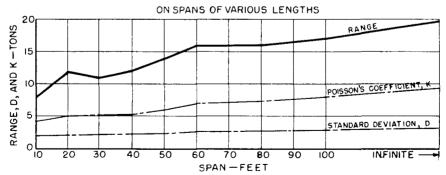


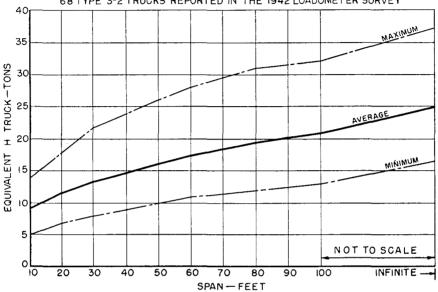
Figure 17.9

MAXIMUM, MINIMUM, AND AVERAGE EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-2 TRUCKS ON SIMPLE SPANS OF VARIOUS LENGTHS

CURVES SHOWN FOR EQUIVALENT H TRUCK LOADINGS

ARE BASED ON MAXIMUM BENDING MOMENTS PRODUCED BY THE

68 TYPE 3-2 TRUCKS REPORTED IN THE 1942 LOADOMETER SURVEY



NOTE: - GROSS VEHICLE WEIGHT IN TONS AND EQUIVALENT H TRUCK LOADINGS IN TONS ARE IDENTICAL AT INFINITE SPAN

RANGE, STANDARD DEVIATION, AND POISSON'S COEFFICIENT
FOR FREQUENCY DISTRIBUTION OF EQUIVALENT H TRUCK LOADINGS
ON SPANS OF VARIOUS LENGTHS

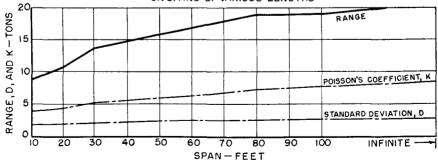


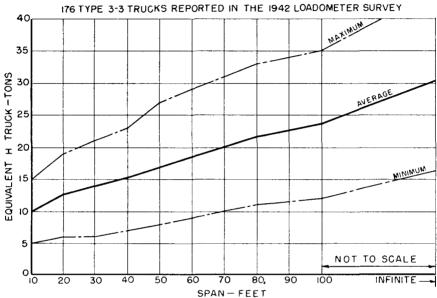
Figure 17.10

MAXIMUM, MINIMUM, AND AVERAGE EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-3 TRUCKS ON SIMPLE SPANS OF VARIOUS LENGTHS

CURVES SHOWN FOR EQUIVALENT H TRUCK LOADINGS

ARE BASED ON MAXIMUM BENDING MOMENTS PRODUCED BY THE

176 TYPE 3-3 TRUCKS REPORTED IN THE 1942 LOADOMETER SURVEY



NOTE: -- GROSS VEHICLE WEIGHT IN TONS AND EQUIVALENT H TRUCK LOADINGS IN TONS ARE IDENTICAL AT INFINITE SPAN

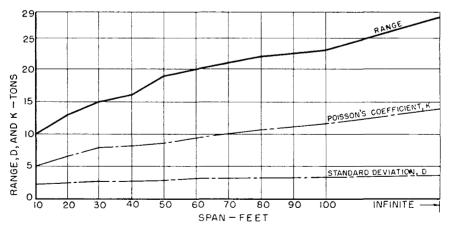
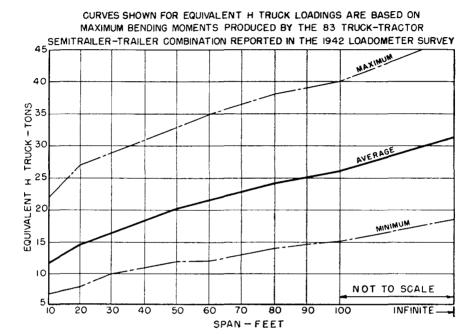


Figure 17.11

MAXIMUM, MINIMUM, AND AVERAGE EQUIVALENT H TRUCK LOADINGS FOR THE 83 TRUCK-TRACTOR SEMITRAILER-TRAILER COMBINATIONS ON SIMPLE SPANS OF VARIOUS LENGTHS



NOTE: - GROSS VEHICLE WEIGHT IN TONS AND EQUIVALENT H TRUCK LOADINGS IN TONS ARE IDENTICAL AT INFINITE SPAN

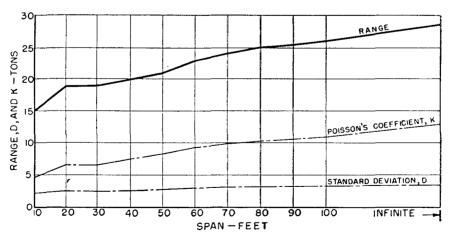


Figure 17.12

MAXIMUM, MINIMUM, AND AVERAGE EQUIVALENT H TRUCK LOADINGS FOR THE 4531 (ALL TYPES) TRUCKS ON SIMPLE SPANS OF VARIOUS LENGTHS

CURVES SHOWN FOR EQUIVALENT H TRUCK LOADINGS ARE BASED ON MAXIMUM BENDING MOMENTS PRODUCED BY THE 4531 (ALL TYPES) TRUCKS REPORTED IN THE 1942 LOADOMETER SURVEY 40 H TRUCK - TONS 32 32 32 EQUIVALENT 1 AVERAGE MINIMUM 10 NOT TO SCALE 20 30 40 50 60 90 70 80 100 INFINITE

RANGE, STANDARD DEVIATION, AND POISSON'S COEFFICIENT FOR FREQUENCY DISTRIBUTION OF EQUIVALENT H TRUCK LOADINGS

SPAN - FEET

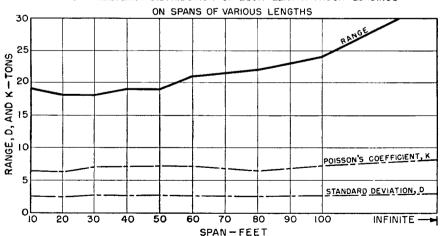


Figure 17.13

18. HISTOGRAMS SHOWING FREQUENCY DISTRIBUTIONS OF EQUIVALENT H TRUCK LOADINGS ON SIMPLE SPAN BRIDGES BASED ON GROSS VEHICLE WEIGHTS

Figures 18.1—18.11 present a graphical representation of the observed and calculated frequencies of equivalent H truck loadings on simple spans up to 100 feet in length for each of the 11 more numerous heavy vehicle types reported by the 1942 loadometer survey; and Figure 18.12 gives the same information for the heavy vehicles reported, representing a combined total of 4531. The histograms represent the observed data, based on 3-item moving averages, and the dashed lines represent the corresponding Poisson distributions. Both the observed and calculated frequencies of equivalent H truck loadings and gross vehicle weights shown in these figures were plotted directly from the corresponding data given by Tables 16.1a—16.12a and 16.1b—16.12b. These distributions are given in the following figures.

Heavy Vehicle	Number of Vehicles	Figure
$ar{ extbf{T}}\mathbf{ype}$	$\mathbf{Reported}$	Number
2	171	18.1
3	381	18.2
2-S1	2855	18.3
2-S2	508	18.4
3-S1	9	18.5
3-S2	142	18.6
3-S3	14	18.7
2-2	99	18.8
2-3	24	18.9
3-2	68	18.10
3-3	176	18.11
All	4531	18.12

A COMPARISON OF OBSERVED WITH THEORETICAL FREQUENCIES
OF EQUIVALENT H TRUCK LOADINGS
FOR TYPE 2 HEAVY VEHICLES ON SIMPLE SPANS OF VARIOUS LENGTHS

OBSERVED FREQUENCIES BASED ON MOMENTS PRODUCED BY THE 171 TYPE 2 TRUCKS REPORTED BY THE 1942 LOADOMETER SURVEY THEORETICAL FREQUENCIES BASED ON POISSONS DISTRIBUTION LAW

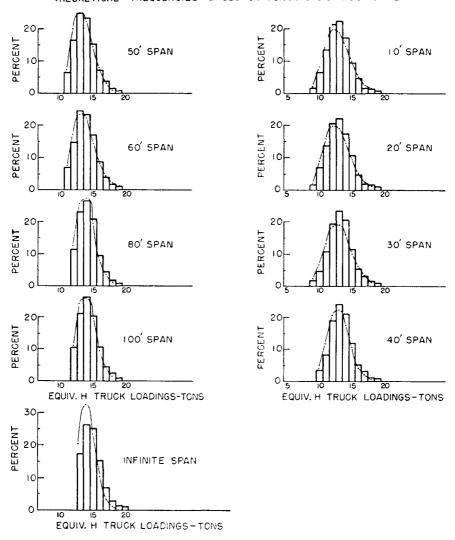


Figure 18.1

A COMPARISON OF OBSERVED WITH THEORETICAL FREQUENCIES OF EQUIVALENT H TRUCK LOADINGS FOR TYPE 3 HEAVY VEHICLES ON SIMPLE SPANS OF VARIOUS LENGTHS

OBSERVED FREQUENCIES BASED ON MOMENTS PRODUCED BY THE 381 TYPE 3 TRUCKS REPORTED BY THE 1942 LOADOMETER SURVEY THEORETICAL FREQUENCIES BASED ON POISSONS DISTRIBUTION LAW

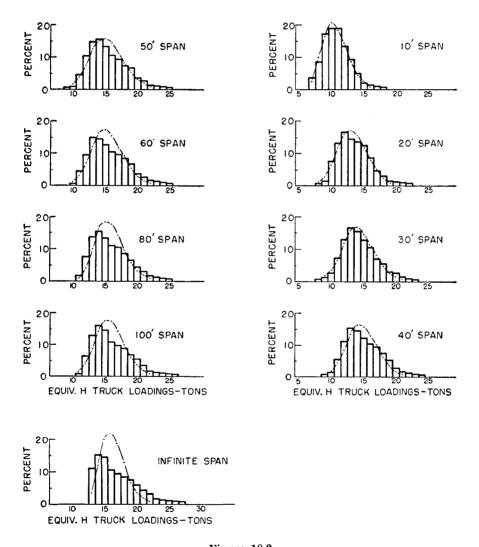


Figure 18.2

A COMPARISON OF OBSERVED WITH THEORETICAL FREQUENCIES OF EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-SI HEAVY VEHICLES ON SIMPLE SPANS OF VARIOUS LENGTHS

OBSERVED FREQUENCIES BASED ON MOMENTS PRODUCED BY THE 2855 TYPE 2-SI TRUCKS REPORTED BY THE 1942 LOADOMETER SURVEY THEORETICAL FREQUENCIES BASED ON POISSONS DISTRIBUTION LAW

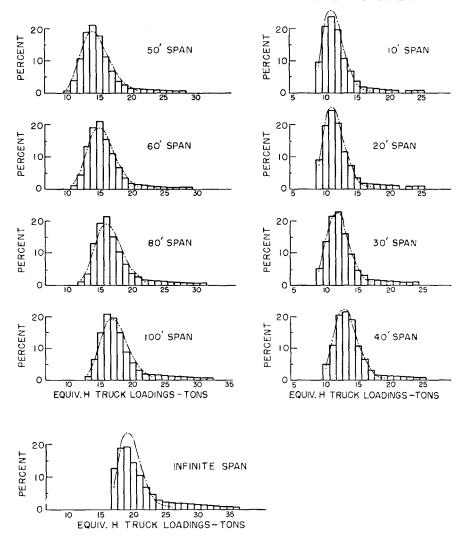


Figure 18.3

A COMPARISON OF OBSERVED WITH THEORETICAL FREQUENCIES
OF EQUIVALENT H TRUCK LOADINGS
FOR TYPE 2-S2 HEAVY VEHICLES ON SIMPLE SPANS OF VARIOUS LENGTHS

OBSERVED FREQUENCIES BASED ON MOMENTS PRODUCED BY THE 508 TYPE 2-S2 TRUCKS REPORTED BY THE 1942 LOADOMETER SURVEY THEORETICAL FREQUENCIES BASED ON POISSONS DISTRIBUTION LAW

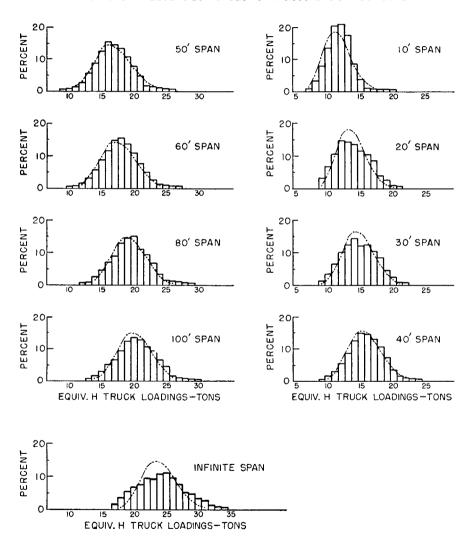


Figure 18.4

FOR TYPE 3-SI HEAVY VEHICLES ON SIMPLE SPANS OF VARIOUS LENGTHS OBSERVED FREQUENCIES BASED ON MOMENTS PRODUCED BY THE 9 TYPE 3-SI TRUCKS REPORTED BY THE 1942 LOADOMETER SURVEY THEORETICAL FREQUENCIES BASED ON POISSONS DISTRIBUTION LAW

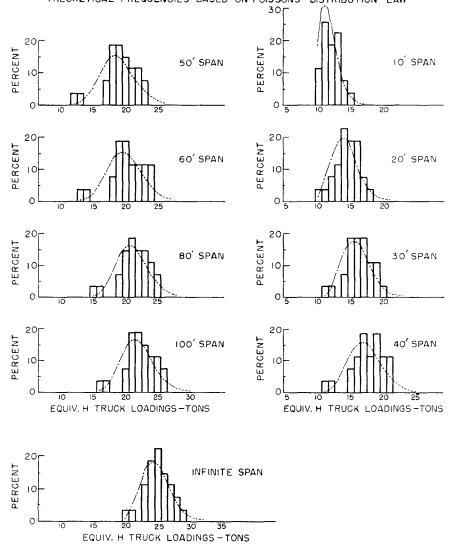


Figure 18.5

FOR TYPE 3-S2 HEAVY VEHICLES ON SIMPLE SPANS OF VARIOUS LENGTHS

OBSERVED FREQUENCIES BASED ON MOMENTS PRODUCED BY THE 142 TYPE 3-S2 TRUCKS REPORTED BY THE 1942 LOADOMETER SURVEY THEORETICAL FREQUENCIES BASED ON POISSONS DISTRIBUTION LAW

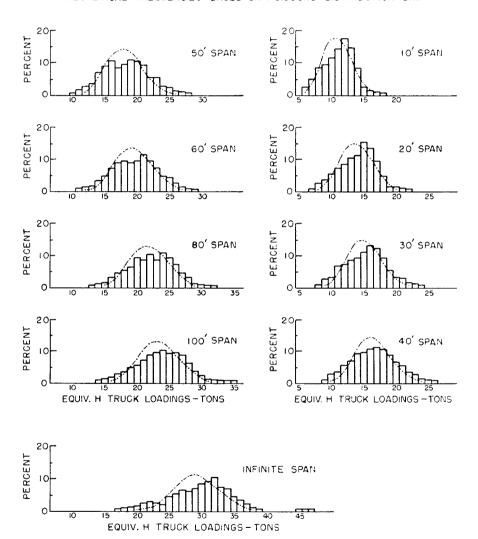


Figure 18.6

FOR TYPE 3-S3 HEAVY VEHICLES ON SIMPLE SPANS OF VARIOUS LENGTHS

OBSERVED FREQUENCIES BASED ON MOMENTS PRODUCED BY THE 14 TYPE 3-S3 TRUCKS REPORTED BY THE 1942 LOADOMETER SURVEY THEORETICAL FREQUENCIES BASED ON POISSONS DISTRIBUTION LAW

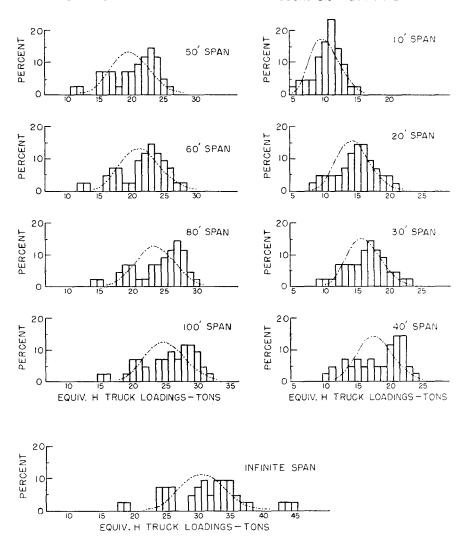


Figure 18.7

A COMPARISON OF OBSERVED WITH THEORETICAL FREQUENCIES
OF EQUIVALENT H TRUCK LOADINGS
FOR TYPE 2-2 HEAVY VEHICLES ON SIMPLE SPANS OF VARIOUS LENGTHS

OBSERVED FREQUENCIES BASED ON MOMENTS PRODUCED BY THE 99 TYPE 2-2 TRUCKS REPORTED BY THE 1942 LOADOMETER SURVEY THEORETICAL FREQUENCIES BASED ON POISSONS DISTRIBUTION LAW

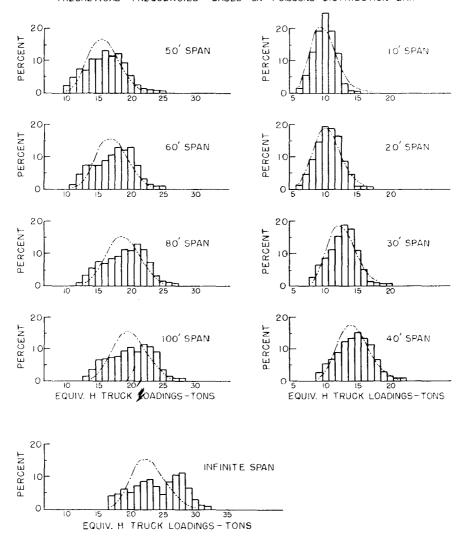


Figure 18.8

A COMPARISON OF OBSERVED WITH THEORETICAL FREQUENCIES OF EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-3 HEAVY VEHICLES ON SIMPLE SPANS OF VARIOUS LENGTHS

OBSERVED FREQUENCIES BASED ON MOMENTS PRODUCED BY THE 24 TYPE 2-3 TRUCKS REPORTED BY THE 1942 LOADOMETER SURVEY THEORETICAL FREQUENCIES BASED ON POISSONS DISTRIBUTION LAW

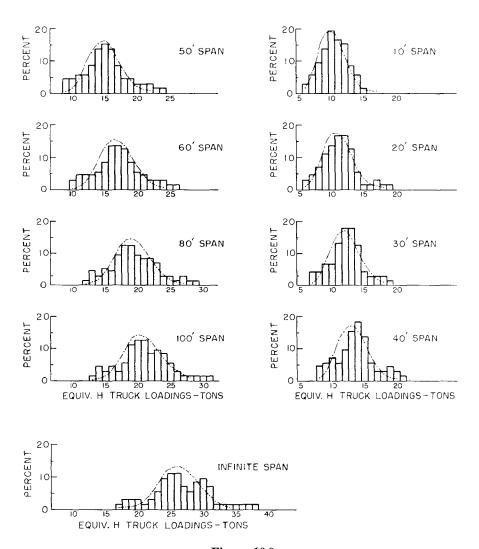


Figure 18.9

FOR TYPE 3-2 HEAVY VEHICLES ON SIMPLE SPANS OF VARIOUS LENGTHS

OBSERVED FREQUENCIES BASED ON MOMENTS PRODUCED BY THE 68 TYPE 3-2 TRUCKS REPORTED BY THE 1942 LOADOMETER SURVEY THEORETICAL FREQUENCIES BASED ON POISSONS DISTRIBUTION LAW

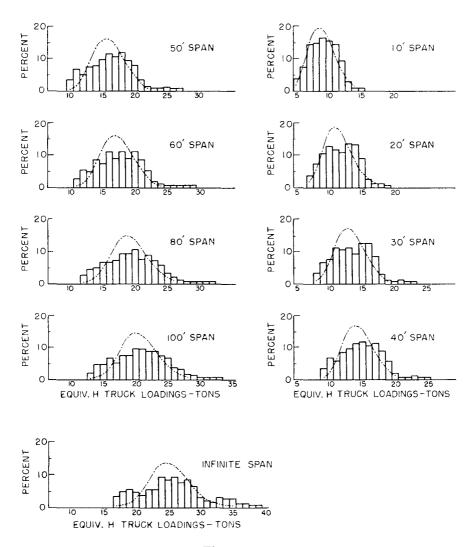


Figure 18.10

FOR TYPE 3-3 HEAVY VEHICLES ON SIMPLE SPANS OF VARIOUS LENGTHS

OBSERVED FREQUENCIES BASED ON MOMENTS PRODUCED BY THE 176 TYPE 3-3 TRUCKS REPORTED BY THE 1942 LOADOMETER SURVEY THEORETICAL FREQUENCIES BASED ON POISSONS DISTRIBUTION LAW

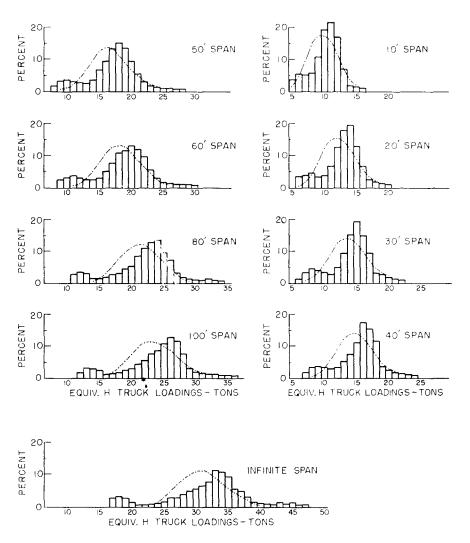


Figure 18.11

A COMPARISON OF OBSERVED WITH THEORETICAL FREQUENCIES
OF EQUIVALENT H TRUCK LOADINGS
FOR ALL HEAVY TYPE VEHICLES ON SIMPLE SPANS OF VARIOUS LENGTH 3

OBSERVED FREQUENCIES BASED ON MOMENTS PRODUCED BY THE 4531 HEAVY VEHICLES REPORTED BY THE 1942 LOADOMETER SURVEY THEORETICAL FREQUENCIES BASED ON POISSONS DISTRIBUTION LAW

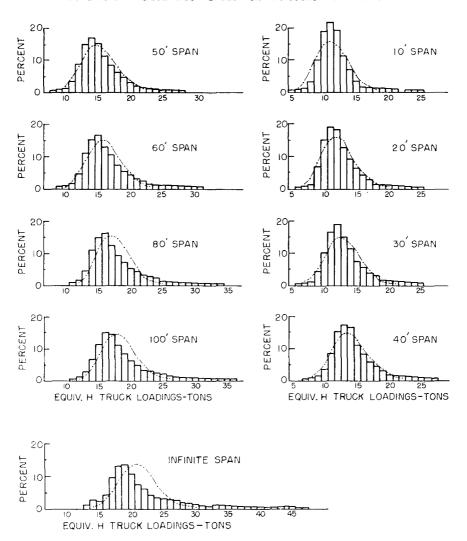


Figure 18.12

19. OBSERVED AND CALCULATED FREQUENCIES OF EQUIVALENT H TRUCK LOADINGS ON SIMPLE SPAN BRIDGES BASED ON VEHICLES WEIGHING ONE KIP EACH

Tables 19.1a—19.11a and Tables 19.1b—19.11b, respectively, give the observed and calculated frequencies of equivalent H truck loadings based on vehicles of unit weight (or vehicles weighing one kip each) on simple spans up to 100 feet in length, for each of the 11 more numerous heavy vehicle types reported by the 1942 loadometer survey. The observed frequencies shown in these tables are based on 3-item moving averages which has the effect of smoothing the data from one cell to the next, as explained in Article 15. The implications and potential uses for this type of information are discussed at some length in Article 15.

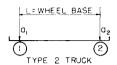
The observed and calculated frequencies of equivalent H truck loadings for each of the 11 heavy vehicle types weighing 1 kip each, on spans up to 100 feet in length are given in the following tables:

Heavy	Number of	Table N	umber
Vehicle	Vehicles	Observed	Calculated
$_{\mathrm{Type}}$	Reported	Frequencies	Frequencies
2	171	19.1a	19.1b
3	381	19.2a	19.2b
2-S1	2855	19.3a	19.3b
2-S2	508	19.4a	19.4b
3-S1	9	19.5a	19.5b
3-S2	142	19.6a	19.6b
3-S3	14	19.7a	19.7b
2-2	99	19.8a	19.8b
2-3	24	19.9a	19.9b
3-2	68	19.10a	19.10b
3-3	176	19.11a	19.11b

The maximum, average, and minimum equivalent H truck loadings, the range, Poisson coefficient, K, and standard deviation, D, shown at the bottom of each of these tables all have the same meaning as explained in Article 15 in connection with the discussion of frequency distributions based either on gross vehicle weights or vehicles weighing one kip each.

Table 19.1a

OBSERVED FREQUENCIES OF EQUIVALENT H TRUCK LOADINGS BASED ON MOMENTS PRODUCED BY THE 171 TYPE 2 TRUCKS WEIGHING ONE KIP EACH



Equivalent	Span-Feet								
H Truck Loadings	10	20	30	40	50	60	80	100	
1.00	18.3	18.3	14.5	23.8	25.5	32.2	38.6	45,4	
.95	25.5	25.5	19.7	24.2	28.6	31.8	32.7	33.3	
.90	20.7	20.9	23.6	23.6	26.3	24.9	23.4	19.7	
.85	17.4	17.6	21.8	14.8	13.3	9.2	4.7	1.6	
.80	6.6	6.6	13.0	8.8	4.7	1.6	.6		
.75	7.8	7.6	4.9	3.9	1.2	.3			
.70	2.5	2.3	1.6	.6	.4				
.65	1.2	1.2	.6	.3					
.60			.3						
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Max H Truck	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Avg H Truck	.90	.90	.89	.91	.93	.95	.96	.97	
Min H Truck	.65	.65	.60	.65	.70	.75	.80	.85	
Range	.35	.35	.40	.35	.30	.25	.20	.15	
Poisson's									
Coef. K	2.0	2.0	2.2	1.7	1.4	1.1	.9	.6	

The equivalent H truck loadings shown for the unit weight trucks of this table are proportional to the equivalent H truck loadings based on gross weights for corresponding vehicles among the 171 Type 2 trucks reported in the 1942 loadometer survey.

Table 19.1b

CALCULATED FREQUENCIES OF EQUIVALENT H TRUCK LOADINGS OF THE 171 TYPE 2 TRUCKS BASED ON POISSON'S DISTRIBUTION LAW

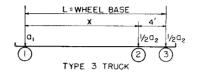


Equivalent H .truck loadings based on moments produced by gross vehicle weights. Equivalent H truck loadings which appear less than 1 in 1000, or account for less than 0.1% of the heavy trucks of this type are not shown in this table.

Equivalent	Span-Feet									
H Truck Loadings	10	20	30	40	50	60	80	100		
1.00	13.5	13.5	11.1	18.2	24.7	33.3	40.7	54.9		
.95	27.1	27.1	24.4	31.1	34.5	36.6	36.6	32.9		
.90	27.1	27.1	26.8	26.4	24.2	20.1	16.5	9.9		
.85	18.0	18.0	19.7	15.0	11.3	7.4	4.9	2.0		
.80	9.0	9.0	10.8	6.4	3.9	2.0	1.1	.3		
.75	3.6	3.6	4.8	2.2	1.1	.4	.2			
.70	1.2	1.2	1.7	.6	.3	.1				
.65	.3	.3	.5	.1		.1				
.60	.1	.1	.2							
.55	.1	.1								
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0		
Max H Truck	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Avg H Truck	.90	.90	.89	.91	.93	.95	.96	.97		
Min H Truck	.55	,55	.60	.65	.70	.65	.75	.80		
Range	.45	.45	.40	.35	.30	.35	.25	.20		
Poisson's										
Coef. K	2.0	2.0	2.2	1.7	1.4	1.1	.9	.6		
Std. Dev. D	1.414	1.414	1.483	1.304	1.183	1.049	.949	.775		

The equivalent H truck loadings shown for the unit weight trucks of this table are proportional to the equivalent H truck loadings based on gross weights for corresponding vehicles among the 171 Type 2 trucks reported in the 1942 loadometer survey.

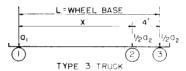
Table 19.2a OBSERVED FREQUENCIES OF EQUIVALENT H TRUCK LOADINGS BASED ON MOMENTS PRODUCED BY THE 381 TYPE 3 TRUCKS WEIGHING ONE KIP EACH



Equivalent	Span-Feet								
H Truck Loadings	10	20	30	40	50	60	80	100	
1.00			3.7	15.0	24.0	25.5	34.6	42.4	
.95			16.6	26.5	30.6	32.2	32.7	33.1	
.90		14.2	27.6	30.5	30.2	30.6	29.5	23.2	
.85		25.8	28.2	17.7	10.9	10.2	2.6	1.1	
.80		29.0	16.0	6.4	2.7	1.1	.6	.2	
.75		20.2	5.3	2.1	1.1	.4			
.70	37.9	7.1	1.5	1.1	.5				
.65	31.2	2.2	.7	.4					
.60	20.2	1.1	.4	.3					
.55	7.5	.4							
.50	2.2								
.45	1.0								
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Max H Truck	.70	.90	1.00	1.00	1.00	1.00	1.00	1.00	
Avg H Truck	.65	.80	.87	.91	.93	.94	.95	.96	
Min H Truck	.45	.55	.60	.60	.70	.75	.80	.80	
Range	.25	.35	.40	.40	.30	.25	.20	.20	
Poisson's									
Coef. K	1.0	1.9	2.6	1.9	1.4	1.3	1.0	.7	

The equivalent H truck loadings shown for the unit weight trucks of this table are proportional to the equivalent H truck loadings based on gross weights for corresponding vehicles among the 381 Type 3 trucks reported in the 1942 loadometer survey.

Table 19.2b CALCULATED FREQUENCIES OF EQUIVALENT H TRUCK LOADINGS OF THE 381 TYPE 3 TRUCKS BASED ON POISSON'S DISTRIBUTION LAW



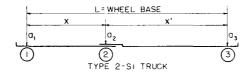
Equivalent H truck loadings based on moments produced by gross vehicle weights. Equivalent H truck loadings which appear less than 1 in 1000, or account for less than 0.1% of the heavy trucks of this type are not shown in this table.

Equivalent	Span-Feet									
H Truck Loadings	10	20	30	40	50	60	80	100		
1.00			7.4	15.0	24.7	27.3	36.8	49.7		
.95			19.3	28.3	34.5	35.4	36.8	34.8		
.90		15.0	25.1	27.0	24.2	23.0	18.4	12.2		
.85		28.4	21.8	17.1	11.3	10.0	6.1	2.8		
.80		27.0	14.1	8.1	3.9	3.2	1.5	.5		
.75		17.1	7.4	3.1	1.1	.8	.3			
.70	36.8	8.1	3.2	1.0	.3	.2	.1			
.65	36.8	3.1	1.2	.3		.1				
.60	18.4	1.0	.4	.1						
.55	6.1	.3	,1							
.50	1.5									
.45	.3									
.40	.1									
Total	100.0	100.0	100.0	100.9	100.0	100.0	100.0	100.0		
Max H Truck	.70	.90	1.00	1.00	1.00	1.00	1,00	1.00		
Avg H Truck	.65	.80	.87	.91	.93	.94	.95	.96		
Min H Truck	.40	.55	.55	.60	.70	.65	.70	.80		
Range	.30	.35	.45	.40	.30	.35	.30	.20		
Poisson's										
Coef. K	1.0	1.9	2.6	1.9	1.4	1.3	1.0	.7		
Std. Dev. D	1.000	1.378	1.612	1.378	1.183	1,140	1.000	.837		

The equivalent H truck loadings shown for the unit weight trucks of this table are proportional to the equivalent H truck loadings based on gross weights for corresponding vehicles among the 381 Type 3 trucks reported in the 1942 loadometer survey.

Table 19.3a

OBSERVED FREQUENCIES OF EQUIVALENT H TRUCK LOADINGS BASED ON MOMENTS PRODUCED BY THE 2855 TYPE 2-S1 TRUCKS WEIGHING ONE KIP EACH

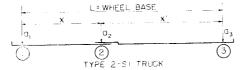


Equivalent	Span-Feet									
H Truck Loadings	10	20	30	40	50	60	80	100		
.95						.4	4.0	14.5		
.90				.4	2.1	5.0	21.5	31,3		
.85			.3	2.7	5.3	21.4	31.2	32.8		
.80			1.5	4.9	21.3	30.6	29.2	19.3		
.75	.3	.7	3.0	17.8	27.5	27.7	11.8	2.0		
.70	13.1	13.1	11.3	23.3	27.5	11.8	2.0	.1		
.65	12.9	13.6	27.4	27.0	11.7	2.3	.1			
.60	26.6	28.0	30.1	15.3	3.8	.7	.1			
.55	20.3	20.2	21.8	7.3	.6	.1				
.50	20.3	19.5	4.5	1.3	.2					
.45	6.5	4.9	.1							
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0		
Max H Truck	.75	.75	.85	.90	.90	.95	.95	.95		
Avg H Truck	.58	.58	.62	.68	.74	.79	.84	.87		
Min H Truck	.45	.45	$.45^{-}$.50	.50	.55	.60	.70		
Range	.30	.30	.40	.40	.40	.40	.35	.25		
Poisson's		•								
Coef. K	3.4	3.3	4.7	4.5	3.3	3.3	2.3	1.6		

The equivalent H truck loadings shown for the unit weight trucks of this table are proportional to the equivalent H truck loadings based on gross weights for corresponding vehicles among the 2855 Type 2-S1 trucks reported in the 1942 loadometer survey.

Table 19.3b

CALCULATED FREQUENCIES OF EQUIVALENT H TRUCK LOADINGS OF THE 2855 TYPE 2-S1 TRUCKS BASED ON POISSON'S DISTRIBUTION LAW



Equivalent H truck loadings based on moments produced by gross vehicle weights. Equivalent H truck loadings which appear less than 1 in 1000, or account for less than 0.1% of the heavy trucks of this type are not shown in this table.

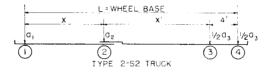
Equivalent H Truck	Span-Feet								
Loadings	10	20	30	40	50	60	80	100	
.95						3.7	10.0	20.2	
.90				1.1	3.7	12.2	23.1	32.3	
.85			.9	5.0	12.2	20.1	26.5	25.8	
.80			4.3	11.2	20.1	22.1	20.3	13.8	
.75	3.3	3.7	10.0	16.9	22.1	18.2	11.7	5.5	
.70	11.3	12.2	15.7	19.0	18.2	12.0	5.4	1.8	

Table 19.3b (Continued)

Equivalent				Spar	n-Feet			
H Truck Loadings	10	20	30	40	50	60	80	100
.65	19.3	20.1	18.5	17.1	12.0	6.6	2.1	,5
.60	21.9	22.1	17.4	12.8	6.6	3.1	.7	.1
.55	18.6	18.2	13.6	8.2	3.1	1.3	.2	
.50	12.6	12.0	9.1	4.6	1.3	.5		
.45	7.2	6.6	5.4	2.3	.5	.2		
.40	3.5	3.1	2.8	1.0	.2			
.35	1.5	1.3	1.3	.4				
.30	.6	.5	.6	.2				
.25	.2	.2	.2	.1				
.20			.1	.1				
.15			.1					
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Max H Truck	.75	.75	.85	.90	.90	.95	.95	.95
Avg H Truck	.58	.58	.62	.68	.74	.79	.84	.87
Min H Truck	.25	.25	.15	.20	.40	.45	.55	.60
Range	.50	.50	.70	.70	.50	.50	.40	.35
Poisson's								
Coef. K	3.4	3.3	4.7	4.5	3.3	3.3	2.3	1.6
Std. Dev. D	1.844	1.817	2.168	2,121	1.817	1.817	1.517	1.265

The equivalent H truck loadings shown for the unit weight trucks of this table are proportional to the equivalent H truck loadings based on gross weights for corresponding vehicles among the 2855 Type 2-S1 trucks reported in the 1942 loadometer survey.

 $Table\ 19.4a$ OBSERVED FREQUENCIES OF EQUIVALENT H TRUCK LOADINGS BASED ON MOMENTS PRODUCED BY THE 508 TYPE 2-S2 TRUCKS WEIGHING ONE KIP EACH

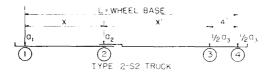


Equivalent			THE NAME OF THE OWNER, WHITE OF	Spa	n-Feet	~~~		
H Truck Loadings	10	20	30	40	50	60	80	100
.95							4.3	11.6
.90					.9	4.9	16.3	24.5
.85				1.0	4.4	12.9	24.3	31.6
.80			.9	4.4	12.9	22.3	28.0	22.3
.75			4.3	12.4	22.1	25.8	16.9	8.8
.70		1.1	21.2	25.5	25.8	20.3	8.8	1.2
.65	.7	19.2	22.1	24.4	18.9	10.5	1.3	
.60	.4	19.3	28.8	19.3	10.4	3.2	.1	
.55	30.3	32.6	11.8	7.2	3.2	.1		
.50	30.3	14.1	10.8	4.5	1.3			
.45	32.9	13.7	.1	1.3	.1			
.40	2.7							
.35	2.7							
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Max H Truck	.65	.70	.80	.85	.90	.90	.95	.95
Avg H Truck	.49	.56	.62	.66	.71	.76	.82	.85
Min H Truck	.35	.45	.45	.45	.45	.55	.60	.70
Range	.30	.25	.35	.40	.45	.35	.35	.25
Poisson's					• • • •			
Coef. K	3.1	2.8	3.5	3.8	3.9	2.9	2.7	2.0

The equivalent H truck loadings shown for the unit weight trucks of this table are proportional to the equivalent H truck loadings based on gross weights for corresponding vehicles among the 508 Type 2-S2 trucks reported in the 1942 loadometer survey.

Table 19.4b

CALCULATED FREQUENCIES OF EQUIVALENT H TRUCK LOADINGS OF THE 508 TYPE 2-S2 TRUCKS BASED ON POISSON'S DISTRIBUTION LAW

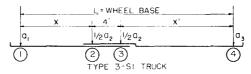


Equivalent H truck loadings based on moments produced by gross vehicle weights. Equivalent H truck loadings which appear less than 1 in 1000, or account for less than 0.1% of the heavy trucks of this type are not shown in this table.

Equivalent	Span-Feet									
H Truck Loadings	10	20	30	40	50	60	80	100		
.95							6.7	13.5		
.90					2.0	5.5	18.1	27.1		
.85				2.2	7.9	16.0	24.5	27.1		
.80			3.0	8.5	15.4	23.1	22.0	18.0		
.75			10.6	16.2	20.0	22.4	14.9	9.0		
.75 .70		6.1	18.5	20.5	19.5	16.2	8.0	3.6		
.65	4.5	17.0	21.6	19.4	15.2	9.4	3.6	1.2		
.60	14.0	23.8	18.9	14.8	9.9	4.5	1.4	.3		
.55	21.6	22.2	13.2	9.4	5,5	1.9	.5	.1		
.50	22.4	15.6	7.7	5.1	2.7	.7	.1	.1		
.45	17.3	8.7	3.9	2.4	1.2	.2	.1			
.40	10.7	4.1	1.7	1.0	.5	.1	.1			
.35	5.6	1.6	.7	.4	.2					
.30	2.5	.6	.2	.1						
.25	1.0	.2								
.20	.3	.1								
.15	.1									
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0		
Max H Truck	.65	.70	.80	.85	.90	.90	.95	.95		
Avg H Truck	.49	.56	.62	.66	.71	.76	.82	.85		
Min H Truck	.15	.20	.30	.30	.35	.40	.40	.50		
Range	.50	.50	.50	.55	.55	.50	.55	.45		
Poisson's										
Coef. K	3.1	2.8	3.5	3.8	3.9	2.9	2.7	2.0		
Std. Dev. D	1.761	1.673	1.871	1.949	1.975	1.703	1.643	1.414		

The equivalent H truck loadings shown for the unit weight trucks of this table are proportional to the equivalent H truck loadings based on gross weights for corresponding vehicles among the 508 Type 2-S2 trucks reported in the 1942 loadometer survey.

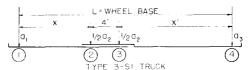
Table 19.5a OBSERVED FREQUENCIES OF EQUIVALENT H TRUCK LOADINGS BASED ON MOMENTS PRODUCED BY THE 9 TYPE 3-S1 TRUCKS WEIGHING ONE KIP EACH



Equivalent	Span-Feet									
H Truck Loadings	10	20	30	40	50	60	80	100		
.90							37.0	55.6		
.85					14.8	37.0	29.6	33.3		
.80				11.1	29.6	29.6	25.9	7.4		
.75				25.9	25.9	22.2	3.7	3.7		
.70			29.6	25.9	18.5	3.7	3.8			
.65			29.6	22.2	3.7	3.7				
.60		44.5	29.6	7.4	3.7	3.8				
.55		33.3	7.4	3.7	3.8					
.50	55.6	14.8	3.8	3.8						
.45	33.3	7.4	•••	•••						
.40	7.4									
.35	3.7									
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0		
Max H Truck	.50	.60	.70	.80	.85	.85	.90	.90		
Avg H Truck	.48	.57	.64	.69	.76	.79	.85	.88		
Min H Truck	.35	.45	.50	.50	.55	.60	.70	.75		
Range	.15	.15	.20	.30	.30	.25	.20	.15		
Poisson's										
Coef. K	.3	.7	1.2	2.1	1.9	1.1	1.0	.3		

The equivalent H truck loadings shown for the unit weight trucks of this table are proportional to the equivalent H truck loadings based on gross weights for corresponding vehicles among the 9 Type 3-S1 trucks reported in the 1942 loadometer survey.

Table 19.5b CALCULATED FREQUENCIES OF EQUIVALENT H TRUCK LOADINGS OF THE 9 TYPE 3-S1 TRUCKS BASED ON POISSON'S DISTRIBUTION LAW



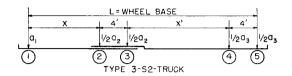
Equivalent H truck loadings based on moments produced by gross vehicle weights. Equivalent H truck loadings which appear less than 1 in 1000, or account for less than 0.1% of the heavy trucks of this type are not shown in this table.

Equivalent H Truck				Spar	ı-Feet			
Loadings	10	20	30	40	50	60	80	100
.90							36.2	74.1
.85					15.0	33.3	36.8	22.2
.80				12.2	28.4	36.6	18.4	3.3
.75				25.7	27.0	20.1	6.1	.3
.70			30.1	27.0	17.1	7.4	1.5	.1
.65			36.1	18.9	8.1	2.0	.3	
.60		49.7	21.7	9.9	3.1	.4	.1	
.55		34.8	8.7	4.2	1.0	.1		
.50	74.1	12.2	2.6	1.5	.3	.1		
.45	22.2	2.8	.6	.4				
.40	3.3	.5	.1	.1				
.35	.3		.1	.1				
.30	.1			-				
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Max H Truck	.50	.60	.70	.80	.85	.85	.90	.90
Avg H Truck	.48	.57	.64	.69	.76	.79	.85	.88
Min H Truck	.30	.40	.35	.35	.50	.50	.60	.70
Range	.20	.20	.35	.45	.35	.35	.30	.20
Poisson's								
Coef. K	.3	.7	1.2	2.1	1.9	1.1	1.0	.3
Std. Dev. D	.548	.837	1.095	1.449	1.378	1.049	1.000	.54

The equivalent H truck loadings shown for the unit weight trucks of this table are proportional to the equivalent H truck loadings based on gross weights for corresponding vehicles among the 9 Type 3-51 trucks reported in the 1942 loadometer survey.

Table 19.6a

OBSERVED FREQUENCIES OF EQUIVALENT H TRUCK LOADINGS BASED ON MOMENTS PRODUCED BY THE 142 TYPE 3-S2 TRUCKS WEIGHING ONE KIP EACH

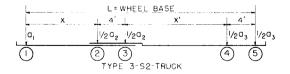


Equivalent				Spa	n-Feet			
H Truck Loadings	10	20	30	40	50	60	80	100
.90								9.9
.85						.8	11.5	23.9
.80					1.4	6.3	23.7	32.2
.75				3.3	6.3	15.7	28.4	23.9
.70			1.4	5.9	14.1	23.9	23.0	9.4
.65			4.9	10.3	20.9	23.7	9.6	.7
.60		1.9	17.1	18.1	23.0	17.4	3.3	
.55		15.5	30.3	26.8	19.0	8.9	.5	
.50	1.9	27.0	28.4	22.5	11.3	3.3		
.45	15.0	32.4	16.0	12.4	4.0			
.40	27.0	17.8	1.9	.7				
.35	32.4	5.4						
.30	18.3							
.25	5.4							_
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Max H Truck	.50	.60	.70	.75	.80	.85	.85	.90
Avg H Truck	.37	.47	.53	.56	.61	.67	.75	.80
Min H Truck	.25	.35	.40	.40	.45	.50	.55	.65
Range	.25	.25	.30	.35	.35	.35	.30	.25
Poisson's			•••	•••				
Coef. K	2.7	2.6	3.3	3.8	3.8	3,7	2.1	2.0

The equivalent H truck loadings shown for the unit weight trucks of this table are proportional to the equivalent H truck loadings based on gross weights for corresponding vehicles among the 142 Type 3-S2 trucks reported in the 1942 loadometer survey.

Table 19.6b

CALCULATED FREQUENCIES OF EQUIVALENT H TRUCK LOADINGS OF THE 142 TYPE 3-S2 TRUCKS BASED ON POISSON'S DISTRIBUTION LAW



Equivalent H truck loadings based on moments produced by gross vehicle weights. Equivalent H truck loadings which appear less than 1 in 1000, or account for less than 0.1% of the heavy trucks of this type are not shown in this table.

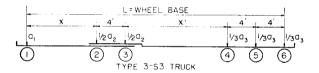
Equivalent	Span-Feet									
H Truck Loadings	10	20	30	40	50	60	80	100		
.90								13.5		
.85						2.5	12.2	27.1		
.80					2.2	9.1	25.7	27.1		
.75				2.2	8.5	16.9	27.0	18.0		
.70			3.7	8.5	16.2	20.9	18.9	9.0		

Table	19.6h	(Cointinued)

Equivalent				Spar	ı-Feet			
H Truck Loadings	10	20	30	40	50	60	80	100
.65			12.2	16.2	20.5	19.3	9.9	3.6
.60		7.4	20.1	20.5	19.4	14.3	4.2	1.2
.55		19.3	22.1	19.4	14.8	8.8	1.5	.3 .1
.50	6.7	25.1	18.2	14.8	9.4	4.7	.4	.1
.45	18.1	21.8	12.0	9.4	5.1	2.2	.1	.1
.40	24.5	14.1	6.6	5.1	2.4	.9	.1	
.35	22.0	7.4	3.1	2.4	1.0	.3		
.30	14.9	3.2	1.3	1.0	.4	.1		
.25	3.0	1.2	.5	.4	.1			
.20	3.6	.4	.2	.1				
.15	1.4	.1						
.10	.5							
.05	.3							
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Max H Truck	.50	.60	.70	.75	.80	.85	.85	.90
Avg H Truck	.37	.47	.53	.56	.61	.67	.75	.80
Min H Truck	.05	.15	.20	.20	.25	.30	.40	.45
Range	.45	.45	.50	.55	.55	.55	.45	.45
Poisson's								
Coef. K	2.7	2.6	3.3	3.8	3.8	3.7	2.1	2.0
Std. Dev. D	1.643	1.612	1.817	1.949	1.949	1.924	1.449	1.414

The equivalent H truck loadings shown for the unit weight trucks of this table are proportional to the equivalent H truck loadings based on gross weights for corresponding vehicles among the 142 Type 3-S2 trucks reported in the 1942 loadometer survey.

 $Table\ 19.7a$ OBSERVED FREQUENCIES OF EQUIVALENT H TRUCK LOADINGS BASED ON MOMENTS PRODUCED BY THE 14 TYPE 3-S3 TRUCKS WEIGHING ONE KIP EACH

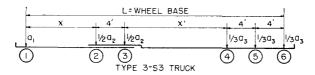


Equivalent H Truck				Spa	n-Feet			
Loadings	10	20	30	40	50	60	80	100
.85								47.6
.80							50.0	30.9
.75						28.6	28.6	14.3
.70					35.7	28.6	9.5	4.8
.65				21.4	31.0	23.8	4.8	2.4
.60			11.9	30.9	16.7	7.1	4.7	
,55		11.9	30.9	31.0	11.9	4.8	2.4	
.50		30.9	31.0	14.3	2.4	4.7		
.45		31.0	23.8	2.4	2.3	2.4		
.40	11.9	23.8	2.4					
.35	33.3	2.4						
.30	28.6							
.25	26.2							
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Max H Truck	.40	.55	.60	.65	.70	.75	.80	.85
Avg H Truck	.32	.46	.51	.58	.65	.68	.76	.82
Min H Truck	.25	.35	.40	.45	.45	.45	.55	.65
Range	.15	.20	.20	.20	.25	.30	.25	.20
Poisson's								
Coef. K	1.6	1.7	1.7	1.4	1.1	1.5	.7	.6

The equivalent H truck loadings shown for the unit weight trucks of this table are proportional to the equivalent H truck loadings based on gross weights for corresponding vehicles among the 14 Type 3-S3 trucks reported in the 1942 loadometer survey.

Table 19.7b

CALCULATED FREQUENCIES OF EQUIVALENT H TRUCK LOADINGS OF THE 14 TYPE 3-S3 TRUCKS BASED ON POISSON'S DISTRIBUTION LAW



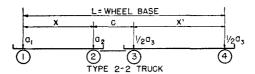
Equivalent H truck loadings based on moments produced by gross vehicle weights. Equivalent H truck loadings which appear less than 1 in 1000, or account for less than 0.1% of the heavy trucks of this type are not shown in this table.

Equivalent	Span-Feet									
H Truck Loadings	10	20	30	40	50	60	80	100		
.85								54.9		
.80							49.6	32.9		
.75						22.3	34.8	9.9		
.70					33.3	33.5	12.2	2.0		
.65				24.7	36.6	25.1	2.8	.3		
.60			18.3	34.5	20.1	12.6	.5	•0		
.55		18.3	31.1	24.2	7.4	4.7	.1			
.50		31.1	26.4	11.3	2.0	1.4	••			
.45		26.4	15.0	3.9	.4	.4				
.40	20.2	15.0	6.4	1.1	.1	••				
.35	32.3	6.4	2.2	.3	.î					
.30	25.8	2.2	.6							
.25	13.8	.6	••							
.20	5.5									
.15	1.8									
.10	.5									
.05	.1									
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0		
Max H Truck	.40	.55	.60	.65	.70	.75	.80	.85		
Avg H Truck	.32	.46	.51	.58	.65	.67	.78	.82		
Min H Truck	.05	.25	.30	.35	.35	.45	.55	.65		
Range	.35	.30	.30	.30	.35	.30	.25	.20		
Poisson's			.00	.00	.00		,20			
Coef. K	1.6	1.7	1.7	1.4	1.1	1.5	.7	.6		
Std. Dev. D	1,265	1.304	1.304	1.183	1.049	1.225	.837	.778		

The equivalent H truck loadings shown for the unit weight trucks of this table are proportional to the equivalent H truck loadings based on gross weights for corresponding vehicles among the 14 Type 3-S3 trucks reported in the 1942 loadometer survey.

Table 19.8a

OBSERVED FREQUENCIES OF EQUIVALENT H TRUCK LOADINGS BASED ON MOMENTS PRODUCED BY THE 99 TYPE 2-2 TRUCKS WEIGHING ONE KIP EACH



Equivalent H Truck	Span-Feet									
Loadings	10	20	30	40	50	60	80	100		
.90							7.4	26.3		
.85						5.7	23.9	32.7		
.80					7.1	17.9	31.7	30.0		
.75				6.7	15.2	25.3	26.9	10.4		
.70			3.3	10.1	24.6	27.9	9.4	.6		
.65			7.1	20.2	23.6	15.2	.7			
.60		2.3	15.8	23.2	18.2	7.1	•			
.55		16.5	21.2	22.9	7.0	.7				

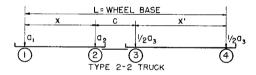
Table 19.8a (Co	ontinuea)							
Equivalent				Spa	n-Feet			
H Truck Loadings	10	20	30	40	50	60	80	100
.50	19.6	16.5	26.3	11.5	4.3	.2		
.45	33.3	31.7	16.5	5.1				
.40	23.9	16.8	9.8	.3				
.35	23.2	16.2						
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Max H Truck	.50	.60	.70	.75	.80	.85	.90	.90
Avg H Truck	.43	.45	.53	.60	.67	.72	.80	.84
Min H Truck	.35	.35	.40	.40	.50	.50	.65	.70
Range	.15	.25	.30	.35	.30	.35	.25	.20
Poisson's								
Coef. K	1.4	2.9	3.5	3.0	2.7	2.5	2.1	1.2

Table 19.8a (Continued)

The equivalent H truck loadings shown for the unit weight trucks of this table are proportional to the equivalent H truck loadings based on gross weights for corresponding vehicles among the 99 Type 2-2 trucks reported in the 1942 loadometer survey.

Table 19.8b

CALCULATED FREQUENCIES OF EQUIVALENT H TRUCK LOADINGS OF THE
99 TYPE 2-2 TRUCKS BASED ON POISSON'S DISTRIBUTION LAW



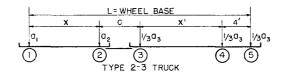
Equivalent H truck loadings based on moments produced by gross vehicle weights. Equivalent H truck loadings which appear less than 1 in 1000, or account for less than 0.1% of the heavy trucks of this type are not shown in this table.

Equivalent				Spar	n-Feet			
H Truck Loadings	10	20	30	40	50	60	80	100
.90			,				12.2	30.1
.85						8.2	25.7	36.1
.80					6.7	20.5	27.0	21.7
.75				5.0	18.1	25.7	18.9	8.7
.70			3.0	14.9	24.5	21.4	9.9	2.6
.65			10.6	22.4	22.0	13.4	4.2	.6
.60		5.5	18.5	22.4	14.9	6.7	1.5	.1
.55		16.0	21.6	16.8	8.0	2.8	.4	.1
.50	24.7	23.1	18.9	10.1	3.6	1.0	.1	
.45	34.5	22.4	13.2	5.0	1.4	.3	.1	
.40	24.2	16.2	7.7	2.2	.5			
.35	11.3	9.4	3.9	.8	.1			
.30	3.9	4.5	1.7	.3	.1			
.25	1.1	1.9	.7	.1	.1			
.20	.3	.7	.2					
.15		.2						
.10		.1						
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Max H Truck	.50	.60	.70	.75	.80	.85	.90	.90
Avg H Truck	.43	.45	.53	.60	.67	.72	.80	.84
Min H Truck	.20	.10	.20	.25	.25	.45	.45	.55
Range	.30	.50	.50	.50	.55	.40	.45	.35
Poisson's								
Coef. K	1.4	2.9	3.5	3.0	2.7	2.5	2.1	1.2
Std. Dev. D	1.183	1.703	1.871	1.732	1.643	1.581	1.449	1.095

The equivalent H truck loadings shown for the unit weight trucks of this table are proportional to the equivalent H truck loadings based on gross weights for corresponding vehicles among the 99 Type 2-2 trucks reported in the 1942 loadometer survey.

Table 19.9a

OBSERVED FREQUENCIES OF EQUIVALENT H TRUCK LOADINGS BASED ON MOMENTS PRODUCED BY THE 24 TYPE 2-3 TRUCKS WEIGHING ONE KIP EACH

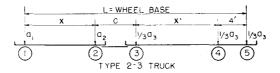


Equivalent	Span-Feet									
H Truck Loadings	10	20	30	40	50	60	80	100		
.85								19.5		
.80							19.5	33.3		
.75							33.3	30.6		
.70						22.2	30.6	16.6		
.65					19.5	29.2	16.6			
.60				11.0	29.2	27.8				
.55			18.1	18.1	30.6	16.7				
.50	8.3	12.5	22.2	30.6	16.6	4.1				
.45	29.2	33,3	29.2	25.0	4.1					
.40	27.8	29.2	19.4	15.3						
.35	29.2	25.0	11.1							
.30	4.2									
.25	1.3									
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0		
Max H Truck	.50	.50	.55	.60	.65	.70	.80	.85		
Avg H Truck	.40	.42	.46	.49	.57	.63	.73	.78		
Min H Truck	.25	.35	.35	.40	.45	.50	.65	.70		
Range	.25	.15	.20	.20	.20	.20	.15	.15		
Poisson's										
Coef. K	1,9	1.6	1.8	2.1	1.5	1.5	1.4	1.4		

The equivalent H truck loadings shown for the unit weight trucks of this table are proportional to the equivalent H truck loadings based on gross weights for corresponding vehicles among the 24 Type 2-3 trucks reported in the 1942 loadometer survey.

Table 19.9b

CALCULATED FREQUENCIES OF EQUIVALENT H TRUCK LOADINGS OF THE 24 TYPE 2-3 TRUCKS BASED ON POISSON'S DISTRIBUTION LAW



Equivalent H truck loadings based on moments produced by gross vehicle weights. Equivalent H truck loadings which appear less than 1 in 1000, or account for less than 0.1% of the heavy trucks of this type are not shown in this table.

Equivalent H Truck Loadings	Span-Feet									
	10	20	30	40	50	60	80	100		
.85								24.7		
.80							24.7	34.5		
.75							34.5	24.2		
.70						22.3	24.2	11.3		
.65					22.3	33.5	11.3	3.9		
.60				12.2	33.5	25.1	3.9	1.1		
.55			16.5	25.7	25.1	12.6	1.1	.3		

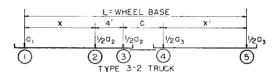
Equivalent				Spar	n-Feet			
H Truck Loadings	10	20	30	40	50	60	80	100
.50	15.0	20.2	29.8	27.0	12.6	4.7	.3	
.45	28.4	32.3	26.8	18.9	4.7	1.4		
.40	27.0	25.8	16.1	9.9	1.4	.4		
.35	17.1	13.8	7.2	4.2	.4			
.30	8.1	5.5	2.6	1.5				
.25	3.1	1.8	.8	.4				
.20	1.0	.5	.2	.1				
.15	.3	.1		.1				
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Max H Truck	.50	.50	.55	.60	.65	.70	.80	.85
Avg H Truck	.40	.42	.46	.49	.57	.63	.73	.78
Min H Truck	.15	.15	.20	.15	.35	.40	.50	.55
Range	.35	.35	.35	.45	.30	.30	.30	.30
Poisson's								
Coef. K	1.9	1.6	1.8	2.1	1.5	1.5	1.4	1.4
Std. Dev. D	1.378	1.265	1.342	1.449	1,225	1.225	1.183	1.183

Table 19.9b (Continued)

The equivalent H truck loadings shown for the unit weight trucks of this table are proportional to the equivalent H truck loadings based on gross weights for corresponding vehicles among the 24 Type 2-3 trucks reported in the 1942 loadometer survey.

OBSERVED FREQUENCIES OF EQUIVALENT H TRUCK LOADINGS BASED ON MOMENTS PRODUCED BY THE 68 TYPE 3-2 TRUCKS WEIGHING ONE KIP EACH

Table 19.10a

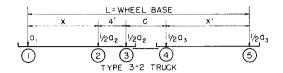


Equivalent H Truck				Spa	n-Feet			
Loadings	10	20	30	40	50	60	80	100
.90							-	12.7
.85							17.7	27.0
.80						7.4	27.0	32.4
.75					9.3	20.1	31.9	21.6
.70				10.8	18.1	26.0	17.1	6.3
.65			9.8	15.7	27.9	27.0	6.3	
.60		1.4	15.7	24.5	25.0	13.2		
.55		14.7	32.8	23.5	15.2	6.3		
.50	1.0	15.2	24.0	17.7	4.5			
.45	14.7	32.4	17.7	7.8				
.40	14.2	18.6						
.35	32.8	17.7						
.30	18.6							
.25	18.7							
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Max H Truck	.50	.60	.65	.70	.75	.80	.85	.90
Avg H Truck	.35	.45	.54	.58	.63	.68	.77	.81
Min H Truck	.25	.35	.45	.45	.50	.55	.65	.70
Range	.25	.25	.20	.25	.25	.25	.20	.20
Poisson's	•	•						••
Coef. K	3.1	3.0	2.2	2.4	2.3	2.4	1.7	1.8

The equivalent H truck loadings shown for the unit weight trucks of this table are proportional to the equivalent H truck loadings based on gross weights for corresponding vehicles among the 68 Type 3-2 trucks reported in the 1942 loadometer survey.

Table 19.10b

CALCULATED FREQUENCIES OF EQUIVALENT H TRUCK LOADINGS OF THE 68 TYPE 3-2 TRUCKS BASED ON POISSON'S DISTRIBUTION LAW



Equivalent H truck loadings based on moments produced by gross vehicle weights. Equivalent H truck loadings which appear less than 1 in 1000, or account for less than 0.1% of the heavy trucks of this type are not shown in this table.

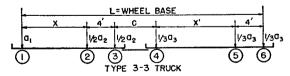
Equivalent H Truck				Span-	Feet			
Loadings	10	20	30	40	50	60	80	100
.90								16.5
.85							18.3	29.8
.80						9.1	31.1	26.8
.75					10.0	21.8	26.4	16.1
.70				9.1	23.1	26.1	15.0	7.2
.65			11.1	21.8	26.5	20.9	6.4	2.6
.60		5.0	24.4	26.1	20.3	12.5	2.2	.8
.55		14.9	26.8	20.9	11.7	6.0	.6	.8 .2
.50	4.5	22.4	19.7	12.5	5.4	2.4		
.45	14.0	22.4	10.8	6.0	2.1	.8		
.40	21.6	16.8	4.8	2.4	.7	.2		
.35	22.4	10.1	1.7	.8	.2	.1		
.30	17.3	5.0	.5	.2		.1		
.25	10.7	2.2	.2	.2 .1				
.20	5.6	.8		.1				
.15	2.5	.3						
.10	1.0	.1						
.05	.4							
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Max H Truck	.50	.60	.65	.70	.75	.80	.85	.90
Avg H Truck	.35	.45	.54	.58	.63	.68	.77	.81
Min H Truck	.05	.10	.25	.20	.35	.30	.55	.55
Range	.45	.50	.40	.50	.40	.50	.30	.35
Poisson's								
Coef. K	3.1	3.0	2.2	2.4	2.3	2.4	1.7	1.8
Std. Dev. D	1.761	1.732	1.483	1.549	1.517	1.549	1.304	1.342

The equivalent H truck loadings shown for the unit weight trucks of this table are proportional to the equivalent H truck loadings based on gross weights for corresponding vehicles among the 68 Type 3-2 trucks reported in the 1942 loadometer survey.

Table 19.11a

OBSERVED FREQUENCIES OF EQUIVALENT H TRUCK LOADINGS BASED ON MOMENTS

PRODUCED BY THE 176 TYPE 3-3 TRUCKS WEIGHING ONE KIP EACH



Equivalent				Span-	-Feet			
H Truck Loadings	10	20	30	40	50	60	80	100
.85				-				9.9
.80							5.3	27.7
.75							25.6	32.4
.70						8.6	32.0	23.8
.65					5.0	21.6	28.4	5.7
.60				4.7	18.6	31.7	7.8	.5
.55			3.8	18.6	31.6	24.5	.9	

Table 13.114 (C	,ontinucu,							
Equivalent H Truck				Spa	n-Feet			
Loadings	10	20	30	40	50	60	80	100
.50		2.1	20.1	31.6	28.8	11.8		
.45		30.5	30.5	29.2	14.8	1.3		
.40	1.9	32.4	30.7	14.8	1.2	.5		
.35	29.7	32.2	13.3	1.1				
.30	32.4	2.8	1.6					
.25	32.4							
.20	3.6							
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Max H Truck	.40	.50	.55	.60	.65	.70	.80	.85
Avg H Truck	.30	.40	.43	.48	.53	.59	.69	.76
Min H Truck	.20	.30	.30	.35	.40	.40	.55	.60
Range	.20	.20	.25	.25	.25	.30	.25	.25
Poisson's								
Coef. K	2.1	2.0	2.3	2.3	2.3	2.2	2.1	1.9

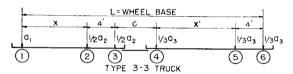
Table 19.11a (Continued)

The equivalent H truck loadings shown for the unit weight trucks of this table are proportional to the equivalent H truck loadings based on gross weights for corresponding vehicles among the 176 Type 3-3 trucks reported in the 1942 loadometer survey.

Table 19.11b

CALCULATED FREQUENCIES OF EQUIVALENT H TRUCK LOADINGS OF THE

176 TYPE 3-3 TRUCKS BASED ON POISSON'S DISTRIBUTION LAW



Equivalent H truck loadings based on moments produced by gross vehicle weights. Equivalent H truck loadings which appear less than 1 in 1000, or account for less than 0.1% of the heavy trucks of this type are not shown in this table.

Equivalent H Truck				Span-	Feet			
Loadings	10	20	30	40	50	60	80	100
.85								15.0
.80							12.2	28.4
.75							25.7	27.0
.70						11.1	27.0	17.1
.65					10.0	24.4	18.9	8.1
.60				10.0	23.1	26.8	9.9	3.1
.55			10.0	23.1	26.5	19.7	4.2	1.0
.50		13.5	23.1	26.5	20.3	10.8	1.5	.3
.45		27.1	26.5	20.3	11.7	4.8	.4	•
.40	12.2	27.1	20.3	11.7	5.4	1.7	.1	
.35	25.7	18.0	11.7	5.4	2.1	.5	.1	
.30	27.0	9.0	5.4	2.1	.7	.2		
.25	18.9	3.6	2.1	.7	.2			
.20	9.9	1.2	.7	.2				
.15	4.2	.3	.2					
.10	1.5	.1						
.05	.6	.1						
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Max H Truck	.40	.50	.55	.60	.65	.70	.80	.85
Avg H Truck	.30	.40	.43	.48	.53	.59	.69	.76
Min H Truck	.05	.05	.15	.20	.25	.30	.35	.50
Range	.35	.45	.40	.40	.40	.40	.45	.35
Poisson's								
Coef. K	2.1	2.0	2.3	2.3	2.3	2.2	2.1	1.9
Std. Dev. D	1.449	1.414	1.517	1.517	1.517	1.483	1.449	1.378

The equivalent H truck loadings shown for the unit weight trucks of this table are proportional to the equivalent H truck loadings based on gross weights for corresponding vehicles among the 176 Type 3-3 trucks reported in the 1942 loadometer survey.

20. MAXIMUM, AVERAGE, AND MINIMUM EQUIVALENT H TRUCK LOADINGS ON SIMPLE SPAN BRIDGES BASED ON VEHICLES WEIGHING ONE KIP EACH

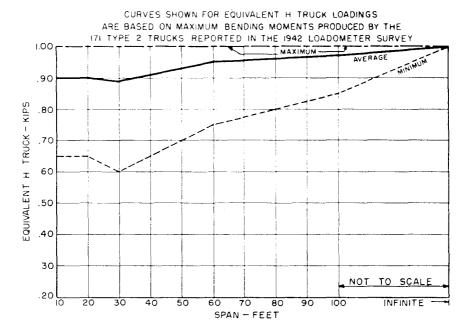
Figures 20.1—20.11 present a graphical representation of the maximum, average, and minimum equivalent H truck loadings on simple spans of various lengths, based on vehicles weighing one kip each, for each of the 11 more numerous heavy vehicle types reported by the 1942 loadometer survey. These figures were plotted from the data given in Tables 19.1a—19.11a. The upper part of each of these figures give the maximum, average, and minimum equivalent H truck loadings for each span length and the lower part shows the range, the Poisson coefficient, K, and the standard deviation, D, for each corresponding span length. The meaning of these terms is fully explained in Article 15. All of these data are given in the following figures.

Heavy Vehicle Type	Number of Vehicles Reported	Figure Number
2	171	20.1
3	381	20.2
2-S1	2855	20.3
2-S2	508	20.4
3-S1	9	20.5
3-S2	142	20.6
3-S3	14	20.7
2-2	99	20.8
2-3	24	20.9
3-2	68	20.10
3-3	176	20.11

FREQUENCY DISTRIBUTION OF EQUIVALENT H TRUCK LOADINGS

ON SIMPLE SPANS OF VARIOUS LENGTHS

FOR TYPE 2 TRUCKS WEIGHING ONE KIP EACH



NOTE: - GROSS VEHICLE WEIGHT IN KIPS AND EQUIVALENT H TRUCK LOADINGS IN KIPS ARE IDENTICAL AT INFINITE SPAN

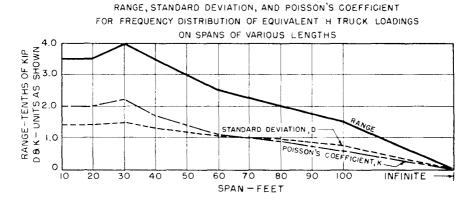
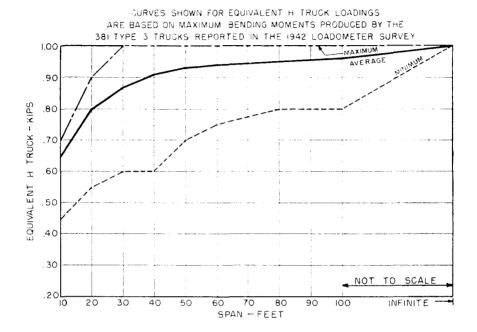


Figure 20.1

FREQUENCY DISTRIBUTION OF EQUIVALENT H TRUCK LOADINGS ON SIMPLE SPANS OF VARIOUS LENGTHS FOR TYPE 3 TRUCKS WEIGHING ONE KIP EACH



NOTE: -GROSS VEHICLE WEIGHT IN KIPS AND EQUIVALENT H TRUCK LOADINGS
IN KIPS ARE IDENTICAL AT INFINITE SPAN

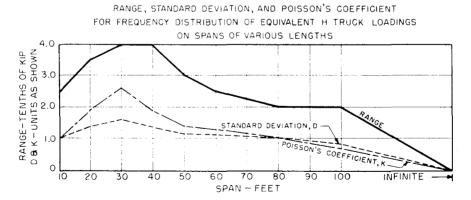
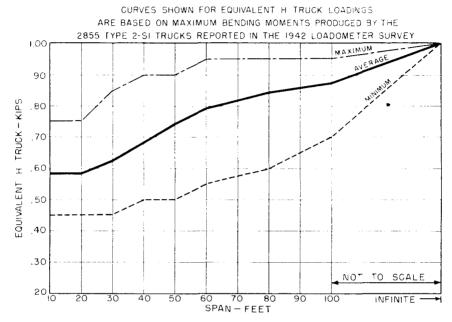


Figure 20.2

FREQUENCY DISTRIBUTION OF EQUIVALENT H TRUCK LOADINGS
ON SIMPLE SPANS OF VARIOUS LENGTHS
FOR TYPE 2-SI TRUCKS WEIGHING ONE KIPEACH



NOTE: - GROSS VEHICLE WEIGHT IN KIPS AND EQUIVALENT H TRUCK LOADINGS IN KIPS ARE IDENTICAL AT INFINITE SPAN

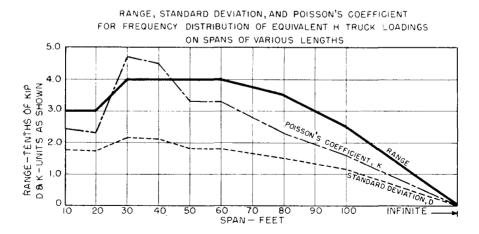
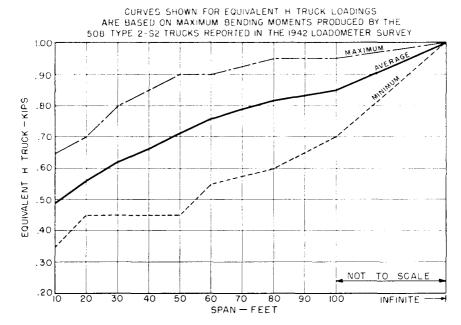


Figure 20.3

FREQUENCY DISTRIBUTION OF EQUIVALENT H TRUCK LOADINGS ON SIMPLE SPANS OF VARIOUS LENGTHS FOR TYPE 2-S2 TRUCKS WEIGHING ONE KIP EACH



NOTE: - GROSS VEHICLE WEIGHT IN KIPS AND EQUIVALENT H TRUCK LOADINGS IN KIPS ARE IDENTICAL AT INFINITE SPAN

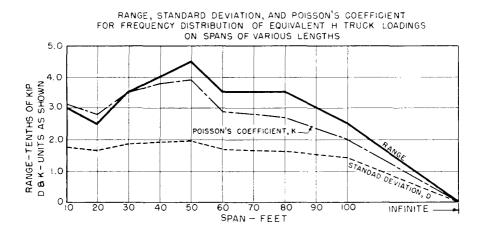
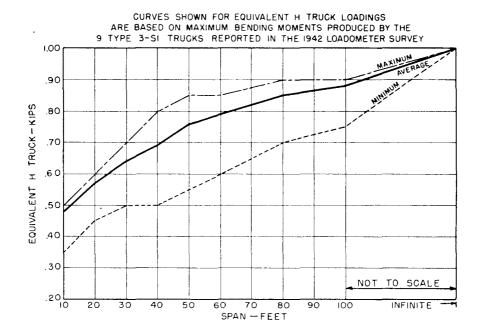


Figure 20.4

FREQUENCY DISTRIBUTION OF EQUIVALENT H TRUCK LOADINGS ON SIMPLE SPANS OF VARIOUS LENGTHS FOR TYPE 3-SI TRUCKS WEIGHING ONE KIP EACH



NOTE: -- GROSS VEHICLE WEIGHT IN KIPS AND EQUIVALENT H TRUCK LOADINGS IN KIPS ARE IDENTICAL AT INFINITE SPAN

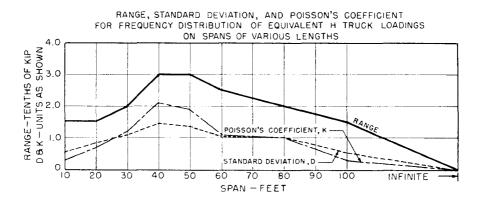
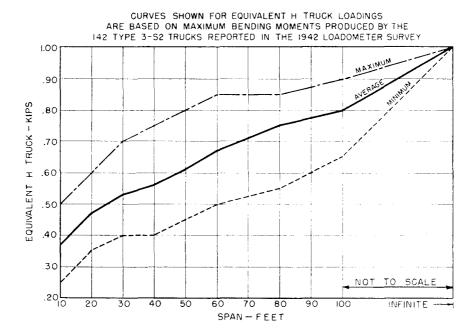


Figure 20.5

FREQUENCY DISTRIBUTION OF EQUIVALENT H TRUCK LOADINGS ON SIMPLE SPANS OF VARIOUS LENGTHS FOR TYPE 3-S2 TRUCKS WEIGHING ONE KIP EACH



NOTE: -GROSS VEHICLE WEIGHT IN KIPS AND EQUIVALENT H TRUCK LOADINGS IN KIPS ARE IDENTICAL AT INFINITE SPAN

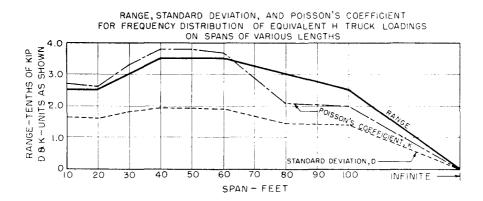
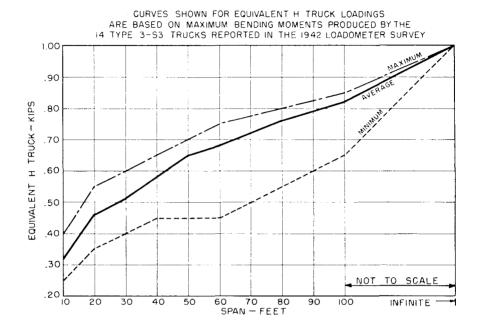


Figure 20.6

FREQUENCY DISTRIBUTION OF EQUIVALENT H TRUCK LOADINGS
ON SIMPLE SPANS OF VARIOUS LENGTHS
FOR TYPE 3-S3 TRUCKS WEIGHING ONE KIP EACH



NOTE: - GROSS VEHICLE WEIGHT IN KIPS AND EQUIVALENT H TRUCK LOADINGS
IN KIPS ARE IDENTICAL AT INFINITE SPAN

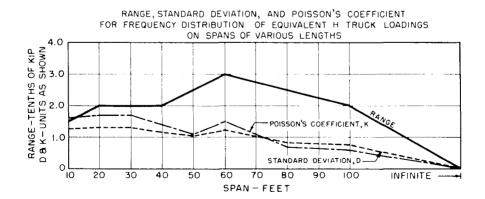
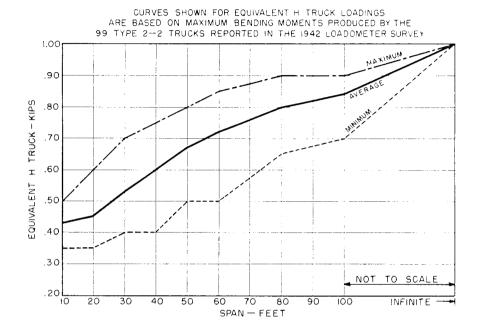


Figure 20.7

FREQUENCY DISTRIBUTION OF EQUIVALENT H TRUCK LOADINGS ON SIMPLE SPANS OF VARIOUS LENGTHS
FOR TYPE 2-2 TRUCKS WEIGHING ONE KIP EACH



NOTE: - GROSS VEHICLE WEIGHT IN KIPS AND EQUIVALENT H TRUCK LOADINGS IN KIPS ARE IDENTICAL AT INFINITE SPAN

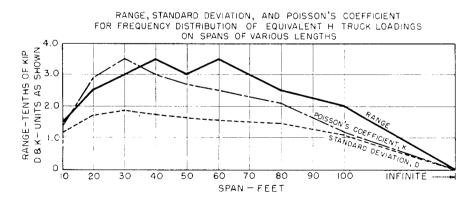
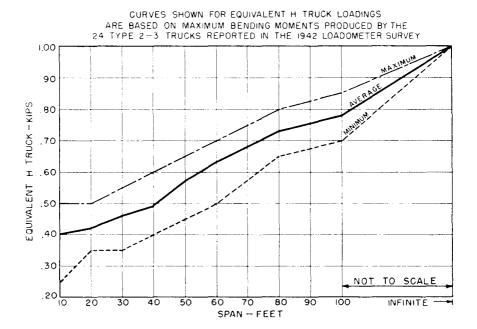


Figure 20.8

FREQUENCY DISTRIBUTION OF EQUIVALENT H TRUCK LOADINGS
ON SIMPLE SPANS OF VARIOUS LENGTHS
FOR TYPE 2-3 TRUCKS WEIGHING ONE KIP EACH



NOTE: - GROSS VEHICLE WEIGHT IN KIPS AND EQUIVALENT H TRUCK LOADINGS IN KIPS ARE IDENTICAL AT INFINITE SPAN

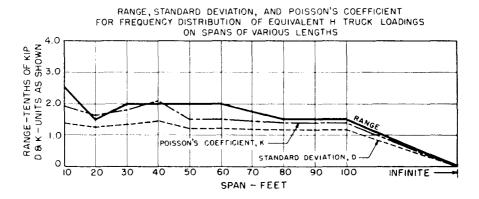
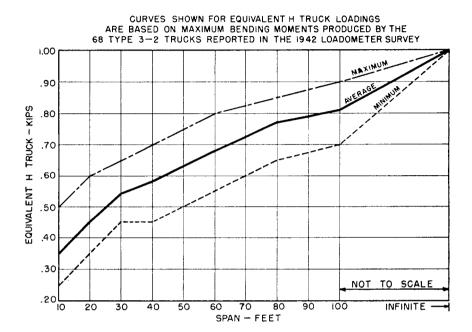


Figure 20.9

FREQUENCY DISTRIBUTION OF EQUIVALENT H TRUCK LOADINGS ON SIMPLE SPANS OF VARIOUS LENGTHS FOR TYPE 3—2 TRUCKS WEIGHING ONE KIP EACH



NOTE: GROSS VEHICLE WEIGHT IN KIPS AND EQUIVALENT H TRUCK LOADINGS IN KIPS ARE IDENTICAL AT INFINITE SPAN

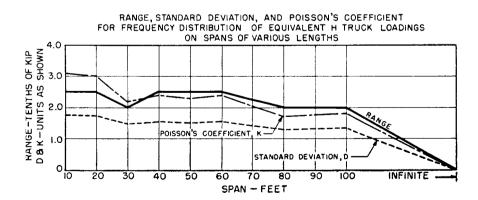
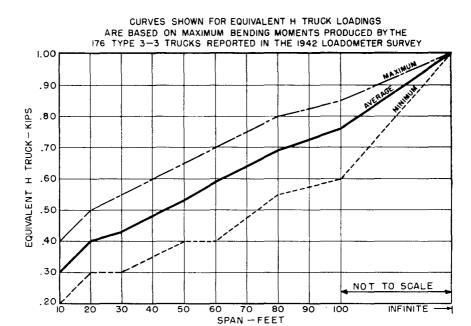


Figure 20.10

FREQUENCY DISTRIBUTION OF EQUIVALENT H TRUCK LOADINGS ON SIMPLE SPANS OF VARIOUS LENGTHS FOR TYPE 3-3 TRUCKS WEIGHING ONE KIP EACH



NOTE: - GROSS VEHICLE WEIGHT IN KIPS AND EQUIVALENT H TRUCK LOADINGS IN KIPS ARE IDENTICAL AT INFINITE SPAN

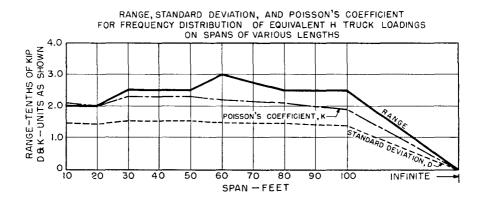


Figure 20.11

21. HISTOGRAMS SHOWING FREQUENCY DISTRIBUTIONS OF EQUIVALENT H TRUCK LOADINGS ON SIMPLE SPAN BRIDGES BASED ON VEHICLES WEIGHING ONE KIP EACH

Figures 21.1—21.11 present a graphical representation of the observed and calculated frequencies of equivalent H truck loadings for vehicles weighing one kip each on simple spans up to 100 feet in length for each of the 11 more numerous heavy vehicle types reported by the 1942 loadometer survey. The histograms represent the observed data, based on 3-item moving averages as explained in Article 15, and the dashed lines represent the corresponding Poisson distributions. Both the observed and calculated frequencies shown in these figures were plotted from the corresponding data given in Tables 19.1a—19.11a and Tables 19.1b—19.11b, respectively. These distributions are given in the following figures.

Heavy Vehicle Type	Number of Vehicles Reported	Figure Number
2	171	21.1
3	381	21.2
2-S1	2855	21.3
2-S2	508	21.4
3-S1	9	21.5
3-S2	142	21.6
3-S3	14	21.7
2-2	99	21.8
2-3	$^{\prime}$ 24	21.9
3-2	68	21.10
3-3	176	21.11

A COMPARISON OF OBSERVED WITH THEORETICAL FREQUENCIES
OF EQUIVALENT H TRUCK LOADINGS FOR TYPE 2 TRUCKS
WEIGHING ONE KIP EACH ON SIMPLE SPANS OF VARIOUS LENGTHS

OBSERVED FREQUENCIES BASED ON MOMENTS PRODUCED BY
171 TYPE 2 TRUCKS WEIGHING ONE KIP EACH
THEORETICAL FREQUENCIES BASED ON POISSON'S DISTRIBUTION LAW

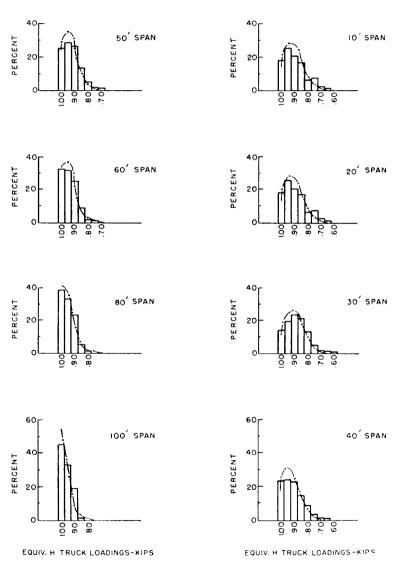


Figure 21.1

A COMPARISON OF OBSERVED WITH THEORETICAL FREQUENCIES
OF EQUIVALENT H TRUCK LOADINGS FOR TYPE 3 TRUCKS
WEIGHING ONE KIP EACH ON SIMPLE SPANS OF VARIOUS LENGTHS

OBSERVED FREQUENCIES BASED ON MOMENTS PRODUCED BY
381 TYPE 3 TRUCKS WEIGHING ONE KIP EACH
THEORETICAL FREQUENCIES BASED ON POISSON'S DISTRIBUTION LAW

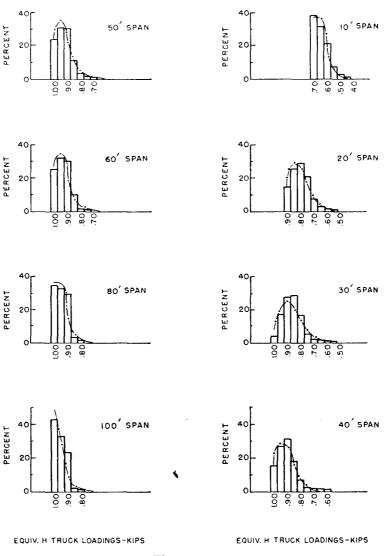


Figure 21.2

A COMPARISON OF OBSERVED WITH THEORETICAL FREQUENCIES
OF EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-SI TRUCKS
WEIGHING ONE KIP EACH ON SIMPLE SPANS OF VARIOUS LENGTHS

OBSERVED FREQUENCIES BASED ON MOMENTS PRODUCED BY 2855 TYPE 2-SI TRUCKS WEIGHING ONE KIP EACH THEORETICAL FREQUENCIES BASED ON POISSON'S DISTRIBUTION LAW

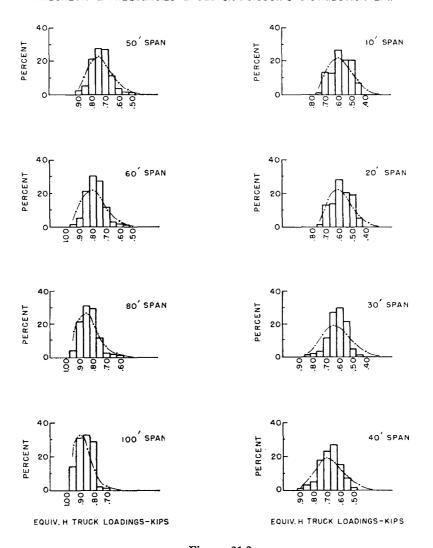


Figure 21.3

A COMPARISON OF OBSERVED WITH THEORETICAL FREQUENCIES
OF EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-S2 TRUCKS
WEIGHING ONE KIP EACH ON SIMPLE SPANS OF VARIOUS LENGTHS

OBSERVED FREQUENCIES BASED ON MOMENTS PRODUCED BY
508 TYPE 2-S2 TRUCKS WEIGHING ONE KIP EACH
THEORETICAL FREQUENCIES BASED ON POISSON'S DISTRIBUTION LAW

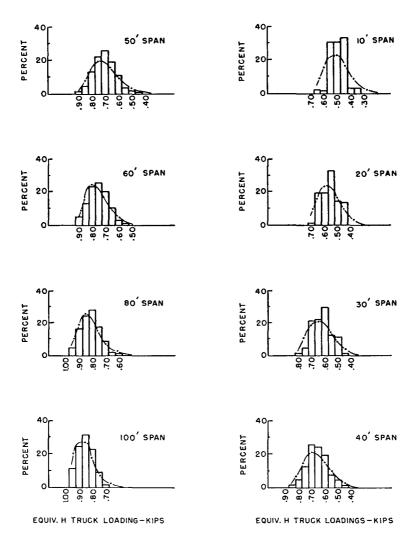


Figure 21.4

A COMPARISON OF OBSERVED WITH THEORETICAL FREQUENCIES
OF EQUIVALENT H TRUCK LOADINGS FOR TYPE 3—SI TRUCKS
WEIGHING ONE KIP EACH ON SIMPLE SPANS OF VARIOUS LENGTHS

OBSERVED FREQUENCIES BASED ON MOMENTS PRODUCED BY 9 TYPE 3-SI TRUCKS WEIGHING ONE KIP EACH THEORETICAL FREQUENCIES BASED ON POISSON'S DISTRIBUTION LAW

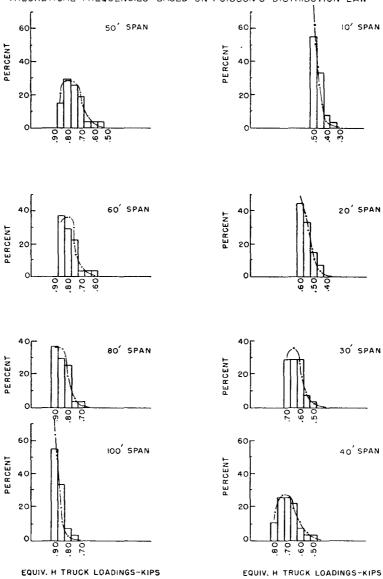


Figure 21.5

A COMPARISON OF OBSERVED WITH THEORETICAL FREQUENCIES
OF EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-S2 TRUCKS
WEIGHING ONE KIP EACH ON SIMPLE SPANS OF VARIOUS LENGTHS

OBSERVED FREQUENCIES BASED ON MOMENTS PRODUCED BY
142 TYPE 3-S2 TRUCKS WEIGHING ONE KIP EACH
THEORETICAL FREQUENCIES BASED ON POISSON'S DISTRIBUTION LAW

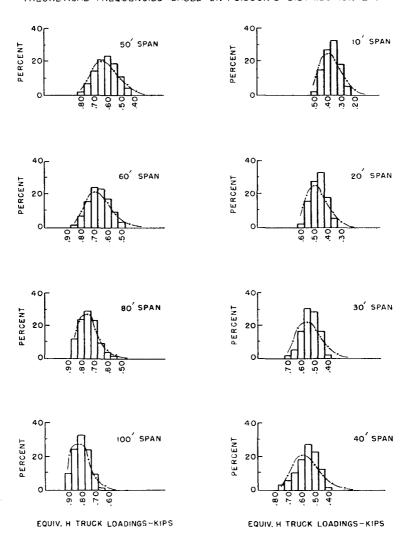


Figure 21.6

A COMPARISON OF OBSERVED WITH THEORETICAL FREQUENCIES
OF EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-S3 TRUCKS
WEIGHING ONE KIP EACH ON SIMPLE SPANS OF VARIOUS LENGTHS

OBSERVED FREQUENCIES BASED ON MOMENTS PRODUCED BY
14 TYPE 3-S3 TRUCKS WEIGHING ONE KIP EACH
THEORETICAL FREQUENCIES BASED ON POISSON'S DISTRIBUTION LAW

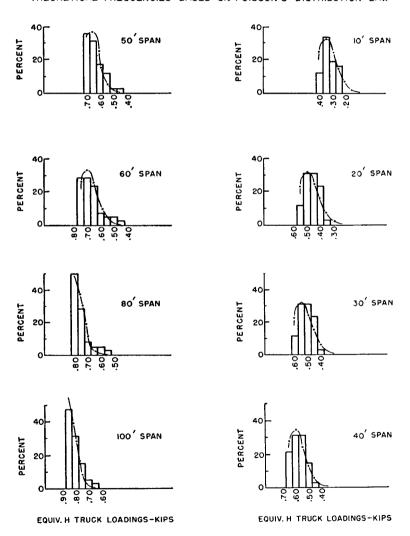


Figure 21.7

A COMPARISON OF OBSERVED WITH THEORETICAL FREQUENCIES
OF EQUIVALENT H TRUCK LOADINGS FOR TYPE 2-2 TRUCKS
WEIGHING ONE KIP EACH ON SIMPLE SPANS OF VARIOUS LENGTHS

OBSERVED FREQUENCIES BASED ON MOMENTS PRODUCED BY
99 TYPE 2-2 TRUCKS WEIGHING ONE KIP EACH
THEORETICAL FREQUENCIES BASED ON POISSON'S DISTRIBUTION LAW

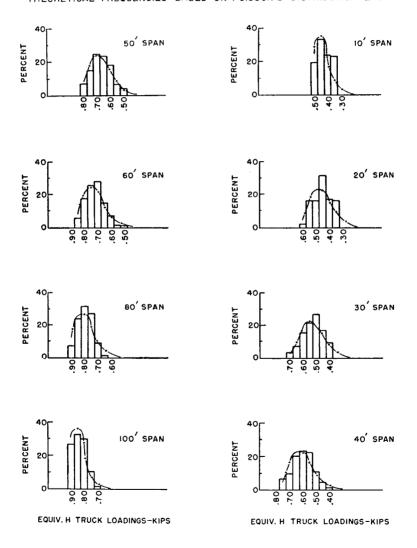


Figure 21.8

A COMPARISON OF OBSERVED WITH THEORETICAL FREQUENCIES
OF EQUIVALENT H TRUCK LOADINGS FOR TYPE 2—3 TRUCKS
WEIGHING ONE KIP EACH ON SIMPLE SPANS OF VARIOUS LENGTHS

OBSERVED FREQUENCIES BASED ON MOMENTS PRODUCED BY 24 TYPE 2-3 TRUCKS WEIGHING ONE KIP EACH THEORETICAL FREQUENCIES BASED ON POISSON'S DISTRIBUTION LAW

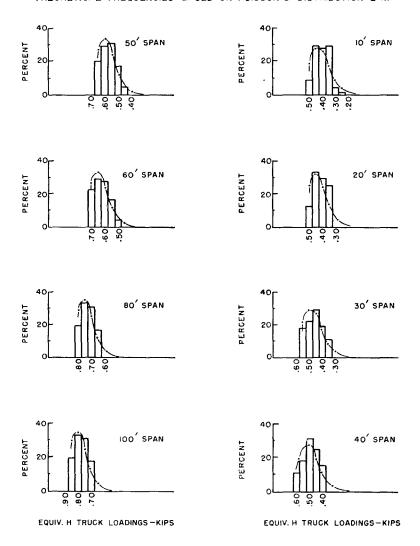


Figure 21.9

A COMPARISON OF OBSERVED WITH THEORETICAL FREQUENCIES
OF EQUIVALENT H TRUCK LOADINGS FOR TYPE 3-2 TRUCKS
WEIGHING ONE KIP EACH ON SIMPLE SPANS OF VARIOUS LENGTHS

OBSERVED FREQUENCIES BASED ON MOMENTS PRODUCED BY 68 TYPE 3-2 TRUCKS WEIGHING ONE KIP EACH THEORETICAL FREQUENCIES BASED ON POISSON'S DISTRIBUTION LAW

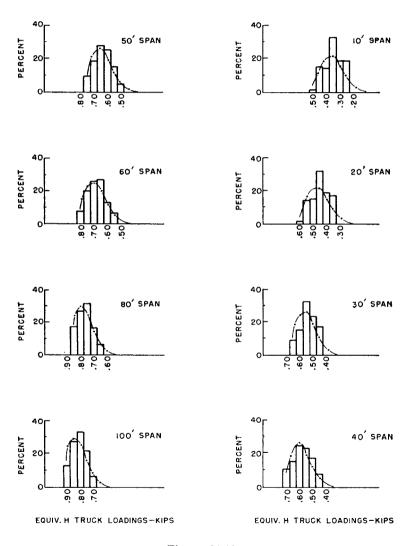


Figure 21.10

A COMPARISON OF OBSERVED WITH THEORETICAL FREQUENCIES
OF EQUIVALENT H TRUCK LOADINGS FOR TYPE 3—3 TRUCKS
WEIGHING ONE KIP EACH ON SIMPLE SPANS OF VARIOUS LENGTHS

OBSERVED FREQUENCIES BASED ON MOMENTS PRODUCED BY
176 TYPE 3-3 TRUCKS WEIGHING ONE KIP EACH
THEORETICAL FREQUENCIES BASED ON POISSON'S DISTRIBUTION LAW

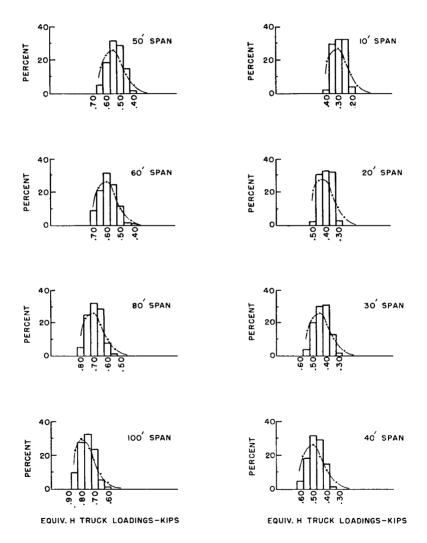


Figure 21.11

PART V

OBSERVED AND CALCULATED FREQUENCIES OF EQUIV-ALENT CONCENTRATED LOADS ON SIMPLE SPAN BRIDGES FOR THE HEAVY VEHICLES REPORTED BY THE SPECIAL LOADMETER SURVEY OF 1942

22. FREQUENCY ANALYSIS OF EQUIVALENT CONCENTRATED LOADS

Since the procedures for arriving at the observed and calculated frequencies of equivalent concentrated loads given by the tables and figures in the following articles of Part V (Articles 23 through 28) have already been explained at some length in Articles 14 and 15, only a brief discussion of them here will be needed to facilitate their interpretation. Before proceeding with the discussion of the tables and figures in these articles, however, a list of their titles will not only serve as a convenient reference, but since they are somewhat self-explanatory, they will also serve to indicate the nature of the material presented in each. They are as follows:

Article 23 (Tables 23.1—23.12)	Observed and Calculated Frequencies of Equivalent Concentrated Loads on Simple Span Bridges Based on Gross Vehicle Weights
Article 24 (Figures 24.1—24.13)	Maximum, Minimum, and Average Equivalent Concentrated Loads on Simple Span Bridges Based on Gross Vehicle Weights
Article 25 (Figures 25.1—25.12)	Histograms Showing Frequency Distributions of Equivalent Concentrated Loads on Simple Span Bridges Based on Gross Vehicle Weights
Article 26 (Tables 26.1—26.11)	Observed and Calculated Frequencies of Equivalent Concentrated Loads on Simple Span Bridges Based on Vehicles Weighing One Kip Each
Article 27 (Figures 27.1—27.11)	Frequency Distributions of Equivalent Concentrated Loads on Simple Span Bridges Based on Vehicles Weighing One Kip Each
Article 28 (Figures 28.1—28.11)	Histograms Showing Frequency Distribution of Equivalent Concentrated Loads on Simple Span Bridges Based on Vehicles Weighing One Kip Each

It will be seen from these titles that the tables and figures given in Articles 23, 24, and 25 are concerned with the frequency analysis of equivalent concentrated loads based on gross vehicle weights and those in Articles 26, 27, and 28 are concerned with a similar frequency analysis based on vehicles weighing one kip each or vehicles of unit weight. The interpretation of the information given by the frequency distributions of equivalent concentrated loads presented in these articles is substantially the same as for those based on equivalent H truck loadings given in Part IV. The reader, therefore, is referred to Article 15 for a discussion of this subject. He is also referred to Article 5.4 "Use of Tables and Charts For Converting Heavy Vehicles into Equivalent Loads" for a discussion of the present and future potential uses of equivalent concentrated loads.

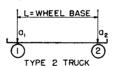
23. OBSERVED AND CALCULATED FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS ON SIMPLE SPAN BRIDGES BASED ON GROSS VEHICLE WEIGHTS

Tables 23.1a—23.11a and Tables 23.1b—23.11b, respectively, give the observed and calculated frequencies of equivalent concentrated loads, on spans up to 100 feet in length, for each of the 11 more numerous heavy vehicle types reported by the 1942 loadometer survey. Also, Table 23.12a and Table 23.12b, respectively, give similar observed and calculated frequencies for all of the 4531 heavy vehicles reported, including those whose individual frequencies are given in Tables 23.1a—23.11a and Tables 23.1b—23.11b. The observed frequencies shown in these tables—as previously explained in Article 15—are based on 3-item moving averages which has the effect of smoothing the data from one cell to the next.

The observed and calculated frequencies of equivalent concentrated loads for each of the 11 more numerous heavy vehicle types reported, and for all of the heavy vehicles reported are given in the following tables.

Heavy	Number of	Table N	Jumber
Vehicle	Vehicles	Observed	Calculated
Type	Reported	Frequencies	Frequencies
2^{-1}	171	23.1a	23.1b
3	381	23.2a	23.2b
2-S1	2855	23.3a	23.3b
2-S2	508	23.4a	23.4b
3-S1	9	23.5a	23.5b
3-S2	142	23.6a	23.6b
3-S3	14	23.7a	23.7b
2-2	99	23.8a	23.8b
2-3	24	23.9a	23.9b
3-2	68	23.10a	23.10b
3-3	176	23.11a	23.11b
All	4531	23.12a	23.12b

Table 23.1a OBSERVED FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS REQUIRED TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY THE 171 TYPE 2 TRUCKS REPORTED IN THE 1942 LOADOMETER SURVEY

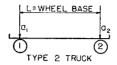


Equivalent				Span	-Feet			
Concentrated Loads	10	20	30	40	50	60	80	100
7	3.1	3.1						
8	6.4	6.4	5.7	1.4				
9	15.8	15.4	12.9	5.5	2.3			
10	25.5	25.5	24.7	16.8	10.3	7.0		
11	24.9	24.9	25.1	26.2	22.0	17.9	13.7	8.0
12	16.2	16.6	19.1	24.7	26.7	26.3	21.8	18.7
13	4.9	4.9	7.2	15.4	21.3	24.2	27.0	27.7
14	2.0	2.0	3.7	5.7	10.5	14.4	20.3	23.4
15	1.2	1.2	1.4	3.1	4.7	6.4	10.9	13.8
16			.2	1.0	1.8	2.7	3.9	5.3
17				.2	.4	1.1	1.8	2.3
18							.6	.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Max. ECL	15	15	16	17	17	17	18	18
Avg. ECL	10.5	10.5	10.8	11.6	12.2	12.6	13.1	13.5
Min. ECL	7	7	8	8	9	10	11	11
Range	8	8	8	9	8	7	7	7
Poisson's								
Coef. K	3.5	3.5	2.8	3.6	3.2	2.6	2.1	2.5

The frequency distribution of equivalent concentrated loads on spans of infinite length are omitted from this table since it is the same as the frequency distribution of equivalent H truck loadings for the above truck shown in Table 16.1a.

Table 23.1b

CALCULATED FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS FOR THE 171 TYPE 2 TRUCKS REPORTED IN THE 1942 LOADOMETER SURVEY BASED ON POISSON'S DISTRIBUTION LAW



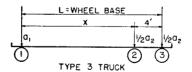
Equivalent concentrated loads which occur less than 1 in 1000, or account for less than 0.1% of the heavy trucks of this type are not shown in this table.

Equivalent				Span-	Feet			
Concentrated Loads	10	20	30	40	50	60	80	100
7	3.0	3.0						
8	10.6	10.6	6.1	2.7				
9	18.5	18.5	17.0	9.8	4.1			
10	21.6	21.6	23.8	17.7	13.0	7.4		
11	18.9	18.9	22.2	21.2	20.9	19.3	12.2	8.2
12	13.2	13.2	15.6	19.1	22.3	25.1	25.7	20.5
13	7.7	7.7	8.7	13.8	17.8	21.8	27.0	25.7
14	3.9	3.9	4.1	8.3	11.4	14.1	18.9	21.4
15	1.7	1.7	1.6	4.2	6.1	7.4	9.9	13.4
16	.7	.7	.6	1.9	2.8	3.2	4.2	6.7
17	.2	.2	.2	.×	1.1	1.2	1.5	2.8
18			.1	.3	.4	.4	.4	1.0
19				.1	.1	.1	.1	.3
20				.1			.1	
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Max. ECL	17	17	18	20	19	19	20	19
Avg. ECL	10.5	10,5	10.8	11.6	12.2	12.6	13.1	13.5
Min. ECL	7	7	8	8	9	10	11	11
Range	10	10	10	12	10	9	9	8
Poisson's								
Coef. K	3.5	3.5	2.8	3.6	3.2	2.6	2.1	2.5
Std. Dev. D	1.871	1.871	1.673	1.897	1.789	1.612	1.449	1.581

The frequency distribution of equivalent concentrated loads on spans of infinite length are omitted from this table since it is the same as the frequency distribution of equivalent H truck loadings for the above truck shown in 'Table 16.1b.

Table 23.2a

OBSERVED FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS REQUIRED TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY THE 381 TYPE 3 TRUCKS REPORTED IN THE 1942 LOADOMETER SURVEY



Equivalent	Span-Feet									
Concentrated Loads	10	20	30	40	50	60	80	100		
5	1.8									
6	8.1	.8								
7	17.4	2.8	1.1	.4						
8	23.0	8.2	3.0	.8	.3					
9	22.0	17.0	8.8	3.2	1.1	.4				
10	14.6	19.4	16.3	10.9	6.2	4.8	1.1			
11	8.2	19.3	19.1	16.1	13.3	11.3	7.3	5.2		
12	3.3	12.9	17.0	17.7	16.9	15.7	13.1	11.3		
13	1.1	10.1	12.7	13.9	16.3	15.8	16.7	15.8		
14	.5	4.9	9.4	12.0	12.0	12.8	14.7	15.3		
15		2.5	6.4	9.5	11.2	10.9	11.9	12.5		
16		1.1	3.0	7.2	8.1	9.0	10.2	11.6		

Equivalent				Span-	Feet			
Concentrated Loads	10	20	30	40	50	60	80	100
17		.7	1.8	3.8	6.7	7.5	8.1	8.9
18		.3	.8	2.4	3.4	5.4	6.6	7.4
19			.6	1.1	2.3	3.0	4.5	4.6
20				.6	.9	1.3	2.5	3.3
21				.4	.7	1.0	1.3	1.8
22					.4	.7	.9	1.0
23					.2	.4	.7	.7
24							.4	.4
25								.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Max, ECL	14	18	19	21	23	23	24	25
Avg. ECL	8.6	10.8	11.8	12.9	13.6	14.1	14.8	15.1
Min. ECL	5	6	7	7	8	9	10	11
Range	9	12	12	14	15	14	14	14
Poisson's								
Coef. K	3.6	4.8	4.8	5.9	5.6	5.1	4.8	4.1

Table 23.2a (Continued)

The frequency distribution of equivalent concentrated loads on spans of infinite length are omitted from this table since it is the same as the frequency distribution of equivalent H truck loadings for the above truck shown in Table 16.2a.

Table 23.2b

CALCULATED FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS FOR THE 381 TYPE 3 TRUCKS REPORTED IN THE 1942 LOADOMETER SURVEY BASED ON POISSON'S DISTRIBUTION LAW



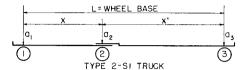
Equivalent concentrated loads which occur less than 1 in 1000, or account for less than 0.1% of the heavy trucks of this type are not shown in this table.

Equivalent				Span-	Feet			
Concentrated Loads	10	20	30	40	50	60	80	100
5	2.7							
6	9.8	.8						
7	17.7	4.0	.8	.3				
8 9	21.2	9.5	4.0	1.6	.4			
9	19.1	15.2	9.5	4.8	2,1	.6		
10	13.8	18.1	15.2	9.4	5.8	3.1	.8	
11	8.3	17.5	18.1	13.8	10.8	7.9	4.0	1.7
12	4.2	14.0	17,5	16.3	15.2	13.5	9.5	6.8
13	1.9	9.6	14.0	16.0	17.0	17.2	15.2	13.9
14	.8	5.8	9.6	13.5	15.8	17.5	18.1	19.0
15	.3	3.1	5.8	10.0	12.7	14.9	17.4	19.5
16	.1	1.5	3.1	6.5	8.9	10.9	14.0	16.0
17	.1	.6	1.5	3.9	5.5	6.9	9.6	10.9
18	•	.3	.6	2.1	3.1	3.9	5.8	6.4
19			.3	1.0	1.6	2.0	3.1	3.3
20				.5	.7	.9	1.5	1.5
21				.2	.3	.4	.6	
22				.2	.1	.2	.3	.2
$\frac{-23}{23}$.2 .1	.1	.1
24								.6 .2 .1 .1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Max. ECL	17	18	19	22	22	23	23	24
Avg. ECL	8.6	10.6	11.8	12.9	13.6	14.1	14.8	15.1
Min. ECL	5	6	7	7	8	9	10	11
Range	12	12	12	15	14	14	13	13
Poisson's								
Coef. K	3.6	4.8	4.8	5.9	5.6	5.1	4.8	4.1
Std. Dev. D	1.897	2.191	2.191	2.429	2.366	2.258	2.191	2.025

The frequency distribution of equivalent concentrated loads on spans of infinite length are omitted from this table since it is the same as the frequency distribution of equivalent H truck loadings for the above truck shown in Table 16.2b.

Table 23.3a

OBSERVED FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS REQUIRED TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY THE 2855 TYPE 2-S1 TRUCKS REPORTED IN THE 1942 LOADOMETER SURVEY



Equivalent Concentrated				Span	-Feet			
Loads	10	20	30	40	50	60	80	100
7	12.2	10.7	3.7					
8	22.3	21.9	15.2	1.9				
9	26.3	26.6	24.3	9.4	.9			
10	20.6	21.5	25.0	18.4	5.4	.9		
11	9.9	10.3	16.3	23.6	15.2	6.3	.2	
12	4.8	4.9	8.1	20.5	22.2	14.8	3.3	.4
13	2.2	2.3	4.2	13.1	22.8	22.0	13.2	5.7
14	1.0	1.1	1.7	6.9	15.2	21.2	20.0	14.6
15	.4	.4	.9	3.1	8.8	15.1	22.4	20.8
16	.1	.2 .1	.3	1.5	4.3	8.6	15.8	20.5
17	.1	.1	.2	.9	2.4	4.9	10.6	14.9
18	.1		.1	.4	1.2	2.6	5.8	9.5
19				.2 .1	.7	1.5	3.3	5.2
20				.1	.5	.8	1.9	2.7
21					.3	.6	1.4	2.0
22					.1	.4	.8	1.4
23						.1	.6	.9
24						.1	.4	.5
25						.1	$\begin{array}{c} .4 \\ .2 \\ .1 \end{array}$.4
26							.1	.3
27								.9 .5 .4 .3 .1
28								.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Max. ECL	18	17	18	20	22	25	26	28
Avg. ECL	9.2	9.3	9.9	11.6	13.0	14.1	15.4	16.3
Min, ECL	7	7	7	8	9	10	11	12
Range	11	10	11	12	13	15	15	16
Poisson's								
Coef. K	2.2	2.3	2.9	3.6	4.0	4.1	4.4	4.3

The frequency distribution of equivalent concentrated loads on spans of infinite length are omitted from this table since it is the same as the frequency distribution of equivalent H truck loadings for the above truck shown in Table 16.3a.

Table 23.3b CALCULATED FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS FOR THE 2855 TYPE 2-S1 TRUCKS REPORTED IN THE 1942 LOADOMETER SURVEY BASED ON POISSON'S DISTRIBUTION LAW



Equivalent concentrated loads which occur less than 1 in 1000, or account for less than 0.1% of the heavy trucks of this type are not shown in this table.

Equivalent Concentrated	Span-Feet									
Loads	10	20	30	40	50	60	80	100		
7	11.1	10.0	5.5							
8	24.4	23.1	16.0	2,7						
9	26.8	26.5	23.1	9.8	1.8					
10	19.7	20.3	22.4	17.7	7.3	1.7				
11	10.8	11.7	16.2	21.2	14.7	6.8	1.2			
12	4.8	5.4	9.4	19.1	19.5	13.9	5.4	1.4		
13	1.7	2.1	4.5	13.8	19.5	19.0	11.9	5.8		
14	.5	.7	1.9	8.3	15.6	19.5	17.4	12.5		

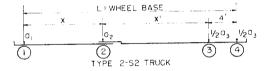
Tabl	e 23	3h	(Con	tinued)

Table 23.3b (0	Continued)							
Equivalent Concentrated				Span-I	reet			
Loads	10	20	30	40	50	60	80	100
15	.2	.2	.7	4.2	10.4	16.0	19.2	18.0
16			.2	1.9	6.0	10.9	16.9	19.3
17			.1	.8	3.0	6.4	12.4	16.6
18				.3	1.3	3.3	7.8	11.9
19				.1	.5	1.5	4.3	7.3
20				.1	.2	.6	2.1	3.9
21					.1	.2	.9	1.9
22					.1	.1	.4	.8
23						.1	.1	.3
24								.1
25								.1
26								.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Max. ECL	15	15	17	20	22	23	23	26
Avg. ECL	9.2	9.3	9.9	11.6	13.0	14.1	15.4	16.3
Min. ECL	7	7	7	8	9	10	11	12
Range	8	8	10	12	13	13	12	14
Poisson's								
Coef. K	2.2	2.3	2.9	3.6	4.0	4.1	4.4	4.3
Std. Dev. D	1.483	1.517	1.703	1.897	2.000	2.025	2.098	2.074

The frequency distribution of equivalent concentrated loads on spans of infinite length are omitted from this table since it is the same as the frequency distribution of equivalent H truck loadings for the above truck shown in Table 16.3b.

Table 23.4a

OBSERVED FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS REQUIRED TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY THE 508 TYPE 2-S2 TRUCKS REPORTED IN THE 1942 LOADOMETER SURVEY

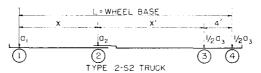


Equivalent				Spar	ı-Feet			
Concentrated Loads	10	20	30	40	50	60	80	100
5	.9							
6	3.6							
7	11.0	4.7						
8	16.7	9.1	4.7	1.1	.2			
9	24.0	13.8	7.2	2.5	.5			
10	21. 2	17.1	13.3	4.7	1.7	.5		
11	15.4	15.9	16.2	9.7	4.1	1.5	.3	
12	5.3	14.1	16.0	13.3	8.0	3.3	.5	
13	1.0	10.8	13.6	16.6	11.8	7.1	2.4	1.2
14	.5	8.2	11.3	16.0	15.1	10.2	4.5	2.8
15	.3	4.1	9.5	15.1	15.7	14.4	8.1	5.1
16	.1	2.0	5.1	10.8	16.4	16.1	10.8	7.4
17		.2	2.5	6.4	12.1	16.3	14.6	11.2
18			.6	2.3	8.3	13.3	14.5	12.8
19				1.1	3.0	8.7	14.7	13.5
20				.3	1.9	4.8	11.9	13.1
21				.1	.8	2.1	8.8	11.9
22					.3	1.1	5.0	10.0
23					.1	.5	2.0	5.6
24						.1	1.3	3.3
25							.4	1.3
26							.1	.6
27							.1	.2
Total	100,0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Max. ECL	16	17	18	20	22	24	27	26
Avg. ECL	9.2	11.0	12.2	13.6	15.0	16.3	18.1	19.2
Min. ECL	5	7	8	8	8	10	11	13
Range	11	10	10	12	14	14	16	13
Poisson's								
Coef. K	4.2	4.0	4.2	5.6	7.0	6.3	7.1	6.2
T11 - C	J:-4-:14:	- e i	.1	443	1		1 - Ci - 14 -	langeth and

The frequency distribution of equivalent concentrated loads on spans of infinite length are omitted from this table since it is the same as the frequency distribution of equivalent H truck loadings for the above truck shown in Table 16.4a.

Table 23.4b

CALCULATED FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS FOR THE 508 TYPE 2-S2 TRUCKS REPORTED IN THE 1942 LOADOMETER SURVEY BASED ON POISSON'S DISTRIBUTION LAW



Equivalent concentrated loads which occur less than 1 in 1000, or account for less than 0.1% of the heavy trucks of this type are not shown in this table.

Equivalent				Span-	Feet			
Concentrated Loads	10	20	30	40	50	60	80	100
5	1.5							
6	6.3							
7	13.2	1.8						
8	18.5	7.3	1.5	.4	.1			
9	19.4	14.7	6.3	2.1	.6			
10	16.3	19.5	13.2	5.8	2.2	.2		
11	11.4	19.5	18.5	10.8	5.2	1.2	.1	
12	6.9	15.6	19.4	15.2	9.1	3.6	.6	
13	3.6	10.4	16.3	17.0	12.8	7.7	2.1	.2
14	1.7	6.0	11.4	15.8	14.9	12.1	4.9	1.3
15	.7	3.0	6.9	12.7	14.9	15.2	8.7	3.9
16	.3	1.3	3.6	8.9	13.0	15.8	12.4	8.1
17	.i	.5	1.7	5.5	10.1	14.4	14.7	12.5
18	.1	.2	.7	3.1	$7.\hat{1}$	11.3	14.9	15.5
19		.1	.3	1.6	4.5	7.9	13.2	15.9
20		.1	.1	.7	2.6	5.0	10.4	14.2
21			.1	.3	1.4	2.9	7.4	11.0
22			•-	.1	.7	1.5	4.8	7.6
23					.3	.7	2.8	4.7
24					.ĭ	.3	1.5	2.6
25					.1	.1	.8	1.4
26					.1	.1	.4.	.7
27					.1		.2	.3
28					.ĩ		.2 .1	.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Max. ECL	18	20	21	22	28	26	28	28
Avg. ECL	9.2	11.0	12.2	13.6	15.0	16.3	18.1	19.2
Min. ECL	5	7	8	8	8	10	11	13
Range	13	13	13	14	20	16	17	15
Poisson's								
Coef. K	4.2	4.0	4.2	5.6	7.0	6.3	7.1	6.2
Std. Dev. D	2.049	2.000	2.049	2.366	2.646	2.510	2.665	2.49

The frequency distribution of equivalent concentrated loads on spans of infinite length are omitted from this table since it is the same as the frequency distribution of equivalent H truck loadings for the above truck shown in Table 16.4b.

Table 23.5a

OBSERVED FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS REQUIRED TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY THE 9 TYPE 3-S1 TRUCKS REPORTED IN THE 1942 LOADOMETER SURVEY

L		L=WH	EEL BASE	
	×	1 4'	, x,	
a,		1/202	1/202	a ₃
0		②(TYPE:	3) 3-SI TRUCK	4

Equivalent Concentrated	Span-Feet									
Loads	10	20	30	40	50	60	80	100		
8	29.6	7.4								
9	25.9	11.1	7.4	7.4						
10	22.2	11.1	3.7	3.7	7.4					
11	14.8	22.2	3.7	.0	3.7					
12	7.4	18.5	18.5	.0	.0	7.4				
13	.1	18.5	18.5	7.4	.0	3.7				
14		7.4	25.9	18.5	.0	.0	7.4			

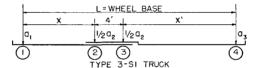
Table 23.5a (Continued)

Equivalent Concentrated Loads 15 16 17 18 19 20 21 22 23 24				Span-	Feet			
	10	20	30	40	50	60	80	100
15		3.7	11.1	18.5	7.4	.0	3.7	7.4
16		.1	11.1	14.8	18.5	3.7	.0	3.7
17			.1	11.1	18.5	14.8	.0	.0
18				11.1	22.2	18.5	11.1	.0
19				7.4	11.1	18.5	18.5	11.1
20				.1	11.1	14.8	18.5	18.5
21					.1	11.1	18.5	18.5
22						7.4	11.1	14.8
23						.1	11.1	11.1
							.1	11.1
25								3.7
26								.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Max, ECL	13	16	17	20	21	23	24	26
Avg. ECL	9.3	11.3	13.1	15.0	16.7	18.2	19.7	20.8
Min. ECL		8	9	9	10	12	14	15
Range	8 5	8	8	11	11	11	10	11
Poisson's								
Coef. K	1.3	3.3	4.1	6.0	6.7	6.2	5.7	5.8

The frequency distribution of equivalent concentrated loads on spans of infinite length are omitted from this table since it is the same as the frequency distribution of equivalent H truck loadings for the above truck shown in Table 16.5a.

Table 23.5b

CALCULATED FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS FOR THE 9 TYPE 3-S1 TRUCKS REPORTED IN THE 1942 LOADOMETER SURVEY BASED ON POISSON'S DISTRIBUTION LAW



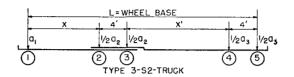
Equivalent concentrated loads which occur less than 1 in 1000, or account for less than 0.1% of the heavy trucks of this type are not shown in this table.

Loads	Equivalent				Span-	Feet			
9	Concentrated Loads	10	20	30	40	50	60	80	100
10	8	27.3	3.7						
10	9	35.4	12.2	1.7	.2				
11	10	23.0	20.1	6.8	1.5	.1			
13 .8 12.0 19.5 13.4 6.2 1.3 1.3 14 2.2 6.6 16.0 16.1 10.3 3.9 .3 15 .1 3.1 10.9 16.1 13.8 8.1 1.9 .2 1.5 16.0 14.8 15.5 12.5 5.4 1.8 1.7 .2 1.8 1.2 1.5 6.9 12.4 16.0 14.7 9.8 19.2 14.2 16.0 14.7 9.8 19.2 14.2 16.0 14.7 9.8 19.2 14.2 16.0 14.7 9.8 19.2 14.2 16.0 14.7 9.8 19.9 19.0 10.2 2.2 2.3 6.2 11.0 15.9 16.6 14.2 10.2 14.2 16.0 14.7 9.8 19.6 14.2 16.0 14.7 9.8 14.2 16.0 14.7 9.8 14.2 16.0 14.7 9.8 14.2 16.0 14.2 16.0 14.7 9.8 14.2 12.2 13.2 13.2 13.2 13.2 13.2 1		10.0	22.1	13.9		.8			
13 .8 12.0 19.5 13.4 6.2 1.3 1.4 2.2 6.6 16.0 16.1 10.3 3.9 .3 15 .1 3.1 10.9 16.1 10.3 3.9 .3 1.9 .2 1.5 16.1 13.8 8.1 1.9 .2 1.6 11.8 11.9 .2 1.5 6.9 12.4 16.0 14.7 9.5 9.6 4.1 9.2 14.2 16.0 14.7 9.5 19.2 1.2 16.0 14.7 9.5 19.2 14.2 16.0 14.7 9.5 19.2 14.2 16.0 14.7 9.5 19.6 4.1 9.2 14.2 16.0 14.7 9.5 19.6 14.2 10.0 15.9 16.6 14.2 10.2 12.4 16.0 14.7 9.5 19.6 14.2 16.0 14.7 9.5 19.6 12.2 13.3 14.2 16.0 14.7 9.5 19.6 12.2 13.2 13.2 13.2 13.2 13.2 13.2 13.2 13.2 13	12	3.2	18.2	19.0	8.9	2.8	.2		
15		.8	12.0	19.5	13.4	6.2	1.3		
16 1.3 6.4 13.8 15.5 12.5 5.4 1.8 17 .5 3.3 10.3 14.8 15.5 10.3 5.5 18 .2 1.5 6.9 12.4 16.0 14.7 9.8 19 .6 4.1 9.2 14.2 16.8 14.8 20 .2 2.3 6.2 11.0 15.9 16.6 21 .1 1.1 3.8 7.6 13.0 16.6 22 .1 1.5 2.1 4.7 9.2 13.3 23 .1 .5 2.1 4.7 9.2 13.3 24 .1 .5 2.1 4.7 9.2 13.3 25 .2 1.1 .5 1.4 3.3 6.2 25 .2 .7 1.7 3.6 2.7 1.7 3.6 27 .2 .7 1.7 3.8 1.9 1.1 .4 .5 28 .2 .1 .3 .8 1.5 .1 .4 .5 30 .1 .3 .8 1.5 .1 .1 .1 .1 .1 .2	14		6.6	16.0	16.1	10.3	3.9		
16 1.3 6.4 13.8 15.5 12.5 5.4 1.8 17 .5 3.3 10.3 14.8 15.5 10.3 5.1 18 .2 1.5 6.9 12.4 16.0 14.7 9.8 19 .6 4.1 9.2 14.2 16.8 14.8 20 .2 2.3 6.2 11.0 15.9 16.6 21 .1 1.1 3.8 7.6 13.0 16.6 22 .1 .5 2.1 4.7 9.2 13.2 23 .2 1.1 .5 2.1 4.7 9.2 13.3 24 .1 .5 2.1 4.7 9.2 13.3 25 .2 .1 .5 1.4 3.3 6.5 25 .2 .7 1.7 3.6 1.2 26 .1 .3 .8 1.5 28 .1 .4 .5 30 .1 .3 .8 1.5 31 .1 .4 .5 31 .1 .1 .2 29 .1 .1 .1 31	15	.1	3.1	10.9	16.1	13.8	8.1	1.9	.3
17	16			6.4	13.8	15.5	12.5		1.8
19	17		.5	3.3	10.3	14.8	15.5	10.3	5.1
19	18		.2	1.5	6.9	12.4	16.0	14.7	9.8
21				.6	4.1	9.2	14.2	16.8	14.3
1.	20			.2	2.3	6.2	11.0	15.9	16.6
1.	21			.1	1.1	3.8	7.6	13.0	16.0
23 24 24 28 26 27 30 30 31 Total 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 Max. ECL 15 31 31 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 Max. ECL 9.3 11.3 13.1 15.0 16.7 18.2 19.7 20.8 Min. ECL 8 8 8 9 9 10 12 14 15 Range 7 10 13 15 17 14 17 14 Poisson's Coef. K 1.3 3.3 4.1 6.0 6.7 6.2 5.7 5.8	22			.1	.5	2.1	4.7	9.2	13.3
25					.2		2.6	5.9	9.6
26	24				.1	.5	1.4	3.3	6.2
26	25					.2	.7	1.7	3.6
27 28 29 30 31 Total 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 Max. ECL 15 18 22 24 27 26 31 29 Avg. ECL 9.3 11.3 13.1 15.0 16.7 18.2 19.7 20.6 Min. ECL 8 8 8 9 9 10 12 14 15 Range 7 10 13 15 17 14 17 14 Poisson's Coef. K 1.3 3.3 4.1 6.0 6.7 6.2 5.7 5.8	26					.1	.3	.8	1.9
28 29 30 31 Total 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 Max. ECL, 15 18 22 24 27 26 31 29 Avg. ECL 9.3 11.3 13.1 15.0 16.7 18.2 19.7 20.8 Min. ECL 8 8 8 9 9 10 12 14 15 Range 7 10 13 15 17 14 17 14 Poisson's Coef. K 1.3 3.3 4.1 6.0 6.7 6.2 5.7 5.8	27					.1		.4	.9
30 31 .1 .1 Total 100.0	28							.1	.4
30 31 .1 .1 Total 100.0	29							.1	.2
Total 100.0 <th< td=""><td>30</td><td></td><td></td><td></td><td></td><td></td><td></td><td>.1</td><td></td></th<>	30							.1	
Max. ECL 15 18 22 24 27 26 31 29 Avg. ECL 9.3 11.3 13.1 15.0 16.7 18.2 19.7 20.6 Min. ECL 8 8 9 9 10 12 14 15 Range 7 10 13 15 17 14 17 14 Poisson's Coef. K 1.3 3.3 4.1 6.0 6.7 6.2 5.7 5.8	31							.1	
Avg. ECL 9.3 11.3 13.1 15.0 16.7 18.2 19.7 20.8 Min. ECL 8 8 9 9 10 12 14 15 Range 7 10 13 15 17 14 17 14 Poisson's Coef. K 1.3 3.3 4.1 6.0 6.7 6.2 5.7 5.8	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Avg. ECL 9.3 11.3 13.1 15.0 16.7 18.2 19.7 20.8 Min. ECL 8 8 9 9 10 12 14 15 Range 7 10 13 15 17 14 17 14 Poisson's Coef. K 1.3 3.3 4.1 6.0 6.7 6.2 5.7 5.8	Max, ECL	15	18	22	24	27	26	31	29
Range 7 10 13 15 17 14 17 14 Poisson's Coef. K 1.3 3.3 4.1 6.0 6.7 6.2 5.7 5.8		9.3	11.3	13.1	15.0	16.7	18.2	19.7	20.8
Range 7 10 13 15 17 14 17 14 Poisson's Coef. K 1.3 3.3 4.1 6.0 6.7 6.2 5.7 5.8	Min. ECL	8	8			10	12		
Coef. K 1.3 3.3 4.1 6.0 6.7 6.2 5.7 5.8	Range	7	10	13	15	17		17	14
	Poisson's								
Std Dev D 1140 1817 2025 2449 2588 2490 2387 24							6.2	5.7	5.8
DW. Dev. D 1.110 1.011 2.000 2.410 2.000 2.400 2.001 2.5	Std. Dev. D	1.140	1.817	2.025	2.449	2.588	2.490	2.387	2.408

The frequency distribution of equivalent concentrated loads on spans of infinite length are omitted from this table since it is the same as the frequency distribution of equivalent H truck loadings for the above truck shown in Table 16.5b.

Table 23.6a

OBSERVED FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS REQUIRED TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY THE 142 TYPE 3-S2 TRUCKS REPORTED IN THE 1942 LOADOMETER SURVEY

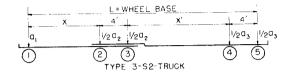


Equivalent Concentrated				Span	-Feet			
Loads	10	20	30	40	50	60	80	100
5	4.9							
6	7.3	3.5						
7	10.8	4.7	2.6					
8	16.2	7.0	3.5	1.9				
9	20.4	8.7	7.0	2.8	1.4			
10	18.8	12.2	8.7	5.2	1.6	.9		
11	12.7	13.6	11.7	7.5	3.3	1.6		
12	5.6	16.2	11.0	9.4	5.2	1.9	1.4	
13	2.4	14.1	14.6	11.0	7.3	3.8	1.9	1.2
14	.9	10.3	14.1	12.0	9.6	5.2	1.9	1.4
15		5.2	12.7	13.4	10.1	7.0	3.3	1.9
16		2.4	7.0	11.7	11.6	9.6	3.8	3.1
17		1.4	3.8	9.4	11.9	10.3	5.9	3.5
18		.7	1.9	6.6	11.3	11.5	6.3	3.8
19			1.2	4.2	9.9	12.4	8.9	4.9
20			.2	2.8	7.0	10.6	9.9	6.3
21				1.2	5.2	9.9	10.8	8,2
22				.7	2.4	5.6	11.7	10.6
23				.2	1.2	4.7	9.6	11.3
24					.5	2.6	8.9	12.2
25					.5	1.2	5.9	9.4
26					•-	.9	5.2	8.5
27						.9 .2	2.8	5.9
28						.1	.9	4.0
29							.9 .5 .2 .2	
30							.2	.9
31							.2	.2
32								0
33								.2
34								2.1 .9 .2 0 .2 .2 .2
35								.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Max. ECL	14	18	20	23	25	28	31	35
Avg. ECL	8.9	11.3	12.7	14.5	16.4	18.2	20.9	22.6
Min. ECL	5	6	7	8	9	10	12	13
Range	9	12	13	15	16	18	19	22
Poisson's								
Coef. K	3.9	5.3	5.7	6.5	7.4	8.2	8.9	9.6

The frequency distribution of equivalent concentrated loads on spans of infinite length are omitted from this table since it is the same as the frequency distribution of equivalent H truck loadings for the above truck shown in Table 16.6a.

Table 23.6b

CALCULATED FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS FOR THE 142 TYPE 3-S2 TRUCKS REPORTED IN THE 1942 LOADOMETER SURVEY BASED ON POISSON'S DISTRIBUTION LAW



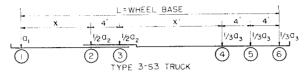
Equivalent concentrated loads which occur less than 1 in 1000, or account for less than 0.1% of the heavy trucks of this type are not shown in this table.

Equivalent				Span-	Feet			
Concentrated Loads	10	20	30	40	50	60	80	100
5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33	2.0 7.9 15.4 20.0 19.5 15.2 9.9 5.5 2.7 1.2 .5	2.6 7.0 12.4 16.4 17.4 11.6 7.7 4.5 2.4 1.2 .1	.3 1.9 5.4 10.3 14.7 16.8 15.9 13.0 9.2 5.9 3.3 1.7 .8 .2 .1	.2 1.0 3.2 6.9 11.2 14.5 15.7 14.6 11.9 8.6 3.3 1.8 .9	.1 .5 1.7 4.1 7.6 11.3 13.9 14.7 13.6 11.2 8.3 5.6 3.4 2.0 1.0 .5 .2	.2 .9 2.5 5.2 8.5 11.6 13.6 12.7 10.4 7.8 5.3 2.0 1.1 .5 .3	.1 .5 1.6 3.6 6.3 9.4 12.0 13.3 13.2 11.7 9.5 7.0 4.8 3.1 1.8 1.0 5.3 3.1	.1 .3 1.0 2.4 4.6 7.4 10.1 12.1 12.2 10.8 8.7 1.7 1.0 5.3 .3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Max. ECL Avg. ECL Min. ECL Range Poisson's Coef. K Std. Dev. D	16 8.9 5 11 3.9 1.975	21 11.3 6 15 5.3 2.302	23 12.7 7 16 5.7 2.387	23 14.5 8 15 6.5 2.550	28 16.4 9 19 7.4 2.720	29 18.2 11 18 7.2 2.864	32 20.9 12 20 8.9 2,983	33 22.6 14 19 8.6 3.098

The frequency distribution of equivalent concentrated loads on spans of infinite length are omitted from this table since it is the same as the frequency distribution of equivalent H truck loadings for the above truck shown in Table 16.6b.

Table 23.7a

OBSERVED FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS REQUIRED TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY THE 14 TYPE 3-S3 TRUCKS REPORTED IN THE 1942 LOADOMETER SURVEY



Snan-Feet

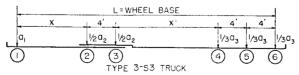
Faning lant

Concentrated				span	-reet			
Loads	10	20	30	40	50	60	80	100
4 5	4.8							
5	4.8							
6	4.8							
7	14.3	7.1	4.8					
8	19.0	7.1	2.4					
9	23.7	7.1	4.8	4.8				
10	16.7	9.5	7.1	2.5	4.8			
11	9.5	11.9	9.5	7.1	2.4	4.8		
12	2.4	14.3	9.5	7.1	0.0	2.4		
13		14.3	14.3	9.5	7.1	.0	4.8	
14		11.9	16.6	4.8	7.1	2.4	2.5	4.8
15		9.5	11.9	7.1	7.1	7.1	.0	2.4
16		4.8	7.1	7.1	2.4	7.1	.0	.0
17		2.5	4.8	9.5	7.1	4.8	7.1	.0
18			4.8	14.3	9.5	2.4	7.1	2.4
19			2.4	14.3	14.3	9.5	7.1	7.1
20				9.5	14.3	11.9	.0	7.1
21				2.4	14.3	16.6	7.1	4.8
22					7.2	11.9	7.1	.0
23					2.4	11.9	11.9	7.1
24						4.8	9.5	7.1
25						2.4	14.3	9.5
26							11.9	9.5
27							7.2	11.9
$\frac{1}{28}$							2.4	14.3
29								7.2
30								4.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Max. ECL	12	17	19	21	23	25	28	30
Avg. ECL	8.4	11.8	13.1	15.7	17.7	19.4	22.1	24.1
Min. ECL	4	7	7	9	10	11	13	14
Range	8	10	12	12	13	14	15	16
Poisson's								
Coef. K	4.4	4.8	6.1	6.7	7.7	8.4	9.1	10.1

The frequency distribution of equivalent concentrated loads on spans of infinite length are omitted from this table since it is the same as the frequency distribution of equivalent H truck loadings for the above truck shown in Table 16.7a.

Table 23.7b

CALCULATED FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS FOR THE 14 TYPE 3-S3 TRUCKS REPORTED IN THE 1942 LOADOMETER SURVEY BASED ON POISSON'S DISTRIBUTION LAW



Equivalent concentrated loads which occur less than 1 in 1000, or account for less than 0.1% of the heavy trucks of this type are not shown in this table.

Equivalent			Span-Feet						
Concentrated Loads	10	20	30	40	50	60	80	100	
4	1.2								
5	5.4								
6	11.9								
7	17.4	.8	.2						
8	19.2	4.0	1.4						
9	16.9	9.5	4.2	.1					

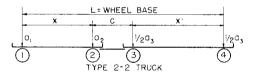
Table 23.7b (Continued)

14010 20.10 (
Equivalent				Span-F	'eet			
Concentrated Loads	10	20	30	40	50	60	80	100
10	12.4	15.2	8.5	.8	.1			
11	7.8	18.2	12.9	2.8	.3	.1		
12	4.3	17.5	15.8	6.2	1.3	.2		
13	2.1	14.0	16.0	10.3	3.4	.8		
14	.9	9.6	14.0	13.8	6.6	2.2	.1	
15	.4	5.6	10.7	15.5	10.2	4.7	.5	.1
16	.1	3.1	7.2	14.8	13.1	7.8	1.4	.2
17		1.5	4.4	12.4	14.4	11.0	3.2	.1 .2 .7 1.8
18		.6	2.4	9.2	13.9	13.2	5.8	1.8
19		.3	1.2	6.2	13.9	13.7	8.8	1.8
20		.3 .1	.6	3.8	9.1	12.9	11.4	6.1
21			.3	2.1	6.4	10.8	13.0	8.7
$\frac{2}{2}$.1	1.1	4.1	8.3	13.2	11.0
23			.1	.5	2.4	5.8	12.0	12.4
24			••	.5 .2	1.3	3.7	9.9	12.4
$\frac{25}{25}$.1	.7	2.2	7.5	11.5
26				.1	3	1.3	5.3	9.7
27				••	.3 .2	.7	3.4	7.5
28					.1	.3	2.1	5.4
29					.1	.2	1.2	3.6
30					.1	.1		2.3
31					••	••	.6 .3 .2 .1	
32							.2	.8
33							.1	.4
34							•-	2
35								1.4 .8 .4 .2 .1
36								.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Max. ECL	16	20	23	26	30	30	33	36
Avg. ECL	8.4	11.8	13.1	15.7	17.7	19.4	22.1	24.1
Min. ECL	4	7	7	9	10	11	14	15
Range	12	13	16	17	20	19	19	21
Poisson's								
Coef. K	4.4	4.8	6.1	6.7	7.7	8.4	8.1	9.1
Std. Dev. D	2.098	2.191	2.470	2.588	2.775	2.898	3.017	3.17
The frequency				entrated lo				

The frequency distribution of equivalent concentrated loads on spans of infinite length are omitted from this table since it is the same as the frequency distribution of equivalent H truck loadings for the above truck shown in Table 16.7b.

Table 23.8a

OBSERVED FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS REQUIRED TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY THE 99 TYPE 2-2 TRUCKS REPORTED IN THE 1942 LOADOMETER SURVEY



Equivalent				Span-	Feet			
Concentrated Loads	10	20	30	40	50	60	80	100
5	5.4	4.4						
6	12.1	8.8	2.0					
7	23.9	18.2	5.7	1.0				
8	27.9	23.8	8.8	4.0				
9	20.9	23.2	14.5	7.1	3.1			
10	8.4	13.5	19.5	10.4	5.7	3.1		
11	1.0	5.7	21.2	13.1	7.4	5.7		
12	.4	1.4	15.8	14.8	9.4	7.7	3.4	
13		.7	7.7	16.2	11.1	7.7	6.7	4.0
14		.3	2.4	13.8	14.1	10.4	7.7	6.1
15			1.7	10.4	15.5	10.4	7.4	6.7
16			.4	5.7	14.1	14.1	8.1	7.7
17			.3	2.4	10.4	12.8	10.8	8.8
18				.7	5.4	13.8	11.5	10.1
19				.4	2.4	8.1	12.8	10.1
20					.7	4.0	12.8	10.1

Table	22 82	(Continued)	

Equivalent	Span-Feet								
Concentrated Loads	10	20	30	40	50	60	80	100	
21 22 23 24 25 26					.7	1.0 .8 .4	10.4 5.4 1.7 1.0 .3	13.1 11.5 8.1 2.4 1.0	
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Max. ECL Avg. ECL Min. ECL Range	$^{12}_{7.8}$ $^{5}_{7}$	14 8.3 5 9	17 10.4 6 11	19 12.4 7 12	21 14.3 9 12	23 15.6 10 13	25 17.7 12 13	26 18.9 13 13	
Poisson's Coef. K	2.8	3.3	4.4	5.4	5.3	5.6	5.7	5.9	

The frequency distribution of equivalent concentrated loads on spans of infinite length are omitted from this table since it is the same as the frequency distribution of equivalent H truck loadings for the above truck shown in Table 16.8a.

Table 23.8b

CALCULATED FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS FOR THE 99 TYPE 2-2 TRUCKS REPORTED IN THE 1942 LOADOMETER SURVEY BASED ON POISSON'S DISTRIBUTION LAW

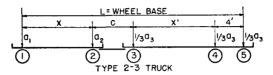
Equivalent concentrated loads which occur less than 1 in 1000, or account for less than 0.1% of the heavy trucks of this type are not shown in this table.

Equivalent				Span-	Feet			
Concentrated Loads	10	20	30	40	50	60	80	100
5	6.1	3.7					•	
6	17.0	12.2	1.2					
7	23.8	20.1	5.4	.5				
8	22.2	22.1	11.9	2.4				
9	15.6	18.2	17.4	6.6	.5			
10	8.7	12.0	19.2	11.9	2.6	.4		
11	4.1	6.6	16.9	16.0	7.0	2.1		
12	1.6	3.1	12.4	17.3	12.4	5.8	.3	
13	.6	1.3	7.8	15.6	16.4	10.8	1.9	.3
14	.2	.5	4.3	12.0	17.4	15.2	5.4	1.6
15	.1	.2	2.1	8.1	15.4	17.0	10.3	4.8
16			.9	4.9	11.6	15.8	14.7	9.4
17			.4	2.6	7.7	12.7	16.8	13.8
18			.1	1.2	4.5	8.9	15.9	16.3
19				.6	2.4	5.5	13.0	16.0
20				.2	1.2	3.1	9.2	13.5
21					.5	1.6	5.9	10.0
22					.2	.7	3.3	6.5
23					.1	.3	1.7	3.9
24					.1	.1	.8	2.1
25							.4	1.0
26							.4 .2 .1	.5
27							.1	.2
28							.1	.5 .2 .1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Max. ECL	15	15	18	20	24	24	28	28
Avg. ECL	7.8	8.3	10.4	12.4	14.3	15.6	17.7	18.9
Min. ECL	5	5	6	7	9	10	12	13
Range	10	10	12	13	15	14	16	15
Poisson's								
Coef. K	2.8	3.3	4.4	5.4	5.3	5.6	5.7	5.9
Std. Dev. D	1.673	1.817	2.098	2.324	2.302	2.366	2.387	2.429
The frequency	distribution	of equive	lent conce	entrated L		nanc of i	nfinite le	

The frequency distribution of equivalent concentrated loads on spans of infinite length are omitted from this table since it is the same as the frequency distribution of equivalent H truck loadings for the above truck shown in Table 16.8b.

Table 23.9a

OBSERVED FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS REQUIRED TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY THE 24 TYPE 2-3 TRUCKS REPORTED IN THE 1942 LOADOMETER SURVEY

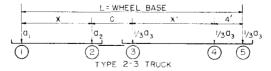


Equivalent	Span-Feet									
Concentrated Loads	10	20	30	40	50	60	80	100		
5	5.6	5.6								
6	9.7	8.3	7.0							
7	15.3	13.9	8.3	5.6						
8	23.5	18.1	8.3	5.6	5.6					
9	22.2	20.7	13.9	6.9	4.2	5.6				
10	16.7	15.3	19.4	8.3	6.9	4.2				
11	5.6	8.3	19.4	18.0	5.6	5.6	2.8			
12	1.4	2.8	12.5	19.3	9.7	4.2	4.2	2.8		
13		2.8	4.2	16.7	15.2	6.9	2.8	4.2		
14		2.8	2.8	7.0	16.6	12.5	5.6	2.8		
15		1.4	2.8	4.2	15.2	13.8	4.2	4.2		
16			1.4	4.2	5.6	15.2	9.7	2.8		
17				2.8	4.2	9.7	12.4	7.0		
18				1.4	2.8	6.9	13.8	11.0		
19					4.2	4.2	12.5	12.4		
20					2.8	2.8	9.7	11.1		
21					1.4	2.8	8.3	8.3		
22						2.8	4.2	9.7		
23						1.4	2.8	8.3		
$\overline{24}$						1.4	1.4	5.6		
25							2.8	2.8		
26							1.4	1.4		
27							1.4	2.8		
$\overline{28}$								1.4		
29								1.4		
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0		
Max, ECL	12	15	16	18	21	24	27	29		
Avg. ECL	8.3	8.8	10.0	11.8	13.6	15.3	18.1	19.8		
Min, ECL	5	5	6	7	8	9	11	12		
Range	7	10	10	11	13	15	16	17		
Poisson's			-							
Coef. K	3.3	3.8	4.0	4.8	5.6	6.3	7.1	7.8		
The frequency	distribution	of oquive	lont conc	ontroted	landa on	anona of	infinita	length a		

The frequency distribution of equivalent concentrated loads on spans of infinite length are omitted from this table since it is the same as the frequency distribution of equivalent H truck loadings for the above truck shown in Table 16.9a.

Table 23.9b

CALCULATED FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS FOR THE 24 TYPE 2-3 TRUCKS REPORTED IN THE 1942 LOADOMETER SURVEY BASED ON POISSON'S DISTRIBUTION LAW



Equivalent concentrated loads which occur less than 1 in 1000, or account for less than 0.1% of the heavy trucks of this type are not shown in this table.

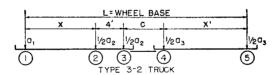
Equivalent	Span-Fect									
Concentrated Loads	10	20	30	40	50	60	80	100		
5	3.7	2.2								
6	12.2	8.5	1.8							
7	20.1	16.2	7.3	.8						
8	22.1	20.5	14.7	4.0	.4					
9	18.2	19.4	19.5	9.5	2.1	.2				

Table 23.9b (Continued)

Equivalent	Span-Feet								
Concentrated Loads	10	20	30	40	50	60	80	100	
10	12.0	14.8	19.5	15.2	5.8	1.2			
11	6.6	9.4	15.6	18.2	10.8	3.6	.1		
12	3.1	5.1	10.4	17.5	15.2	7.7	.6	.1	
13	1.3	2.4	6.0	14.0	17.0	12.1	2.1	.3	
14	.5	1.0	3.0	10.0	15.8	15.2	4.9	.1 .3 1.2	
15	.2	.4	1.3	5.8	12.7	15.9	8.7	3.2	
16		.1	.5 .2	3.1	8.9	14.4	12.4	6.3	
17			.2	1.4	5.5	11.3	14.7	9.9	
18			.1	.5	3.1	7.9	14.9	12.8	
19			.1		1.6	5.0	13.2	14.2	
20					.7	2.9	10.4	13.9	
21					.3	1.5	7.4	12.1	
22					.1	.7	4.8	9.4	
23						.3	2.8	6.7	
24						.1	1.5	4.3	
25							8 ا	2.6	
26							.4	1.5	
27							.2 .1	.8 .4 .2	
28							.1	.4	
29								.2	
30								.1	
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Max. ECL	15	16	19	18	22	24	28	30	
Avg. ECL	8.3	8.8	10.0	11.8	13.6	15,3	18.1	19.8	
Min. ECL	5	5	6	7	8	9	11	12	
Range	10	11	13	11	14	15	17	18	
Poisson's									
Coef. K	3.3	3.8	4.0	4.8	5.6	6.3	7.1	7.8	
Std. Dev.	1.817	1.949	2.000	2.191	2,366	2.510	2.665	2.793	

The frequency distribution of equivalent concentrated loads on spans of infinite length are omitted from this table since it is the same as the frequency distribution of equivalent H truck loadings for the above truck shown in Table 16.9b.

Table 23.10a
OBSERVED FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS REQUIRED TO
PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY THE
68 TYPE 3-2 TRUCKS REPORTED IN THE 1942 LOADOMETER SURVEY



Equivalent	Span-Feet									
Concentrated Loads	10	20	30	40	50	60	80	100		
4	4.9									
5	9.8	4.4								
6	17.2	7.4								
7	19.1	12.7	8.8							
8	22.0	14.7	8.3	7.8						
9	15.2	14.7	11.3	6.9	7.4					
10	9.8	17.1	12.7	7.8	6.9	6.9				
11	1.5	13.7	15.2	10.8	6.4	5.4				
12	.5	10.3	14.2	13.2	8.3	5.9	6.4			
13		3.0	13.7	13.2	10.2	7.8	5.4	6.4		
14		1.0	8.8	12.3	12.7	9.3	6.9	4.9		
15		1.0	3.9	10.8	11.2	9.8	6.4	5.9		
16			1.0	8.8	12.7	10.3	8.3	5.4		
17			1.0	3.9	9.8	11.7	9.8	7.4		
18			.5	2.0	7.9	12.2	10.7	7.8		
19			.5	.5	2.5	9.3	10.2	9.8		
20			. 1	1.0	1.5	5.9	9.8	10.2		
21				.5	.5	2.0	8.8	9.3		
22				.5	.5	1.0	7.9	9.3		
23					.5	.5	3.9	7.8		

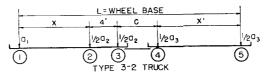
Table 23.10a (Continued)

Equivalent	Span-Feet								
Concentrated Loads	10	20	30	40	50	60	80	100	
24					.5	.5	2.0	6.4	
25					.5	.5	1.0	3.4	
26						.5	.5	2.0	
27						.5	.5	1.5	
28							.5		
29							.5	.5 .5	
30							.5	.5	
31								.5	
32								.5 .5 .5	
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Max. ECL	12	15	20	22	25	27	30	32	
Avg. ECL	7.4	9.2	11.0	12.8	14.3	15.8	18.1	19.7	
Min. ECL	4	5	7	8	9	10	12	13	
Range	8	10	13	14	16	17	18	19	
Poisson's									
Coef. K	3.4	4.2	4.0	4.8	5.3	5.8	6.1	6.7	

The frequency distribution of equivalent concentrated loads on spans of infinite length are omitted from this table since it is the same as the frequency distribution of equivalent H truck loadings for the above truck shown in Table 16.10a.

Table 23.10b

CALCULATED FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS FOR THE 68 TYPE 3-2 TRUCKS REPORTED IN THE 1942 LOADOMETER SURVEY BASED ON POISSON'S DISTRIBUTION LAW



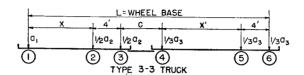
Equivalent concentrated loads which occur less than 1 in 1000, or account for less than 0.1% of the heavy trucks of this type are not shown in this table.

Equivalent				Span-	Feet			
Concentrated Loads	10	20	30	40	50	60	80	100
4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	3.3 11.3 19.3 21.9 18.6 12.6 7.2 3.5 1.5 .6	1.5 6.3 13.2 18.5 19.4 16.3 11.4 6.9 3.6 1.7 .7 .3 .1	1.8 7.3 14.7 19.5 19.5 15.6 10.4 6.0 3.0 1.3 .5 .2	.8 4.0 9.5 15.2 18.2 17.5 14.0 9.6 5.8 3.1 1.5 .6	.5 2.6 7.0 12.4 16.4 17.4 11.6 7.7 4.5 2.4 1.2 .5 .2	.3 1.8 5.1 9.8 14.3 16.6 16.0 13.3 9.6 6.2 3.6 1.9 .9	.2 1.4 4.2 8.5 12.9 15.8 16.0 14.0 10.7 7.2 4.4 2.4 1.2 .3 .1	.1 .8 2.8 6.2 10.3 13.8 15.5 14.8 12.4 2.6 2.2 3.8 2.1 1.1 .5 .2 .1
Total	100.0	100.0	100.0	100.0	100.0	100,0	100.0	100.0
Max. ECL	14	18	20	20	24	24	28	30
Avg. ECL	7.4	9.2	11.0	$\frac{20}{12.8}$	14.3	15.8	18.1	19.7
Min. ECL	4	5	7	8	9	10	12	13.1
Range	10	13	13	12	15	14	16	17
Poisson's	• •	20					4.9	
Coef. K	3.4	4.2	4.0	4.8	5.3	5.8	6.1	6.7
Std. Dev. D	1.844	2.049	2.000	2.191	2.302	2.408	2.470	2.588
The farmers	3:-1-21-4:00	- C	7777777				6:	

The frequency distribution of equivalent concentrated loads on spans of infinite length are omitted from this table since it is the same as the frequency distribution of equivalent H truck loadings for the above truck shown in Table 16.10b.

Table 23.11a

OBSERVED FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS REQUIRED TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY THE 176 TYPE 3-3 TRUCKS REPORTED IN THE 1942 LOADOMETER SURVEY

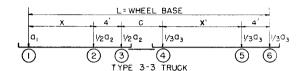


Equivalent Concentrated Loads	Span-Feet								
	10	20	30	40	50	60	80	100	
4	6.1								
5	6.3	5.5	2.1						
6	6.1	5.1	4.2	2.5					
7	11.6	5.1	4.9	3.8	2.1				
8	22.1	5.9	4.2	4.2	3.4	2.3			
9	23.6	10.2	3.6	4.0	4.0	3.2			
10	17.4	19.1	7.6	3.2	3.8	3.6	2.3		
11	4.9	21.2	12.3	5.3	3.0	3.0	3.2	2.1	
12	1.5	16.7	21.5	8.0	2.8	2.5	3.2	3.0	
13	.4	7.0	18.3	13.4	6.3	2.5	2.5	3.2	
14		2.5	14.0	18.3	9.5	4.2	1.7	$^{2.3}$	
15		1.3	3.4	17.0	14.9	6.1	1.9	1.3	
16		.4	2.3	11.2	15.6	9.9	$^{2.5}$	1.5	
17			1.0	4.5	14.6	12.0	2.8	1.7	
18			.6	1.9	10.0	14.1	4.7	$^{2.7}$	
19				1.7	5.1	13.4	8.5	3.0	
20				.6	2.3	11.1	9.7	4.4	
21				.4	.6	6.4	12.7	7.2	
22					.8	2.7	12.3	8.9	
23					.6	.6	12.8	11.7	
24					.4	.6	8.3	11.8	
25					.2	.6	4.5	12.4	
26						.6	2.1	9.3	
27						.4	1.1	5.5	
28						.2	.8	2.5	
29							.8	1.3	
30							.8	1.0	
31							.8 .6 .2	1.0 .8 .8 .8 .6	
32							.2	-8	
33								.8	
34								.6	
35								.2	
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Max. ECL	13	16	18	21	25	28	32	35	
Avg. ECL	8.1	10.1	11.5	13.3	15.0	16.9	20.3	22.4	
Min. ECL	4	5	5	6	7	8	10	11	
Range	9	11	13	15	18	20	22	24	
Poisson's									
Coef. K	4.1	5.1	6.5	7.3	8.0	8.9	10.3	11.4	

The frequency distribution of equivalent concentrated loads on spans of infinite length are omitted from this table since it is the same as the frequency distribution of equivalent H truck loadings for the above truck shown in Table 16.11a.

Table 23.11b

CALCULATED FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS FOR THE 176 TYPE 3-3 TRUCKS REPORTED IN THE 1942 LOADOMETER SURVEY BASED ON POISSON'S DISTRIBUTION LAW



Equivalent concentrated loads which occur less than 1 in 1000, or account for less than 0.1% of the heavy trucks of this type are not shown in this table.

Equivalent				Span-	Feet			
Concentrated Loads	10	20	30	40	50	60	80	100
4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 31 31 31 31 31 31 31 31 31	1.7 6.8 13.9 19.0 19.5 16.0 10.9 6.4 3.3 1.5 .6 .2 .1	.6 3.1 7.9 13.5 17.2 17.5 14.9 10.9 6.9 3.9 2.0 .9 .4 .2	.2 1.0 3.2 6.9 11.2 14.5 15.7 14.6 11.9 8.6 5.6 3.3 1.8 .9	.1 .5 1.8 4.4 8.0 11.7 14.2 14.8 13.5 11.0 8.0 5.3 3.2 1.8 .9 .5 .2	.3 1.1 2.9 5.7 9.2 12.2 14.0 14.0 12.4 9.9 7.2 4.8 3.0 1.7 .9	.1 .5 1.6 3.6 6.3 9.4 12.0 13.3 11.7 9.5 7.0 4.8 3.1 1.8 1.0 .5	.2 .6 1.6 3.2 5.6 8.2 10.6 12.5 11.7 10.0 7.9 5.8 4.0 2.6 1.6 1.6 .9 .5 .2	.1 .1 .3 .8 1.8 3.4 5.6 7.9 10.0 11.4 11.9 11.3 9.9 6.1 4.4 2.9 1.8 1.1 6 .3 .2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Max. ECL Avg. ECL Min. ECL Range Poisson's Coef. K Std. Dev. D	17 8.1 4 13 4.1 2.025	19 10.1 5 14 5.1 2.258	20 11.5 5 15 6.5 2.550	23 13.3 6 17 7.3 2.702	24 15.0 7 17 8.0 2.828	28 16.9 8 20 8.9 2.983	32 20.3 12 20 8.3 3.209	34 22.4 12 22 10.4 3,376

The frequency distribution of equivalent concentrated loads on spans of infinite length are omitted from this table since it is the same as the frequency distribution of equivalent H truck loadings for the above truck shown in Table 16.11b.

Table 23.12a

OBSERVED FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS BASED ON MOMENTS PRODUCED BY THE 4531 (ALL TYPES) TRUCKS REPORTED BY THE 1942 LOADOMETER SURVEY

Equivalent Concentrated	Span-Feet								
Loads	10	20	30	40	50	60	80	100	
4	.5				-				
5	.8	.5	.1						
5 6 7	2.5	1.7	.4	.1					
	9.6	7.8	3.1	.4	.1				
8	19.5	17.3	11.1	1.9	.3	.1			
9	24.5	22.3	18.4	7.3	1.2	.3			
10	20.5	20.2	21.1	14.5	5.1	1.6	.3		
11	11.6	12.9	16.6	19.5	12.7	6.3	1.4	.8	
12	5.7	8.0	11.2	18.2	18.1	12.6	4.4	2.1	
13	2.7	4.6	7.4	13.7	19.0	17.6	11.5	6.4	
14	1.2	2.6	4.7	9.3	14.1	17.0	15.7	12.1	
15	.5	1.3	3.0	6.3	10.1	13.4	17.1	15.7	
16	.2 .1	.5	1.5	4.1	7.0	9.6	12.8	15.4	
17	.1	.2	-8	2.3	5.0	7.1	10.0	12.1	
18	.1	.1	3	1.2	3.2	5.2	6.9	8.8	
19			.8 .3 .2	1.2 .7	1.8	3.6	5.4	6.1	
20			1	.3	1.1	2.3	4.0	4.5	
21			••	.2	.6	1.5	3.4	3.9	
22					.3	.8	2.4	3.3	
23					.1	.5	1.8	2.6	
24					.î	.2	1.2	2.0	
25					.1	.ī	.7	1.5	
26					••	.1	.4	1.1	
27						.î	.4 .2 .1		
$\overline{28}$						••	.1	4	
29							.ĩ	.7 .4 .2 .1	
30							.î	1	
31							.1	.1	
32							•••	.1	
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Max. ECL	18	18	20	21	25	27	31	32	
Avg. ECL	9.3	9.7	10.6	12.2	13.5	14.6	16.2	17.1	
Min. ECL	4	5	5	6	7	8	10	11	
Range	14	13	15	15	18	19	21	21	
Poisson's			-	_			· -		
Coef. K	5.3	4.7	5.6	6.2	6.5	6.6	6.2	6.1	

The frequency distribution of equivalent concentrated loads on spans of infinite length are omitted from this table since it is the same as the frequency distribution of equivalent H truck loadings for the above truck shown in Table 16.12a.

Table 23.12b

CALCULATED FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS OF THE 4531 (ALL TYPES) TRUCKS REPORTED BY THE 1942 LOADOMETER SURVEY BASED ON POISSON'S DISTRIBUTION LAW

Equivalent Concentrated				Span-	Feet		,	
Loads	10	20	30	40	50	60	80	100
4	.5							
5	2.6	.9	.4					
6	7.0	4.3	2.1	.2				
7	12.4	10.0	5.8	1.3	.2			
8	16.4	15.7	10.8	3.9	1.0	.1		
9	17.4	18.5	15.2	8.1	3.2	.9		
10	15.4	17.4	17.0	12.5	6.9	3.0	.2	
11	11.6	13.6	15.8	15.5	11.2	6.5	1.3	.2
12	7.7	9.1	12.7	15.9	14.5	10.8	3.9	1.4
13	4.5	5.4	8.9	14.2	15.6	14.2	8.1	4.2
14	2.4	2.8	5.5	11.0	14.6	15.6	12.5	8.5
15	1.2	1.3	3.1	7.6	11.9	14.7	15.5	12.9
16	.5	.6	1.6	4.7	8.6	12.1	15.9	15.8
17	.2	.2	.7	2.6	5.6	8.9	14.2	16.0

Table 23.12b (Continued)

Equivalent Concentrated	Span-Feet							
Loads	10	20	30	40	50	60	80	100
18	.1	.1	.3	1.4	3.3	5.9	11.0	14.0
19	.1	.1	.1	.7	1.8	3.5	7.6	10.7
20				.3	.9	1.9	4.7	7.2
21				.1	.4	1.0	2.6	4.4
22					.2	.5	1.4	2.4
23					.1	.2	.7	1.2
24						.1	.3	.6
25						.1	.1	.3
26								,1
27								.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Max. ECL	19	19	19	21	23	25	25	27
Avg. ECL	9.3	9.7	10.6	12.2	13.5	14.6	16.2	17.1
Min. ECL	4	5	5	6	7	8	10	11
Range	15	14	14	15	16	17	15	16
Poisson's				-	-		-	_ •
Coef. K	5.3	4.7	5.6	6.2	6.5	6.6	6.2	6.1
Std. Dev. D	2.302	2.168	2.366	2,490	2.550	2.569	2.490	2.470

The frequency distribution of equivalent concentrated loads on spans of infinite length are omitted from this table since it is the same as the frequency distribution of equivalent H truck loadings for the above truck shown in Table 16.12b.

Each of these tables gives either the observed or calculated frequencies of equivalent concentrated loads on span lengths of 10, 20, 30, 40, 50, 60, 80, and 100 feet, respectively. The frequency distributions of these equivalent concentrated loads on an infinite span were omitted from these tables because they are the same as those given for each corresponding vehicle type and span in the right hand column of Tables 16.1—16.12. Reference to the frequencies of equivalent concentrated loads on an infinite span, however, is just another way of saying that they represent the frequency distribution of gross vehicle weights. This may be more readily explained perhaps if the discussion were confined to some particular vehicle having a gross weight of, say, 20 tons. A Type 2-S1 truck weighing 20 tons, for example, irrespective of its wheel base length or distribution of load among its axles, would produce the same maximum moment on an infinite span as a single concentrated load of 20 tons. Therefore, the equivalent concentrated load corresponding to this vehicle on an infinite span would be the same as its gross vehicle weight, or simply an equivalent concentrated load of 20 tons.

At the bottom of each of the Tables 23.1—23.12, the maximum, average, and minimum equivalent concentrated loads for each span are given and also the range which is the spread or difference between the maximum and minimum. The Poisson coefficient, K, as explained in Article 14, is equal to the difference between the average and minimum loading equivalents. The standard deviation, $D=\sqrt{K}$, is a statistical index associated with a given distribution which provides a measure for determining just how usual or unusual a given loading equivalent might be considered. A brief discussion concerning the meaning and use of the standard deviation, $D=\sqrt{K}$, will be found in Article 15.2.

24. MAXIMUM, AVERAGE, AND MINIMUM EQUIVALENT CONCENTRATED LOADS ON SIMPLE SPAN BRIDGES BASED ON GROSS VEHICLE WEIGHTS

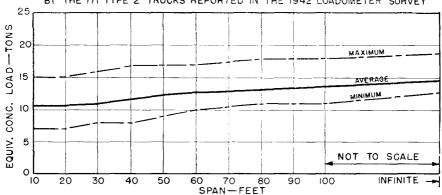
Figures 24.1—24.11 present a graphical representation of the maximum, average, and minimum equivalent concentrated loads on simple span bridges of various lengths for each of the 11 more numerous heavy vehicle types reported by the special loadometer survey of 1942. Figure 24.12 gives the same information for 83 truck-tractor semitrailer trailer combinations (6 different vehicle types) that did not occur in sufficient numbers to justify individual distributions, and Figure 24.13 gives the same information for all heavy vehicles reported, representing a combined total of 4531.

The upper part of each of these figures gives the maximum, average, and minimum equivalent concentrated loads for each span length and the lower part shows the range, the Poisson coefficient, K, and the standard deviation, D, for each corresponding span length. All of these data are given in the following figures:

Heavy Vehicle Type	Number of Vehicles Reported	Figure Number
2	171	24.1
$\frac{2}{3}$	381	24.2
2-S1	2855	24.3
2-S2	508	24.4
3-S1	9	24.5
3-S2	142	24.6
3-S3	14	24.7
2-2	99	24.8
2-3	24	24.9
3-2	68	24.10
3-3	176	24.11
6 types of tractor-truck		
semitrailer trailer	83	24.12
combinations		
All	4531	24.13

MAXIMUM, MINIMUM, AND AVERAGE EQUIVALENT CONCENTRATED LOADS FOR TYPE 2 TRUCKS ON SIMPLE SPANS OF VARIOUS LENGTHS

CURVES SHOWN ARE FOR EQUIVALENT CONCENTRATED LOADS REQUIRED TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY THE 171 TYPE 2 TRUCKS REPORTED IN THE 1942 LOADOMETER SURVEY



NOTE: -- GROSS VEHICLE WEIGHT IN TONS AND EQUIVALENT CONCENTRATED LOADS IN TONS ARE IDENTICAL AT INFINITE SPAN

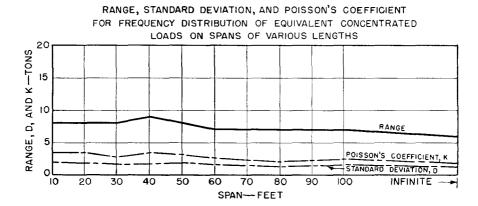
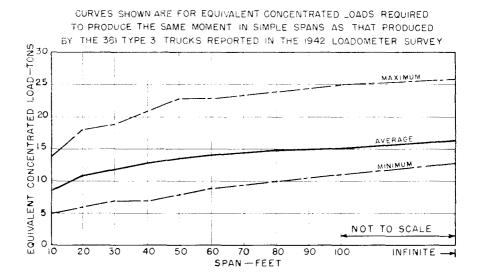


Figure 24.1

MAXIMUM, MINIMUM, AND AVERAGE EQUIVALENT CONCENTRATED LOADS FOR TYPE 3 TRUCKS ON SIMPLE SPANS OF VARIOUS LENGTHS



NOTE: -- GROSS VEHICLE WEIGHT IN TONS AND EQUIVALENT CONCENTRATED LOADS IN TONS ARE IDENTICAL AT INFINITE SPAN

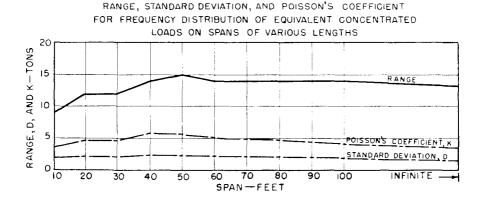
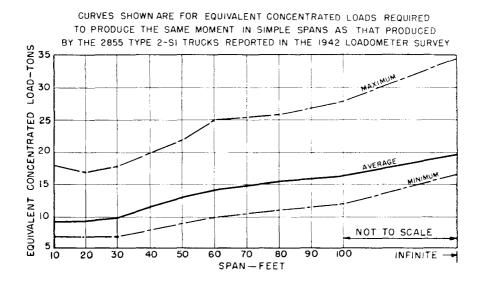


Figure 24.2

MAXIMUM, MINIMUM, AND AVERAGE EQUIVALENT CONCENTRATED LOADS FOR TYPE 2-SI TRUCKS ON SIMPLE SPANS OF VARIOUS LENGTHS



NOTE: -GROSS VEHICLE WEIGHT IN TONS AND EQUIVALENT CONCENTRATED LOADS IN TONS ARE IDENTICAL AT INFINITE SPAN

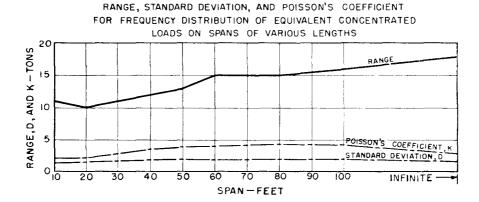
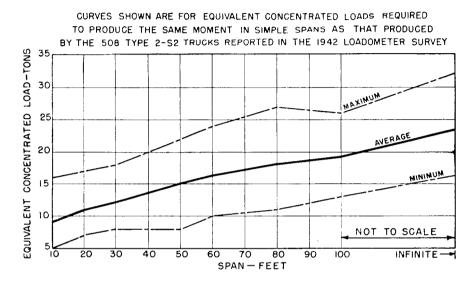


Figure 24.3

MAXIMUM, MINIMUM, AND AVERAGE EQUIVALENT CONCENTRATED LOADS FOR TYPE 2-S2 TRUCKS ON SIMPLE SPANS OF VARIOUS LENGTHS



NOTE: - GROSS VEHICLE WEIGHT IN TONS AND EQUIVALENT CONCENTRATED
LOADS IN TONS ARE IDENTICAL AT INFINITE SPAN

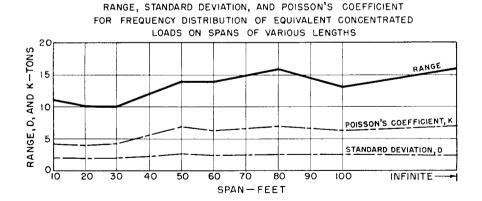
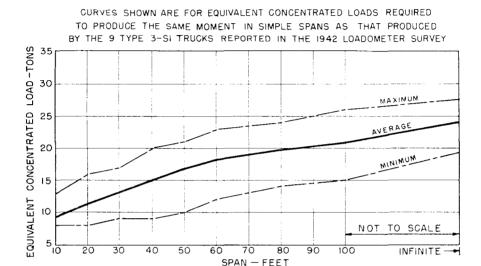


Figure 24.4

MAXIMUM, MINIMUM, AND AVERAGE EQUIVALENT CONCENTRATED LOADS FOR TYPE 3-SI TRUCKS ON SIMPLE SPANS OF VARIOUS LENGTHS



NOTE: -- GROSS VEHICLE WEIGHT IN TONS AND EQUIVALENT CONCENTRATED

LOADS IN TONS ARE IDENTICAL AT INFINITE SPAN

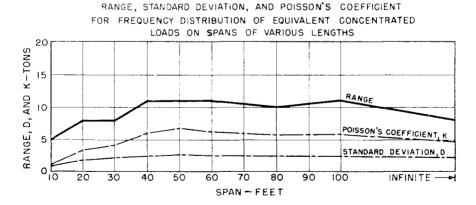
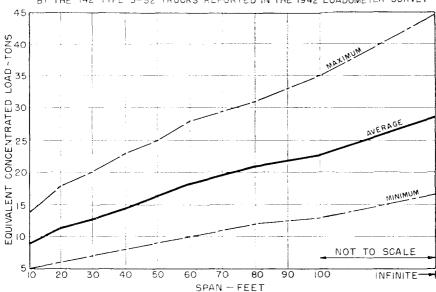


Figure 24.5

MAXIMUM, MINIMUM, AND AVERAGE EQUIVALENT CONCENTRATED LOADS FOR TYPE 3-S2 TRUCKS ON SIMPLE SPANS OF VARIOUS LENGTHS

CURVES SHOWN ARE FOR EQUIVALENT CONCENTRATED LOADS REQUIRED TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY THE 142 TYPE 3-S2 TRUCKS REPORTED IN THE 1942 LOADOMETER SURVEY



RANGE, STANDARD DEVIATION, AND POISSON'S COEFFICIENT FOR FREQUENCY DISTRIBUTION OF EQUIVALENT CONCENTRATED

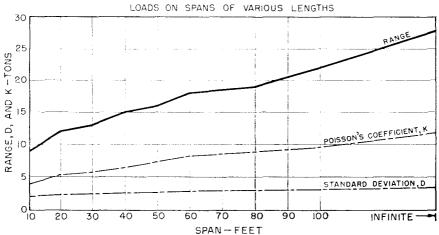


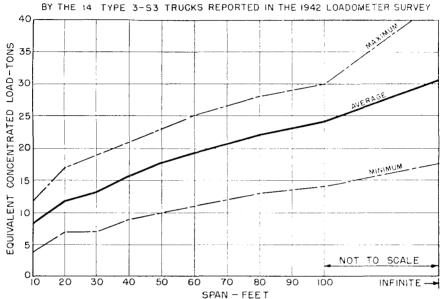
Figure 24.6

MAXIMUM, MINIMUM, AND AVERAGE EQUIVALENT CONCENTRATED LOADS FOR TYPE 3-S3 TRUCKS ON SIMPLE SPANS OF VARIOUS LENGTHS

CURVES SHOWN ARE FOR EQUIVALENT CONCENTRATED LOADS REQUIRED

TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED

THE 14 TYPE 3-S3 TRUCKS REPORTED IN THE 1942 LOADOMETER SURVE



RANGE, STANDARD DEVIATION, AND POISSON'S COEFFICIENT FOR FREQUENCY DISTRIBUTION OF EQUIVALENT CONCENTRATED LOADS ON SPANS OF VARIOUS LENGTHS

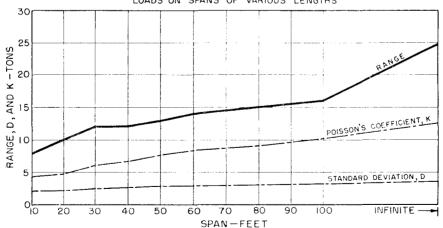
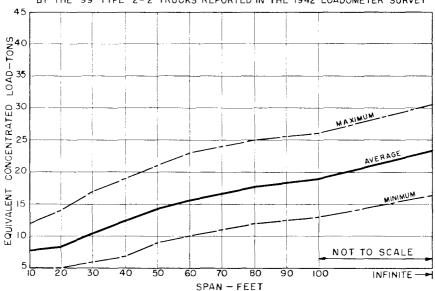


Figure 24.7

MAXIMUM, MINIMUM, AND AVERAGE EQUIVALENT CONCENTRATED LOADS FOR TYPE 2-2 TRUCKS ON SIMPLE SPANS OF VARIOUS LENGTHS

CURVES SHOWN ARE FOR EQUIVALENT CONCENTRATED LOADS REQUIRED TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY THE 99 TYPE 2-2 TRUCKS REPORTED IN THE 1942 LOADOMETER SURVEY



NOTE: — GROSS VEHICLE WEIGHT IN TONS AND EQUIVALENT CONCENTRATED

LOADS IN TONS ARE IDENTICAL AT INFINITE SPAN

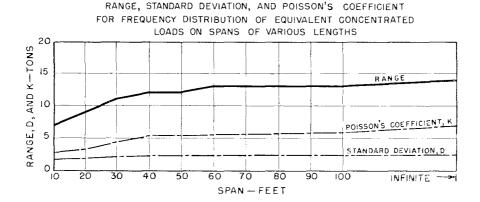
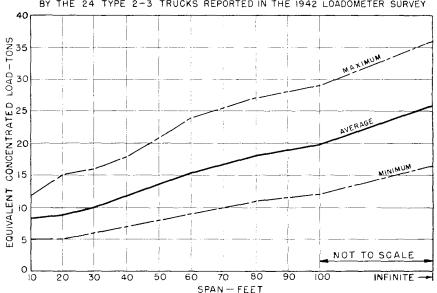


Figure 24.8

MAXIMUM, MINIMUM, AND AVERAGE EQUIVALENT CONCENTRATED LOADS FOR TYPE 2-3 TRUCKS ON SIMPLE SPANS OF VARIOUS LENGTHS

CURVES SHOWN ARE FOR EQUIVALENT CONCENTRATED LOADS REQUIRED TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY THE 24 TYPE 2-3 TRUCKS REPORTED IN THE 1942 LOADOMETER SURVEY



NOTE: — GROSS VEHICLE WEIGHT IN TONS AND EQUIVALENT CONCENTRATED LOADS IN TONS ARE IDENTICAL AT INFINITE SPAN

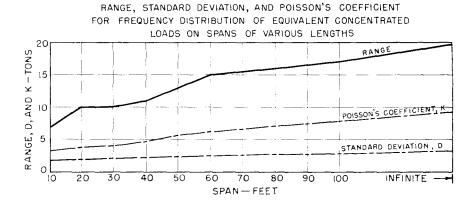
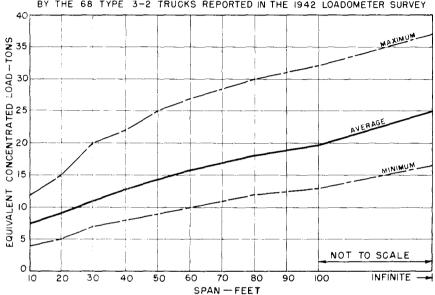


Figure 24.9

MAXIMUM, MINIMUM, AND AVERAGE EQUIVALENT CONCENTRATED LOADS FOR TYPE 3-2 TRUCKS ON SIMPLE SPANS OF VARIOUS LENGTHS

CURVES SHOWN ARE FOR EQUIVALENT CONCENTRATED LOADS REQUIRED TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY THE 68 TYPE 3-2 TRUCKS REPORTED IN THE 1942 LOADOMETER SURVEY



NOTE: — GROSS VEHICLE WEIGHT IN TONS AND EQUIVALENT CONCENTRATED LOADS IN TONS ARE IDENTICAL AT INFINITE SPAN

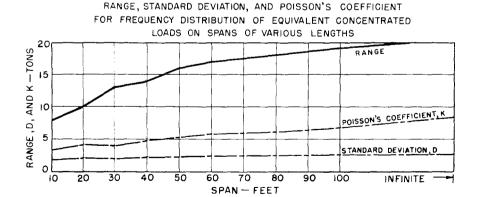
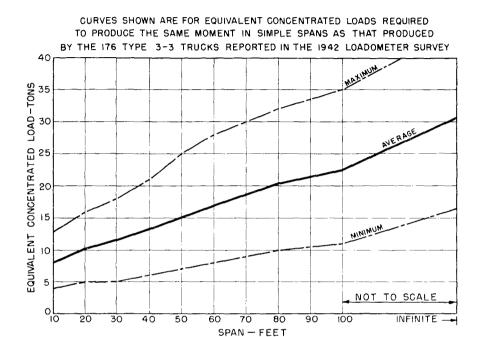


Figure 24.10

MAXIMUM, MINIMUM, AND AVERAGE EQUIVALENT CONCENTRATED LOADS FOR TYPE 3-3 TRUCKS ON SIMPLE SPANS OF VARIOUS LENGTHS



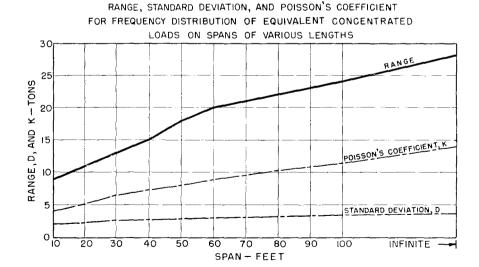
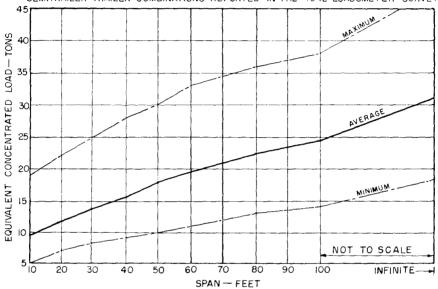


Figure 24.11

MAXIMUM, MINIMUM, AND AVERAGE EQUIVALENT CONCENTRATED LOADS FOR THE 83 TRUCK-TRACTOR SEMITRAILER-TRAILER COMBINATIONS ON SIMPLE SPANS OF VARIOUS LENGTHS

CURVES SHOWN ARE FOR EQUIVALENT CONCENTRATED LOADS REQUIRED TO PRODUCE
THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY THE 83 TRUCK-TRACTOR
SEMITRAILER-TRAILER COMBINATIONS REPORTED IN THE 1942 LOADOMETER SURVEY



RANGE, STANDARD DEVIATION, AND POISSON'S COEFFICIENT
FOR FREQUENCY DISTRIBUTION OF EQUIVALENT CONCENTRATED
LOADS ON SPANS OF VARIOUS LENGTHS

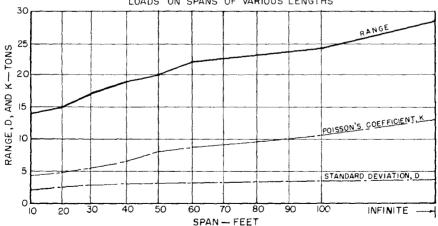


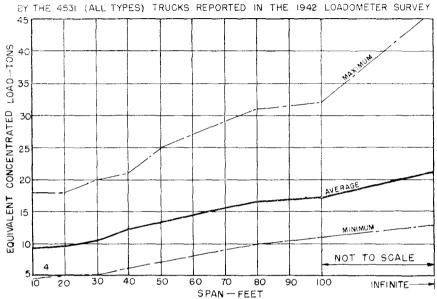
Figure 24.12

MAXIMUM, MINIMUM, AND AVERAGE EQUIVALENT CONCENTRATED LOADS FOR THE 453I (ALL TYPES) TRUCKS ON SIMPLE SPANS OF VARIOUS LENGTHS

CURVES SHOWN ARE FOR EQUIVALENT CONCENTRATED LOADS REQUIRED

TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED

THE 653 (ALL TYPES) TRUCKS REPORTED IN THE 1942 LOADOMETER SURVEY



RANGE, STANDARD DEVIATION, AND POISSON'S COEFFICIENT FOR FREQUENCY DISTRIBUTION OF EQUIVALENT CONCENTRATED

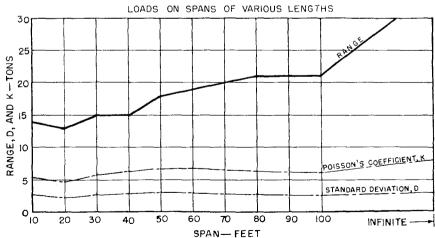


Figure 24.13

25. HISTOGRAMS SHOWING FREQUENCY DISTRIBUTIONS OF EQUIVALENT CONCENTRATED LOADS ON SIMPLE SPAN BRIDGES BASED ON GROSS VEHICLE WEIGHTS

Figures 25.1—25.11 present a graphical representation of the observed and calculated frequencies of equivalent concentrated loads on simple spans up to 100 feet in length for each of the 11 more numerous heavy vehicle types reported in the 1942 loadometer survey; Figure 24.12 gives the same information for all of the heavy vehicles reported, representing a combined total of 4531. The histograms represent the observed data, based on 3-item moving averages, and the dashed lines represent the corresponding Poisson distributions. Both the observed and calculated frequencies of equivalent concentrated loads were plotted from the corresponding data given by tables 23.1a—23.12a and 23.1b—23.12b. These distributions are given in the following figures:

Heavy Vehicle Type	Number of Vehicles Reported	Figure Number
2	171	25.1
3	381	25.2
2-S1	2855	25.3
2-S2	508	25.4
3-S1	9	25.5
3-S2	142	25.6
3-S3	14	25.7
2-2	99	25.8
2-3	24	25.9
3-2	68	25.10
3-3	176	25.11
All	4531	25.12

A COMPARISON OF OBSERVED WITH THEORETICAL FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS FOR TYPE 2 HEAVY VEHICLES ON SIMPLE SPANS OF VARIOUS LENGTHS

OBSERVED FREQUENCIES BASED ON EQUIVALENT CONCENTRATED LOADS WHICH PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY THE 171 TYPE 2 TRUCKS REPORTED IN THE 1942 LOADOMETER SURVEY THEORETICAL FREQUENCIES BASED ON POISSON'S DISTRIBUTION LAW

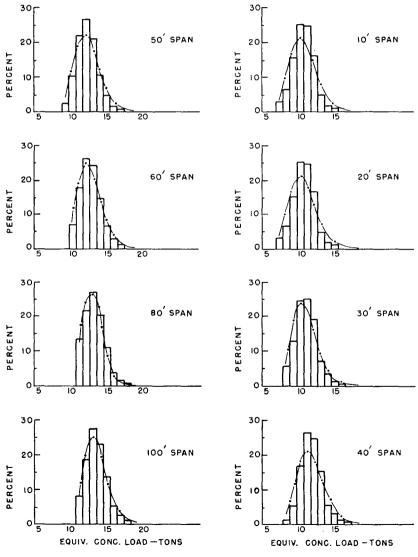


Figure 25.1

A COMPARISON OF OBSERVED WITH THEORETICAL FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS FOR TYPE 3 HEAVY VEHICLES ON SIMPLE SPANS OF VARIOUS LENGTHS

OBSERVED FREQUENCIES BASED ON EQUIVALENT CONCENTRATED LOADS WHICH PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY THE 3BI TYPE 3 TRUCKS REPORTED IN THE 1942 LOADOMETER SURVEY THEORETICAL FREQUENCIES BASED ON POISSON'S DISTRIBUTION LAW

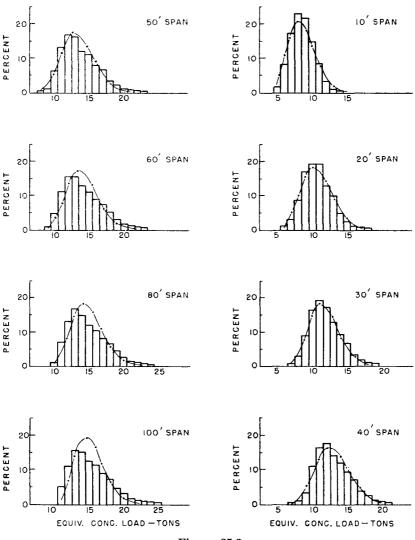


Figure 25.2

A COMPARISON OF OBSERVED WITH THEORETICAL FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS FOR TYPE 2-SI HEAVY VEHICLES ON SIMPLE SPANS OF VARIOUS LENGTHS

OBSERVED FREQUENCIES BASED ON EQUIVALENT CONCENTRATED LOADS WHICH PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY THE 2855 TYPE 2-SI TRUCKS REPORTED IN THE 1942 LOADOMETER SURVEY THEORETICAL FREQUENCIES BASED ON POISSON'S DISTRIBUTION LAW

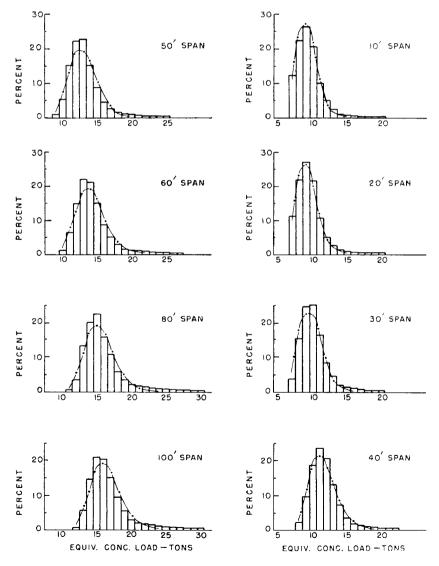


Figure 25.3

A COMPARISON OF OBSERVED WITH THEORETICAL FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS FOR TYPE 2-S2 HEAVY VEHICLES ON SIMPLE SPANS OF VARIOUS LENGTHS

OBSERVED FREQUENCIES BASED ON EQUIVALENT CONCENTRATED LOADS WHICH PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY THE 508 TYPE 2-S2 TRUCKS REPORTED IN THE 1942 LOADOMETER SURVEY THEORETICAL FREQUENCIES BASED ON POISSON'S DISTRIBUTION LAW

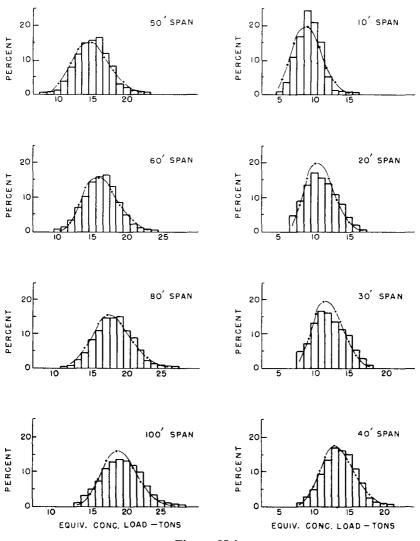


Figure 25.4

A COMPARISON OF OBSERVED WITH THEORETICAL FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS FOR TYPE 3-SI HEAVY VEHICLES ON SIMPLE SPANS OF VARIOUS LENGTHS

OBSERVED FREQUENCIES BASED ON EQUIVALENT CONCENTRATED LOADS WHICH PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY THE 9 TYPE 3-SI TRUCKS REPORTED IN THE 1942 LOADOMETER SURVEY THEORETICAL FREQUENCIES BASED ON POISSON'S DISTRIBUTION LAW

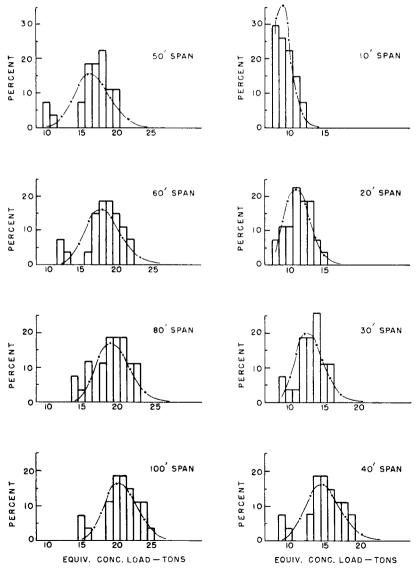


Figure 25.5

A COMPARISON OF OBSERVED WITH THEORETICAL FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS FOR TYPE 3-S2 HEAVY VEHICLES ON SIMPLE SPANS OF VARIOUS LENGTHS'

OBSERVED FREQUENCIES BASED ON EQUIVALENT CONCENTRATED LOADS WHICH PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY THE 142 TYPE 3-S2 TRUCKS REPORTED IN THE 1942 LOADOMETER SURVEY THEORETICAL FREQUENCIES BASED ON POISSON'S DISTRIBUTION LAW

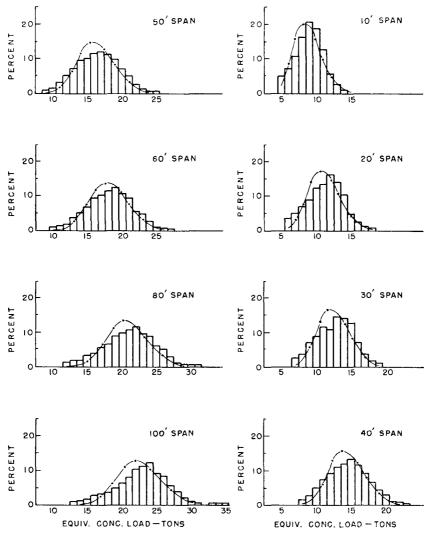


Figure 25.6

A COMPARISON OF OBSERVED WITH THEORETICAL FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS FOR TYPE 3-S3 HEAVY VEHICLES ON SIMPLE SPANS OF VARIOUS LENGTHS

OBSERVED FREQUENCIES BASED ON EQUIVALENT CONCENTRATED LOADS WHICH PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY THE 14 TYPE 3-S3 TRUCKS REPORTED IN THE 1942 LOADOMETER SURVEY THEORETICAL FREQUENCIES BASED ON POISSON'S DISTRIBUTION LAW

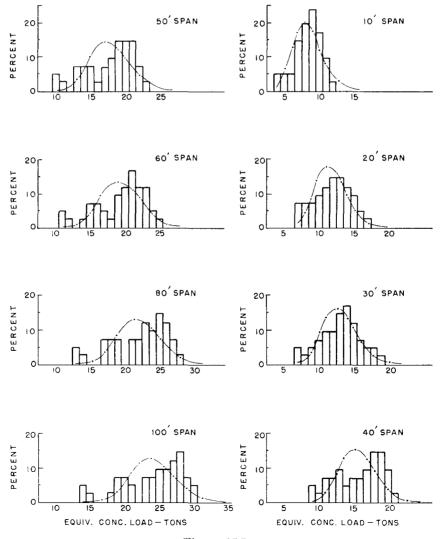


Figure 25.7

A COMPARISON OF OBSERVED WITH THEORETICAL FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS FOR TYPE 2-2 HEAVY VEHICLES ON SIMPLE SPANS OF VARIOUS LENGTHS

OBSERVED FREQUENCIES BASED ON EQUIVALENT CONCENTRATED LOADS WHICH PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY THE 99 TYPE 2-2 TRUCKS REPORTED IN THE 1942 LOADOMETER SURVEY THEORETICAL FREQUENCIES BASED ON POISSON'S DISTRIBUTION LAW

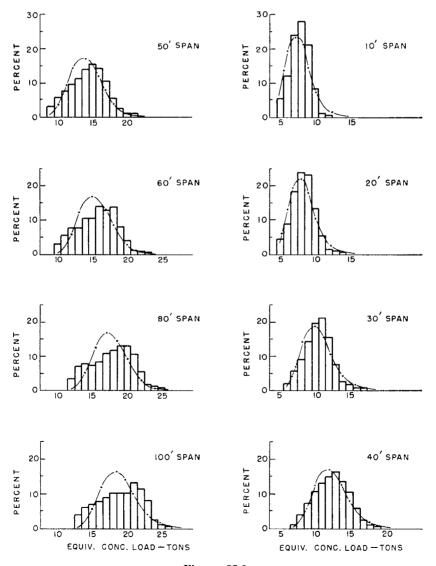


Figure 25.8

A COMPARISON OF OBSERVED WITH THEORETICAL FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS FOR TYPE 2-3 HEAVY VEHICLES ON SIMPLE SPANS OF VARIOUS LENGTHS

OBSERVED FREQUENCIES BASED ON EQUIVALENT CONCENTRATED LOADS WHICH PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY THE 24 TYPE 2-3 TRUCKS REPORTED IN THE 1942 LOADOMETER SURVEY THEORETICAL FREQUENCIES BASED ON POISSON'S DISTRIBUTION LAW

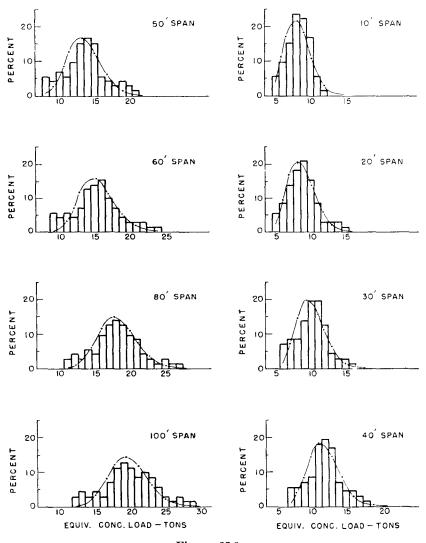


Figure 25.9

A COMPARISON OF OBSERVED WITH THEORETICAL FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS FOR TYPE 3-2 HEAVY VEHICLES ON SIMPLE SPANS OF VARIOUS LENGTHS

OBSERVED FREQUENCIES BASED ON EQUIVALENT CONCENTRATED LOADS WHICH PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY THE 68 TYPE 3-2 TRUCKS REPORTED IN THE 1942 LOADOMETER SURVEY THEORETICAL FREQUENCIES BASED ON POISSON'S DISTRIBUTION LAW

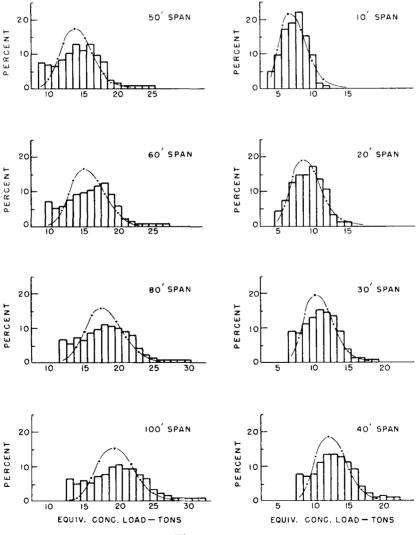


Figure 25.10

A COMPARISON OF OBSERVED WITH THEORETICAL FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS FOR TYPE 3-3 HEAVY VEHICLES ON SIMPLE SPANS OF VARIOUS LENGTHS

OBSERVED FREQUENCIES BASED ON EQUIVALENT CONCENTRATED LOADS WHICH PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY THE 176 TYPE 3-3 TRUCKS REPORTED IN THE 1942 LOADOMETER SURVEY THEORETICAL FREQUENCIES BASED ON POISSON'S DISTRIBUTION LAW

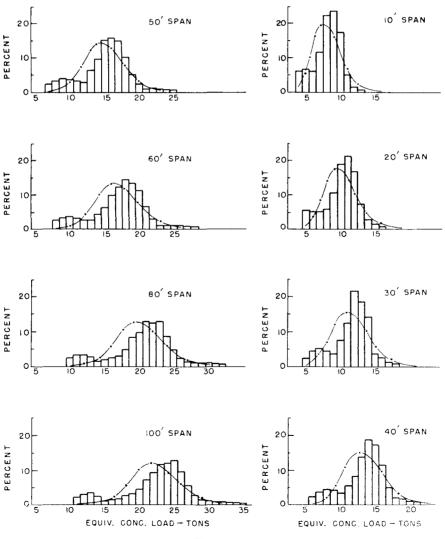


Figure 25.11

A COMPARISON OF OBSERVED WITH THEORETICAL FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS FOR ALL TYPE HEAVY VEHICLES ON SIMPLE SPANS OF VARIOUS LENGTHS

OBSERVED FREQUENCIES BASED ON EQUIVALENT CONCENTRATED LOADS WHICH PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY THE 4531 (ALL TYPES) TRUCKS REPORTED IN THE 1942 LOADOMETER SURVEY THEORETICAL FREQUENCIES BASED ON POISSON'S DISTRIBUTION LAW

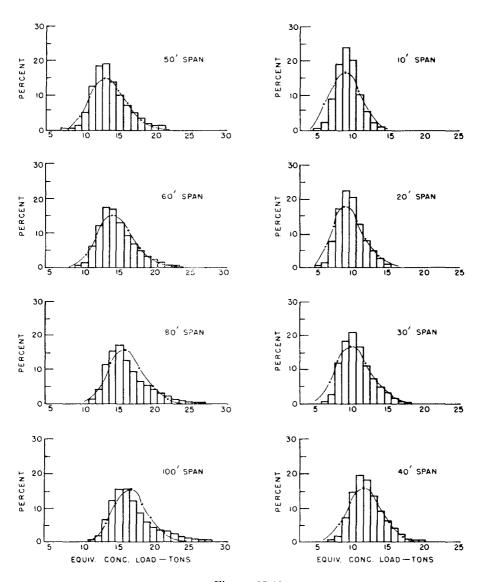


Figure 25.12

26. OBSERVED AND CALCULATED FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS ON SIMPLE SPAN BRIDGES BASED ON VEHICLES WEIGHING ONE KIP EACH

The observed and calculated frequencies of equivalent concentrated loads based on gross vehicle weights, as discussed in Articles 23, 24, and 25, provide a convenient means for analyzing the range and frequencies of the actual live load bending moments that would result on various span lengths from the heavy vehicle loadings reported by the 1942 loadometer survey. Owing to the fact, however, that these moments include the effect of gross vehicle weights, they do not reflect the stress producing characteristics of the vehicles themselves.

In order to investigate or analyze the stress producing characteristics of the heavy vehicle types and loadings actually found on the highways, therefore, it is necessary to eliminate gross vehicle weight as a variable by holding it constant. This may be accomplished by considering each heavy vehicle investigated to have a gross vehicle weight of one kip as was done in the case of the 1303 variations of wheel base, number and spacing of axles, percentage and distribution of load among the axles for the 14 heavy vehicle types given by the identification index Tables 6.1—6.14. The moment produced by these vehicles of unit weight on spans of various lengths (see Tables 6.1—6.14, 7.1—7.14, and Figures 9.1—9.14) not only provide a simple means for comparing the stress producing characteristics of one vehicle with those of another, but also for comparing or measuring the stress producing effects of any given vehicle type and loading, on a given span, in terms of a standard H truck loading, H design loading, single concentrated load, or any other type of loading as may be desired for use as a basis of comparison.

In the case of measuring the stress producing effects of a given vehicle on a given span, in terms of the standard H truck or a single concentrated load, however, it is simpler to obtain this information directly from Tables 10.1—10.14 and Tables 12.1—12.14, respectively, than by comparing the moments given by Tables 9.1—9.14. For example, if it were desired to rate the stress producing characteristics of a Type 2-S1 Truck—with axle spacings of 12 and 24 feet, making an over-all wheel-base length of 36 feet, and a percentage distribution of load from front to rear of 10, 45, and 45 percent, respectively—in terms of an equivalent concentrated load on a 60-foot span, it will be found in Table 12.3 that this vehicle (2-S1-66) of unit weight will produce but 62.6 percent as much moment as a concentrated load of unit weight on this 60-foot span. Therefore, the stress producing effects of this 2-S1-66 truck would be rated at .626 of a single concentrated load of equal weight.

An analysis of the stress producing characteristics of the 11 more numerous heavy vehicle types, reported by the 1942 loadometer survey, is given by Tables 26.1a—26.11a and Tables 26.1b—26.11b which present the observed and calculated frequencies of equivalent concentrated loads for these vehicles on a unit weight basis on spans up to 100 feet in length. In Table 26.1a, it will be seen that of the 171 Type 2 trucks reported, 25.5 percent of them produced 90 percent as much moment as a single concentrated load of equal weight on a 50-foot span. In the same column it will be seen that 28.7 percent of them produced 85 percent as much moment as a single concentrated load of equal weight, and so on.

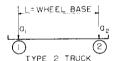
The observed and calculated frequencies of equivalent concentrated loads for each of the 11 heavy vehicle types weighing one kip each on spans up to 100 feet in length are given in the following tables:

Heavy	Number of	Table of	Table of
Vehicle	Vehicles	Observed	Calculated
$_{ m Type}$	$\mathbf{Reported}$	Frequencies	Frequencies
2^{-}	$^{-}171$	26.1a	26.1b
3	381	26.2a	26.2b
2-S1	2855	26.3a	26.3b
2-S2	508	26.4a	26.4b
3-S1	9	26.5a	26.5b
3-S2	142	26.6a	26.6b
3-S3	14	26.7a	26.7b
2-2	99	26.8a	26.8b
2-3	24	26.9a	26.9b
3-2	68	26.10a	26.10b
3-3	176	26.11a	26.11b

The maximum, average, and minimum equivalent concentrated loads, the range, Poisson coefficient, K, and standard deviation, D, all have the same meaning as explained in connection with the frequency distributions based on gross vehicle weights in Article 15.

Table 26.1a

OBSERVED FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS REQUIRED TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY THE 171 TYPE 2 TRUCKS WEIGHING ONE KIP EACH

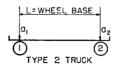


Equivalent	Span-Feet								
Concentrated Loads	10	20	30	40	50	60	80	100	
.95							28.7	41.7	
.90				11.3	25.5	37.4	32.8	33.3	
.85			9.7	19.7	28.7	32.8	28.9	23.4	
.80	18.4	18.4	19.7	27.3	26.9	23.0	9.1	1.6	
.75	25,5	25.7	26.7	22.2	13.3	5.9	.5		
.70	25.9	26.1	23.4	13.3	4.7	.6			
.65	18.7	18.7	13.3	4.7	.6	.3			
.60	7.8	7.6	5.3	1.2	.3				
.55	2.5	2.3	1.5	.3					
.50	1.2	1.2	.4						
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Max. ECL	.80	.80	.85	.90	.90	.90	.95	.95	
Avg. ECL	.71	.71	.73	.79	.83	.85	.89	.91	
Min. ECL	.50	.50	.50	.55	.60	.65	.75	.80	
Range	.30	.30	.35	.35	.30	.25	.20	.15	
Poisson's									
Coef. K	1.8	1.8	2.3	2.3	1.4	.9	1.2	.7	

The equivalent concentrated loadings shown for the unit weight trucks of this table are proportional to the equivalent concentrated loadings based on gross weights for corresponding vehicles among the 171 Type 2 trucks reported by the 1942 loadometer survey.

Table 26.1b

CALCULATED FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS REQUIRED TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY THE 171 TYPE 2 TRUCKS WEIGHING ONE KIP EACH



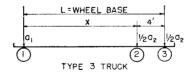
Calculated frequencies are based on Poisson's Distribution Law. Equivalent concentrated loads which occur less than 1 in 1000, or account for less than 0.1% of the heavy trucks of this type are not shown in this table.

Equivalent				Span-	Span-Feet							
Concentrated Loads	10	20	30	40	50	60	80	100_				
.95							30.1	49.7				
.90				10.0	24.7	40.7	36.1	34.8				
.85			10.0	23.1	34.5	36.6	21.7	12.2				
.80	16.5	16.5	23.1	26.5	24.2	16.5	8.7	2.8				
.75	29.8	29.8	26.5	20.3	11.3	4.9	2.6	.5				
.70	26.8	26.8	20.3	11.7	3.9	1.1	.6					
.65	16.1	16.1	11.7	5.4	1.1	.2	.1					
.60	7.2	7.2	5.4	2.1	.3		.1					
.55	2.6	2.6	2.1	.7								
.50	.8	.8	.7	.2								
.45	.2	.2	.2									
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0				
Max. ECL	.80	.80	.85	.90	.90	.90	.95	.95				
Avg. ECL	.71	.71	.73	.79	.83	.85	.89	.91				
Min. ECL	.45	.45	.45	.50	.60	.65	.60	.75				
Range	.35	.35	.40	.40	.30	.25	.35	.20				
Poisson's												
Coef. K	1.8	1.8	2.3	2.3	1.4	.9	1.2	.7				
Std. Dev. D	1.342	1.342	1.517	1.517	1.183	.949	1.095	.837				

The equivalent concentrated loadings shown for the unit weight trucks of this table are proportional to the equivalent concentrated loadings based on gross weights for corresponding vehicles among the 171 Type 2 trucks reported by the 1942 loadometer survey.

Table 26.2a

OBSERVED FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS REQUIRED TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY THE 381 TYPE 3 TRUCKS WEIGHING ONE KIP EACH



Equivalent	Span-Feet							
Concentrated Loads	10	20	30	40	50	60	80	100
.95							29.0	36.1
.90					22.4	33.3	32.6	33.1
-85				26,9	31.0	32.5	32.9	29.5
.80			18.9	30.7	32.1	29.2	4.8	1.1
.75		14.2	27.6	28.5	11.1	3.9	.7	.2
.70		25.8	29.7	9.7	2.4	.8		
.65	29.1	16.0	2.4	8	3			

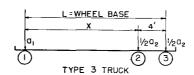
Table	26.2a	(Continued)

Equivalent Concentrated	Span-Feet								
Loads	10	20	30	40	50	60	80	100	
.60	14.2	20.8	5.3	1.1	.2				
.55	31.2	7.5	1.4	.4					
.50	30.2	2.2	.7	.3					
.45	21.3	.4	.4						
.40	2.1								
.35	1.0								
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Max. ECL	.60	.75	.80	.85	.90	.90	.95	.95	
Avg. ECL	.52	.66	.72	.78	.83	.85	.89	.90	
Min. ECL	.35	.45	.45	.50	.60	.65	.75	.75	
Range	.25	.30	.35	.35	.30	,25	.20	.20	
Poisson's									
Coef. K	1.7	1.9	1.7	1.3	1.4	1.0	1.2	.9	

The equivalent concentrated loadings shown for the unit weight trucks of this table are proportional to the equivalent concentrated loadings based on gross weights for corresponding vehicles among the $381~\mathrm{Type}$ 3 trucks reported by the $1942~\mathrm{loadometer}$ survey.

Table 26.2b

CALCULATED FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS REQUIRED TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY THE 381 TYPE 3 TRUCKS WEIGHING ONE KIP EACH



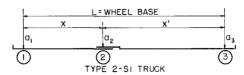
Calculated frequencies are based on Poisson's Distribution Law. Equivalent concentrated loads which occur less than 1 in 1000, or account for less than 0.1% of the heavy trucks of this type are not shown in this table.

Equivalent Concentrated Loads	Span-Feet								
	10	20	30	40	50	60	80	100	
.95							30.1	40.7	
.90					24.7	36.8	36.1	36.6	
.85				27.3	34.5	36.8	21.7	16.5	
.80			18.3	35.4	24.2	18.4	8.7	4.9	
.75		15.0	31.1	23.0	11.3	6.1	2.6	1.1	
.70		28.4	26.4	10.0	3.9	1.5	.6	.2	
.65		27.0	15.0	3.2	1.1	.3	.1		
.60	18.3	17.1	6.4	.8	.3	.1	.1		
.55	31.1	8.1	2.2	.2					
.50	26.4	3.1	.6	.1					
.45	15.0	1.0							
.40	6.4	.3							
.35	2.2								
.30	.6								
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100,0	
Max. ECL	.60	.75	.80	.85	.90	.90	.95	.95	
Avg. ECL	.52	.66	.72	.78	.83	.85	.89	.90	
Min. ECL	.30	.40	.50	.50	.60	.60	.60	.70	
Range	.30	.35	.30	.35	.30	.30	.35	.25	
Poisson's									
Coef. K	1.7	1.9	1.7	1.3	1.4	1.0	1.2	.9	
Std. Dev. D	1.304	1.378	1.304	1.140	1.183	1.000	1.095	.949	

The equivalent concentrated loadings shown for the unit weight trucks of this table are proportional to the equivalent concentrated loadings based on gross weights for corresponding vehicles among the 381 Type 3 trucks reported by the 1942 loadometer survey.

Table 26.3a

OBSERVED FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS REQUIRED TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY THE 2855 TYPE 2-S1 TRUCKS WEIGHING ONE KIP EACH

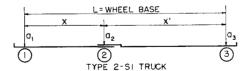


Equivalent Concentrated Loads	Span-Feet								
	10	20	30	40	50	60	80	100	
.90							2.9	17.0	
.85						2.8	21.3	31.4	
.80					2.9	13.0	31.2	32.8	
.75				2.8	13.1	26.8	30.4	16.7	
.70			.3	5.3	23.0	29.6	12.0	2.0	
.65			3.0	18.2	28.6	20.2	2.0	.1	
.60	.3	.7	5.1	27.3	20.1	6.4	.2		
.55	13.1	13.1	24.1	27.9	10.2	1.1			
.50	26.6	28.2	30.2	15.0	1.9	.1			
.45	33.1	32.9	28.1	3.4	.2				
.40	20.3	20.2	9.1	.1					
.35	6.6	4.9	.1						
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Max. ECL	.60	.60	.70	.75	.80	.85	.90	.90	
Avg. ECL	.46	.46	.50	.58	.66	.71	.78	.82	
Min. ECL	.35	.35	.35	.40	.45	.50	.60	,65	
Range	.25	.25	.35	.35	.35	.35	.30	.25	
Poisson's									
Coef. K	2.8	2.7	4.0	3.3	2.9	2.8	2.3	1.6	

The equivalent concentrated loadings shown for the unit weight trucks of this table are proportional to the equivalent concentrated loadings based on gross weights for corresponding vehicles among the 2855 Type 2-S1 trucks reported by the 1942 loadometer survey.

Table 26.3b

CALCULATED FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS REQUIRED TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY THE 2855 TYPE 2-S1 TRUCKS WEIGHING ONE KIP EACH



Calculated frequencies are based on Poisson's Distribution Law. Equivalent concentrated loads which occur less than 1 in 1000, or account for less than 0.1% of the heavy trucks of this type are not shown in this table.

Equivalent Concentrated Loads	Span-Feet								
	10	20	30	40	50	60	80	100	
.90							10.2	20.2	
.85						6.1	23.1	32.3	
.80					5.5	17.0	26.5	25.8	
.75				3.7	16.0	23.8	20.3	13.8	
.70			1.8	12.2	23.1	22.2	11.7	5.5	
.65			7.3	20.1	22.4	15.6	5.4	1.8	
.60	6.1	6.7	14.7	22.1	16.2	8.7	2.1	.5	
.55	17.0	18.1	19.5	18.2	9.4	4.1	.7	.1	
.50	23.8	24.5	19.5	12.0	4.5	1.6	.2		
.45	22.2	22.0	15.6	6.6	1.9	.6			
.40	15.6	14.9	10.4	3,1	.7	.2			

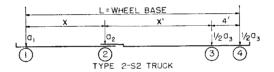
Table	26 3h	(Contin	hon

Equivalent	Span-Feet								
Concentrated Loads	10	20	30	40	50	60	80	100	
.35	8.7	8.0	6.0	1.3	.2	.1			
.30	4.1	3.6	3.0	.5	.1				
.25	1.6	1.4	1.3	.2					
.20	.6	.5	.5						
.15	.2	.1	.2						
.10	.1	.1	.1						
.05		.1	.1						
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Max. ECL	.60	.60	.70	.75	.80	.85	.90	.90	
Avg. ECL	.46	.46	.50	,58	.66	.71	.78	.82	
Min. ECL	.10	.05	.05	.25	.30	.35	.50	.55	
Range	.50	.55	.65	.50	.50	.50	.40	.35	
Poisson's									
Coef. K	2.8	2.7	4.0	3.3	2.9	2.8	2.3	1.6	
Std. Dev. D	1.673	1.643	2.000	1.817	1.703	1.673	1.517	1.265	

The equivalent concentrated loadings shown for the unit weight trucks of this table are proportional to the equivalent concentrated loadings based on gross weights for corresponding vehicles among the 2855 Type 2-S1 trucks reported by the 1942 loadometer survey.

Table 26.4a

OBSERVED FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS REQUIRED TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY THE 508 TYPE 2-S2 TRUCKS WEIGHING ONE KIP EACH

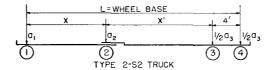


Equivalent Concentrated				Span-	-Feet			
Loads	10	20	30	40	50	60	80	100
.90								11.7
.85							13.7	24.5
.80					.9	8.3	24.5	32.7
.75				.8	7.3	17.4	31.3	22.3
.70				4.4	13.9	27.2	20.4	8.8
.65			4.8	12.9	27.0	24.5	8.8	.1
.60			6.8	26.6	24.7	15.9	1.3	
.55		19.5	22.0	27.1	19.2	5.5		
.50	.8	19.3	28.9	20.2	5.6	1.2		
.45	30.6	33.0	26.5	6.2	1.3			
.40	30.3	14.2	10.8	1.8	.1			
.35	32.9	14.0	,2					
.30	2.7							
.25	2.7							
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Max. ECL	.50	.55	.65	.75	.80	.80	.85	.90
Avg. ECL	.39	.46	.50	.57	.62	.68	.76	.80
Min. ECL	.25	.35	.35	.40	.40	.50	.60	.65
Range	.25	,20	.30	.35	.40	.30	.25	.25
Poisson's	.=-		•00	.00	.10	.00	.20	.20
Coef. K	2.1	1.8	3.0	3.7	3.5	2.4	1.9	1.9

The equivalent concentrated loadings shown for the unit weight trucks of this table are proportional to the equivalent concentrated loadings based on gross weights for corresponding vehicles among the 508 Type 2-S2 trucks reported by the 1942 loadometer survey.

Table 26.4b

CALCULATED FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS REQUIRED TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY THE 508 TYPE 2-S2 TRUCKS WEIGHING ONE KIP EACH



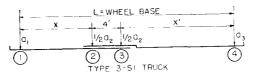
Calculated frequencies are based on Poisson's Distribution Law. Equivalent concentrated loads which occur less than 1 in 1000, or account for less than 0.1% of the heavy trucks of this type are not shown in this table.

Equivalent				Span-	Feet			
Concentrated Loads	10	20	30	40	50	60	80	100
.90								15.0
.85							15.0	28.4
.80					3.0	9.1	28.4	27.0
.75				2.5	10.6	21.8	27.0	17.1
.70				9.1	18.5	26.1	17.1	8.1
.65			5.0	16.9	21.6	20.9	8.1	3.1
.60			14.9	20.9	18.9	12.5	3.1	1.0
.55		16.5	22.4	19.3	13.2	6.0	1.0	.3
.50	12.2	29.8	22.4	14.3	7.7	2.4	.3	
.45	25.7	26.8	16.8	8.8	3.9	.8		
.40	27.0	16.1	10.1	4.7	1.7	.2		
.35	18.9	7.2	5.0	2.2	.7	.1		
.30	9.9	2.6	2.2	.9	.1	.1		
.25	4.2	.8	.8	.3	.1			
.20	1.5	.2	.3	.1				
.15	.4		.1					
.10	.1							
.05	.1							
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Max. ECL	.50	.55	.65	.75	.80	.80	.85	.90
Avg. ECL	.39	.46	.50	.57	.62	.68	.76	.80
Min. ECL	.05	.20	.15	.20	.25	.30	.50	.55
Range	.45	.35	.50	.55	.55	.50	.35	.35
Poisson's								
Coef, K	2.1	1.8	3.0	3.7	3.5	2.4	1.9	1.9
Std. Dev. D	1.449	1.342	1.732	1.924	1.871	1.549	1.378	1.378

The equivalent concentrated loadings shown for the unit weight trucks of this table are proportional to the equivalent concentrated loadings based on gross weights for corresponding vehicles among the 508 Type 2-S2 trucks reported by the 1942 loadometer survey.

Table 26.5a

OBSERVED FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS REQUIRED TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY THE 9 TYPE 3-S1 TRUCKS WEIGHING ONE KIP EACH



Equivalent	Span-Feet								
Concentrated Loads	10	20	30	40	50	60	80	100	
.85							37.0	59.3	
.80						29.6	29.6	33.3	
.75					25.9	29.6	25.9	3.7	
.70				11.1	29.6	25.9	3.7	3.7	
.65				29.6	25.9	7.4	3.8		
.60			18.5	25.9	7.4	3.7			

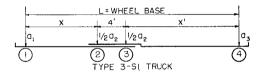
Table 26.5a (Continued)

Equivalent Concentrated	Span-Feet .								
Loads	10	20	30	40	50	60	80	100	
.55			29.6	22.2	3.7	3.8			
.50		40.8	29.6	3.7	3.7				
.45		33.3	18.5	3.7	3.8				
.40	55.6	14.8	3.8	3.8					
.35	33,3	11.1							
.30	7.4								
.25	3.7								
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Max. ECL	.40	.50	.60	.70	.75	.80	.85	.85	
Avg. ECL	.38	.46	.52	.60	.67	.73	.80	.84	
Min. ECL	.25	.35	.40	.40	.45	.55	.65	.70	
Range	.15	.15	.20	.30	.30	.25	.20	.15	
Poisson's									
Coef. K	.3	.8	1.6	2.0	1.6	1.3	1.0	.2	

The equivalent concentrated loadings shown for the unit weight trucks of this table are proportional to the equivalent concentrated loadings based on gross weights for corresponding vehicles among the 9 Type 3-S1 trucks reported by the 1942 loadometer survey.

Table 26.5b

CALCULATED FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS REQUIRED TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY THE 9 TYPE 3-S1 TRUCKS WEIGHING ONE KIP EACH



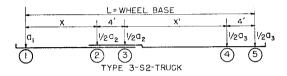
Calculated frequencies are based on Poisson's Distribution Law. Equivalent concentrated loads which occur less than 1 in 1000, or account for less than 0.1% of the heavy trucks of this type are not shown in this table.

Equivalent				Span-l	Feet			
Concentrated Loads	10	20	30	40	50	60	80	100
.85							36.8	81.9
.80						27.3	36.8	16.4
.75					20.2	35.4	18.4	1.6
.70				13.5	32.3	23.0	6.1	.1
.65				27.1	25.8	10.0	1.5	
.60			20.2	27.1	13.8	3.2	.3	
.55			32.3	18.0	5.5	.8	.1	
.50		44.9	25.8	9.0	1.8	.2		
.45		35.9	13.8	3.6	.5	.1		
.40	74.1	14.4	5.5	1.2	.1			
.35	22.2	3.8	1.8	.3				
.30	5.3	.8	.5	.3 .1 .1				
.25	.3	.1	.1	.1				
.20	.1	.1						
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Max. ECL	.40	.50	.60	.70	.75	.80	.85	.85
Avg. ECL	.38	.46	.52	.60	.67	.73	.80	.84
Min. ECL	.20	.20	.25	.25	.40	.45	.55	.70
Range	.20	.30	.35	.45	.35	.35	.30	.15
Poisson's								
Coef. K	.3	.8	1.6	2.0	1.6	1.3	1.0	.2
Std. Dev. D	.548	.894	1.265	1.414	1.265	1.140	1.000	.44

The equivalent concentrated loadings shown for the unit weight trucks of this table are proportional to the equivalent concentrated loadings based on gross weights for corresponding vehicles among the 9 Type 3-S1 trucks reported by the 1942 loadometer survey.

Table 26.6a

OBSERVED FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS REQUIRED TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY THE 142 TYPE 3-S2 TRUCKS WEIGHING ONE KIP EACH

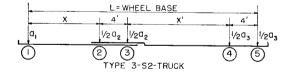


Equivalent	Span-Feet								
Concentrated Loads	10	20	30	40	50	60	80	100	
.85							1.4	14.3	
.80							12.4	31.9	
.75						6.6	28.2	32.2	
.70					5.9	14.8	31.5	20.2	
.65				3.5	10.8	28.6	20.9	1.4	
.60				7.3	24.4	26.1	4.9		
.55			5.4	15.0	23.9	18.5	.7		
.50		1.9	17.4	29.6	22.5	4.5			
.45		15.5	31.0	26.1	8.5	.9			
.40	1.9	27.0	28.4	17.8	4.0				
.35	27.9	32.4	16.0	.7					
.30	32.4	17.8	1.8	•••					
.25	32.4	5.4	2.0						
.20	5.4	0							
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Max. ECL	.40	.50	.55	.65	.70	.75	.85	.85	
Avg. ECL	.29	.37	.43	.49	.56	.62	.71	.77	
Min. ECL	.20	.25	.30	.35	.40	.45	.55	.65	
Range	.20	.25	.25	.30	.30	.30	.30	.20	
Poisson's	.20	.20	.20	.50	.00	.00	.00	.20	
Coef. K	2.1	2.6	2.4	3.2	2.9	2.5	2.8	1.6	

The equivalent concentrated loadings shown for the unit weight trucks of this table are proportional to the equivalent concentrated loadings based on gross weights for corresponding vehicles among the 142 Type 3-S2 trucks reported by the 1942 loadometer survey.

Table 26.6b

CALCULATED FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS REQUIRED TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY THE 142 TYPE 3-S2 TRUCKS WEIGHING ONE KIP EACH



Calculated frequencies are based on Poisson's Distribution Law. Equivalent concentrated loads which occur less than 1 in 1000, or account for less than 0.1% of the heavy trucks of this type are not shown in this table.

Equivalent	Span-Feet							
Concentrated Loads	10	20	30	40	50	60	80	100
.85							6.1	20.2
.80							17.0	32.3
.75						8.2	23.8	25.8
.70					5.5	20.5	22.2	13.8
.65				4.1	16.0	25.7	15.6	5.5
.60				13.0	23.1	21.4	8.7	1.8
.55			9.1	20.9	22.4	13.4	4.1	.5
.50		7.4	21.8	22.3	16.2	6.7	1.6	.1

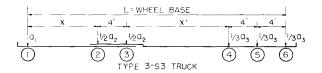
Table 26.6b (Continued)
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Equivalent Concentrated	Span-Feet								
Loads	10	20	30	40	50	60	80	100	
.45		19.3	26.1	17.8	9.4	2.8	.6		
.40	12.2	25.1	20.9	11.4	4.5	1.0	.2		
.35	25.7	21.8	12.5	6.1	1.9	.3	.1		
.30	27.0	14.1	6.0	2.8	.7				
.25	18.9	7.4	2.4	1.1	.2				
.20	9.9	3.2	.8	.4	.1				
.15	4.2	1.2	.2	.1					
.10	1.5	.4	.1						
.05	.6	.1	.1						
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Max. ECL	.40	.50	.55	.65	.70	.75	.85	.85	
Avg. ECL	.29	.37	.43	.49	.56	.62	.71	.77	
Min. ECL	.05	.05	.05	15	.20	.35	.35	.50	
Range	.35	.45	.50	.50	.50	.40	.50	.35	
Poisson's									
Coef. K	2.1	2.6	2.4	3.2	2.9	2.5	2.8	1.6	
Std. Dev. D	1.449	1,612	1.549	1.789	1.703	1.581	1.673	1.265	

The equivalent concentrated loadings shown for the unit weight trucks of this table are proportional to the equivalent concentrated loadings based on gross weights for corresponding vehicles among the 142 Type 3-S2 trucks reported by the 1942 loadometer survey.

Table 26.7a

OBSERVED FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS REQUIRED TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY THE 14 TYPE 3-S3 TRUCKS WEIGHING ONE KIP EACH

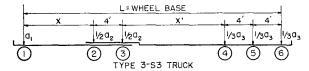


Equivalent	Span-Feet								
Concentrated Loads	10	20	30	40	50	60	80	100	
.80		-						54.8	
.75							50.0	31.0	
.70							31.0	9.5	
.65						54.8	11.9	2.4	
.60					50.0	31.0	2.4	2.3	
.55				42.9	31.0	7.2	2.4		
.50			11.9	33.3	14.3	2.4	2.3		
.45		11.9	33.3	16.7	2.4	2.3			
.40		31.0	31.0	7.1	2.3	2.3			
.35		31.0	23.8						
.30	40.5	23.8							
.25	33.3	2.3							
.20	26.2								
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Max. ECL	.30	.45	.50	.55	.60	.65	.75	.80	
Avg. ECL	.26	.36	.42	.51	.57	.63	.72	.78	
Min. ECL	.20	.25	.35	.40	.40	.40	.50	.60	
Range	.10	.20	.15	.15	.20	.25	.25	.20	
Poisson's	• • • •					•	_		
Coef. K	.8	1.7	1.6	.7	.6	.5	.6	.4	

The equivalent concentrated loadings shown for the unit weight trucks of this table are proportional to the equivalent concentrated loadings based on gross weights for corresponding vehicles among the 14 Type 3-S3 trucks reported by the 1942 loadometer survey.

Table 26.7b

CALCULATED FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS REQUIRED TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY THE 14 TYPE 3-S3 TRUCKS WEIGHING ONE KIP EACH



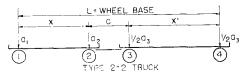
Calculated frequencies are based on Poisson's Distribution Law. Equivalent concentrated loads which occur less than 1 in 1000, or account for less than 0.1% of the heavy trucks of this type are not shown in this table.

Equivalent				Span-	Feet			
Concentrated Loads	10	20	30	40	50	60	80	100
.80								67.0
.75							54.9	26.8
.70							32.9	5.4
.65						60.7	9.9	.7
.60					54.9	30.3	2.0	.1
.55				49.7	32.9	7.6	.3	
.50			20.2	34.8	9.9	1.3		
.45		18.3	32.3	12.2	2.0	.1		
.40		31.1	25.8	2.8	.3			
.35		26.4	13.8	.5				
.30	44.9	15.0	5.5					
.25	35.9	6.4	1.8					
.20	14.4	2.2	.5					
.15	3.8	.6	.1					
.10	.8							
.05	.2							
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Max. ECL	.30	.45	.50	.55	.60	.65	.75	.80
Avg. ECL	.26	.36	.42	.51	.57	.63	.72	.78
Min. ECL	.05	.15	.15	.35	.40	.45	.55	.60
Range	.25	.30	.35	.20	.20	.20	.20	.20
Poisson's								
Coef. K	.8	1.7	1.6	.7	.6	.5	.6	.4
Std. Dev. D	.894	1.304	1.265	.837	.775	.707	.775	.633

The equivalent concentrated loadings shown for the unit weight trucks of this table are proportional to the equivalent concentrated loadings based on gross weights for corresponding vehicles among the 14 Type 3-S3 trucks reported by the 1942 loadometer survey.

Table 26.8a

OBSERVED FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS REQUIRED TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY THE 99 TYPE 2-2 TRUCKS WEIGHING ONE KIP EACH



Equivalent	Span-Feet							
Concentrated Loads	10	20	30	40	50	60	80	100
.85							5.4	30.3
.80						4.0	22.9	32.7
.75					4.0	12.8	32.0	28.6
.70					7.4	24.9	28.6	7.8
.65				5.4	20.9	25.3	10.4	.6
.60			2.4	16.2	24.2	20.2	.7	

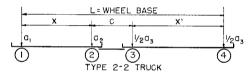
Table 26.8a (Continued)

Equivalent Concentrated	Span-Feet								
Loads	10	20	30	40	50	60	80	100	
.55			6.4	25.9	25.6	7.8			
.50			19.5	28.3	11.8	4.7			
.45		17.5	25.9	17.2	5.7	.3			
.40	19.5	17.2	26.9	6.4	.4				
.35	33.3	32.3	13.1	.6					
.30	23.9	16.8	5.8						
,25	23,3	16.2							
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Max. ECL	.40	.45	.60	.65	.75	.80	.85	.85	
Avg. ECL	.33	.35	.43	.52	.59	.66	.74	.79	
Min. ECL	.25	.25	.30	.35	.40	.45	.60	.65	
Range	.15	.20	.30	.30	.35	.35	.25	.20	
Poisson's									
Coef. K	1.4	2.0	3.3	2.6	3.2	2.9	2.2	1.1	

The equivalent concentrated loadings shown for the unit weight trucks of this table are proportional to the equivalent concentrated loadings based on gross weights for corresponding vehicles among the 99 Type 2-2 trucks reported by the 1942 loadometer survey.

Table 26.8b

CALCULATED FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS REQUIRED TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY THE 99 TYPE 2-2 TRUCKS WEIGHING ONE KIP EACH



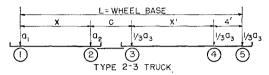
Calculated frequencies are based on Poisson's Distribution Law. Equivalent concentrated loads which occur less than 1 in 1000, or account for less than 0.1% of the heavy trucks of this type are not shown in this table.

Equivalent Concentrated				Span-	Feet			
Loads	10	20	30	40	50	60	80	100
.85							11.1	33.3
.80						5.5	24.4	36.6
.75					4.1	16.0	26.8	20.1
.70					13.0	23.1	19.7	7.4
.65				7.4	20.9	22.4	10.8	2.0
.60			3.7	19.3	22.3	16.2	4.8	.4
.55			12.2	25.1	17.8	9.4	1.7	.1
.50			20.1	21.8	11.4	4.5	.5	.1
.45		13.5	22.1	14.1	6.1	1.9	.2	
.40	24.7	27.1	18.2	7.4	2.8	.7		
.35	34.5	27.1	12.0	3.2	1.1	.2		
.30	24.2	18.0	6.6	1.2	.4	.1		
.25	11.3	9.0	3.1	.4	.1	-		
.20	3.9	3.6	1.3	.1				
.15	1.1	1.2	.5					
.10	.3	.3	.1					
.05		.2	.1					
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Max. ECL	.40	.45	.60	.65	.75	.80	.85	.85
Avg. ECL	.33	.35	.43	.52	.59	.66	.74	.79
Min. ECL	.10	.05	.05	.20	.25	.30	.45	.50
Range	.30	.40	.55	.45	.50	.50	.40	.35
Poisson's		•••	•00	. 10	.00	•00	.10	.00
Coef. K	1.4	2.0	3.3	2.6	3.2	2.9	2.2	1.1
Std. Dev. D	1.183	1.414	1.817	1.612	1.789	1.703	1.483	1.049

The equivalent concentrated loadings shown for the unit weight trucks of this table are proportional to the equivalent concentrated loadings based on gross weights for corresponding vehicles among the 99 Type 2-2 trucks reported by the 1942 loadometer survey.

Table 26.9a

OBSERVED FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS REQUIRED TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY THE 24 TYPE 2-3 TRUCKS WEIGHING ONE KIP EACH

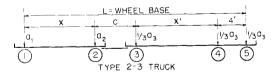


Equivalent				Span	-Feet			
Concentrated Loads	10	20	30	40	50	60	80	100
.80								29.2
.75							19.5	33.3
.70							33.3	30.6
.65						19.4	30.6	6.9
.60					15.2	29.2	16.6	
.55					18.1	30.6		
.50				23.6	30.6	16.7		
.45			18.1	33.3	20.8	4.1		
.40	8.3	15.3	33.3	27.8	15.3			
.35	31.9	33.3	29.2	15.3				
.30	29.2	26.4	19.4	2010				
.25	29,2	25.0	2012					
.20	1.4							
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Max. ECL	.40	.40	.45	.50	.60	.65	.75	.80
Avg. ECL	,31	.32	.38	.44	.50	.57	.68	.74
Min. ECL	.20	.25	.30	.35	.40	.45	.60	.65
Range	.20	.15	.15	.15	.20	.20	.15	.15
Poisson's		•==	•==		•=•		****	
Coef. K	1.8	1.5	1.5	1.3	2.0	1.5	1.4	1.1

The equivalent concentrated loadings shown for the unit weight trucks of this table are proportional to the equivalent concentrated loadings based on gross weights for corresponding vehicles among the 24 Type 2-3 trucks reported by the 1942 loadometer survey.

Table 26.9b

CALCULATED FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS REQUIRED TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY THE 24 TYPE 2-3 TRUCKS WEIGHING ONE KIP EACH



Calculated frequencies are based on Poisson's Distribution Law. Equivalent concentrated loads which occur less than 1 in 1000, or account for less than 0.1% of the heavy trucks of this type are not shown in this table.

Equivalent Concentrated	Span-Feet							
Loads	10	20	30	40	50	60	80	100
.80								33.3
.75							24.7	36.6
.70							34.5	20.1
.65						22.3	24.2	7.4
.60					13.5	33.5	11.3	2.0
.55					27.1	25.1	3.9	.4
.50				27.3	27.1	12.6	1.1	.1
.45			22.3	35.4	18.0	4.7	.3	.1

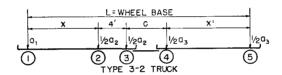
Table	26 9b	(Conf	inued)

Equivalent Concentrated				Span-F	`eet			
Loads	10	20	30	40	50	60	80	100
.40	16.5	22.3	33.5	23.0	9.0	1.4		
.35	29.8	33.5	25.1	10.0	3.6	.4		
.30	26.8	25.1	12.6	3.2	1.2			
.25	16.1	12.6	4.7	.8	.3			
.20	7.2	4.7	1.4	.2	.1			
.15	2.6	1.4	.4	.1	.1			
.10	.8	.4						
.05	.2							
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Max. ECL	.40	.40	.45	.50	.60	.65	.75	.80
Avg. ECL	.31	.32	.38	.44	.50	.57	.68	.74
Min. ECL	.05	.10	.15	.15	.15	.35	.45	.45
Range	.35	.30	.30	.35	.45	.30	.30	.35
Poisson's								
Coef. K	1.8	1.5	1.5	1.3	2.0	1.5	1.4	1.1
Std. Dev. D	1.342	1.225	1.225	1.140	1.414	1.225	1.183	1.049

The equivalent concentrated loadings shown for the unit weight trucks of this table are proportional to the equivalent concentrated loadings based on gross weights for corresponding vehicles among the 24 Type 2-3 trucks reported by the 1942 loadometer survey.

Table 26.10a

OBSERVED FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS REQUIRED TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY THE 68 TYPE 3-2 TRUCKS WEIGHING ONE KIP EACH

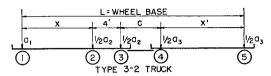


Equivalent				Span-	Feet			
Concentrated Loads	10	20	30	40	50	60	80	100
.85								19.6
.80							12.7	32.4
.75							27.0	32.4
.70						24.5	32.4	14.7
.65					12.3	25.0	21.6	.9
.60				11.3	23.0	27.5	6.3	
.55			9.8	23.0	31.9	14.7		
.50		1.5	15.7	32.4	22.6	8.3		
.45		15.7	32.8	23.0	10.2			
.40	1.1	15.2	24.0	10.3				
.35	14.7	32.4	17.7					
.30	32.8	17.6						
.25	32.8	17.6						
.20	18.6	2,110						
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Max. ECL	.40	.50	.55	,60	.65	.70	.80	.85
Avg. ECL	.27	.35	.44	.50	.55	.62	.71	.78
Min. ECL	.20	.25	.35	.40	.45	.50	.60	.65
Range	.20	.25	.20	.20	.20	.20	.20	.20
Poisson's	.20	,	0	.20	.20	.20	.20	
Coef. K	2.5	3.0	2.2	2.0	1.9	1.5	1.8	1.4

The equivalent concentrated loadings shown for the unit weight trucks of this table are proportional to the equivalent concentrated loadings based on gross weights for corresponding vehicles among the 68 Type 3-2 trucks reported by the 1942 loadometer survey.

Table 26,10b

CALCULATED FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS REQUIRED TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY THE 68 TYPE 3-2 TRUCKS WEIGHING ONE KIP EACH



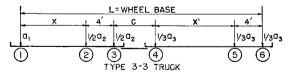
Calculated frequencies are based on Poisson's Distribution Law. Equivalent concentrated loads which occur less than 1 in 1000, or account for less than 0.1% of the heavy trucks of this type are not shown in this table.

Equivalent Concentrated				Span-	Feet			,
Loads	10	20	30	40	50	60	80	100
.85								24.7
.80							16.5	34.5
.75							29.8	24.2
.70						22.3	26.8	11.3
.65					15.0	33.5	16.1	3.9
.60				13.5	28.4	25.1	7.2	1.1
.55			11.1	27.1	27.0	12.6	2.6	.3
.50		5.0	24.4	27.1	17.1	4.7	.8	• •
.45		14.9	26.8	18.0	8.1	1.4	.2	
.40	8.2	22.4	19.7	9.0	3.1	.4		
.35	20.5	22.4	10.8	3.6	1.0			
.30	25.7	16.8	4.8	1.2	.3			
.25	21.4	10.1	1.7	.3				
.20	13.4	5.0	.5	.1				
.15	6.7	2.2	.2	.1				
.10	2.8	.8						
.05	1.3	.4						
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Max. ECL	.40	.50	.55	.60	.65	.70	.80	.85
Avg. ECL	.27	.35	.44	.50	.55	.62	.71	.78
Min. ECL	.05	.05	.15	.15	.30	.40	.45	.55
Range	.35	.45	.40	.45	.35	.30	.35	.30
Poisson's								
Coef. K	2.5	3.0	2.2	2.0	1.9	1.5	1.8	1.4
Std. Dev. D	1.581	1.732	1.483	1.414	1.378	1.225	1.342	1.18

The equivalent concentrated loadings shown for the unit weight trucks of this table are proportional to the equivalent concentrated loadings based on gross weights for corresponding vehicles among the 68 Type 3-2 trucks reported by the 1942 loadometer survey.

Table 26.11a

OBSERVED FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS REQUIRED TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY THE 176 TYPE 3-3 TRUCKS WEIGHING ONE KIP EACH



Equivalent				Span-	Feet			
Concentrated Loads	10	20	30	40	50	60	80	100
.80								12.1
.75							5.3	32.0
.70							26.0	33.0
.65						4.9	32.2	21.6
.60					4.4	19.5	28.4	1.3
.55					18.0	31.6	7.4	
.50				18.8	31.8	28.8	.7	
.45			16.3	31.1	29.2	13.8		

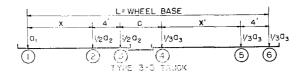
Table	26.11a	(Cor	tinu	ed)

Table 26.11a	(Continued)							
Equivalent Concentrated	Span-Feet							
Loads	10	20	30	40	50	60	80	100
.40 .35 .30 .25 .20	30.7 33.3 32.4 3.6	2.1 30.5 32.4 32.2 2.8	31.6 32.2 18.2 1.7	32.2 15.7 2.2	15.3 1.3	1.4		
Total	100.0	100.0	100.0	100,0	100.0	100.0	100.0	100.0
Max. ECL Avg. ECL Min. ECL Range Poisson's	.30 .25 .15 .15	.40 .30 .20 .20	.45 .37 .25 .20	.50 .42 .30 .20	.60 .48 .35 .25	.65 .53 .40 .25	.75 .65 .50 .25	.80 .72 .60 .20
Coef. K	1.1	2.0	1.6	1.5	2.4	2.3	2.1	1.7

The equivalent concentrated loadings shown for the unit weight trucks of this table are proportional to the equivalent concentrated loadings based on gross weights for corresponding vehicles among the 176 Type 3-3 trucks reported by the 1942 loadometer survey.

Table 26.11b

CALCULATED FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS REQUIRED TO PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY THE 176 TYPE 3-3 TRUCKS WEIGHING ONE KIP EACH



Calculated frequencies are based on Poisson's Distribution Law. Equivalent concentrated loads which occur less than 1 in 1000, or account for less than 0.1% of the heavy trucks of this type are not shown in this table.

Equivalent	Span-Feet							
Concentrated Loads	10	20	30	40	50	60	80	100
.80								18.3
.75							12.2	31.1
.70							25.7	26.4
,65						10.0	27.0	15.0
.60					9.1	23.1	18.9	6.4
.55					21.8	26.5	9.9	2.2
.50				22.3	26.1	20.3	4.2	.6
.45			20.2	33.5	20.9	11.7	1.5	
.40		13.5	32.3	25.1	12.5	5.4	.4	
.35		27.1	25.8	12.6	6.0	2.1	.1 .1	
.30	33.3	27.1	13.8	4.7	2.4	.7	.1	
.25	36.6	18.0	5.5	1.4	.8	.2		
.20	20.1	9.0	1.8	.4	.2			
.15	7.4	3.6	.5		.1			
.10	2.0	1.2	.1		.1			
.05	.6	.5						
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Max. ECL	.30	.40	.45	.50	.60	.65	.75	.80
Avg. ECL	.25	.30	.37	.42	.48	.53	.65	.72
Min. ECL	.05	.05	.10	.20	.10	.25	.30	.50
Range	.25	.35	.35	.30	.50	.40	.45	.30
Poisson's	•							
Coef. K	1.1	2.0	1.6	1.5	2.4	2.3	2.1	1.7
Std. Dev. D	1.049	1,414	1.265	1.225	1.549	1.517	1.449	1.304

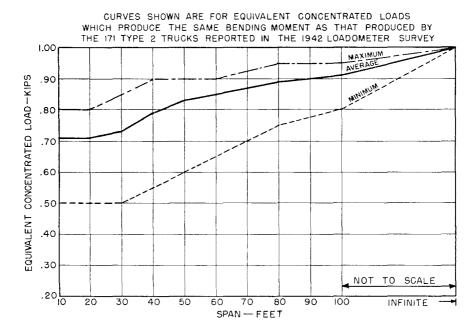
The equivalent concentrated loadings shown for the unit weight trucks of this table are proportional to the equivalent concentrated loadings based on gross weights for corresponding vehicles among the 176 Type 3-3 trucks reported by the 1942 loadometer survey.

27. MAXIMUM, AVERAGE, AND MINIMUM EQUIVALENT CONCENTRATED LOADS ON SIMPLE SPAN BRIDGES BASED ON VEHICLES WEIGHING ONE KIP EACH

Figures 27.1—27.11 present a graphical representation of the maximum, average, and minimum equivalent concentrated loads on simple spans of various lengths, based on vehicles weighing one kip each, for each of the 11 more numerous heavy vehicle types reported by the 1942 loadometer survey. The upper part of each of these figures give the maximum, average, and minimum equivalent concentrated loads for each span length and the lower part shows the range, the Poisson coefficient, K, and the standard deviation, D, for each corresponding span length. All of these data are given in the following figures.

Heavy Vehicle Type	Number of Vehicles Reported	Figure Number
2	171	27.1
3	381	27.2
2-S1	2855	27.3
2-S2	508	27.4
3-S1	9	27.5
3-S2	142	27.6
3-S3	14	27.7
2-2	99	27.8
2-3	24	27.9
3-2	68	27.10
3-3	176	27.11

FREQUENCY DISTRIBUTION OF EQUIVALENT CONCENTRATED LOADS ON SIMPLE SPANS OF VARIOUS LENGTHS FOR TYPE 2 TRUCKS WEIGHING ONE KIP EACH



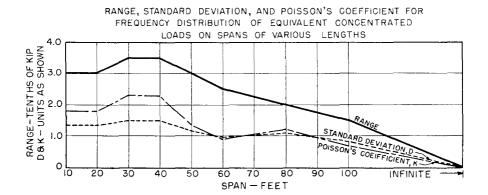
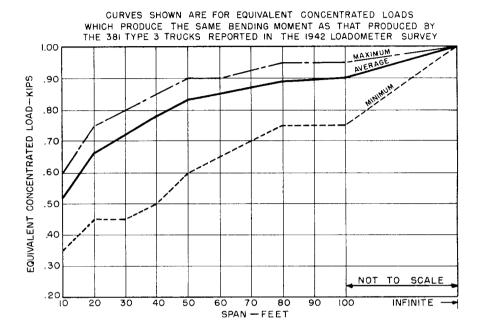


Figure 27.1

FREQUENCY DISTRIBUTION OF EQUIVALENT CONCENTRATED LOADS ON SIMPLE SPANS OF VARIOUS LENGTHS FOR TYPE 3 TRUCKS WEIGHING ONE KIP EACH



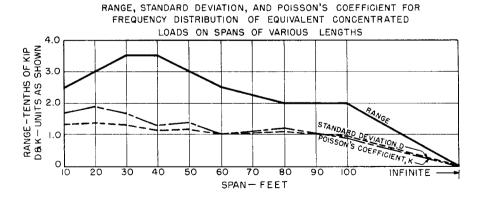
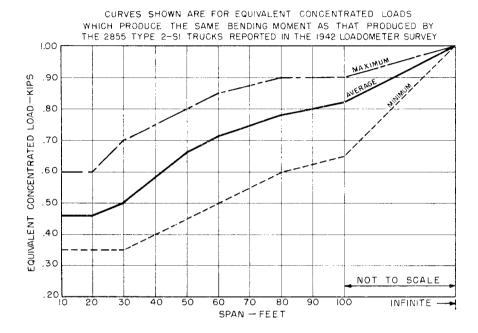


Figure 27.2

FREQUENCY DISTRIBUTION OF EQUIVALENT CONCENTRATED LOADS ON SIMPLE SPANS OF VARIOUS LENGTHS FOR TYPE 2-SI TRUCKS WEIGHING ONE KIP EACH



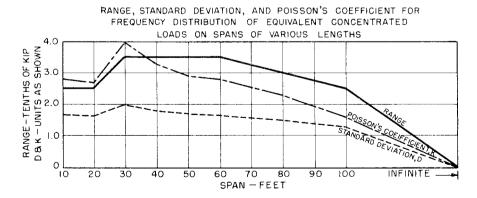
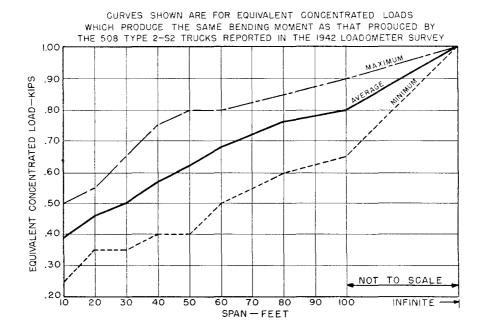


Figure 27.3

FREQUENCY DISTRIBUTION OF EQUIVALENT CONCENTRATED LOADS ON SIMPLE SPANS OF VARIOUS LENGTHS FOR TYPE 2-S2 TRUCKS WEIGHING ONE KIP EACH



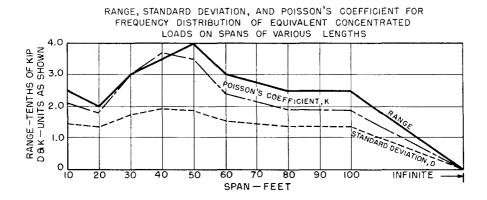
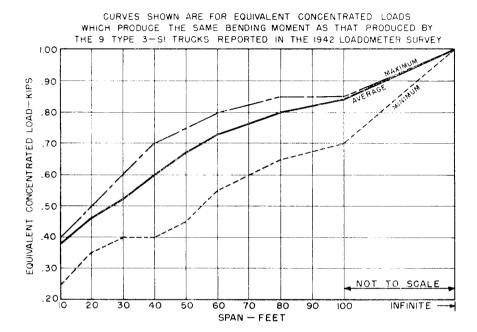


Figure 27.4

FREQUENCY DISTRIBUTION OF EQUIVALENT CONCENTRATED LOADS ON SIMPLE SPANS OF VARIOUS LENGTHS FOR TYPE 3-SI TRUCKS WEIGHING ONE KIP FACH



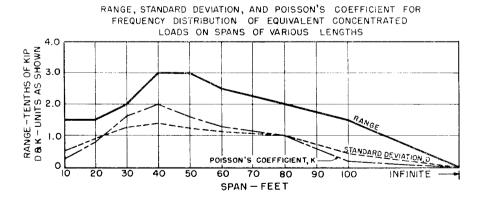
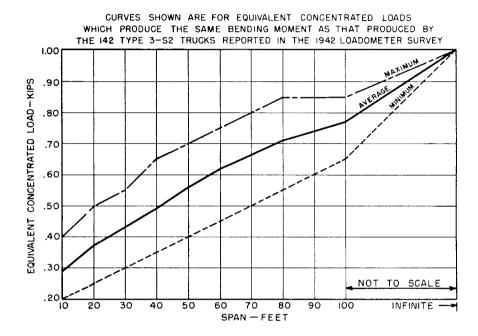


Figure 27.5

FREQUENCY DISTRIBUTION OF EQUIVALENT CONCENTRATED LOADS ON SIMPLE SPANS OF VARIOUS LENGTHS FOR TYPE 3-S2 TRUCKS WEIGHING ONE KIP EACH



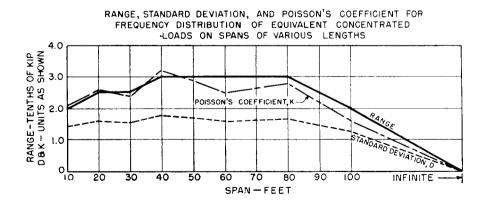
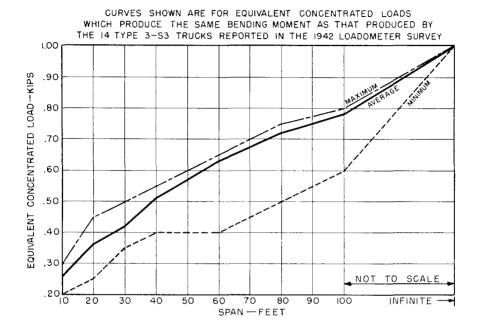


Figure 27.6

FREQUENCY DISTRIBUTION OF EQUIVALENT CONCENTRATED LOADS ON SIMPLE SPANS OF VARIOUS LENGTHS FOR TYPE 3-S3 TRUCKS WEIGHING ONE KIP FACH



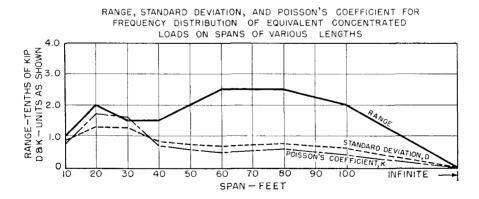
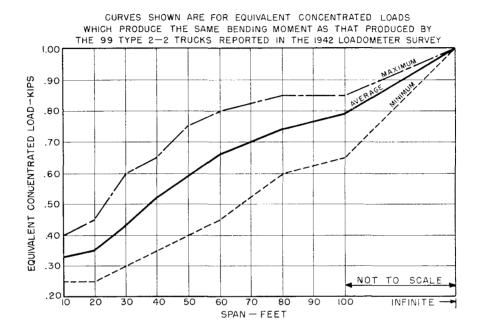


Figure 27.7

FREQUENCY DISTRIBUTION OF EQUIVALENT CONCENTRATED LOADS ON SIMPLE SPANS OF VARIOUS LENGTHS FOR TYPE 2-2 TRUCKS WEIGHING ONE KIP EACH



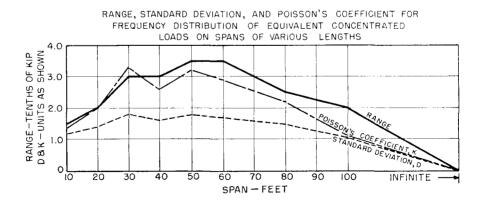
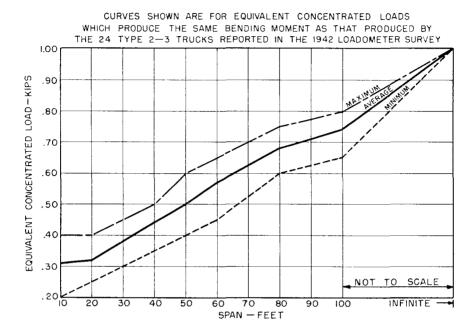


Figure 27.8

FREQUENCY DISTRIBUTION OF EQUIVALENT CONCENTRATED LOADS ON SIMPLE SPANS OF VARIOUS LENGTHS FOR TYPE 2—3 TRUCKS WEIGHING ONE KIP EACH



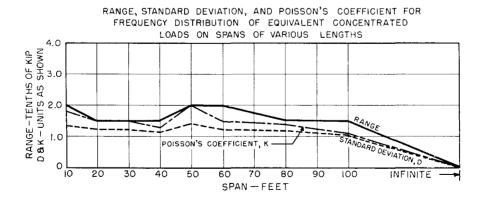
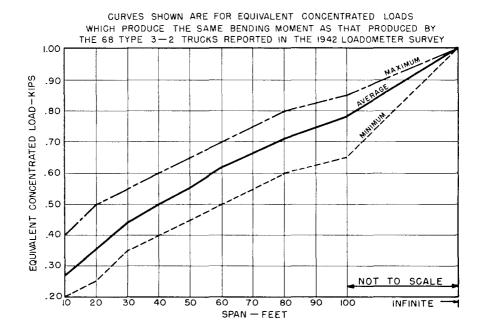


Figure 27.9

FREQUENCY DISTRIBUTION OF EQUIVALENT CONCENTRATED LOADS ON SIMPLE SPANS OF VARIOUS LENGTHS FOR TYPE 3-2 TRUCKS WEIGHING ONE KIP EACH



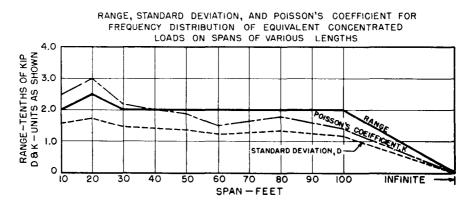
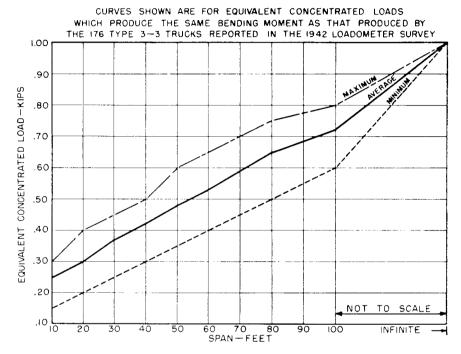


Figure 27.10

FREQUENCY DISTRIBUTION OF EQUIVALENT CONCENTRATED LOADS ON SIMPLE SPANS OF VARIOUS LENGTHS FOR TYPE 3-3 TRUCKS WEIGHING ONE KIP EACH



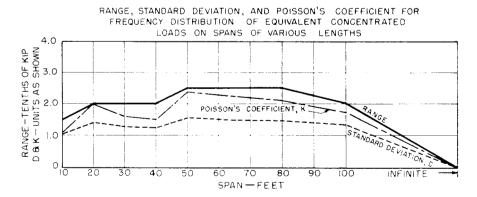


Figure 27.11

28. HISTOGRAMS SHOWING FREQUENCY DISTRIBUTIONS OF EQUIVALENT CONCENTRATED LOADS ON SIMPLE SPAN BRIDGES BASED ON VEHICLES WEIGHING ONE KIP EACH

Figures 28.1—28.11 present a graphical representation of the observed and calculated frequencies of equivalent concentrated loads for vehicles weighing one kip each on simple spans up to 100 feet in length for each of the 11 more numerous heavy vehicle types reported by the 1942 loadometer survey. The histograms represent the observed data, based on 3-item moving averages, and the dashed lines represent the corresponding Poisson distributions. Both the observed and calculated frequencies shown in these figures were plotted from the corresponding data given in Tables 26.1a—26.11a and Tables 26.1b—26.11b, respectively. These distributions are given in the following figures.

Heavy Vehicle	Number of Vehicles	Figure
\mathbf{Type}	${f Reported}$	Number
2	171	28.1
3	381	28.2
2-S1	2855	28.3
2-S2	508	28.4
3-S1	9	28.5
3-S2	142	28.6
3-S3	14	28.7
2-2	99	28.8
2-3	24	28.9
3-2	68	28.10
3-3	176	28.11

A COMPARISON OF OBSERVED WITH THEORETICAL FREQUENCIES
OF EQUIVALENT CONCENTRATED LOADS FOR TYPE 2 TRUCKS
WEIGHING ONE KIP EACH ON SIMPLE SPANS OF VARIOUS LENGTHS

OBSERVED FREQUENCIES BASED ON EQUIVALENT CONCENTRATED LOADS WHICH PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY 171 TYPE 2 TRUCKS WEIGHING ONE KIP EACH THEORETICAL FREQUENCIES BASED ON POISSON'S DISTRIBUTION LAW

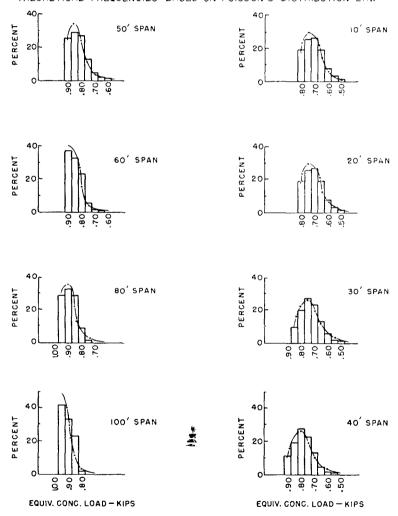


Figure 28.1

A COMPARISON OF OBSERVED WITH THEORETICAL FREQUENCES

OF EQUIVALENT CONCENTRATED LOADS FOR TYPE 3 TRUCKS

WEIGHING ONE KIP EACH ON SIMPLE SPANS OF VARIOUS LENGTHS

OBSERVED FREQUENCIES BASED ON EQUIVALENT CONCENTRATED LOADS WHICH PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY 381 TYPE 3 TRUCKS WEIGHING ONE KIP EACH THEORETICAL FREQUENCIES BASED ON POISSON'S DISTRIBUTION LAW

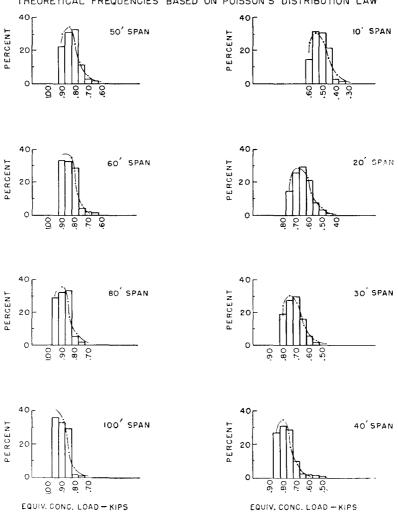


Figure 28.2

A COMPARISON OF OBSERVED WITH THEORETICAL FREQUENCIES
OF EQUIVALENT CONCENTRATED LOADS FOR TYPE 2-SI TRUCKS
WEIGHING ONE KIP EACH ON SIMPLE SPANS OF VARIOUS LENGTH!

OBSERVED FREQUENCIES BASED ON EQUIVALENT CONCENTRATED LOADS WHICH PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY 2855 TYPE 2-SI TRUCKS WEIGHING ONE KIP EACH THEORETICAL FREQUENCIES BASED ON POISSON'S DISTRIBUTION LAW

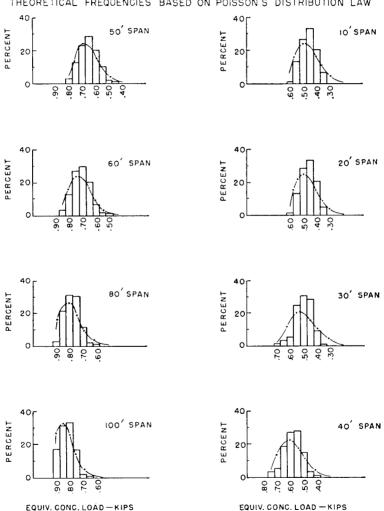


Figure 28.3

A COMPARISON OF OBSERVED WITH THEORETICAL FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS FOR TYPE 2-S2 TRUCKS WEIGHING ONE KIP EACH ON SIMPLE SPANS OF VARIOUS LENGTHS

OBSERVED FREQUENCIES BASED ON EQUIVALENT CONCENTRATED LOADS WHICH PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY 508 TYPE 2-S2 TRUCKS WEIGHING ONE KIP EACH THEORETICAL FREQUENCIES BASED ON POISSON'S DISTRIBUTION LAW

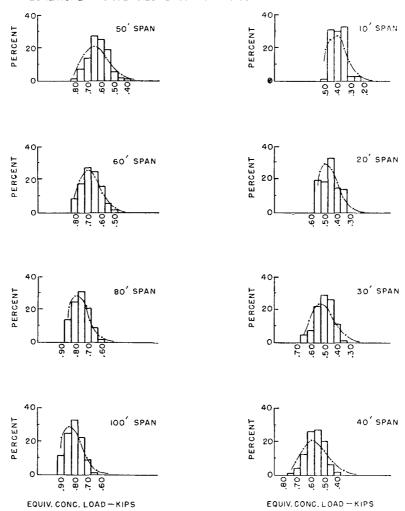


Figure 28.4

A COMPARISON OF OBSERVED WITH THEORETICAL FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS FOR TYPE 3-SI TRUCKS WEIGHING ONE KIP EACH ON SIMPLE SPANS OF VARIOUS LENGTHS

OBSERVED FREQUENCIES BASED ON EQUIVALENT CONCENTRATED LOADS WHICH PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY 9 TYPE 3-SI TRUCKS WEIGHING ONE KIP EACH THEORETICAL FREQUENCIES BASED ON POISSON'S DISTRIBUTION LAW

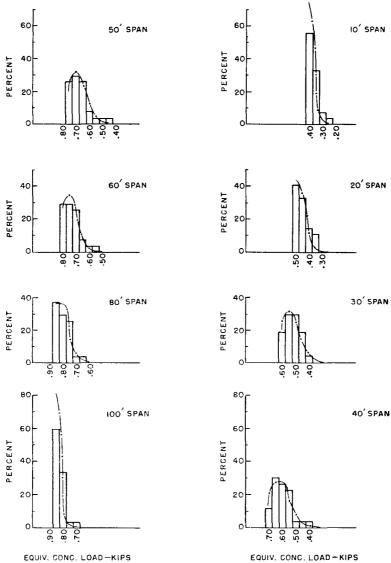


Figure 28.5

A COMPARISON OF OBSERVED WITH THEORETICAL FREQUENCIES
OF EQUIVALENT CONCENTRATED LOADS FOR TYPE 3-S2 TRUCKS
WEIGHING ONE KIP EACH ON SIMPLE SPANS OF VARIOUS LENGTHS

OBSERVED FREQUENCIES BASED ON EQUIVALENT CONCENTRATED LOADS WHICH PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY 142 TYPE 3-S2 TRUCKS WEIGHING ONE KIP EACH THEORETICAL ERFOLIENCIES BASED ON POISSON'S DISTRIBUTION LAW

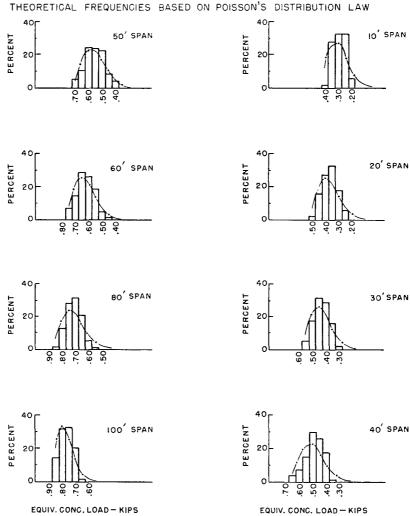


Figure 28.6

A COMPARISON OF OBSERVED WITH THEORETICAL FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS FOR TYPE 3-S3 TRUCKS WEIGHING ONE KIP EACH ON SIMPLE SPANS OF VARIOUS LENGT

OBSERVED FREQUENCIES BASED ON EQUIVALENT CONCENTRATED LOADS WHICH PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY 14 TYPE 3-S3 TRUCKS WEIGHING ONE KIP EACH THEORETICAL FREQUENCIES BASED ON POISSON'S DISTRIBUTION LAW

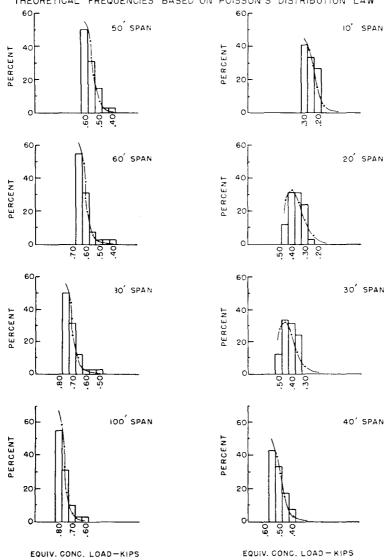


Figure 28.7

A COMPARISON OF OBSERVED WITH THEORETICAL FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS FOR TYPE 2-2 TRUCKS WEIGHING ONE KIP EACH ON SIMPLE SPANS OF VARIOUS LENGTHS

OBSERVED FREQUENCIES BASED ON EQUIVALENT CONCENTRATED LOADS WHICH PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY 99 TYPE 2-2 TRUCKS WEIGHING ONE KIP EACH THEORETICAL FREQUENCIES BASED ON POISSON'S DISTRIBUTION LAW

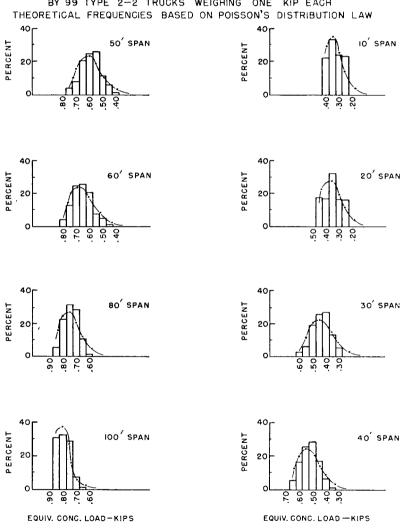


Figure 28.8

A COMPARISON OF OBSERVED WITH THEORETICAL FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS FOR TYPE 2-3 TRUCKS WEIGHING ONE KIP EACH ON SIMPLE SPANS OF VARIOUS LENGTHS

OBSERVED FREQUENCIES BASED ON EQUIVALENT CONCENTRATED LOADS WHICH PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY 24 TYPE 2-3 TRUCKS WEIGHING ONE KIP EACH THEORETICAL FREQUENCIES BASED ON POISSON'S DISTRIBUTION LAW 10' SPAN 50 SPAN PERCENT PERCENT 20 20 40 60 SPAN 20' SPAN PERCENT PERCENT 20 20 0 0 40 80' SPAN 30' SPAN PERCENT PERCENT 20 40' SPAN PERCENT 100' SPAN PERCENT 20 20

Figure 28.9

EQUIV. CONC. LOAD-KIPS

EQUIV. CONC. LOAD - KIPS

A COMPARISON OF OBSERVED WITH THEORETICAL FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS FOR TYPE 3-2 TRUCKS WEIGHING ONE KIP EACH ON SIMPLE SPANS OF VARIOUS LENGTHS

OBSERVED FREQUENCIES BASED ON EQUIVALENT CONCENTRATED LOADS WHICH PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY 68 TYPE 3-2 TRUCKS WEIGHING ONE KIP EACH THEORETICAL FREQUENCIES BASED ON POISSON'S DISTRIBUTION LAW

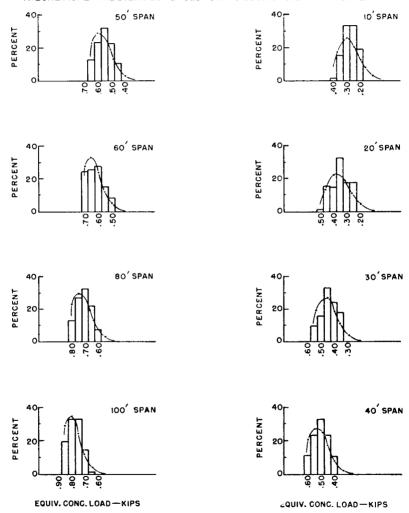


Figure 28.10

A COMPARISON OF OBSERVED WITH THEORETICAL FREQUENCIES OF EQUIVALENT CONCENTRATED LOADS FOR TYPE 3-3 TRUCKS WEIGHING ONE KIP EACH ON SIMPLE SPANS OF VARIOUS LENGTHS

OBSERVED FREQUENCIES BASED ON EQUIVALENT CONCENTRATED LOADS WHICH PRODUCE THE SAME MOMENT IN SIMPLE SPANS AS THAT PRODUCED BY 176 TYPE 3-3 TRUCKS WEIGHING ONE KIP EACH THEORETICAL FREQUENCIES BASED ON POISSON'S DISTRIBUTION LAW

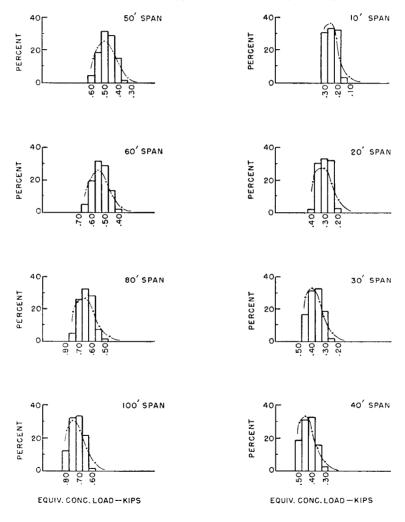


Figure 28.11

Part VI

CONCLUSION

It was pointed out in the introduction and also in Article 1.1, that the over-all objective of this bulletin is to develop a rapid yet simple and accurate mathematical procedure for the rating of heavy motor vehicle types and loadings—such as those reported by a local, state, or national loadometer survey—in terms of equivalent H truck loadings, equivalent H design loadings, equivalent concentrated loads or any other convenient standardized loads, and to show how the frequency distributions of these loads provide a rational means for measuring the level or levels of heavy motor vehicle operation corresponding to given traffic conditions. In order to accomplish these ends, however, it is first necessary to find a satisfactory method for converting a given heavy vehicle loading into, say, an H or H-S truck loading equivalent, an equivalent concentrated load, or into an equivalent design load.

In Article 1.1 it was also suggested, that this may be accomplished by evaluating some stress producing effect—such as the maximum moment or shear caused by a vehicle on, say, a 40-foot simple span bridge—and then finding the gross weight required on, say, a standard H truck to produce the same effect. For example, if a given vehicle caused a maximum moment on this 40-foot span of 259.5 kip-feet, it would produce the same maximum moment as an H15 truck. On this basis, therefore, the given vehicle would be rated as an equivalent H15 truck loading on a 40-foot span. In a similar manner, the given vehicle could be rated in terms of an equivalent H-S truck loading, an equivalent H or H-S design loading, equivalent concentrated load, or any other standardized equivalent load as may be desired. However, owing to the fact that moments caused by these various loadings on a given span bear constant relationships to each other, their loading equivalents may be converted from any one into any one or more of the others by means of the conversion coefficients discussed in Article 13 and given in Table 13.1 or Figure 13.1.

The tables and figures in Part II provide the basic information for rating most any type of heavy vehicle—irrespective of its wheel base length, number and spacing of axles, or distribution of load among the axles—ordinarily encountered in highway traffic, in terms of any one or more of the above mentioned loading equivalents as may be required for the particular situation under consideration. And once all the heavy vehicles reported by a loadometer survey have been converted into loading equivalents on a given span, the frequency distribution of various intensities of these equivalent loads for the given span may then be obtained by arranging them into groups or cells of increasing magnitudes and calculating the percentage of vehicles thus found in each cell, respectively. Frequency distributions of this kind are given in Parts IV and V for each of the more commonly used heavy vehicle types reported by the 1942 special loadometer survey. The distributions given in Part IV are based on the conversion of each of the heavy vehicles reported into equivalent H truck loadings and those in Part V are based on equivalent concentrated loads.

Among the more interesting—and perhaps the most useful—results obtained from these studies is that the frequency distributions of gross vehicle weights, and also the relative frequencies of various intensities of equivalent loads on spans of various lengths, arrange themselves into statistical patterns which bear a very strong resemblance to the theoretical frequencies given by the Poisson distribution formula. In fact, the agreement between the observed and calculated frequencies obtained from the 1942 loadometer data is close enough to justify the conclusion that the Poisson distribution yields mathematical answers which are sufficiently accurate in many practical situations for estimating the frequencies of various intensities of highway loads or loading equivalencies, and for evaluating their stress producing effects on simple span bridges and other highway structures.

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