# AN OVERWEIGHT FINE STRUCTURE FOR TEXAS

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CENTER FOR TRANSPORTATION RESEARCH
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# AN OVERWEIGHT FINE STRUCTURE FOR TEXAS

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**Permit Fees and Fines for Overweight Vehicles**

Research Project 3-18-85-919

Conducted for

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by the

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The contents of this report reflect the views of the authors, who are responsible for the facts and the accuracy of the data presented herein. This report does not constitute a standard, specification, or regulation.

## PREFACE

One of the principal causes of pavement deterioration is the magnitude (and repetition) of vehicle loadings experienced by a highway. An overweight vehicle refers to any vehicle that is operating in excess of its gross registered weight or the legal axle weight limits. Unless a special permit or exemption has been obtained, this represents an illegal operation. Ideally, overweight penalties (such as fines) are intended to provide a disincentive to illegal operations. Overweight movements can lead to accelerated pavement/bridge effects and traffic safety hazards as well as result in unfair competition with drivers who operate within legal weight limits.

This is the final report for project 3-18-85-919, "Permit Fees and Fines for Overweight Vehicles," and describes a recommended fine structure for overweight vehicles. The study was conducted at the Center for Transportation Research, The University of Texas at Austin, as part of the Cooperative Research Program with the State Department of Highways and Public Transportation. A companion study of permit fees was conducted at the Texas Transportation Institute, Texas A&M University. The authors wish to acknowledge and extend their appreciation to the individuals who have contributed to this research:

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## SUMMARY

Vehicles found to be illegally overweight in Texas are presently fined from $100 to $150 for the first offense (within one year of the first offense), $150 to $250 for the second offense (within one year of the first offense), and $200 to $500 for the third offense (within one year of the second offense). The second offense can also lead to imprisonment of up to sixty days, while the third offense can lead to imprisonment of up to six months. While the driver of an overloaded vehicle is charged with the offense, recent legislation (Article 6701d-11, Section 5b) has made it possible to also prosecute the person responsible for overloading the vehicle.

A new, graduated fine structure for Texas is recommended in this report. The schedule is based on a "cents-per-pound" rate that increases with the amount of excess weight:

| Excess Weight (Pounds) | Fine Per Pound Overweight: Over Gross Weight | Fine Per Pound Overweight: Over Axle Weight |
|---|---|---|
| Under 2,001* | $ 0.02 | $ 0.03 |
| 2,001 - 5,000* | 0.03 | 0.04 |
| 5,001 - 8,000 | 0.04 | 0.06 |
| 8,001 - 12,000 | 0.05 | 0.08 |
| 12,001 - 18,000 | 0.06 | 0.10 |
| 18,001 - 25,000 | 0.07 | 0.12 |
| Over 25,000 | 0.08 | 0.14 |

*Minimum fine to be $100

If the recommended fine schedule was in effect in 1983, about $26.2 million would have been collected, with an average fine of $560 per violation. For second and third offenses, the rates charged per pound of excess weight could be doubled.

Although legislation would be required, it is possible that overweight fines could be collected administratively by the State Department of Highways and Public Transportation Commission (or the Department of Public Safety) as a civil penalty. The actual amount of collections with a new overweight fine structure will depend on the level of enforcement by the Department of Public Safety (i.e., the number of weight checks made each year) and the response of drivers to increased fines.

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## I. Introduction

Statutory vehicle weight limits specify maximum load weights for vehicles operating on roads and highways. Vehicle weight limits are established to promote public traffic safety and reduce undue delays for motorists and to protect the structural integrity of the highway system. Recent data indicates that 75 to 78 percent of all weighed vehicles are within Texas statutory weight limits.* Violators of these prescribed limits can create traffic safety hazards and cause a more rapid deterioration of highway pavements and bridges. In addition, violators undermine the competitiveness of the trucking industry by providing themselves with an illegal, unfair advantage.

An effective program aimed at discouraging violation of legal weight limits is contingent upon two factors, the probability of being caught and the penalty. If operators do not perceive that there is any strong likelihood of being weighed, then there is little disincentive to overload. Moreover, there is little disincentive if the penalty for being overweight is less than the economic benefits of overloading. These two factors are examined in this report, beginning first with a discussion of existing fine structures and then providing a possible fine structure for operation of illegal overweight vehicles.

## II. Current Fine Schedules

Texas Law. Current Texas law prohibits operation of vehicles in excess of 80,000 pounds gross vehicle weight. In addition, limits are set for single axles (20,000 pounds) and tandem axles (34,000 pounds). Vehicles that

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*C. Michael Walton and Chien-pei Yu, An Assessment of the Enforcement of Truck Size and Weight Limitations in Texas, April 1983, p. 43. Data obtained from Texas Department of Public Safety.

exceed any of these limits without a special permit are cited to Justice of the Peace Courts for prosecution of a Class C misdemeanor. Conviction of a first offense carries a minimum and maximum penalty of $100 and $150, respectively. A second conviction within one year of the first offense can result in a fine of $150 to $250 and/or up to 60 days imprisonment. Any individual or company found guilty of a third offense within one year of the second can be fined from $200 to $500 and/or placed in the county jail for a period not to exceed six months. These penalties became effective in September of 1983, with penalties before that time ranging from $25 to $200. Table 1 provides data on the amount of violations and fines collected for the period 1981 to 1983 (prior to the new fine structure).

Surrounding States. Numerous states have devised many different methods for calculating fines for overweight vehicles. The four states surrounding Texas provide a good sample of what most states do with some minor alterations. New Mexico and Oklahoma, for example, provide fines based on the weight in excess of the gross vehicle or axle weight. As shown in Table 2, New Mexico's fines range from a low of $25 to a high of $500 while Oklahoma's fines begin at $80 and go up to $500.

Louisiana also operates its fine structure on a graduated scale, i.e., the fine increases as the amount of excess weight increases. However, instead of a flat fee charged for each weight grouping, as in New Mexico and Oklahoma, a specific cents-per-pound is charged (Table 3). This type of scale has a negligible minimum and no maximum. The average fine collected in 1983 was about $70 per violation.

Arkansas combines a fine structure similar to Louisiana's with a penalty based on the operator's number of offenses. Initially, operators of

TABLE 1. TEXAS OVERWEIGHT VIOLATIONS AND FINE COLLECTIONS

| | Fiscal Year | | |
|---|---|---|---|
| | 1981 | 1982 | 1983 |
| # of Over-Weight Violations | 41,775 | 47,693 | 46,794 |
| Overweight Fines Collected | $1,743,237 | $2,072,193 | $2,502,424 |
| Average Over-Weight Fine | $41.37 | $43.45 | $53.48 |

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Source: Memorandum, Texas Department of Public Safety, March 1, 1984.

TABLE 2. OKLAHOMA AND NEW MEXICO FINE SCHEDULES

| Amount Overweight (pounds) | Oklahoma | New Mexico |
|---|---|---|
| 700 - 2,000* | 80 | 25 |
| 2,001 - 3,000* | 130 | 25 |
| 3,001 - 4,000 | 180 | 40 |
| 4,001 - 5,000 | 230 | 75 |
| 5,001 - 6,000 | 280 | 125 |
| 6,001 - 7,000 | 330 | 200 |
| 7,001 - 8,000 | 380 | 275 |
| 8,001 - 9,000 | 430 | 350 |
| 9,001 - 10,000 | 480 | 425 |
| 10,001 + | 500 | 500 |

* The first overweight category for New Mexico is 1,000 - 3,000 pounds.

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Source: Oklahoma Department of Public Safety, and Federal Highway Administration, Overweight Vehicles -- Penalties and Permits: An Inventory of State Practices, November 1982, p. 207.

TABLE 3. LOUISIANA FINE SCHEDULE

| Amount Overweight (Pounds) | Amount of Fine (Cents-per-Pound) Over Gross Weight | Over Axle Weight |
|---|---|---|
| 0 - 3,000 | $.02 | $.01 |
| 3,001 - 5,000 | .03 | .015 |
| 5,001 - 10,000 | .04 | .02 |
| 10,001 + | $100 + $.05/lb. | $100 + $.05/lb. |

NOTES: (1) If vehicle exceeds gross weight but not axle weight, the "over gross weight" schedule is used. If vehicle exceeds axle weight but not gross weight, the "over axle weight" schedule is used.

(2) When two or more axles are overweight, these fines are figured separately and added together.

(3) If vehicle exceeds both gross and axle weight, fines are figured for both schedules and the larger of the two penalties is imposed.

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Source: Louisiana Department of Transportation and Development, Louisiana Regulations for Trucks, Vehicles, and Loads, 1983, pp. 63-64.

overweight vehicles are charged a maximum of $100 for the first offense, a maximum of $200 for the second offense within one year, and a maximum of $500 for third and successive offenses within a year. In addition, the operator pays a fine based on weight in excess of axles and gross vehicle weights. Table 4 lists the fine schedule for Arkansas. The average fine collected was about $200 per violation in 1983.

## III. Developing a Fine Schedule

Economic Incentive to Overload. The first step in developing a fine schedule for Texas is to understand the economic incentives to overload. If there are no fines for overloading, hauling excess weight has economic benefits for vehicle operators. Previous research* indicates that the transport costs per unit of weight decreases as cargo weight increases. Table 5 provides an example of the average line-haul cost for a typical intercity trucker. This table indicates that even though transportation costs per mile have increased, the actual cost per ton-mile has declined dramatically. Thus the more a truck is overweight, the greater the financial returns. Table 6 illustrates the incremental advantage as the amount of excess weight increases. This information would suggest the need for a graduated fine schedule to offset this increasing economic incentive.

A precursory view would suggest that a schedule similar to New Mexico or Arkansas would provide some economic disincentive to overload. However, as Table 7 indicates, there exists some point on each schedule where there is a decreasing fine per pound overweight. Thus, at some point each of the schedules provides an economic incentive to overload. This problem occurs

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*James Glickert and David Paxson, "The Value of Overweighting to Intercity Truckers", Paper presented to the Transportation Research Board, January 15, 1981.

TABLE 4. ARKANSAS FINE SCHEDULE

| Amount Overweight (lbs.) | Amount of Fine |
|---|---|
| 0 - 1,000 | Minimum $10, Maximum $.02/lb. |
| 1,001 - 2,000 | Maximum $.03/lb. |
| 2,001 - 3,000 | Maximum $.04/lb. |
| 3,001 + | Maximum $.05/lb. |

NOTE: If an operator is found to have willfully avoided being weighed at a weigh station, the penalty is doubled.

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Source: Arkansas Motor Vehicle Laws, p. 286-287.

TABLE 5. TRUCK COST SENSITIVITY TO CARGO WEIGHT

| Cargo Weight Tons | Line-Haul Cost/Mile | Line-Haul Cost/Ton-Mile |
|---|---|---|
| 10 | $.891 | $.089 |
| 15 | .895 | .060 |
| 20 | .903 | .045 |
| 25 | .905 | .036 |

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Source: Glickert and Paxson, p. 5.

TABLE 6. INCREMENTAL INCENTIVES FOR OVERLOADING

| Vehicle Weight (Pounds) | Cargo Weight (Pounds) | Rate/ Pound | Resulting Rate | Economic Incentive |
|---|---|---|---|---|
| 73,000 | 45,000 | $.056 | $2,520 | $ 0 |
| 75,000 | 47,000 | .054 | 2,538 | 18 |
| 80,000 | 52,000 | .052 | 2,704 | 184 |
| 100,000 | 72,000 | .048 | 3,456 | 936 |

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Source: Glickert and Paxson, p. 6.

TABLE 7. OVERWEIGHT FINES FOR VARIOUS STATES

Fine for First Offense

| Amount Over Gross Weight (Pounds) | Arkansas | Louisiana | New Mexico | Texas |
|---|---|---|---|---|
| 2,000 | $ 160 | $ 40 | $ 25 | $ 150 |
| 6,500 | 425 | 260 | 200 | 150 |
| 10,000 | 600 | 400 | 425 | 150 |
| 15,000 | 850 | 850 | 500 | 150 |
| 30,000 | 1,600 | 1,600 | 500 | 150 |

Fine Per Pound Overweight

| Amount Over Gross Weight (Pounds) | Arkansas | Louisiana | New Mexico | Texas |
|---|---|---|---|---|
| 2,000 | $.080 | $.020 | $.013 | $.075 |
| 6,500 | .065 | .040 | .031 | .023 |
| 10,000 | .060 | .040 | .043 | .015 |
| 15,000 | .057 | .057 | .033 | .010 |
| 30,000 | .053 | .053 | .017 | .005 |

Source: Table 2, 3, and 4

whenever a flat rate fine is introduced into the schedule. For Arkansas the problem is the $100 fine for first offenders; for Louisiana it occurs when $100 is added to all excess weight above 10,000 pounds. Similarly, for New Mexico it occurs when a $500 flat rate is charged for all excess weight above 10,000 pounds. Finally, in Texas, it occurs simply because Texas charges a single rate. At a minimum, a fine schedule should have a constant fine per pound overweight. If a state desires to increase its total fine, it is better to increase the cents-per-pound charged to overloading than to apply a fixed amount.

Recommended Fine Schedule for Texas. The first step in designing a fine schedule is to develop the graduated scale for overweight vehicles. Information from a recent study reveals that the amount of excess gross vehicle weight ranges from 0 to 50,000 pounds with a median of 8,000 pounds.* The distribution is heavily skewed with over 95 percent of all violations within a range of 0 to 25,000 pounds. Therefore, a scale up to 25,000 pounds will cover most overweight violations. Table 8 provides a recommended scale with suggested fines for vehicles over gross weight and over axle weight. Fines for vehicles exceeding both gross vehicle weights and axle weights should be cumulative. For example, if a tractor semi-trailer combination has a gross vehicle weight of 90,000 pounds with 6,000 pounds over maximum on one tandem axle and 4,000 pounds over maximum on the other tandem axle, then the fine is calculated as follows:

| | | |
|---|---|---|
| Total Fine = GVW Fine + Axle Weight Fine | | (1) |
| GVW Fine = 10,000 x $.05 | = $ 500 | (2) |
| Axle wt Fine = (6,000 + 4,000) x $.08 | = $ 800 | (3) |
| Total Fine = 500 + 800 | = $1,300 | (4) |

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*Walton and Yu, p. 52.

TABLE 8. RECOMMENDED FINE STRUCTURE

| Amount Over Weight (Pounds) | Fine Per lb. Overweight | |
|---|---|---|
| | Over Gross Weight | Over Axle Weight |
| 0 - 2,000* | $.02 | $.03 |
| 2,001 - 5,000* | .03 | .04 |
| 5,001 - 8,000 | .04 | .06 |
| 8,001 - 12,000 | .05 | .08 |
| 12,001 - 18,000 | .06 | .10 |
| 18,001 - 25,000 | .07 | .12 |
| 25,000 + | .08 | .14 |

*Minimum fine of $100

If the vehicle exceeds only its gross vehicle weight or its axle weight, then the fine should be calculated in the appropriate column.

If this schedule were operational in 1983, overweight violations would have amounted to $26 million or $560 per violation. This is considerably larger than the $2.5 million or $53 per violation actually collected. Appendix A illustrates the procedure for calculating this estimate.

The purpose of this fine schedule is to discourage vehicle operators from exceeding their weight limitations or to encourage them to purchase special overweight permits. Table 9 provides relative cents-per-pound overweight fines for those states with graduated scales and no maximum penalty. (Some of the states' fine schedules were recalculated to a cents-per-pound basis for comparison purposes.) Table 10 provides a comparison of actual fines for vehicles of different weights in excess of legal 80,000 pound limits. The table assumes first time offenses and maximum penalties. The figures for Texas are based on the recommended schedule and may be much higher if the vehicle is also operating above its allowable axle weights.

The difference in the Texas fine schedule for vehicles over gross weight and over axle weight is an attempt to reduce some disparity with regard to relative pavement "wear" costs per vehicle. Since pavement wear is related to the magnitude and repetition of axle loads, this fine schedule penalizes vehicles more heavily for exceeding their axle weights as compared to gross vehicle weights. (The gross vehicle weight limit reflects the maximum designed loads used on bridges and related structures.) This fine schedule, however, does not eliminate the difference in pavement wear associated with axle weights, nor is it damage based, but it does, because of its structure, reduce some of the disparity.

TABLE 9. RELATIVE CENTS-PER-POUND FOR VARIOUS STATES

| State | Range of Fine | Other Notes |
|---|---|---|
| Alaska | $.05 | |
| Arkansas | $.02 - $.05 | additional fine based on number of offenses |
| Colorado | $.05 | $15 addition |
| Connecticut | $.03 - $.05 | $50 addition plus 10% court costs |
| Delaware | $.02 - $.05 | |
| District of Columbia | $.06 | $100 for first 5,000 lb. |
| Florida | $.05 | |
| Georgia | $.08 - $.13 | |
| Illinois | $.06 - $.12 | |
| Iowa | $.015 - $.10 | additional variable flat rate |
| Kansas | $.025 - $.10 | rate adjusted to number of offenses |
| Louisiana | $.01 - $.05 | additional $100 if over 10,000 lb. |
| Michigan | $.02 - $.10 | |
| Minnesota | $.01 - $.30 | |
| Missouri | $.02 - $.10 | |
| North Carolina | $.01 - $.05 | |
| North Dakota | $.01 - $.08 | |
| Oregon | $.01 - $.07 | |

(Continued)

TABLE 9. RELATIVE CENTS-PER-POUND FOR VARIOUS STATES, Continued

| State | Range of Fine | Other Notes |
|---|---|---|
| Pennsylvania | $.025 - $.20 | double if over 80,000 lb. |
| South Carolina | $.01 - $.05 | |
| South Dakota | $.03 - $.10 | |
| Virginia | $.02 - $.05 | additional maximum $100 flat rate |
| Washington | $.03 | additional fine based on number of offenses |
| West Virginia | $.05 - $.20 | |
| Wisconsin | $.01 - $.10 | based on number of offenses |

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Source: FHWA, p. 205-209

TABLE 10. STATE FINES FOR VARIOUS WEIGHT VIOLATIONS (in 1982 dollars)

| State | 2,500 lb. Over GVW | 10,000 lb. Over GVW | 30,000 lb. Over GVW |
|---|---|---|---|
| Alaska | 125 | 500 | 1,500 |
| Arkansas | 200 | 600 | 1,600 |
| Colorado | 27.5 | 65 | 165 |
| Connecticut | 125 | 350 | 950 |
| Delaware | 50 | 350 | 1,350 |
| District of Columbia | 100 | 400 | 1,600 |
| Florida | 125 | 500 | 1,500 |
| Georgia | 30.5 | 318 | 1,318 |
| Illinois | 150 | 1,200 | 3,600 |
| Iowa | 155 | 1,200 | 3,200 |
| Kansas | 125 | 1,000 | 3,000 |
| Louisiana | 50 | 400 | 1,600 |
| Michigan | 100 | 1,000 | 3,000 |
| Minnesota | 25 | 3,000 | 9,000 |
| Missouri | 185 | 935 | 2,935 |
| North Carolina | 30 | 330 | 1,330 |
| North Dakota | 25 | 800 | 2,400 |

(Continued)

TABLE 10. STATE FINES FOR VARIOUS WEIGHT VIOLATIONS (in 1982 dollars), Continued

| State | 2,500 lb. Over GVW | 10,000 lb. Over GVW | 30,000 lb. Over GVW |
|---|---|---|---|
| Oregon | 25 | 700 | 2,100 |
| Pennsylvania | 150 | 2,250 | 8,250 |
| South Carolina | 25 | 125 | 1,020 |
| South Dakota | 125 | 1,000 | 3,000 |
| Virginia | 150 | 600 | 1,600 |
| Washington | 125 | 350 | 950 |
| West Virginia | 20 | 100 | 900 |
| Wisconsin | 250 | 900 | 2,300 |
| Texas Recommended Schedule* | 100 | 500 | 2,400 |

*Based on Schedule in Table 8

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Source: FHWA, P. 205-209.

## IV. Enforcement of Overweight Statutes

The development of an effective fine structure is the first step in a program to discourage operation of overweight vehicles. However, for any fine schedule to be effective there must be an adequate level of enforcement and a consistent application of penalties for violators. If a potential violator sees little chance of being apprehended or paying a fine, then there is little disincentive to overload. The first part of this section examines current enforcement levels and attempts to document the probability of a violator being caught. Alternatives for dealing with flagrant violators are also presented. The final part recommends an alternative to court-imposed fines.

Probability of Violator Apprehension. The Department of Public Safety's (DPS) License and Weight Division is the primary enforcer of vehicle weight laws. As of 1983, one-hundred-and-ninety-six commissioned officers were responsible for the operation and administration of 8 permanent weigh stations, 12 semi-portable scales, and 704 portable scales.* Texas law also authorizes state police to use other public and private permanent scales when not near DPS-operated scales.

In 1983, 633,409 vehicles were checked with 213,408 actually being weighed. Twenty-two percent of the vehicles weighed were either in excess of their gross vehicle weight or axle weight. Based on this level of enforcement it is possible to calculate a probability of apprehension. If enforcement is directed at vehicles over 24,000 pounds in gross vehicle weight, then a vehicle will be checked about every 10,800 miles (Appendix B). Therefore, the probability of being checked on a 500-mile trip is 4.6 percent.

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* Tom Griebel, "Report on Enforcement Against Overweight Trucks," January 15, 1984 pp. 2-4.

Based on this information and information presented earlier, it is possible to construct a scenario of the economic benefits or losses to overload. Table 11 documents the incentive that a truck operator would have to increase his payload on a 500-mile trip. The decline in the rate per pound is a result of a declining ratio of operating costs to pounds cargo weight. Table 12 presents that incentive in relationship to the disincentive of the recommended fine schedule. As Table 12 indicates, the low probability of being apprehended on a 500 mile trip significantly reduces the expected value of the fine. In order for the operator to have no incentive to overload by 120,000 pounds, the probability of being apprehended must increase to almost 30 percent. This scenario documents the importance of enforcement in an effective program to discourage overloading.

Repeat Offenders and Flagrant Violators. The previous scenario used the probability of being stopped by a state trooper in determining the expected value of the fine. There are, however, other factors that might influence a vehicle operator's decision to overload. Current Texas laws allow for troopers to require trucks to shift or reduce loads. In 1983, truck violators were required to shift loads 29,607 or 13.9 percent of the time. Given the amount of lost time that off-loading or load shift consumes, mandatory off-loading for flagrant or repeat offenders may increase the expected value of the fine. Another factor that may reduce the incentive to overload is the possibility of a jail sentence. Currently, eight states allow for jail sentences ranging from 30 days to 6 months. Mandatory minimum sentences for frequent violators may reduce the incentive to overload. Nine states also provide for higher rates based on the number of offenses. An alternative for Texas, if the recommended schedule or something similar were used, is to double the rate charged per pound of excess weight for second or

TABLE 11. INCREMENTAL INCENTIVE TO OVERLOAD IN TEXAS**

| Cargo Weight (Pounds) | Rate/ Pound* | Resulting Rate | Incentive |
|---|---|---|---|
| 25,000 | $.0560 | $1,400 | $ 0 |
| 40,000 | .0510 | 2,040 | 640 |
| 55,000 | .0488 | 2,684 | 1,284 |
| 70,000 | .0476 | 3,332 | 1,932 |
| 90,000 | .0468 | 4,212 | 2,812 |
| 120,000 | .0462 | 5,544 | 4,144 |

*$.056 is an average rate, the reduction in the rate per pound is based on research by John G. Larkin, "Modelling Future Truck Weight Patterns as Influenced by Alternative Vehicle Weight Legislation", 1978, The University of Texas.

**The resulting rates are based on a 500 mile trip for vehicle type 3S-2, i.e., truck-semitrailer combination with two tandem axles.

TABLE 12. ECONOMIC BENEFITS AND COSTS: AN EXAMPLE

| Cargo Weight (Pounds) | Economic Incentive | Expected Fine* | Total Incentive |
|---|---|---|---|
| 25,000 | $ 0 | -- | $ 0 |
| 40,000 | 640 | -- | 640 |
| 55,000 | 1,284 | -- | 1,284 |
| 70,000 | 1,932 | $110 | 1,822 |
| 90,000 | 2,812 | 354 | 2,458 |
| 120,000 | 4,144 | 658 | 3,486 |

*Expected fine is the recommended fine (axle overweight plus GVW overweight) times the 4.6 percent probability of being caught. The first three cargo weights are within current legal limits.

third offenders. Finally, for flagrant violators, the only effective deterrent may be the threat of license suspension.

Administrative Fines. In addition to enforcement, effective overweight fine schedules require a consistent application of fines. If fines are seldom imposed or reduced substantially, then the economic disincentives are not meaningful. In Texas, where fines are generally imposed by county courts, there is a problem with court overburden. The county courts are often backlogged and vehicle weight violations do not receive high priority. Current statutes also have no provisions for civil recourse.* The Attorney General has the authority to initiate injunction proceedings against the company that is overloading the trucks rather than prosecute the driver; however, there is not sufficient staff to handle very many cases and this theory is difficult to prove. Moreover, some courts have refused to follow this action. The Attorney General has suggested a public relations approach to increasing public awareness of vehicle overloading. This approach may force local county and district attorneys and judges to take cognizance of overweight violations.**

A possible alternative to the current approach is to let the fine be handled administratively. Currently, nine states use such an approach. This would require new legislation allowing DPS, the State Highway and Public Transportation Commission,or some other administrative body to administer civil penalties. This is currently done by the Texas Railroad Commission and the sunset commission has also recommended to the legislature that the Air Control Board be given the same authority.*** Administrative fines would

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*Griebel, p.8-9.

**Watson C. Arnold, Assistant Texas Attorney General, Memorandum, July 9, 1984.

***Before legislation is introduced, it may be appropriate for the Attorney General to produce a legal decision on such action.

reduce some of the court overburden and allow for certain imposition of fines.

## V. Conclusion

As indicated in this report, there are various factors that may influence an operator's decision to overload his vehicle. A fine schedule that serves as an economic disincentive to offset financial gains is a first step in an effective program to reduce weight violations. Current Texas law is inadequate in reducing the economic incentive and in fact, because of its fixed rate structure, serves to increase economic incentives. The second part of an effective program is an adequate level of enforcement. Any possible gains from a schedule designed to discourage overloading are lost when enforcement is inadequate. Enforcement of Texas vehicle weight laws is dependent on both the level of DPS enforcement as well as the response by county courts. Additional research is needed to discuss ways of enhancing DPS enforcement and for alternatives to the current court-imposed fines.

The purpose of this report, however, is to examine the current fine schedule and -- if found to be inadequate -- to recommend an alternative. The analysis suggests that regardless of the level of enforcement, the current Texas fine schedule does not provide a disincentive to overload and therefore does not effectively serve the public with better traffic safety or protection of highway structures. A schedule similar in kind to the recommended schedule is needed to respond to the objective of vehicle weight limit statutes.

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# APPENDIX A

## CALCULATION OF 1983 FINES USING RECOMMENDED SCHEDULE

APPENDIX A: CALCULATION OF 1983 FINES USING RECOMMENDED SCHEDULE

Calculation of Over GVW Fines

| Average Over Gross Weight (Pounds) | Number of Vehicles | Fine Per Lb. | Total Fine Over Gross Weight |
|---|---|---|---|
| 3,000 | 5,667 | $.03 | $ 510,030 |
| 6,500 | 9,237 | .04 | 2,401,620 |
| 10,000 | 9,008 | .05 | 4,504,000 |
| 15,000 | 4,488 | .06 | 4,039,200 |
| 21,500 | 2,719 | .07 | 4,092,095 |
| 30,000 | 1,638 | .08 | 3,931,200 |
| Total | 32,757 | | $19,478,145 |

Source: Table 8; Table 1; and Walton and Yu, Figure 11, p. 52

Specific data needed for calculation of over axle weight fines are not available; however, it is possible to make an approximation. According to the "Texas Truck Weight Survey Data, 1980",* truck-trailer combinations with J axle configurations amounting to 80,000 pounds maximum weight (front single-axle, 12,000 pounds; and two tandem axles, 34,000 pounds each) accounted for almost 90 percent of total overweight violations. Given that it is not possible to exceed gross vehicle weight without also exceeding axle weight, (since maximum total axle weight is also 80,000 pounds), then the average weight over legal axle weight should be close to the average weight over allowable gross weight. According to data in the 1980 survey, the average amount over gross weight was 8,000 pounds.* Using this number and multiplying by the number of axle weight violations and six cents per

* Data from Figure 11 in Walton and Yu.

pound equals the total fines for axle weight violations:

8,000 lbs. x 14,038 axle violations x $.06/lb. = $6,738,240

Therefore, if the recommended fine schedule were in use in 1983, $26.2 million would have been collected with an average fine of $560 per violation.

# APPENDIX B

## CALCULATION OF THE PROBABILITY OF APPREHENSION

## APPENDIX B: CALCULATION OF THE PROBABILITY OF APPREHENSION

| Truck GVW (Pounds) | % of Total VMT |
|---|---|
| over 6,000 | 9.2 |
| over 10,000 | 6.4 |
| over 17,000 | 5.7 |
| over 24,000 | 5.2 |
| over 40,000 | 4.6 |
| over 60,000 | 4.0 |
| over 72,000 | 3.6 |

Total vehicle-miles-traveled (VMT) in 1983, according to SDHPT, are 131,887 billion miles. Assuming that the 1980 vehicle distribution determined in the Texas highway cost allocation study is applicable to 1983, VMT for vehicles over 24,000 pounds is 6.858 billion miles. Given the number of checks by DPS (633,409), a vehicle is checked every 10,800 miles.