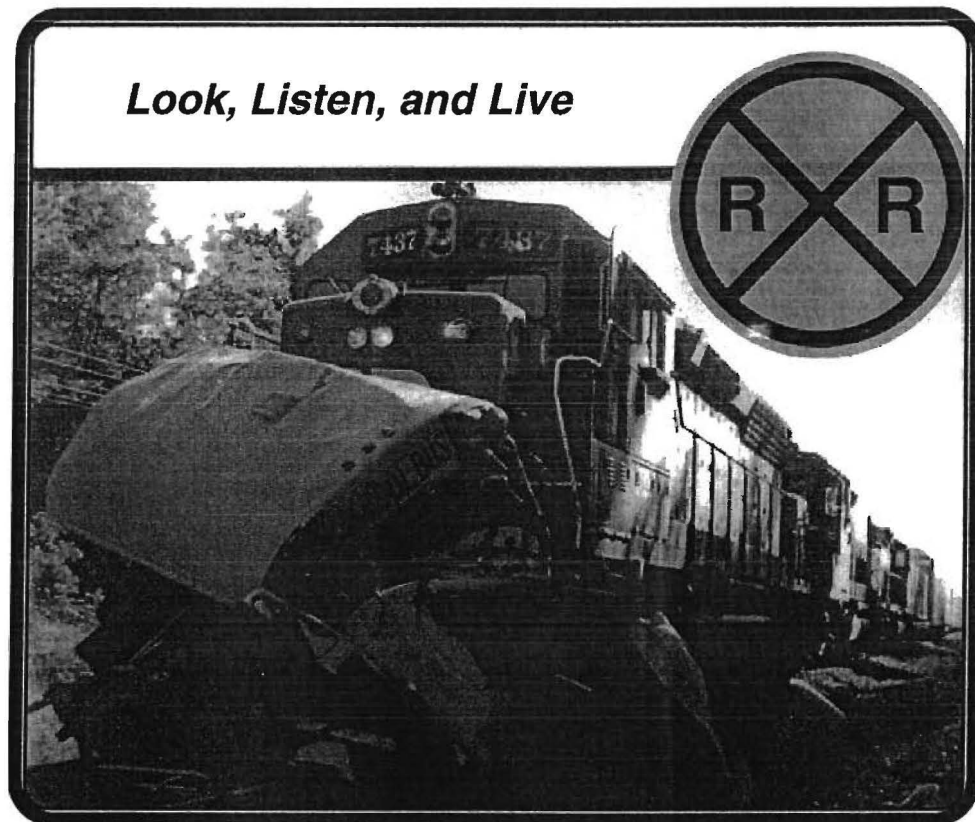


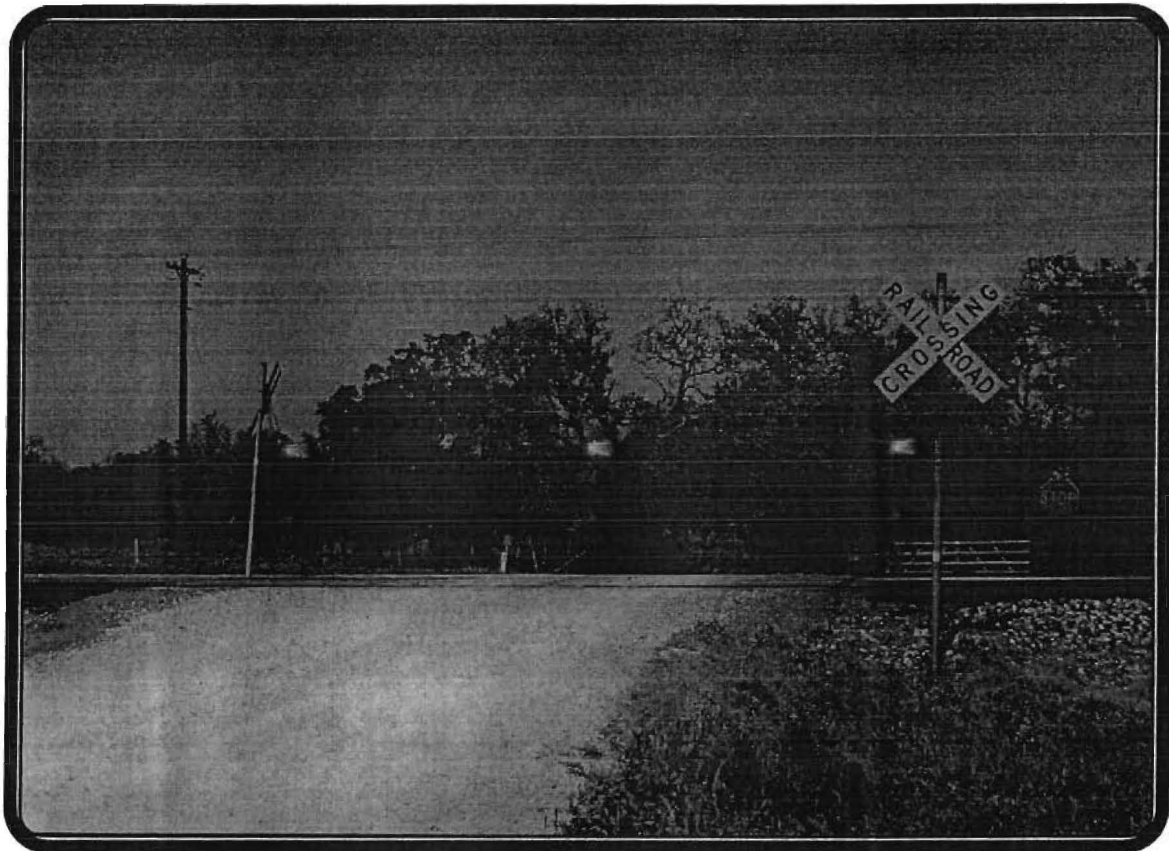
HIGHWAY-RAIL GRADE CROSSINGS

***Public Safety
Education Materials—***



Report No. 1469-4

***Sponsored by
Texas Department of Transportation
in cooperation with
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Research conducted by
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August 1998

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Disclaimer

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1

COMMON MYTHS

KNOW THE FACTS



1. Myth: Trains can stop on a dime.

FACT: Trains cannot stop quickly. The average freight train with 100 cars may weigh 12 to 20 million pounds and requires more than a mile to stop—the equivalent distance of at least 18 football fields! Chances are, if you can see the train, it will not have time to stop to avoid a collision before reaching the crossing. *Always yield the right of way to the train because the engineer cannot yield to you.*

2. Myth: You can hear a train coming.

FACT: Don't expect to be able to hear a train approaching. *Most of the time your radio will be on, or you will be talking with your passengers or children. The sound of the whistle may even be muffled by traffic congestion or windy weather conditions.* Look ahead for the "RXR" sign which serves as an advance warning that a crossing is ahead. Slow down and be prepared to stop while looking for a train at the crossing.



3. Myth: Trains can be steered just like highway vehicles.

FACT: *Trains run on a fixed track and cannot be steered like vehicles.* In fact, a train does not even have a steering wheel. Therefore, you must always yield the right-of-way to a train.

4. Myth: Attempting to beat a train is worth the risk.

FACT: *Don't assume there is enough time to beat a train across the tracks.* From your viewpoint in your vehicle, your perception of distance and speed is affected by the size of the train. Large objects approaching from a slight angle appear to be traveling slower than they actually are. These illusions can affect your ability to make good judgments. Adding two or three minutes to your trip to allow the train to pass is worth it to ensure that you arrive at your final destination safely.

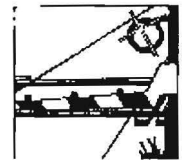


5. Myth: It will never happen to me.

FACT: *Nearly every 100 minutes a train collides with a vehicle or a pedestrian in the United States.* Even though most drivers are aware of safe driving behavior around crossings, few drivers remember to use these tips consistently. Change your driving behavior around crossings to ensure a safer passage across railroad tracks.

6. Myth: It is OK to drive around lowered gates if I do not see a train.

FACT: *It is against the law to drive around lowered gates or under lowering gates,* unless directed to do so by a railroad flagman or policing agency. Even if you do see a train stopped nearby, remember to look for a second train on a second track.



7. Myth: Crossings without signals and/or gates do not have much train activity.

FACT: Crossings are ranked to determine which ones have the most critical need for improvement. *Crossings may not have signals and/or gates because the vehicular demand is not great enough.* This does not necessarily mean that the number of trains using the crossing is low. Therefore, exercise extreme caution when approaching a crossing that does not have signals and/or gates to warn of the approach of a train.

COMMON MYTHS

1

KNOW THE FACTS

8. Myth: All crossings used by trains have flashing light signals.

FACT: Flashing lights and/or gates are *not required* at a crossing in order to be used by a train. *You should always expect an approaching train at a crossing at any time and from any direction.*

9. Myth: Trains never use this crossing.

FACT: Trains can use any crossing at any time. A track is officially out-of-service only if an "Out-of-Service" plaque is attached to the crossbuck at the crossing. Otherwise, *always expect a train.*

10. Myth: Trains are predictable and run on schedule.

FACT: Freight trains do not run on set schedules! Many people pay little or no attention when approaching a familiar crossing because they rarely see a train. At all crossings, especially those you are most familiar with—*always expect a train!*

11. Myth: Trains are less of a threat than other vehicles.

FACT: Did you know that *a motorist is 30 times more likely to be killed if involved in a vehicle-train crash than in any other type of highway collision?* Just as you look both ways before walking across a street or proceeding into an intersection, don't forget to look both ways before crossing the tracks.

12. Myth: The United States does not rely on railroads much anymore.

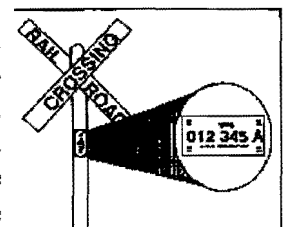
FACT: *Trains are used to transport many common household items across the country.* Transporting cargo by trains removes many trucks from the roadways, creating a safer driving environment for the public and reducing the wear and tear on the roadway network. In 1996, railroads carried 40 percent of all intercity freight.

13. Myth: Railroad crossing safety is a railroad responsibility.

FACT: *Safe behavior at grade crossings is everyone's responsibility.* Each person has a unique role to contribute toward improving safety at grade crossings in Texas. Drivers should slow, look both ways, and listen before crossing any track...always yielding the right-of-way to a train. The railroads must monitor warning equipment to make sure it is operating properly. The train crew should sound the horn when approaching busy intersections.

14. Myth: The crossing signals are always broken; they never work right.

FACT: *The warning signals and gates are designed to be fail-safe.* If a problem is detected in the equipment, the gates will automatically lower and/or the signals will flash to provide the maximum protection for the driving public. Therefore, respect the warnings that the signals and gates provide and if they do fail, proceed to another crossing to gain access across the tracks. To report a problem at a grade crossing, obtain the crossing identification number from the tag mounted on the crossbuck or signal post at the crossing. First, contact 911. Then, notify the Texas Department of Public Safety at *1-800-772-7677.*



2

COMMON QUESTIONS

WHY ARE THINGS THE WAY THEY ARE?

1. **What is the difference between an ACTIVE and a PASSIVE crossing?** All crossings should have an advance warning sign to indicate that a crossing is ahead and a crossbuck to mark the location of the train tracks. Crossing classifications are determined by the ability of the warning system to indicate the presence of an approaching train. **Active** crossings will have flashing light signals, automatic gates, and/or bells with installation costs of \$80,000 to \$300,000, depending on the crossing. **Passive** crossings, on the other hand, do not have signals. Before crossing the tracks, the **driver** must slow down, and stop if necessary, to see if a train is coming. Remember, crossings without gates and flashing lights are still used by trains.
2. **Which crossings get active warning devices?** The Texas Department of Transportation decides which crossings on state highways warrant active warning devices by using a formula which includes the average daily vehicle traffic count, types of vehicles using the crossing, number of daily trains each way, train speeds, collision history at the crossing, and existing type of warning device.
3. **What vehicles are required to stop at grade crossings?** School buses, vehicles carrying hazardous materials, and vehicles carrying paying passengers are required to stop at all crossings. Recreational vehicles are not required to stop at crossings, but should still use caution. Remember, avoid shifting gears when crossing the tracks.
4. **What should I do when the signals are flashing but no train is present?** If no gates are present at a crossing (only flashing lights), you may proceed after stopping to check for an approaching train. If gates are lowered, you must drive to a different crossing to cross. It is against the law to drive around lowered gates or to drive under lowering gates. If a problem is detected in the circuitry, signals will automatically activate to assure the maximum protection for the motoring public. Report signal malfunctions to the appropriate authorities.
5. **Why do trains blow their horns at crossings with automatic signals?** Horns get the driver's attention and provide additional warning to remind drivers that trains are approaching. Many drivers become accustomed to train schedules and expect trains at certain times at familiar crossings, or may not be paying attention to the flashing signals and lowering gates. State laws require that the horn be blown at all public crossings.
6. **What are my responsibilities at grade crossings?** First, determine if the crossing is active or passive. Slow down at active crossings and look both ways before crossing the tracks. At a passive crossing, do not cross until you are sure that a train is not approaching. You may need to roll down your window to listen for a train. Look carefully both ways, and remember, trains appear farther away than they actually are, and are usually traveling much faster than you think. Always report problems to the appropriate authorities.
7. **May I walk across the tracks for convenient access to my destination?** Railroad property is private property, strictly limited to railroad personnel or persons granted permission from railroad authorities. Walking across at unauthorized crossings and/or railroad right-of-way is considered trespassing. More than 500 people are killed annually in the U.S. when trespassing on railroad property. Trespassers either did not expect a train, expected it to be on the other track, thought it was moving slower or that it could stop for them, stood too close, or just did not take the time to think about the dangers. Do not let this happen to you or any of your family or friends.

COMMON QUESTIONS

2

WHY ARE THINGS THE WAY THEY ARE?

- 8. *Is the loud banging noise caused by flat spots on rail car wheels dangerous?*** Flat spots on rail wheels are common and occur when the wheels slide on the rails. Railroad equipment is closely monitored by the railroads and by Federal and State inspectors. Flat spots are allowed to certain tolerances and inspected regularly by railroad maintenance personnel to ensure that these tolerances are not exceeded. Wheels are replaced on a regular basis.
- 9. *How are speed limits determined for trains?*** Railroad speeds are based on the quality of construction of the track, the maintenance record, and the type of train control or signal system being used. The Federal Railroad Administration (FRA), a Federal agency, regulates the maximum allowable speed for a given segment of railroad track. Speeds used by the railroad are based on safety and efficiency of transporting people and goods and may be at or below the maximum speed specified by the FRA.
- 10. *Why can't long freight trains clear the crossings faster?*** Trains are operated under rigid speed restrictions for your safety and are monitored closely by railroad regulatory agencies. The average length of a freight train is one mile. A train traveling 50 to 60 mph may only take a minute to clear the crossing. At 30 mph, it still only takes two minutes to clear. When you are in a hurry, these few minutes may seem longer.
- 11. *What happened to the cabooses?*** In the early days of railroading, one or two train crew members were needed to ride at the rear of the train in a specialized car called the caboose. These crew members inspected the train, lined track switches, and monitored the rear of the train. Caboose were hazardous places to work and inefficient for railroads to operate. Most cabooses have been eliminated by the use of new technology; however, a few cabooses are still used for special duties.
- 12. *Why do trains run during rush hour?*** The service provided by the railroad is essential for the public good. The railroad needs the freedom to decide how and when to run its trains to transport people and goods as safely and efficiently as possible. Although running trains during rush hour may inconvenience some of us, the inconvenience is necessary because trains serve the larger public good.
- 13. *Why can't the railroad just tell us its train schedules?*** From a public perspective, train schedules are of little use due to frequent schedule changes. Train schedules today need to be flexible in order to adapt to changing business conditions, and their operation depends on the needs of the customer.
- 14. *How do I report a problem?*** Each crossing is marked with an identification number. Refer to this number when reporting:

 - Signal malfunctions:* Call 1-800-772-7677 (Number is posted at all active crossings)
 - Stalled vehicle on the tracks:* Call 911 first and then 1-800-772-7677
 - Crossing surface roughness:* Inform local district of Texas Department of Transportation
 - Sight obstructions:* Railroad (division superintendent), TxDOT, Railroad Commission
 - Complaints or hazards:* Call Railroad Commission in Austin, TX, 512-463-7116
- 15. *How do I know who owns this track?*** Call the Railroad Commission and give them an identification number for a crossing along the track that you are reporting.

3

RAIL TRANSPORTATION

ROLE OF THE RAILROAD IN THE TRANSPORTATION SYSTEM

Railroads in the United States. Railroads have existed in the United States since the 1830s. As people moved westward and settled the American Frontier, towns and cities located on and developed around the railroads. During the nearly 170-year history, railroads of the U.S. have undergone many changes but remain a vital link in our nation's transportation system.



Railroad Renaissance. In the 1970s, the government deregulated the U.S. railroad industry. Technological innovation and prudent management have resulted in unprecedented growth and renewal of the railroad industry during the 1980s and 1990s. Today more than 500 railroads operate in the U.S. on nearly 170,000 miles of track and employ 213,000 people. The U.S. railroad industry is the most productive railroad system in the world and one of the most productive industries in the nation.

Benefits of Railroads. Railroads provide a safe, efficient, and low-cost method of transporting people and goods. Many common household items and consumer products - automobiles, televisions, VCRs, food products - are transported by rail. The consumer would pay much more without the low-cost transportation alternative provided by the railroad. Another benefit is the reduction in the number of large trucks on streets and highways, resulting in safer, less-congested, and longer-lasting roads.

Another example of the vital role of railroads in our daily lives is electricity. Electricity is supplied to our homes and offices to operate devices we use everyday - lamps, computers, televisions, microwave ovens, and a host of other products. Railroads provide reliable, low-cost transportation of coal, an energy source used to generate electricity for millions of people nationwide.

Types of Railroads. There are many different types of railroads. One way to classify railroads is by the type of unique transportation service they provide.

Class I Railroads - The Class I railroads are the largest railroads operating in the United States. There were twelve Class I railroads in 1996 that operated nearly three-fourths of all railroad mileage and generated over 90 percent of all railroad freight revenue. A typical Class I railroad operates several thousand miles of railroad, extending throughout as many as fifteen to twenty states. The Class I railroads specialize in providing "line-haul" interstate transportation, the direct movement of freight (such as coal or automobiles) over long distances between two points, often spanning from one side of the country to the other. Trains on Class I railroads are usually very long, often one mile or more in length, and generally operate at higher speeds on well-maintained tracks.

Regional Railroads - Regional railroads are smaller versions of the Class I railroads. In fact, most Regional railroads own and operate tracks once owned and operated by Class I railroads. The main difference between Class I and Regional railroads is their geographic extent - a typical Regional railroad operates several hundred miles of tracks extending across one or two states. Regional railroads offer a mixture of line-haul and local service to their customers.

ROLE OF THE RAILROAD IN THE TRANSPORTATION SYSTEM

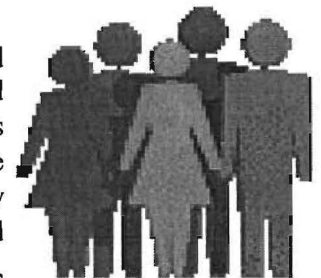
Short Line Railroads - Short line railroads (also sometimes called "feeder railroads") are the smallest railroads. Although many short line railroads were originally created as such, most, like the larger regional railroads, were once owned and operated by a Class I railroad. Trends within the U.S. railroad industry—mergers, consolidations, abandonment, and cost-cutting—have contributed to the rapid growth of the short line railroad industry. The number of short line railroads fluctuates as some go out of business and as new ones are created, but the total number is well into the hundreds. Short line railroads may be a few miles long or a couple hundred miles long. Short lines specialize in local service and, in some instances, terminal switching. Short line railroads may be thought of as feeder lines, originating and terminating much of the traffic carried by larger Class I and Regional railroads. Trains on short line railroads generally consist of only a few cars and run at relatively slow speeds.

Passenger Railroads - As the name implies, passenger railroads specialize in the movement of people rather than goods. There are several different types of passenger railroads.

- Amtrak, the national passenger railroad network, provides mainly long-distance and inter-city rail passenger service over the railroad lines of Class I and regional freight railroads.
- Commuter railroads are usually transit properties that move people by rail within a given region or metropolitan area. Commuter rail is growing as a transportation alternative, in response to congestion on the highway system.
- Light rail transit, in many ways resembling the trolleys and interurbans of past decades, moves people over relatively short distances within a city.
- High-speed rail passenger lines, which are proposed for many regions of the United States, will operate inter-city trains at speeds exceeding 100 mph.

Passenger trains are generally much shorter than freight trains. On some passenger railroads, especially commuter and light rail lines, the trains tend to be very short but with small headways between trains (more frequent trains). Passenger trains also generally travel at higher speeds. The combination of short, fast, and frequent trains means that grade crossings are blocked more often but for very short periods of time for each train passage.

Public Perception of Railroad Industry. For several decades, the widespread public perception has been that the U.S. railroad industry is dying. If the railroad decline witnessed during the 1960s and 1970s had been permitted to continue, this perception might have proven correct. True, many once-busy rail lines are now gone or lie dormant. However, other railroad lines are booming with new traffic; new tracks are being built, and thousands of new locomotives and railcars are purchased each year. The U.S. railroad industry has been revitalized and is a vibrant, essential, and permanent link in our nation's intermodal transportation system.



4

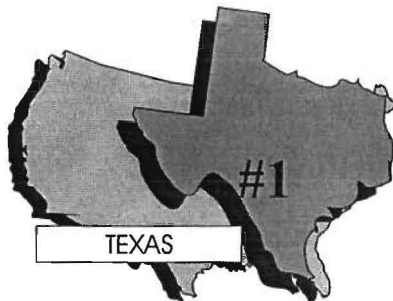
STATS AND FACTS

HARD FACTS ABOUT GRADE CROSSING CRASH STATISTICS

Nationwide Concern. A highway-rail grade crossing crash is the most severe type of highway crash resulting in hundreds of fatalities and several thousand injuries each year. According to the Federal Railroad Administration (FRA), in 1995, 559 people were killed and 1,863 people were injured in 4,565 crashes at public and private crossings nationwide. Operation Lifesaver is a nationwide public education program to inform people about driving safely at highway-rail grade crossings and the dangers of trespassing on railroad tracks and rights-of-way. In 1996, 408 people were killed and 1,610 injured in 4,257 crashes.

Did you know...

- Nearly *every 100 minutes* a train collides with a vehicle or pedestrian in the U.S.
- A motorist is 30 times more *likely to die* in a crash involving a train than in a crash involving another motor vehicle.
- *Over half* of the crashes occur at grade crossings at crash sites with active warning devices (gates, lights, bells).
- *Two* motorists are *killed daily* in vehicle-train crashes.
- *Deaths* at highway-rail grade crossings rank #1 among rail-related fatalities.
- *Railroad property is private* property. *Trespassing* on railroad property is *illegal*.



TEXAS Leads Nation in Highway-rail Grade Crossing Crashes. In Texas, according to FRA data, 55 fatalities and 227 injuries were the result of 464 crashes in 1995 at public and private crossings. This compares to 58 fatalities and 232 injuries from 560 crashes in 1994, representing a 17 percent decrease in crashes and a five (5) percent decrease in fatalities. In 1996, there were 61 fatalities and 175 injuries in 434 crashes.

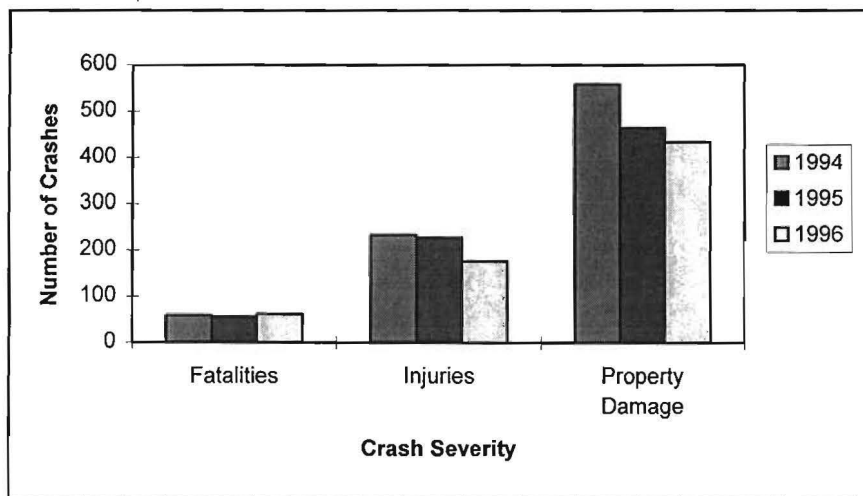


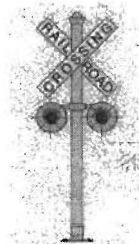
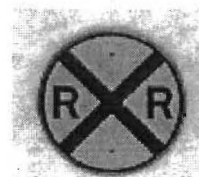
Figure 4-1. Frequency and Severity of Crashes at Texas Rail-Highway Grade Crossings

HARD FACTS ABOUT GRADE CROSSING CRASH STATISTICS

Highway-Rail Grade Crossing Warnings

There are two basic types of warnings:

- 1) Passive Signs
- 2) Active Warning Devices



The purpose of crossing warnings is to attract the driver's attention and get him or her to slow down or stop for the highway-rail grade crossing and to look and listen for a train. It is the driver's responsibility to be in control of the vehicle and stop as required by law. Private crossings are not required to have advance signs and other markings and are on roadways that are not maintained by public authority.

Texas has 11,646 public highway-rail grade crossings and approximately 6,544 private crossings. Approximately 36 percent of Texas crossings have active warning devices. However, with more crossings than any state in the nation, Texas has more than 8,000 public highway-rail grade crossings with only passive warning signs.

Motorist Action Prior to Crashes—According to Texas 1994 train crash data:

- the majority of the crashes (60 percent - 338) occurred after the motorist failed to stop for an approaching train,
- the motorist drove around or through gates in 13 percent (71) of the crashes,
- the motorist stopped and then proceeded in 5 percent (27) of the crashes,
- twenty percent (111) were reported as "other motorist action," and;
- in 2 percent (13) of the crashes the motorists' action was reported as unknown.

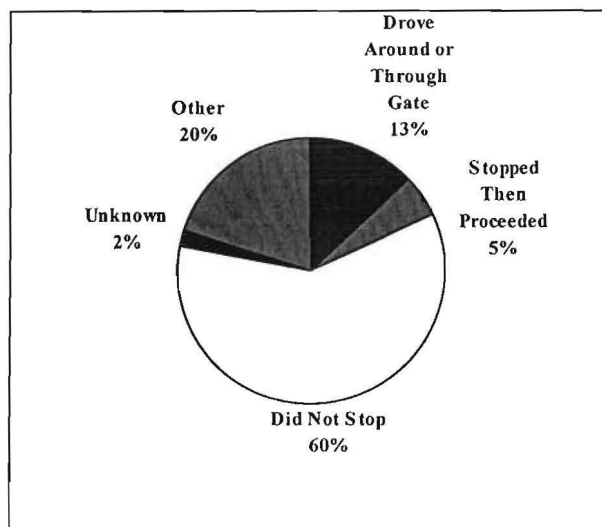


Figure 4-3. Motorist Action Prior to Crash

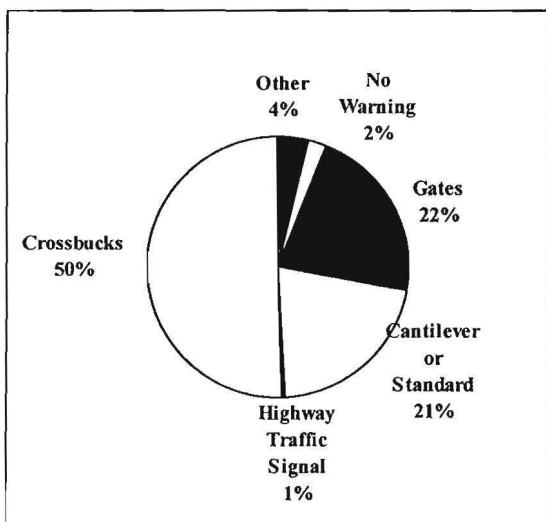


Figure 4-3. Type of Warning Device at Crash Site

Types of Warning Devices at Crashes—Many people assume that very few crashes occur at crossings with active warning devices such as lights, gates, and/or bells. On the contrary, about 43 percent of Texas' vehicle-train crashes in 1994 occurred at crossings with active warning devices. About one-half of the crashes occurred at crossings marked only by crossbucks.

Surprisingly, one in five crashes involves a vehicle running into the side of a train! Motorists are encouraged to be extra careful when approaching a highway-rail grade intersection during low light conditions. Look for the advance warning sign alerting you of this critical intersection to avoid running into the side of a train.

5

MOTOR VEHICLE LAWS

LAWS PERTAINING TO RAILROAD GRADE CROSSING SITUATIONS

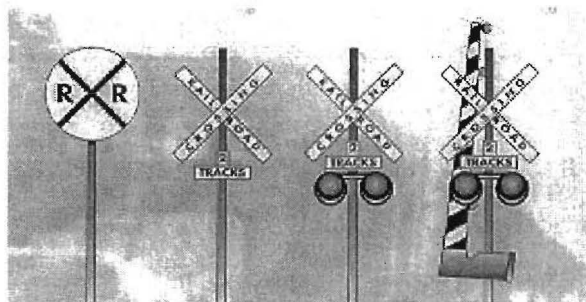


The Texas Motor Vehicle Law requires a driver to **yield** to an oncoming train (Article XI, Section 86 of the Uniform Act). The Texas Traffic Laws were recently amended (effective September 1, 1997) to more clearly outline requirements for operators approaching a railroad grade crossing.



"Subsection (a) An operator approaching a railroad grade crossing shall **stop** not closer than 15 feet or farther than 50 feet from the nearest rail if:

1. A clearly visible railroad signal warns of the approach of a railroad train;
2. A crossing gate is lowered, or a flagger warns of the approach or passage of a train;
3. A railroad engine approaching within approximately 1,500 feet of the highway crossing emits a signal audible from that distance and the engine is an immediate hazard because of its speed or proximity to the crossing;
4. An approaching railroad train is plainly visible to the operator and is in hazardous proximity to the crossing; or
5. The operator is required to stop by:
 - A) other law;
 - B) an official traffic-control device; or
 - C) a traffic-control signal.



Subsection (b) An operator of a vehicle required by Subsection (a) to stop shall remain stopped until it is safe to proceed.

Subsection (c) An operator of a vehicle who approaches a railroad grade crossing equipped with railroad crossbuck signs without automatic, electric, or mechanical signal devices, crossing gates, or flagger warning of the approach or passage of a train shall yield right-of-way to a train in hazardous proximity to the crossing, and proceed at a speed that is reasonable for the existing conditions. If required for safety, the operator shall stop at a clearly marked stop line before the grade crossing or, if no stop line exists, not closer than 15 feet or farther than 50 feet from the nearest rail.

Subsection (d) An operator commits an offense if the operator drives around, under, or through a crossing gate or a barrier at a railroad crossing while the gate or barrier is closed, being closed, or being opened.

Subsection (e) In a prosecution under this section, proof that at the time of the offense a train was in hazardous proximity to the crossing and that the train was plainly visible to the operator is prima facie evidence that it was not safe for the operator to proceed.

Subsection (f) A offense under this section is punished by a fine of not less than \$50 or more than \$200."

MOTOR VEHICLE LAWS

5

LAWS PERTAINING TO RAILROAD GRADE CROSSING SITUATIONS

The Texas Drivers Handbook, published by the Texas Department of Public Safety, gives the following instruction regarding motor vehicle laws at highway-rail grade crossings.

Chapter 4: Right-of-Way: Texas Law requires obedience to signals indicating the approach of a train. Whenever any person driving a vehicle approaches a railroad grade crossing, the driver of such vehicle shall stop within fifty (50) feet but not less than fifteen (15) feet from the nearest rail of such railroad and shall not proceed until he can do so safely when:

- A clearly visible electric or mechanical signal device gives warning of immediate approach of a train;
- A crossing gate is lowered, or when a human flagman gives or continues to give a signal of the approach or passage of a train;
- A railroad engine approaching within approximately fifteen hundred (1500) feet of the highway crossing emits a signal audible from such distance and such engine by reason of its speed or nearness to such crossing is an immediate hazard;
- An approaching train is plainly visible and is in hazardous proximity to such crossing.



If you encounter a railroad grade crossing signal problem, please call the Texas Department of Public Safety Headquarters Communications Center in Austin (toll free number is 1-800-772-7677) or your local police department or county sheriff's office. Each railroad crossing signal has an identification number. Please note the number and be ready to provide it when reporting a problem.

6

OPERATING PRACTICES

RAILROAD OPERATING PRACTICES DEFINED

Railroads are responsible for the safe operation of trains and other railroad equipment at highway-rail grade crossings. Federal and state rules and regulations, and railroad rulebooks such as the General Code of Operating Rules, govern safe train operation.



Signal Operation/Maintenance. The railroad "crossbuck" crossing signs at highway-rail grade crossings are typically installed and maintained by the railroad. Active traffic control devices (i.e., flashing light signals and gates) at highway-rail grade crossings are usually installed and maintained by railroad employees or their contractors. Railroad crossing advance warning signs are installed and maintained by the road authority.

Blocking Grade Crossings for Extended Periods. Railroad operating rules state that if possible, a standing train or switching movement must avoid blocking a public grade crossing longer than ten minutes. State law prohibits standing trains from blocking crossings for more than 5 minutes.

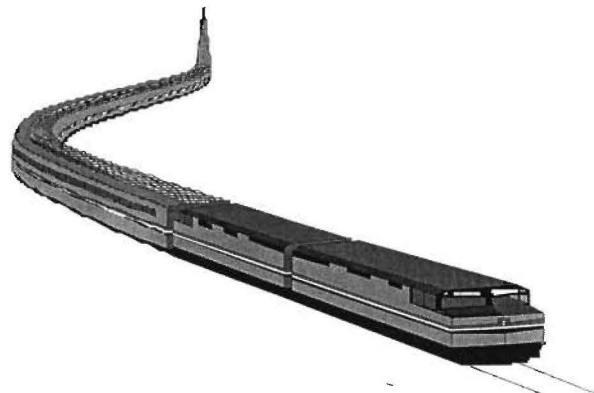
Sounding Whistle and Bell at Grade Crossings. Operating rules and state law require trains to sound the whistle and ring the bell when approaching public grade crossings. The sounding of the whistle and bell usually begins about one-quarter mile before the train reaches the crossing. The train must continue to repeat the whistle and ring the bell until the train occupies the crossing.



Locomotive "Ditch Lights" and Other Warning Devices. Some railroads place a pair of bright, white lights on the front of the locomotive. Sometimes these lights are illuminated continuously, and on some railroads, the lights turn on or pulsate when the whistle is sounded at public grade crossings. These devices are commonly known as "ditch lights." Ditch lights increase the train's visibility and help drivers judge the speed and distance of the train. Federal law mandates the use of ditch lights on certain lead locomotives.

Standing Equipment at or Near Grade Crossings. *Drivers must exercise caution when approaching grade crossings where there is standing railroad equipment.* If there is more than one track, the standing equipment may block the view of a moving train on the other track. Operating rules require railroad employees to avoid parking railroad equipment closer than 250 feet to the grade crossing when there is more than one track. This practice decreases the chances of the standing equipment blocking the driver's view down the tracks.

Train Speed. The Federal Railroad Administration defines the maximum speed that trains can travel according to the class of track. The railroad may choose to operate trains at this maximum speed or at a slower speed. The train speed limit varies at different locations along the railroad track depending upon the type of train, the alignment of the railroad, and the condition of the track. Some communities and cities have passed ordinances that further restrict train speeds through their jurisdictions, though they are often challenged in court as being pre-empted by Federal law. This practice, however, causes grade crossings to be blocked longer by trains and further delays drivers.



OPERATING PRACTICES

6

RAILROAD OPERATING PRACTICES DEFINED

Flagging Grade Crossings. Under certain circumstances, a railroad employee ("flagger") will stand at the grade crossing (sometimes in the middle of the street or highway) and use hand signals to stop highway traffic or to motion the highway traffic through the crossing. This practice is known as "flagging" the crossing since the railroad employee uses a flag to attract the drivers' attention.

Drivers must heed and obey the warnings of the railroad "flaggers." The "flaggers" are there to ensure the public's safety while certain types of railroad operations are underway.

Roles of the Train Crew. Train crews usually consist of two people, the conductor and the engineer. Some trains that perform switching and other local service may have one or more brakemen on the crew, in addition to the conductor and the engineer.

The conductor is in charge of the train. The conductor has several responsibilities:

- Supervise the operation and administration of the train.
- Advise the engineer and others of any restrictions placed on railroad equipment in the train.
- Ensure that records are kept of the freight being handled and the work performed en route.

The engineer shares responsibility for the train with the conductor. The engineer also has several responsibilities:

- Operate the train safely and efficiently.
- Check with the conductor to determine if any equipment in the train requires special handling.

Railroad Crew Safety Policies. Safety is the most important element in performing railroad job duties. Railroad employees are required to always take the safe course of action.

Federal law (the "Hours of Service Law") allows railroad train crews to be on-duty (at work) no more than twelve hours at a time. Train crews must have at least eight hours of off-duty time before they can return to work to begin a new shift.

Federal law and the railroad's rulebook prohibit employees from possessing, using, or being under the influence of drugs or alcohol when reporting for duty or while on duty. Like many workers, railroad employees are subject to random drug-testing to ensure compliance with the law. Violation of the drug and alcohol policies can result in a railroad employee being fired from his or her job.

7

DRIVER RESPONSIBILITIES

YOUR RESPONSIBILITIES AS A DRIVER

The required driver response to highway-rail grade crossings is not always the same and depends on the traffic control devices placed at these crossings.

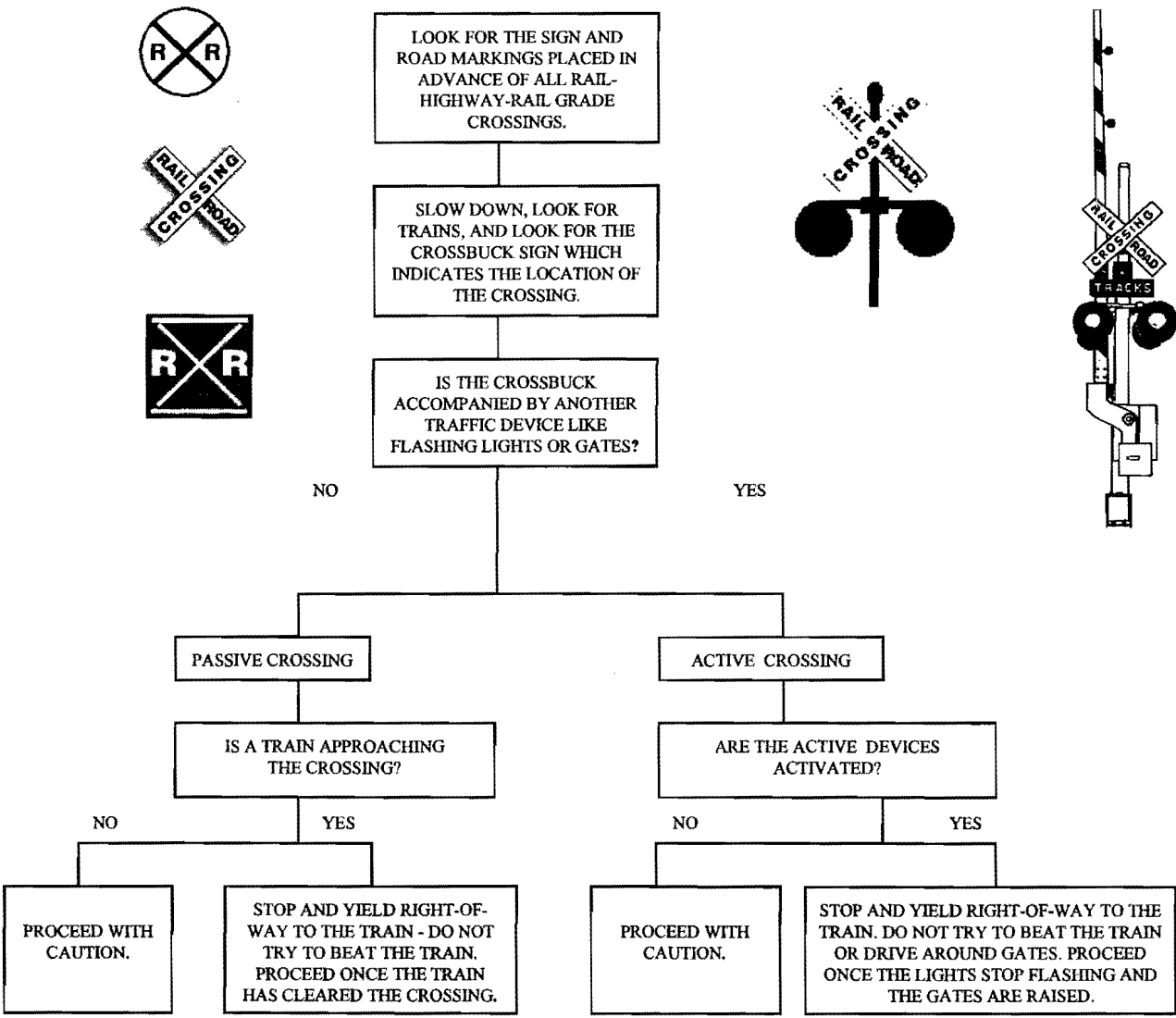
Passive Highway-Rail Grade Crossings

Passive warning devices are traffic control devices that give warning of the presence of a highway-rail grade crossing. The devices command that the driver slow down, look for trains, and yield right-of-way if a train is occupying or approaching the crossing.

Active Highway-Rail Grade Crossings

Active warning devices are traffic control devices that give warning of the approach or presence of a train. When activated, active warning devices command the driver to stop and not proceed until it is safe to do so. At crossings with gates, the driver is required to wait until the gates have been raised before proceeding across the tracks.

Decision-Making Chart for Drivers at Rail-Highway Crossings



DRIVER RESPONSIBILITIES

7

YOUR RESPONSIBILITIES AS A DRIVER

In all cases:

- Check to ensure that *all* tracks are clear at multiple track crossings; there may be a second train approaching!
- Do not stop on the track; your vehicle might stall and you may not be able to clear the tracks in time!
- Do not pass, this is a no passing zone.
- Do not shift gears while crossing the tracks; your vehicle might stall.
- Remember, trains cannot yield to you!

Illegal to Drive Around the Gates. The driver of a vehicle commits an offense if he or she drives around, under, or through a crossing gate or a barrier at a highway-rail crossing while the gate or barrier is closed, being closed, or being opened.

Crossings with STOP or YIELD Signs: At these crossings, driver response is identical to that required at a highway-highway intersection. At a STOP sign, the driver should bring his or her car to a complete stop, look both ways for an oncoming train, and proceed only when safe to do so. At a YIELD sign, the driver should slow down, look both ways for an oncoming train, and proceed across the tracks if safe to do so.

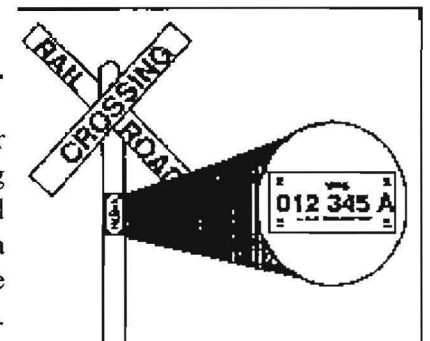
EXEMPT Crossings. If the crossing has a sign indicating that it is EXEMPT, it means that drivers of vehicles such as school buses or hazardous material trucks, who by law are required to stop at every crossing, do not have to make a compulsory stop at that crossing.



Driver Response to Railroad Flagger at Crossing. Obey signals of railroad flaggers. If they are at the crossing, a train is sure to be nearby!

Passing/Overtaking at Railroad Crossings or on Highway Approach to Crossings. Do not try to pass another vehicle on the approach to, or at, a railroad crossing. You already have enough to concentrate on by looking for trains while maintaining a safe following distance from the car in front of you. Furthermore, if you are overtaking another car, you may not be able to slow down enough to stop and avoid an oncoming train.

Report Signal Malfunctions/Problems (Civic Responsibility). Sometimes the active devices may malfunction or have electrical problems. If a problem is detected in the equipment, the gates will automatically lower and/or the signals will flash to provide the maximum protection for the driving public. Therefore, respect the warnings that the signals and gates provide, and proceed to another crossing to gain access across the tracks. To report a problem at a grade crossing, obtain the crossing identification number from the tag mounted on the crossbuck or signal post at the crossing. First, contact 911. Then, notify the Texas Department of Public Safety at *1-800-772-7677*.



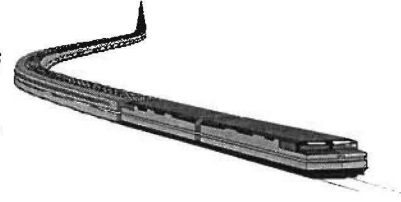
8

DRIVER BEHAVIOR ISSUES

UNDERSTANDING THE HUMAN FACTORS INVOLVED

Many crashes at highway-rail grade crossings result from driver error. Driver behavioral issues that contribute to these errors are discussed in this section.

Illusions When Estimating Size, Distance, Geometry, Speed of Approaching Train. Never try to judge a train's speed or distance. Because of its size, a train always appears to be moving more slowly than it is. If you are in doubt, stop and wait for the train to pass.



Drivers Must Use Visual and Audible Cues to Detect Trains. You should always slow down and look and listen for approaching trains at highway-rail grade crossings. When approaching a highway-rail grade crossing, you should idle the engine, turn off all radios, fans, wipers and other noise sources in the vehicle, lower the window and listen for a train horn before entering a highway-rail grade crossing. Ambient noise levels in the vehicle may mask the sound of an approaching train's horn. Remember LOOK, LISTEN, AND LIVE.

Sight Distance and Human Factors Issues. If buildings or vegetation obscure your view of the railroad tracks at a crossing equipped only with a crossbuck sign, then stop, get out of your vehicle, and look up and down the tracks before crossing. Never assume that if you cannot see or hear the train, there isn't one there. Rather be safe than DEAD.

Attempting to Beat The Train. Look up and down the tracks. It's difficult to judge the distance and approach speed of a train as it moves toward a crossing. If in doubt, be safe, stop and wait. NEVER TRY TO BEAT THE TRAIN; if it's a tie, you still lose.

Driving Around Lowered Gates. Drivers' respect for grade crossing traffic devices is weakened when they observe other drivers violating rules like driving around lowered gates. Furthermore, drivers are more likely to copy this behavior if they perceive no immediate consequences, such as enforcement measures. Remember the Texas Motor Vehicle Law prohibits drivers from driving around lowered gates.



Be patient; it usually only takes 30 seconds to 3 minutes for a train to pass through a highway-rail grade crossing.

Influence of Drugs/Alcohol. Do not drive under the influence of drugs or alcohol. The effects of alcohol and drugs impair driver concentration and vision. Drivers also become over-confident, and hence, are more likely to take more risks. As the highway-rail grade intersection is the most dangerous intersection you'll encounter on the road, you should treat it with great respect and caution.

Stopping on Tracks. Never stop on railroad tracks. If a train appears, your vehicle may cut out when you try to move off, or you may be trapped between other vehicles. Furthermore, never drive onto the grade crossing until you are sure you can clear the tracks. Once you have started across the tracks, keep going, especially if you see a train approaching.

DRIVER BEHAVIOR ISSUES

8

UNDERSTANDING THE HUMAN FACTORS INVOLVED

Perception of How Wide a Train Is (For Queued Vehicles). A typical train car overhangs the train tracks by 3 to 4 feet. If you are queuing up at an intersection on an approach that is crossed by a railway track, make sure that your vehicle will not be exposed to an oncoming train. To do this you'll have to judge whether the space on the far side of the track is big enough to accommodate your vehicle, with room to spare, or else stay where you are until the queue has dissipated.

Excessive Speed/Speed Unsafe for Highway Conditions. Do not travel at speeds in excess of the posted speed, as you may not be able stop in time to avoid a train at a highway-rail grade intersection. Be especially alert at night for highway-rail grade crossing warning signs. Always travel at a rate of speed that allows your vehicle to be stopped within the distance illuminated by your headlights. Traveling faster, or "overdriving your headlights," could jeopardize your ability to stop in time once a highway-rail grade crossing comes into view.

Danger of Following the Lead Vehicle's Example. Never follow the vehicle in front of you without checking for yourself whether it's safe to proceed.

Driver Attention. Driver inattention is one of the biggest causes of train-involved crashes at highway-rail grade crossings. Remember, trains do not operate on fixed schedules; therefore, expect a train anytime....anytime could be train time.

**Malfunctioning Grade Crossing Signal
Devices should be reported to the Texas
Department of Public Safety (include
location and posted D.O.T. ID number):
1-800-772-7677**

9

MAINTENANCE

DIVISION OF RESPONSIBILITIES FOR MAINTENANCE ACTIVITIES

Railroads have several responsibilities with respect to grade crossing maintenance. Because grade crossings exist for the benefit of highway users, the public—through the federal, state, and local governments—is primarily responsible for funding the maintenance of grade crossing devices and the public streets and highways that cross railroad tracks. Private property owners who own land at or near grade crossings also play an important role in ensuring that the grade crossings are safe.

Some responsibilities for grade crossing maintenance are legal responsibilities imposed by law, legal precedent, or contract. Other responsibilities are "civic responsibilities" that arise from the desire to be a good neighbor.

Railroad Responsibilities

Grade crossing maintenance is a shared responsibility; therefore, the railroads contribute funds to pay for maintenance work. Railroads typically fund all or a portion of the maintenance costs associated with safety devices, as well as the tracks and roadway surface at the crossing.

Railroads inspect and test automatic safety devices monthly, quarterly, and annually. Minor repairs to grade crossing equipment are made immediately. More extensive repairs may require parts to be obtained and maintenance crews to be scheduled to perform the work.

Railroads have other maintenance responsibilities to ensure the safety of the grade crossing. Railroads perform routine maintenance along the railroad right-of-way (property) to control or remove vegetation and other features that may obstruct sight distances. This practice is especially important at grade crossings used by vehicles that must stop at the tracks (for example, school buses). The drivers need to be able to see down the tracks so that they can cross safely from a full stop.

Public Responsibilities

The public agency with jurisdiction for the street or highway approach to the grade crossing is responsible for maintaining the roadway pavement, traffic control devices, and right-of-way. These responsibilities include ensuring a safe roadway surface, installing and maintaining traffic control devices (such as advance railroad warning signs and pavement markings), and like the railroad, keeping the right-of-way free from obstructions and vegetation.

Private Property Owners

Private citizens can also play a very important role in maintaining a safe grade crossing environment. Buildings, structures, vegetation, and other objects on private property can create a sight obstruction that impairs the driver's ability to see approaching trains. The landowner has a civic responsibility to do everything within reason to ensure that these features do not create a safety hazard. This civic responsibility may mean periodically trimming back trees and other vegetation, or the removal of dilapidated buildings that have fallen into disrepair and no longer serve a useful purpose.



10

ACTIVE WARNING DEVICES

WHAT THEY MEAN AND HOW THEY WORK

Active warning devices are traffic control devices that give warning of the approach or presence of a train. When activated, active warning devices command the driver to stop and not proceed until it is safe to do so.

Types of Active Warning Devices. There are several types of active warning devices. The most common devices are flashing red signals and automatic gates. The signals may be used either alone or in conjunction with the automatic gates. Wig-wag signals and automatic bells are other active warning devices.

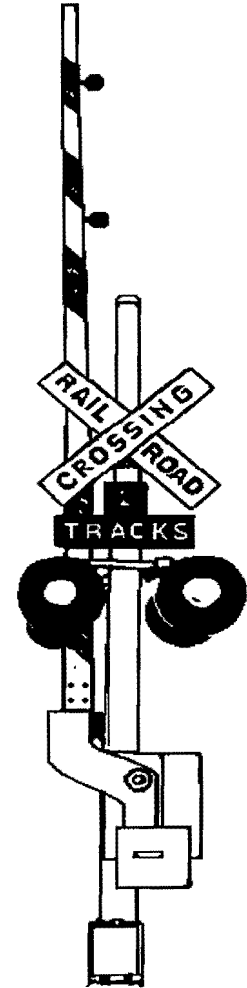
Principles of Design and Operation. Active warning devices are activated by the passage of a train over a detection circuit in the railroad track. The electrical detection circuit uses the rails of the track as electrical conductors. The presence of a solid electrical path (i.e., the steel wheels and axles of a locomotive or railcar) shunts, or completes, the circuit and causes the warning devices to activate.

Active warning devices are designed according to the "fail-safe" principle. According to this principle, any failure or malfunction that affects the warning device system will cause the device to operate in its most restrictive (i.e., safest) mode. In other words, any time the circuit is shunted, whether by a train, vandalism, or a track condition, the warning device will activate.

When Are Active Warning Devices Used? No established rules exist to determine when active warning devices are used. Decisions on the installation of active warning devices are usually determined by considering the types and amounts of highway and railroad traffic, the speeds of highway and railroad traffic, the available sight distance, and the grade crossing's accident history. Active warning devices are normally used at crossings with high volumes of highway and/or railroad traffic, those having restricted sight distance possibly preventing drivers from seeing an approaching train, or those with a history of train and vehicle accidents.

Availability of funding is another important consideration. Active warning devices are very expensive to install and maintain - about \$100,000 on average, not including the annual maintenance expense. Limited funds restrict the number of active warning devices installed. The number of grade crossings far outweigh the amount of funding available; therefore, only crossings determined to have the greatest need are considered for active warning device installation. Highway agencies ensure that the maximum safety benefits are received for the money spent by prioritizing grade crossings that receive active warning devices.

Responsibility for Selection, Installation, and Maintenance. The Texas Department of Transportation (TxDOT) prioritizes grade crossings that are candidates for improvement projects. A team of highway and railroad safety experts visits each crossing and makes recommendations regarding the type of improvement needed (for example, installing signals and gates). TxDOT makes the final decision about the type of improvement.



ACTIVE WARNING DEVICES

10

WHAT THEY MEAN AND HOW THEY WORK

Active warning devices are usually funded by TxDOT, using money provided by the federal government. Railroads and local communities contribute on a cost-sharing basis. The railroad is responsible for installing the active warning devices since the devices must be connected to the railroad track for train detection purposes. The state inspects the warning device installation to ensure that the work is properly performed and meets required standards.

The railroad is responsible for the ongoing upkeep and maintenance of the active warning devices. In most cases, the maintenance expense is funded by the railroad company.

Driver Responsibilities. *Drivers must always obey active warning devices at grade crossings, even when a train is not apparent or present. When in doubt about what to do at a grade crossing, the safest course of action is always the proper thing to do.*

- At crossings with flashing signals, but no automatic gates, come to a complete stop before the crossing when the signals are flashing. Look both ways and listen for a train. *Do not proceed through the crossing until it is safe to do so. It is a violation of the law to run the signals without coming to a complete stop and checking for a train.*
- At crossings with both flashing signals and automatic gates, come to a complete stop before the crossing when the signals are flashing and the gates are being lowered, are down, or are being raised. *Do not proceed through the crossing until the signals stop flashing and the gates are raised. Do not drive around the lowered gates for any reason. It is a violation of the law to drive around the gates.*
- If the gates are down and a train does not arrive, do not drive around the gates. Do not follow other drivers that may be driving around the gates. Turn around and use an alternate route to cross the tracks. It may be inconvenient, but it could save your life, or at least keep you from getting a traffic ticket.

What to do if You Suspect a Signal or Gate is Malfunctioning. If you suspect that a signal or automatic gate at a grade crossing is not operating properly, you can call to report the suspected problem to the appropriate authorities.

- In Texas, every active warning device has a small sign mounted on the device that provides a toll-free telephone number for reporting signal and gate malfunctions. Anyone encountering a malfunctioning railroad crossing signal and/or gates should contact the Department of Public Safety (DPS) promptly at the toll-free number **(1-800-772-7677)**. Callers should be prepared to give the crossing identification number (also located on the small sign) and a description of the malfunction (for example, the gates are down and there is no train present). The DPS will report the malfunction to the appropriate railroad company so a maintenance crew can be dispatched to make repairs.
- In addition to the toll-free DPS number, some railroads also have toll-free telephone numbers that the public can call to report suspected signal/gate malfunctions. The railroad telephone number is usually displayed on equipment at or near the grade crossing, such as the signal cabinet. When calling these numbers, be prepared to provide the crossing location (name of street or highway, and the city and state where it is located), the crossing identification number, and a description of the malfunction.

The most effective way to reduce grade crossing crashes is to eliminate the grade crossings themselves, thereby removing the opportunity for a train and a motor vehicle to collide. The United States Department of Transportation is encouraging states, counties, communities, and railroads to reduce the number of public and private grade crossings by 25 percent.

Benefits. There are four main benefits of consolidating unnecessary grade crossings: fewer intersections where collisions between vehicles and trains can occur; the removal of a potential safety hazard at a cost that is often only a fraction of the cost of warning signals and gates; the redirection of resources to remaining crossings with the greatest public necessity; and finally, the reduction in the number of grade crossings that may require costly improvements or grade separation in the future.

Challenges. The primary impediment to consolidating unnecessary grade crossings is local opposition to the closing of almost any crossing. Meritorious crossing consolidation proposals consistently fail to gain approval from local governing bodies because concerns regarding community impact are not addressed to the satisfaction of local officials. Even when formal approval from the local government is not required by law, local endorsement of the project, or the absence of local opposition, is an unwritten requirement.

Terms such as "crossing closure" and "crossing elimination" have two shortcomings— namely that they convey an incomplete image of what is involved in closing a crossing and that they generate the idea of something being taken away.

"Crossing consolidation" more appropriately characterizes projects that reduce the number of unnecessary and hazardous crossings and reroute traffic to adjacent crossings that have been improved.

Grade Crossing Consolidation. In most cases, the closing of a public grade crossing is, in reality, a grade crossing consolidation project. A proposal to close a crossing should require an examination of the impact on connecting streets and highways, and the characteristics of the alternative crossings. A consolidation project may include street improvements and upgrading of one or more adjacent crossings.

How Crossings Are Selected. Crossings are selected for consolidation projects in many ways:

- Review of a rail corridor by a team of highway and railroad safety experts.
- Recommendations by federal or state safety inspectors.
- Signalization of one or more adjacent crossings.
- Response to a serious collision, or a series of collisions.
- Planning for a track rehabilitation project.
- Reports by train engineers of "near misses."
- Suggestions from Operation Lifesaver volunteers.
- Requests by a city or county for crossing improvements.
- Recommendations by railroad safety committees.

Local Approval is Critical. Consolidation of highway-rail grade crossings is very much a state and local government issue. The federal government exercises no authority over the closure of existing crossings or the opening of new crossings. The majority of opportunities to consolidate crossings are on local streets and roads, not state highways. Therefore, to close a public crossing, local agreement, or at a minimum, the absence of local opposition, is a key requirement.

An Effective Strategy. The first step in developing an effective strategy to consolidate unnecessary crossings is to recognize that the approval process is a negotiating process. The concerns of the local community must be addressed.

The usual arguments for crossing consolidation seldom result in the closing of unnecessary crossings. To obtain approval for crossing consolidation projects, state agencies, railroads, and federal offices have developed unique strategies to gain local support. These strategies offer a mixture of crossing safety education and incentives for closing crossings.

A Model Approach to Crossing Consolidation

Screen Projects—Determine whether strong justification in regard to safety and redundancy exists.

Coordinate Railroad/State Efforts—Railroad and state officials should work together to ensure the success of grade crossing closure initiatives.

Know the Local Community—Learn critical factors unique to each crossing consolidation project: street and highway layout, traffic patterns and volumes, emergency vehicle routes, impacts on neighborhoods and businesses, community perceptions of the railroad, warning devices at adjacent crossings, the form of local government and administrative procedures, local needs, alternative crossings for closure, and other unique information about local culture and practices.

Build Local Support—Successful crossing consolidation projects build local support among local public works officials, emergency response personnel, elected officials, and Operation Lifesaver volunteers.

Include Incentives—A proposal to close one or more grade crossings is often favorably received if the effect of the total project is viewed as a community improvement—there is a tangible community benefit in addition to the enhancement of grade crossing safety.

Resources

For more information on crossing consolidation, contact:
Federal Railroad Administration
Highway-Rail Crossing and Trespasser Programs Division
400 Seventh Street, SW, RRS-23
Washington, D.C. 20590
1-202-366-0533

12

POLITICIANS AND OFFICIALS

ROLE OF AUTHORITIES IN GRADE CROSSING SAFETY

Federal, state, county, and local government officials are important players in highway-rail grade crossing safety. The following are some of the government agencies with primary responsibility for highway-rail safety issues and a summary description of the roles that they play.

Federal Government



- ***Federal Highway Administration (FHWA)***
Administers federal funding for crossing safety improvements (grade crossing upgrades) through the Surface Transportation Program (STP) under the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) for all systems of roads and highways; publishes sign and pavement marking standards in the Manual on Uniform Traffic Control Devices (MUTCD); and conducts crossing research in coordination with the FRA.
- ***Federal Railroad Administration (FRA) - Rail Safety***
Enforces the Code of Federal Regulations (CFR); enforces noise standards by testing moving, stationary, and switching trains; specifies track classes including a reference to maximum railroad operating speeds; investigates complaints by the public regarding crossings; investigates selected train/vehicle crossing accidents usually where two or more fatalities occur; maintains the accident/incident reporting system; is custodian of the U.S. Department of Transportation/American Association of Railroads National Rail/Highway Crossing Inventory; and conducts crossing research in coordination with the FHWA.
- ***National Highway Traffic Safety Administration (NHTSA)***
Maintains the Fatal Accident Reporting System (FARS).



State Government

- ***Texas Department of Transportation (TxDOT)***
Develops an annual priority list of recommended highway-rail grade crossings or FHWA crossing safety improvement funds; administers the projects; coordinates the joint on-site inspection of crossings for potential upgrading, which includes a team of rail operators, cities, counties, school districts, and law enforcement officials to recommend the type of safety improvements needed; and issues permits for movement of oversize loads over the state highway system.
- ***Railroad Commission of Texas (RCT)***
Assists the FRA with the inspection of railroad equipment, operations, and track; enforces state legislation regarding sight rectangle at grade crossings with passive warning devices and clearance above and beside trackage on bridges; and investigates complaints by the public regarding crossings.

- ***Department of Public Safety (DPS)***
Enforces highway-rail grade crossing safety laws; maintains highway-rail accident data which is forwarded to TxDOT and NHTSA; and receives and passes to the railroads reports of crossing signal problems made by the public using a toll-free 1-800 telephone number.

County Government

- ***County Commission***
Maintains and operates county roads and highways; clears vegetation and sight obstructions from county right-of-way; and participates in joint on-site inspections of grade crossings that are candidates for improvement.
- ***County Law Enforcement***
Enforces traffic and trespass laws, and completes grade crossing accident reports.

Local Government

- ***Public Works/Transportation Department***
Maintains and operates city roads and highways; clears vegetation and sight obstructions from city right-of-way; and participates in joint on-site inspections of grade crossings that are candidates for improvement.
- ***City Law Enforcement***
Enforces traffic and trespass laws, and completes grade crossing accident reports.
- ***School District***
Develops school bus routes; notifies appropriate government and railroad authorities of problematic grade crossings; and participates in joint on-site inspections of grade crossings that are candidates for improvement.

13

PEDESTRIANS AND TRESPASSERS

PEDESTRIAN AND TRESPASSER RESPONSIBILITIES

Trespassing on railroad property and rights-of-way is illegal. It is also very dangerous. Since 1990, fatalities resulting from trespassing on railroad property have grown at an alarming rate nationwide. Each year, approximately 1,000 people are killed and injured nationally while illegally present on railroad property.

Between 1993 and 1994, the number of people who were killed in trespassing incidents in Texas rose by 71 percent. People have been killed and injured while they were:

- Walking on tracks,
- Playing on or around trains and tracks,
- Fishing from railroad bridges,
- Sleeping between the rails, and
- Hopping on and off railroad cars.

According to Texas law (Penal Code, Title 7 § 28.07 Interference with Railroad Property), a person commits an offense if the person:

- throws an object or discharges a firearm or weapon at a train or rail-mounted work equipment; or
- without the effective consent of the owner:
 - ▶ enters or remains on railroad property, knowing that it is railroad property;
 - ▶ tampers with railroad property (i.e., a train, locomotive, railroad car, caboose, work equipment, rolling stock, safety device, switch, or connection);
 - ▶ places an obstruction on a railroad track or right-of-way; or
 - ▶ causes in any manner the derailment of a train, railroad car, or other railroad property that moves on tracks.

(Source: Railroad Commission of Texas)

Operation Lifesaver, the nationally recognized grade crossing safety program, educates and alerts news media, advertisers, and print and film media to the dangers of portraying careless attitudes about the dangers of trespassing on railroad property.

Consider This! Would you appreciate it if...

- Someone was walking around in your front yard without your permission?
- Someone was fishing or hunting on your property without your permission?

Remember . . .

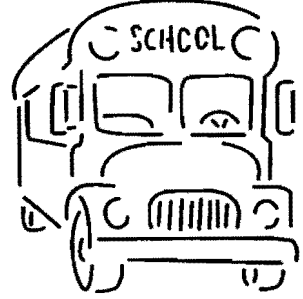
- Railroad tracks, trestles, yards, and equipment are private property.
- Trespassers are subject to arrest and fines.

14

SCHOOL BUS OPERATIONS

SAFE TRANSPORTATION OF PRECIOUS CARGO

School bus drivers, as well as school administrators, should be aware of the dangers of highway-rail grade crossings in order to ensure safe transportation of this precious cargo.



RESPONSIBILITIES OF A SCHOOL BUS DRIVER

REMEMBER, highway-rail grade crossings are always a source of danger no matter how many times you use one crossing or how well you think you "know the tracks." Operation Lifesaver, Inc. recommends the following procedures when school bus drivers encounter highway-rail grade crossings.

Stop. A school bus, *with or without passengers*, should stop at least 15 feet and no more than 50 feet from the tracks.

Observe the Traffic. Be sure to begin your stop far enough in advance to avoid other motorists making panic stops or causing rear end collisions. Use your hazard lights if you think it necessary.

Open the Service Door. When the bus is stopped, the driver should open the service door. Be sure to close the door before going on. This is not required by law, but may be required by district policy.

Open the Driver's Window. For improved looking and listening, open the driver's window.

Signal for Silence. Tell the passengers to be silent until the crossing is completed and turn off distracting fans, heaters, and radios.

Listen and Look. Listen and look in both directions along the tracks for oncoming trains. If one train passes, make sure that a second train, possibly hidden by the first, is not approaching on an adjacent track. If your view is obstructed for 1,000 feet in either direction, do not attempt to cross until you are certain that no train is approaching. Bad weather can obstruct your view, so be especially careful during poor weather conditions.

Obey Highway-Rail Grade Crossing Signals. For crossings equipped with warning devices such as lights, bells, or gates, always obey the signal. Never attempt to drive under a gate as it is closing or around it after the gate has closed.

Obey Law Enforcement Officer. Obey the directions of a police officer or flagman present at the crossing.

Drive in Low Gear. Cross the tracks in a low gear. Do not change gears while crossing. Before attempting to cross, be sure the bus will completely clear the tracks.

Clear the Tracks. If the gate begins to close while you are underneath, keep moving ahead until you clear the crossing. If you must stop on the other side of the tracks for a traffic signal, make sure the back of the bus clears the crossing completely. Don't forget that a train can overhang the width of the tracks by as much as 3 to 4 feet.

If a bus stalls on the tracks, get the students out and away from the bus as quickly as possible. In a crash, the bus will move forward with the train, so move your students away from the tracks as far as possible in a direction toward the train to avoid being hit by debris from the crash. If no train is approaching, try to restart the bus. If a radio is available, notify your dispatcher to call 911 and 1-800-772-7677. Identify the crossing identification number posted on the sign posts.

The School Administrator's Role in Safety Improvement

- Establish communication lines between local and state agencies and the railroads, and your school district.
- Route school bus operations to provide maximum safety at grade crossings.
- Provide grade crossing-specific training opportunities for school bus drivers.
- Establish a highway-rail grade crossing safety policy for the operation of school buses.

Key Considerations

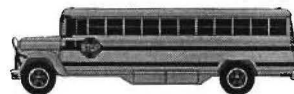
- How many highway-rail grade crossings are on your school bus routes?
- How many school bus trips are made each day over these crossings?
- How many of these highway-rail grade crossings have flashing light signals, including gate arms?
- How many crossings on school bus routes only have signs rather than gates, lights, or bells to warn drivers of approaching trains? Can these be avoided when planning routes?
- Have you received a report of a "Near-Collision" between a school bus and a train?
- Do you know who to contact if you have grade crossing safety concerns such as missing or damaged warning devices?
- Do school bus drivers receive special instructions on the meaning of highway-rail grade crossing signals and how crossing signals work?
- Do you have special instructions for substitute or relief drivers regarding hazards at specific highway-rail grade crossings?
- Do you know who to contact to obtain assistance in supplementing driver training courses with highway-rail grade crossing safety training?

Enhancing the Safety of Your School Bus Program

- Alter school bus routes to provide maximum safety at highway-rail grade crossings.
- Address each of the key considerations discussed above.
- Outline procedures for evacuating a school bus stalled on a crossing.
- Prepare a loose leaf binder for storing the following information for all highway-rail grade crossings along your school bus routes.
 - ▶ Schematic diagram of the crossing.
 - ▶ Photographs of each approach to the crossing.
 - ▶ Information from the crossing identification tag mounted on the sign or signal post.
 - ▶ Reports of "Near-Collision" incidents.
 - ▶ Description of what the school bus driver must do in case a detour from the regular route is required.

To learn more about school bus transportation, the Internet address is schoolbus@txdps.state.tx.us. The mailing address is:

School Bus Transportation
Texas Department of Public Safety
P. O. Box 4087
Austin, TX 78773-0001
Phone: 1-512-424-5732
Fax: 1-512-424-7184

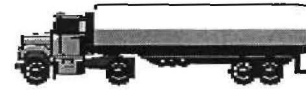


15

HAZARDOUS MATERIALS

SAFE TRANSPORTATION OF HAZARDOUS MATERIALS

If you are a professional driver whose cargo is hazardous materials, you should be aware of the dangers that lurk at every highway-rail grade crossing. Reading this may save your life and the lives of others.



General Precautions

- Expect a train at any time on any track! Be certain you stop at every crossing, except those that are posted EXEMPT.
- Do not rely on a train whistle to warn you! In-cab noise may mask the train's warning.
- Do not attempt to cross the tracks unless you are certain the vehicle you are driving will clear on the other side. Never shift gears while crossing railroad tracks.
- Be cautious of obstructions that may block your view of an approaching train, e.g. vegetation, buildings, standing railcars, etc.
- Be alert to weather and how it affects conditions at the crossings, such as impaired visibility and difficulty in stopping on slippery roads.
- When possible, plan your trip to use grade separations where available or use crossings equipped with flashing light warning devices or flashing lights and gates.
- Look up and down the tracks. It's difficult to judge the distance and approach speed of a train as it moves toward a crossing. If in doubt, be safe; stop and wait.
- Slow down and be prepared to stop at the first railroad warning sign.

Special Precautions

- Grade crossing surfaces may be rough. Thus, it is important to cross all tracks slowly to avoid damaging equipment, as well as for safety.
- Extreme care is required at crossings with a steep approach or departure angle. To avoid high-centering, use caution, especially if you are towing a lowslung trailer, and use an alternative route if adequate clearance is not available. Don't risk getting stuck on a crossing.
- If the unit does get hung up on the crossing, report the situation immediately. Contact police authorities via the "911" emergency number, regular telephone operator, or other quickest means of notification, such as flagging down a passing motorist. It is also essential that police be given detailed and accurate information concerning the crossing location, so they can immediately contact the railroad.

SAFE TRANSPORTATION OF HAZARDOUS MATERIALS

- After contacting officials, post a watchman; if possible, try to move your unit. Should a train approach your stalled vehicle, attempt to signal train crew of the approaching train from a location on the same side of the crossing that the train is approaching from while remaining clear of your vehicle and the tracks. The train will need to be flagged at least a mile and a half from the hazard site.
- When making a stop to comply with regulation:
 - ▶ Make the stop gradually to give warning to following traffic.
 - ▶ Use the four way flashers while coming to a stop. When stopped, leave flashers on until traffic immediately behind your unit has come to a stop. Be certain to turn off flashers when you resume travel.
 - ▶ Keep the brakes applied when waiting at the crossing. This will prevent movement of the truck and minimize the chance of being pushed into the path or side of a train if struck from behind.
 - ▶ After stopping at crossings with two or more sets of tracks, watch out for a second train! A second train may be obscured by the train which has just passed. Remember, never assume anything at a highway-rail grade crossing.
 - ▶ Always exercise caution at every highway-rail crossing, especially if the crossing is not equipped with automatic warning devices.

Stopping Requirements

The Federal Motor Carrier Safety Regulations require trucks to stop within 50 feet, but not closer than 15 feet of the nearest rail as follows:

- When transporting any quantity of chlorine.
- When your unit is placarded for the transportation of hazardous materials.
- Cargo tank vehicles:
 - ▶ loaded or empty, used for transporting hazardous materials.
 - ▶ transporting a hazardous material under DOT exemption.
 - ▶ transporting a hazardous material loaded at a temperature above its flash point.



Exceptions to Stopping Requirements

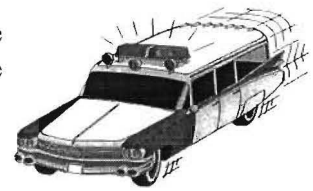
The Federal requirements just listed apply in nearly all states. However, regulations and requirements do vary from state to state, and exceptions can easily be found. Be conversant with the requirements in the state(s) in which you operate. Remember this rule whenever you travel toward a highway-rail grade crossing. ***IN CASE OF DOUBT OR UNCERTAINTY... TAKE THE SAFE COURSE.***

16

EMERGENCY VEHICLES

SAFE ROUTING OF EMERGENCY VEHICLES

As an emergency vehicle driver you are often in situations where you have to make decisions based on risk. This information will help you understand the risks at the railroad grade crossings and may help save your life and the lives of your crew.



Important Safety Tips

1. ***Always expect a train on any track at any time in either direction.*** Most trains do not run on a fixed schedule. Use caution at highway-rail grade crossings at all times.
2. ***Don't get trapped on a crossing.*** Don't drive onto a crossing until you are sure you can clear the tracks. Once you have started across the tracks, keep going even if you see a train coming.
3. ***Get out of your vehicle if it stalls.*** If your vehicle stalls at the crossing, get everybody out and off the tracks immediately. If a train is coming, stay clear of the tracks. If there is no train in sight, post lookouts; try to start or move the vehicle, and request your dispatcher to alert the railroad.
4. ***Watch for a second train.*** After the last car of a train passes through the crossing, wait to start across until you are sure that there is not another train coming on another track, especially from the opposite direction.
5. ***Never drive around crossing gates.*** If the crossing gates are down, stop and do not attempt to cross the tracks until the gates have risen and the lights stop flashing.
6. ***Never try to judge a train's speed or distance.*** Because of its size, a train always appears to be moving more slowly than it is. If you are in doubt, stop and wait for the train to pass.
7. ***Be especially alert at night for highway-rail grade crossing warning signs.*** Always travel at a rate of speed that allows your vehicle to be stopped within the distance illuminated by your headlights. Traveling faster, or "overdriving your headlights," could jeopardize your ability to stop in time once a highway-rail grade crossing comes into view.
8. ***If a train is blocking a crossing and you must get through, contact your emergency dispatcher, the local law enforcement office, or the local railroad office.*** If a train is blocking the highway-rail grade crossing and your emergency vehicle must get across because of potential loss of life or limb, contact your emergency dispatcher, the local law enforcement office by dialing 911, or your local railroad office.
9. ***To obtain additional material on highway-rail grade crossing safety, call Operation Lifesaver.*** Additional material on highway-rail grade crossing safety can be obtained through the Texas Operation Lifesaver organization. Please contact:

Texas Operation Lifesaver
c/o State Coordinator
Texas Safety Association
P.O. Box 149179
Austin, TX 78714-9179
Telephone: 1-512-251-1151 (ext. 122)

EMERGENCY VEHICLES

16

SAFE ROUTING OF EMERGENCY VEHICLES

Answers to Common Questions about Highway-Rail Grade Crossings

1. *What type of vehicle is unable to yield to an emergency vehicle and why?*

Never expect a train to yield to an emergency vehicle. It takes an average freight train carrying 12,000,000 pounds and traveling at 55 miles an hour approximately a mile and one-half to stop. An eight-car passenger train traveling at 80 miles an hour requires approximately one mile to stop.



2. *Which is louder, a train's horn and bell or an emergency vehicle's siren and horn?*

A 1986 study conducted by the National Transportation Safety Board concluded that a train's warning horn is effective for a large commercial and emergency vehicle only if the driver stops the vehicle, idles the engine, turns off all radios, fans, wipers and other noise sources in the cab, lowers the window and listens for a train horn before entering a highway-rail grade crossing. Even if emergency sirens and air horns are deactivated as an emergency vehicle approaches a crossing, ambient noise levels in the cab may mask the sound of an approaching train's horn.

And, there are certain crossings at which trains are not required to blow the horn, such as private crossings and those exempt by local ordinances.

For maximum safety, it is recommended that all emergency personnel be assigned watch areas when the vehicle is approaching highway-rail grade crossings and keep the driver informed as to the status of these crossings.

3. *What should an emergency vehicle operator do when approaching highway-rail grade crossings?*

- Familiarize yourself with the crossings in your area and avoid them whenever possible.
- When approaching a crossing, slow down or stop, if necessary; have all crew members look left and right to determine whether a train is approaching.
- Assign one or two of the crew members the responsibility of challenging the driver face-to-face in cases when he or she seems to be considering ignoring an oncoming train.
- If a crossing has obstructions that block vision or a severe curvature that interferes with the ability to see, stop the emergency vehicle and send a crew member on foot to insure the safety of the crew.
- When approaching a crossing, turn off the sirens, air horns and any other sound-producing devices, roll down the vehicle's window, slow down and listen carefully, and observe to determine if a train is coming.

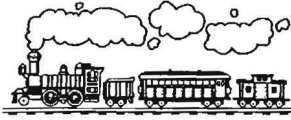
4. *What does sirencide mean?*

Sirencide is the term used to describe an emotional reaction sometimes experienced by emergency vehicle operators. Sirencide produces feelings of power and urgency, which block out reason and prudence. Because sirencide can lead to the careless operation of an emergency vehicle and place the lives of passengers in jeopardy, emergency vehicle crew members need to work together as a team when approaching highway-rail grade crossings.

17

THE YOUNGER YEARS

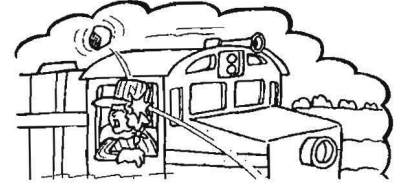
SAFETY EDUCATION FOR KINDERGARTEN AND ELEMENTARY



*Trains travel down the railway line;
keep well clear of them and you'll be fine.*

*Don't play near or put things on the track;
If they go flying they'll hit you with a "JAWWACK!"*

*Throwing stuff at trains can hurt the train crew;
Playing in box cars can be dangerous too!*



*You'll be in great danger if you hear a Choo-choo
So never play on a bridge or in a tunnel mind you!*



*Railroad crossings are marked with signs;
Some have letters and numbers and lines.*

*This sign has a cross and a double RR;
Slow down Mom, a crossing can't be far.*

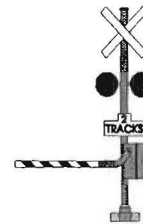


*This sign is placed at every crossing;
Help Dad see the train he may be missing.*



*Red flashing lights mean a train's on the way;
Stop at the crossing and yield right-of-way.*

*The gate is down, but we can't see the train;
Don't go Dad, we may get a fine!*



*Mommy don't stop on the railway track;
If you can't go forward— at least go back!*

*Follow these rules when you play or drive;
LOOK, LISTEN, AND STAY ALIVE!*

by Andre H. Frieslaar—1997

Kids, when riding in the car with mom and dad, always try to help them look and listen for trains. You can do this by looking for the railroad signs, lights, and gates. When you see them, look and listen for trains, and tell mom or dad if you see or hear anything!

Operation Lifesaver has a website too! The Internet address is <http://www.oli.org/oli/>. Visit this website with your teacher or parents to learn more about railroad crossing safety or to order coloring books and other educational materials. Operation Lifesaver wants you to learn to LOOK! LISTEN! and LIVE!

Contact Operation Lifesaver at:

Operation Lifesaver Inc.
1420 King Street, Suite 401
Alexandria, Virginia 22314
1-703-739-0308
1-800-537-6224
Fax: 1-703-519-8267
Email: oliusa1@aol.com

18

GENERATION "NEXT"

SAFETY EDUCATION FOR TEENS AND PRETEENS

You may not be allowed to drive yet, but that doesn't mean you don't have responsibilities when you're out riding with friends or family. Your responsibility is to help those around you **LOOK, LISTEN, and LIVE**—especially when you encounter highway-rail grade crossings. You can do this by being aware of the facts!

"A motorist is 30 times more likely to die in a vehicle/train crash than in any other type of highway collision."

Did you know that the most dangerous spot on any highway or road is a highway-rail grade crossing? Operation Lifesaver is a program designed to help save your life at these dangerous crossings by giving you the facts. Be wise; **LOOK, LISTEN, and LIVE!**

"It usually only takes 30 seconds to 3 minutes for a train to pass through a highway-rail grade crossing. Be patient.....NEVER TRY TO BEAT THE TRAIN."

Highway-rail crossings are marked with one or more of the following warning devices for your safety. Learn what they are and watch for them. With these warning devices and caution on your part, highway-rail crossing crashes should never happen. Point these signs out to whoever you are driving with....**IT MAY SAVE YOUR LIVES!**

"Be street smart and remember these signs of life!"



1.



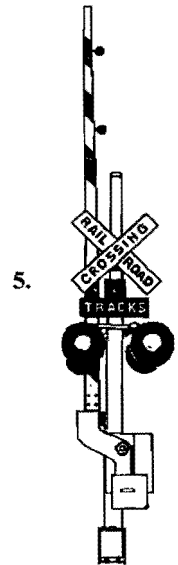
2.



3.



4.



5.

1. **Advance warning signs** mean a highway-rail grade crossing is ahead. They are located at a sufficient distance to allow you to stop (if necessary) before reaching the crossing.
2. **Pavement markings**, consisting of a R X R and a stop line, may be painted on the pavement in front of a crossing. Always stay behind the painted stop line while waiting for a passing train.
3. **Railroad crossbuck signs** are required at all public crossings. These signs should be treated the same as a yield sign. The driver should slow down and be prepared to stop upon sighting a train. If there is more than one track, a sign below the crossbuck indicates the number of tracks at this crossing.
4. **Flashing light signals** are used with crossbuck signs at many highway-rail grade crossings. Always stop when the lights begin to flash. This means a train is coming. If there is more than one track, make sure all tracks are clear before crossing.
5. **Gates** are used with flashing light signals at certain crossings. Stop when the lights begin to flash and before the gate begins to lower across your road lane. Do not attempt to cross until the gates are raised and the lights have stopped flashing.

"A car traveling 55 mph needs 200 feet to stop, but the average train traveling at 55 mph needs more than a MILE to stop. That's 5,280 feet or a distance of more than 18 football fields."

Trains cannot stop in time to avoid crashes—the drivers have to. Here are some safety tips you can give people with whom you may drive.

Expect a Train on Any Track at Any Time. Most trains do not travel on a regular schedule. Be cautious at a grade crossing at any time of the day or night.

Don't Get Trapped on a Grade Crossing. Never drive onto a grade crossing until you are sure you can clear the tracks. Once you have started across the tracks, keep going, especially if you see a train approaching.

Never Drive Around the Gates. If the gates are down, stop and stay in place. Do not cross the tracks until the gates are raised and the lights have stopped flashing.

Watch Out for the Second Train. When you are at a multiple track crossing and the last car of the train passes the crossing, do not proceed until you are sure that no other train is coming on another track, especially from the opposite direction.

Get Out of Your Vehicle if it Stalls. If your vehicle stalls on a crossing, get everyone out and off the tracks immediately. If a train is coming, stay clear of the tracks. If no train is in sight, post lookouts, and try to start the vehicle or push it off the tracks.

"Playing or walking along railroad tracks or rights-of-way or on any rail car or train is trespassing. These activities are not only illegal, they are very dangerous, leading to more than 500 deaths and thousands of injuries every year."

Don't let friends talk you into fishing off railroad bridges or even walking on them. If a train comes, you might either be forced to jump off the bridge or get hit! Similarly, don't go into train tunnels. Again, you will not be able to outrun the train. **RATHER BE SAFE THAN DEAD!**



Malfunctioning Grade Crossing Signal Devices should be reported to the Texas Department of Public Safety (include location and posted D.O.T. ID number):
1-800-772-7677

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FREE AT LAST

SAFETY EDUCATION FOR YOUNG DRIVERS

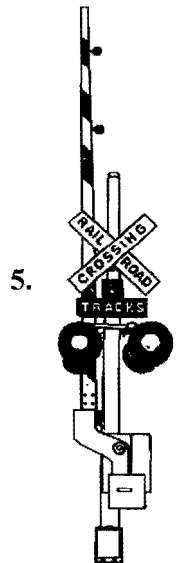
You've passed your driver's test, but don't stop learning. Highway-rail grade crossings are the most dangerous intersections you'll encounter in your driving career. This information will help make you a better, safer driver and may even save your life! *"A motorist is 30 times more likely to die in a vehicle/train crash than in any other type of highway accident."*

What is Operation Lifesaver? Operation Lifesaver is a program designed to help save your life at the most dangerous spot on any highway or road—the highway-rail grade crossing. Nationally, the chance for death or serious injury in a train-motor vehicle crash is 40 times greater than for other types of highway accidents. The sad part is, these crashes could be avoided if more people understood the dangers at highway-rail grade crossings.

Why so many crossing crashes? Did you know that at the 300,000 crossings nationwide, 5,800 accidents occur annually? Approximately 2,300 people involved in these accidents are injured seriously enough to require medical attention. Almost 500 of these injuries result in fatalities because drivers are not attentive to the hazards at highway-rail grade crossings. They cross the tracks day after day without seeing a single train. The advance warning signs and the "X" on the crossbuck post become just a part of the scenery—familiar, unalarming.

And then one day there's a train! In more than 50 percent of the crashes, the drivers actually disregarded the flashing red lights or gates that warned of an approaching train. They simply failed to follow the basic, common sense rules: **LOOK! LISTEN! LIVE!**

TO BE A BETTER DRIVER TAKE NOTE OF THESE SIGNS OF LIFE...



1. **Advance warning signs** mean a highway-rail grade crossing is ahead. They are located at a sufficient distance to allow you to stop (if necessary) before reaching the crossing.
2. **Pavement markings**, consisting of a R X R and a stop line, may be painted on the pavement in front of a crossing. Always stay behind the painted stop line while waiting for a passing train.
3. **Railroad crossbuck signs** are required at all public crossings. These signs should be treated the same as a yield sign. The driver should slow down and be prepared to stop upon sighting a train. If there is more than one track, a sign below the crossbuck indicates the number of tracks at this crossing.
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5. **Gates** are used with flashing light signals at certain crossings. Stop when the lights begin to flash and before the gate begins to lower across your road lane. Do not attempt to cross until the gates are raised and the lights have stopped flashing.

Know the law



The Texas Motor Vehicle Law (Article XI, Section 86 of the Uniform Act) requires a motorist to STOP at least 15 feet away from rail tracks when: (a) a flashing signal device gives warning of a train's immediate approach; (b) a crossing gate is lowered or a flagman signals the approach of a train; (c) a train is within 1,500 feet of the highway-rail grade crossing; or (d) an approaching train is plainly visible and is in "hazardous proximity" to the highway-rail grade crossing. The minimum fine for non-compliance is \$50-200.

Furthermore, a driver is obligated to:

- Treat the crossbuck as a yield sign, and the motorist must stop whenever automatic signals are activated.
- Not exceed the speed limit.
- Be able to stop within an assured clear distance ahead.
- Drive with reasonable care in all circumstances.

Safe Driving Tips at Highway-Rail Grade Crossings

- Come to a complete STOP for flashing lights and bells, and proceed only if an oncoming train is not in sight.
- Never drive around lowered gates. It is illegal to do so. Lowered gates mean a train is just a few seconds away!
- Never try to beat the train. If it's a tie, you lose!
- Expect a train anytime. Anytime can be train time!
- Watch out for a second track; two tracks may mean two trains. Make sure all tracks are clear before proceeding.
- Never stop on the tracks, and never attempt to cross tracks if traffic or other hazards would prevent you from completely clearing the crossing.
- If your car stalls on the tracks and you can't restart it, call 911 immediately. If a train approaches, abandon your car, running away from the tracks in the direction of the approaching train to avoid flying debris.
- You can easily misjudge the speed and distance of an oncoming train. Due to the large size of a train, it may seem to be moving more slowly than it actually is. Don't risk it!
- Trains can't stop quickly or swerve out of your way, so you must stay off their path.
- When you see the Advance Warning Sign roll down your window and turn down your radio so you can listen for the train whistle.
- Buses and trucks carrying hazardous cargo are required always to stop at every highway-rail grade crossing. Be ready to stop if you are behind one of these vehicles.
- Many vehicle/train crashes happen at night and in bad weather, so be extra alert at these times.
- Alcohol, distractions and fatigue are factors in a large number of vehicle/train crashes. Don't gamble with your life. Practice safe driving habits at all times.



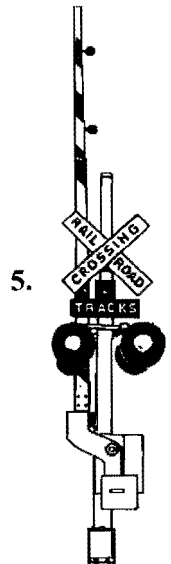
You're an experienced driver, but as they say "You're never too old to learn." Highway-rail grade crossings are the most dangerous intersections you'll encounter on the road. This information will help make you a better and safer driver, and may even save your life! *"A motorist is 30 times more likely to die in a vehicle/train crash than in any other type of highway accident."*

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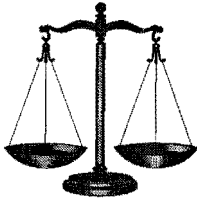
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- Pavement markings**, consisting of a R X R and a stop line, may be painted on the pavement in front of a crossing. Always stay behind the painted stop line while waiting for a passing train.
- Railroad crossbuck signs** are required at all public crossings. These signs should be treated the same as a yield sign. The driver should slow down and be prepared to stop upon sighting a train. If there is more than one track, a sign below the crossbuck indicates the number of tracks at this crossing.
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- Gates** are used with flashing light signals at certain crossings. Stop when the lights begin to flash and before the gate begins to lower across your road lane. Do not attempt to cross until the gates are raised and the lights have stopped flashing.

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- Be able to stop within an assured clear distance ahead.
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- Never try to beat the train. If it's a tie, you lose!
- Expect a train anytime. Anytime can be train time!
- Watch out for a second track; two tracks may mean two trains. Make sure all tracks are clear before proceeding.
- Never stop on the tracks, and never attempt to cross tracks if traffic or other hazards would prevent you from completely clearing the crossing.
- If your car stalls on the tracks and you can't restart it, call 911 immediately. If a train approaches, abandon your car, running away from the tracks in the direction of the approaching train to avoid flying debris.
- You can easily misjudge the speed and distance of an oncoming train. Due to the large size of a train, it may seem to be moving more slowly than it actually is. Don't risk it!
- Trains can't stop quickly or swerve out of your way, so you must stay out of their path.
- When you see the Advance Warning Sign, roll down your window and turn your radio off so you can listen for the train whistle.
- Buses and trucks carrying hazardous cargo are required always to stop at every highway-rail grade crossing. Be ready to stop if you are behind one of these vehicles.
- Many vehicle/train crashes happen at night and in bad weather, so be extra alert at these times.
- Alcohol, distractions, and fatigue are factors in a large number of vehicle/train crashes. Don't gamble with your life. Practice safe driving habits at all times.

What is Operation Lifesaver? Operation Lifesaver is an active, continuous public information and education program developed to help prevent and reduce crashes, injuries, and fatalities at the nation's 300,000 public and private highway-rail grade crossings. Operation Lifesaver emphasizes the use of education, enforcement, and engineering as a means to significantly reduce grade crossing tragedies.

Education: Educate the public, both young and old, in regard to safe behavior at highway-rail grade crossings. Targeting specific audiences, Operation Lifesaver educates the public on crossing dangers, the meaning and purpose of warning devices, and the responsibilities of drivers and pedestrians at crossings.

Enforcement: Training police officers in regard to enforcement of crossing safety laws is a strong component of Operation Lifesaver. Periodically, short videos are shown to police officers during daily roll-call, offering quick reminders of their duties for vehicle-train collision investigations and citing for driving around lowered or under lowering gates.

Engineering: National research is underway to improve the intersection of the railroad track and roadway. Installation costs range from \$80,000 to \$300,000 to install active warning devices, such as signals, gates, and bells. Researchers are investigating reducing cost improvements at crossings with low vehicular traffic.

When did Operation Lifesaver begin? Operation Lifesaver was born in Idaho in 1972 after Union Pacific Railroad and community leaders in the state decided to band together and fight the growing number of highway-rail grade crossing crashes, injuries, and fatalities with a public education program. The results were astounding! At the end of the first year, the highway-rail grade crossing fatality rate dropped a resounding 39 percent. A second program, initiated in Nebraska, demonstrated even more impressive results after a one-year period with a 46 percent reduction in highway-rail grade crossing fatalities.

Where is it active? Each state has its own Operation Lifesaver programs. States have reported fatality reductions at highway-rail grade crossings ranging from 28 percent to 100 percent one year after establishing the program. Participation at the local level by cities, rural communities, and schools is vital to the success of the statewide Operation Lifesaver program.

Who gets involved? The nation's railroads, related federal, state, and local governments, business, railroad suppliers, labor, civic and community leaders, and other concerned safety professionals are all part of state programs. Any person, including yourself and your organization, is welcome to join in a state program. Operation Lifesaver, Inc. and many states have developed special Operation Lifesaver materials for state and local use. Contact your state Operation Lifesaver Coordinator to obtain publications, curriculum materials, and films for various age groups. You may also be interested in receiving training as a certified Operation Lifesaver presenter for your community or organization. Likewise, your local PTA, church, civic, service, or fraternal organizations may want to assist Operation Lifesaver in reducing collisions between vehicles and trains in your area.

Contacts

Texas Operation Lifesaver
c/o State Coordinator
Texas Safety Association
P.O. Box 149179
Austin, Texas 78714-9179
1-512-251-1151 (ext. 122)

Operation Lifesaver, Inc.
1420 King Street, Suite 401
Alexandria, Virginia 22314
1-800-537-6224

Operation Lifesaver has a site on the worldwide web: The Internet address is <http://www.oli.org/oli/>. This web site provides information about the organization and educational materials that the organization provides.

RESOURCE LIST

CONTACTS FOR REPORTING GRADE CROSSING CONCERNS

Contacts for Highway-rail Grade Crossing Information

The following state and national organizations and agencies can assist you in obtaining additional information regarding grade crossing improvement programs.

For Information About Driver Training and Law Enforcement Programs

Railroad Commission of Texas Rail Division

P.O. Box 12967
Austin, Texas 78711-2967
Telephone: 512- 463-7116

Texas Operation Lifesaver c/o Texas Safety Association

P.O. Box 149179
Austin, Texas 78714-9179
Telephone: 512-251-1151 (ext. 122)

For Information About the Texas Highway-Rail Grade Crossing Improvement Program

Texas Department of Transportation

125 E. 11th Street
Austin, Texas 78701-2483
Telephone: 512-416-3200

*Traffic Safety Section
Information Services Section
Railroad Section*

Listing of Districts
Department of Public Safety regional map with phone numbers

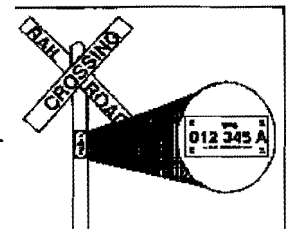
For Crossing Data and Collision History

Office of Safety Analysis Federal Railroad Administration

400 Seventh Street, S.W.
Washington, D.C. 20590
Telephone: 202-366-0521

To Report a Malfunctioning Signal

1. Obtain the crossing identification number from the tag mounted on the sign or signal post at the grade crossing.
2. Then call 1-800-772-7677 to notify the Texas Department of Public Safety.





LOOK, LISTEN, AND LIVE

To order this report, contact
Information Technology Exchange Center (ITEC)
Texas Transportation Institute
409-845-4853

Research and Technology Transfer Office (RTT)
Texas Department of Transportation
512-464-7684