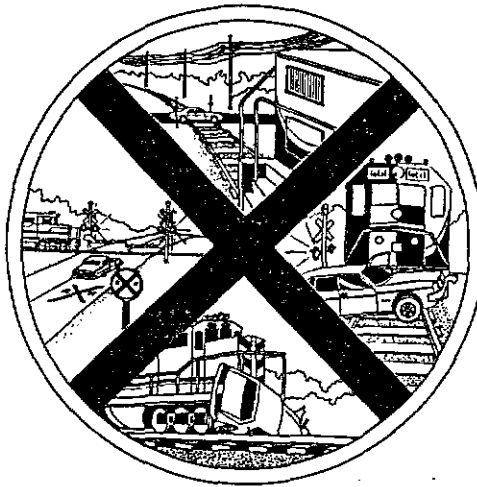


Hazardous Rail Crossings: A Life or Death Decision



KLA White Paper Project

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Introduction:

Across the nation the annual cost of highway rail grade crossing accidents results in three billion dollars in fatality costs and six hundred fifty million in nonfatal injury costs. Accidents such as the train/schoolbus collision in Fox River Grove, which resulted the death of seven teen agers, have drawn national attention. Rail grade accidents are not, however, just a national problem but a relevant state and county problem as well. Just as recently as February 17, 1996, four teen agers were injured in a car/train crash here in Warsaw. There have been tragic deaths in Warsaw in past years and in Syracuse only recently. In fact, Kosciusko County has been one of the top ranking counties in the state for accidents and fatalities at rail crossings.

Why are these accidents occurring? Who is at fault? Is it the railroads? Is it the government? Is it motorists themselves? Maybe it is a lack of proper signals? How can this problem be avoided and what can be done? The purpose of this paper is to provide information and present answers to these questions. The data presented was collected via interviews with state and county officials and information provided by the Indiana Department of Transportation and Operation Lifesaver. The points covered will include statistics that demonstrate the significance of the problem, the various crossings types and how each is signaled, the range of programs that have been enacted or proposed , and in conclusion, the recommendations that we propose to assist in eliminating this problem.

Section 1- Statistics:

National transportation is the means of growth in the United States and around the world. In the age of the automobile and the locomotive, transportation has flourished. With this growth, railroads and automobiles inevitably must share some of the same traveled areas. In 1975 there were as many as 219,161 highway rail grade crossings in the United States.(see graph pg. 11) With this many crossings there are good chances that an automobile and a train might meet at the same point at the same time. When this situation occurs and the motorist is unaware of the train, accidents occur. Between 1975 and 1979 there was an average of 11,516 accidents involving motor vehicles at railroad crossings, resulting in 864 deaths. (see graph pg. 12) These figures dropped significantly between 1979 and 1984 due to a number of factors. Some of these factors were programs that created better funding for marking rail crossings as well as a decrease in the total number of national highway rail grade crossings. (see graph pg. 13)

In 1994, Indiana was ranked sixth in the nation for the number of highway rail grade crossings at 6,788. Indiana was third in the nation in the accident category with 263 and fifth in the nation for deaths with 27. Bringing the topic even closer to home, Kosciusko County currently has 62 county maintained crossings and, according to Warsaw Police Department Operations Sergeant Larry Engle, ranked second highest rate in the state for accidents approximately four years ago.

Section 2- Crossing Types:

Indiana is ranked very high in injuries and deaths nationally. With this being the case, we will look now at the various types of crossing protection currently in use. Many of us are accustomed to driving our automobiles and encountering rail crossings. Rail crossings are marked in several ways and selection of the type of signaling used is determined by a priority index for each crossing. Each crossing is evaluated by daily train count, number of automobiles, trucks and school buses crossing the railway daily, as well as the past history of accidents at the respective crossings. This data is considered and then the crossing is marked with either passive or active signal devices based on this priority index.

Passive type signal devices include crossbucks (the X marked railroad crossing signs with no flashing lights) or stop signs. Also, there are the advance railroad crossing signs and markings on the pavement. Active devices are those that bring attention to motorists when an oncoming train is approaching. These signals include flashing lights, wig wags with bells, and gates that lower to block the intersection. (see illustration pg. 14)

Funding for these various signals is derived at national, state and local levels. In 1994, \$149.3 million was allocated for rail crossing signaling. Ken Traylor of the Kosciusko County Highway Department informed us that 80% of the cost for signals is covered by the state and the remaining 20% by the county. Traylor stated that the cost of signaling a single crossing with active flashers and gates is

approximately \$150,000. The cost of signaling with active flashers only is approximately \$90,000. The railroad company is responsible for installation of the devices and from the time the county applies for funding until the project is actually completed ranges from four to six years. According to Traylor the amount of federal funding for 1996 is in the neighborhood of \$700,000.

A key statistic to consider when discussing the various types of signaling is that 60.7 percent of all accidents occurring at railway crossings in Indiana and approximately 50 percent nationally, are at crossings that are actively signaled and working properly.

Section 3- Programs:

There are a host of programs that are in place, planned or being discussed for the future. These programs all are aimed at improving railroad crossing safety and require a great deal of coordination between federal, state and local government, the railroads and private sector organizations. We will begin with a review of some of the current programs in place followed by the results that these programs have yielded. The discussion of programs will conclude with a review of some of the planned projects and future considerations.

The first major program to improve rail crossing safety was the Highway Safety Act of 1973. This was a program enacted by congress that was the foundation for the Rail-Highway Crossing Program which is also known as the Section 130 Program. The goal of the Section 130 Program

is to provide money for the individual states to reduce accidents, injuries and fatalities. The main pool of funds for this is the Surface Transportation Programs. Ten percent of these funds are allocated for the Section 130 Program. This ten percent amounted to one hundred forty nine million in 1994 which funded over 28,000 projects that were completed in that year. These projects consist of overpasses, underpasses, signal devices, advance warning signs and any other methods determined necessary by the states. This program is administered and overseen by the Department of Transportation. The Section 130 Program resulted in 61% fewer accidents and 34% fewer fatalities nationwide since 1974. The Section 130 Program may have outlived its useful purpose however, because the most significant reductions took place in the first ten years of the program. There have been no major improvements since 1985. It should be noted that with all the improvements that have been made, 57% of all public crossing in the United States are passive type crossings marked only by crossbucks. (see graph pg. 15)

The section 130 program is a federal program but there are many other agencies and programs that interrelate over rail-highway safety. There are three federal agencies under the Department of Transportation. The Federal Highway Administration (FHWA) is responsible for administration of the section 130 program. The Federal Railroad Administration (FRA) is responsible for railroad safety oversight. The FRA is not involved in funding but acts in a data collection role. The FRA maintains an inventory list of all railroad crossings nationwide. This inventory list is used by the states in conjunction with accident data, also collected by the FRA, to assess where safety improvements

are necessary. The National Highway Traffic Safety Administration (NHTSA) is an organization that funds educational programs geared toward influencing driving behavior. The funding that NHTSA provides is accomplished through the State and Community Highway Safety Grant Program which is also known as the section 402 program. This program got its start in 1966 providing funds for programs intended to reduce highway crashes, injuries and fatalities. The section 402 program funds such programs as motorcycle safety, pedestrian & bicycle safety, and roadway safety. Another agency involved in rail crossing safety is the Federal Transit Administration. This group functions as a review board of light rail safety statistics and also conducts investigations of warning devices at railroad crossings.

The state and local government involvement in rail crossing safety comes in the way of enforcement of highway safety laws and a system administration that ranks rail crossings by their potential risk factor. This program assists states in determining how funds are best spent on improvements.

The most significant program in the private sector is known as Operation Lifesaver. This program is a not for profit, nationwide information and education program. Unlike many of the government programs which chart their course on after the fact accident data, Operation Lifesaver is a proactive program aimed at raising public awareness of the dangers of rail crossings. Operation Lifesaver involvement is at many levels including the nations railroads, businesses, railroad suppliers, labor, civic and community leaders, the federal, state and local governments and other concerned safety professionals. All are involved in the program which is

operated within each state. The success of Operation Lifesaver is based on involvement at the grass roots level. The program started in 1972 when Union Pacific Railroad and concerned leaders in Idaho strategized how to reduce the growing number of rail crossing accidents and fatalities. Because driver ignorance and impatience are the most common factors that lead to vehicle/train collisions, Operation Lifesaver seeks to inform motorists with a simple motto of "Look, Listen, and Live." Some of Operation Lifesaver's safety tips are; Expect a train on any track at any time, Don't get trapped on a grade crossing, Never drive around the gates, Watch out for the second train, Get out of your vehicle if it stops on the tracks, Never try to beat a train to the crossing, Watch out for vehicles that must stop at rail crossings, Don't misjudge the train's speed and distance, and be especially watchful at night for highway-rail grade crossing warning signs. These tips seem like basic common sense, but the emphasis of these simple rules does raise the awareness levels and results in fewer accidents. When Operation Lifesaver concluded its first year in Idaho, the result was a 39% decrease in highway-rail grade crossing fatalities. The second state to initiate the program was Nebraska. At the end of their first year, the fatality rate had dropped 46%. Across the nation, Operation Lifesaver has reduced rail crossing fatalities between 28% to 100% within one year of program establishment.

There are continuing plans for the future of highway-rail grade crossing safety improvement. The Rail-Highway Crossing Action Plan, which was enacted in 1994 seeks to reduce crossing accidents and fatalities 50% by the year 2004. This plan was issued by the Department of Transportation and seems to have some of the same basic

principles as Operation Lifesaver with regard to it being a cooperative effort of government, the railroads, private industry, and not for profit interests. This plan consists of six initiatives and fifty five proposals. One of the cornerstones of this plan is re-engineering using a corridor approach so that many unnecessary crossings can be closed. There are 32 proposals in this area. Another key element is education of motorists. Sixteen proposals would work toward educating motorists of the dangers of rail crossing. This section also proposes increased funding for Operation Lifesaver. Finally thirteen proposals are directed at enhancement of law enforcement efforts.

The common elements to all of these efforts are time and money. Crossing closure is a controversial issue and the amount of cooperation that is necessary to achieve the final goal is considerable. As of May 1995, Department of Transportation agencies were making progress on 39 of the proposals but only 7 are completed in detail. The problem is that the DOT cannot independently implement many of the proposals.

At the Indiana state level, some worthwhile work is being conducted regarding funding allocation. Senator Richard Lugar and Senator Dan Coats have introduced legislation that would change the current method of section 130 funds allocation. The basis of the plan is to spend the total funds available in the states that have the greatest risk of rail crossing accidents. For example, 25% of the nations rail crossings are concentrated in just five states, but this is not currently considered in distribution of available funds. Indiana ranks sixth in the nation for the number of grade crossings and third in the nation for grade crossing

accidents. 75% of these accidents occur in the northern part of the state. Under the current system, states with the highest number of crossings and accidents in some cases receive less money than states that do not have as great of a need. This proposed legislation would apply risk factors into the formula for funding apportionment and would result in a 33% increase in rail crossing safety construction funds for Indiana. This plan does make better use of limited resources than the current percentage method. Still, Lugar and Coats both agree that money alone will not solve the problem and support greater education programs such as Operation Lifesaver.

Conclusions & Recommendations:

In review, obviously the problem of accidents and fatalities is very significant across the nation, in Indiana and in Kosciusko county specifically. Following a review of national, state and county statistics on accidents and fatalities, it was demonstrated that the problem is indeed significant and that the majority of these occurrences in Indiana (60.7%) and approximately 50% nationwide, have been at crossings that were adequately signaled and working properly. Some explanation was then provided with regard to the various methods and costs of crossing signaling and also the terminology associated with each. Finally, programs were explored starting with an explanation of the Highway Safety Act of 1973, the first major program that paved the way for the Rail-Highway Crossing Program known as the section 130 program. It was pointed out that the section 130 program was very effective in its initial years but has had much less dramatic results over the last ten

years. Brief descriptions were given concerning all of the many departments and agencies that perform work pertinent to rail-highway safety. Following explanation of the government programs, the private sector program of Operation Lifesaver was discussed in some detail. We then described some of the programs that are being considered, proposed or planned for the future. The closing point that we made with regard to future programs is that as good as they may be, they will take a great deal of time and money to succeed in making a positive impact. The bottom line is that we cannot protect negligent drivers from themselves. The driver awareness levels need to be enhanced so that motorists drive responsibly in the areas of rail crossings. For this reason we propose that Kosciusko County take the steps necessary to create a local chapter of Operation Lifesaver. We challenge other concerned individuals or future KLA members to help make this happen. If driver awareness was enhanced to a higher level, additional crossing signaling, re-engineering and even closing would not be the issue that it is today. It is, after all, much better to change the behavior of an individual than to attempt to control it by enforcement type means. Let's start raising our awareness of rail crossings and lowering our accident and fatality rates.

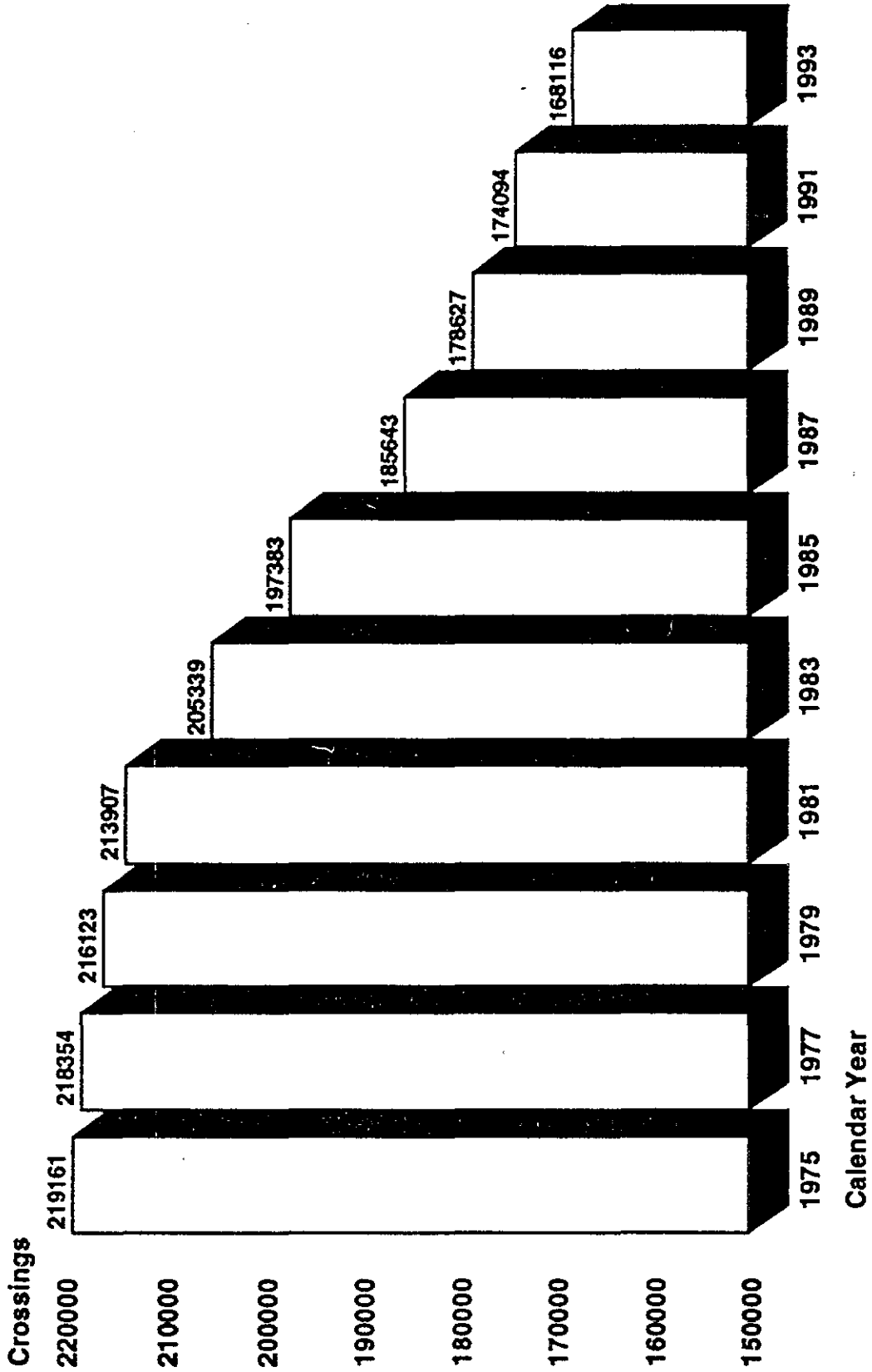
For more information on Operation Lifesaver dial:

1-800-537-6224

or write to:

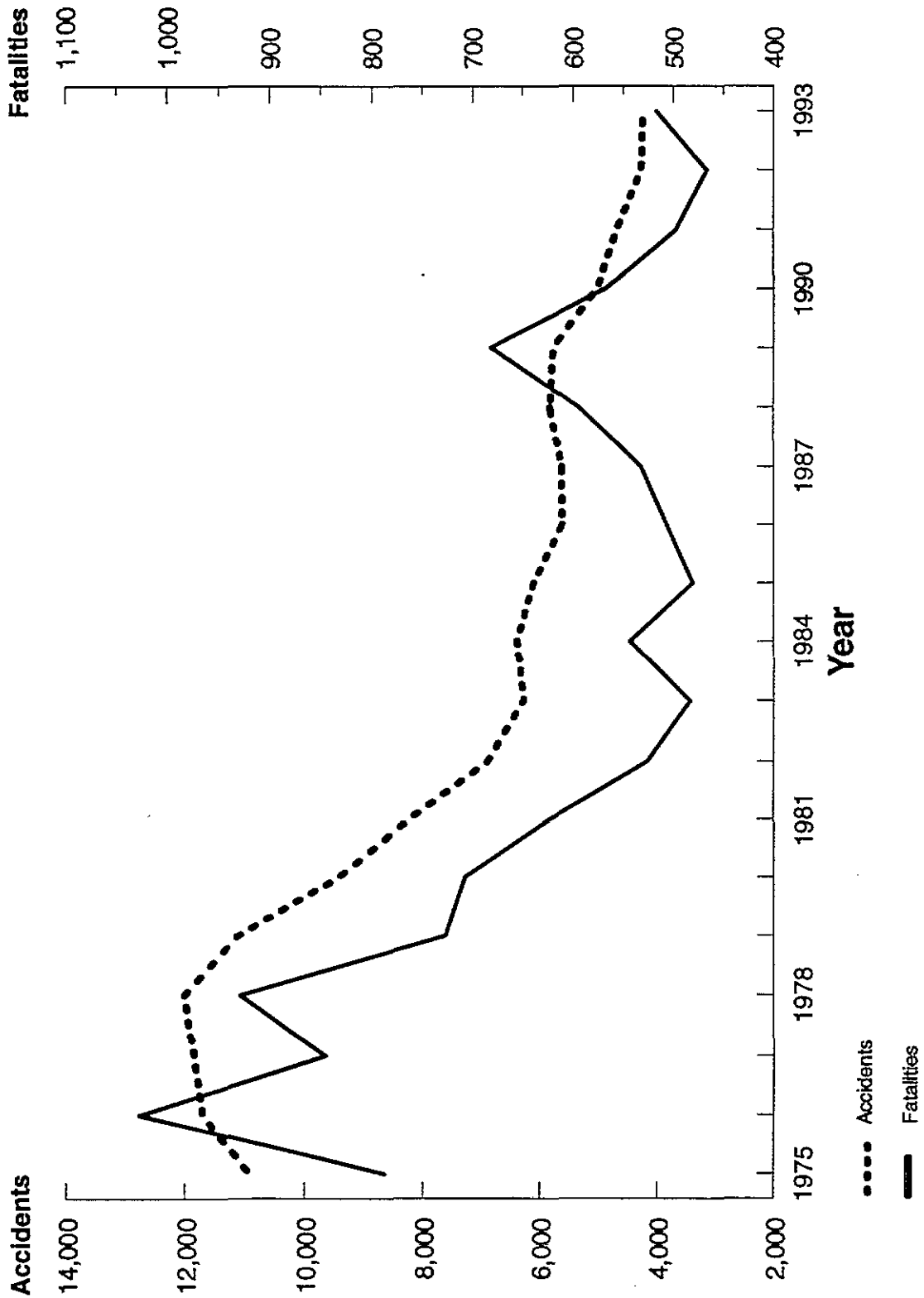
Operation Lifesaver, Inc.
National Support Center
1522 King Street
Alexandria, VA 22314

Public Railroad Crossings (1975-93)



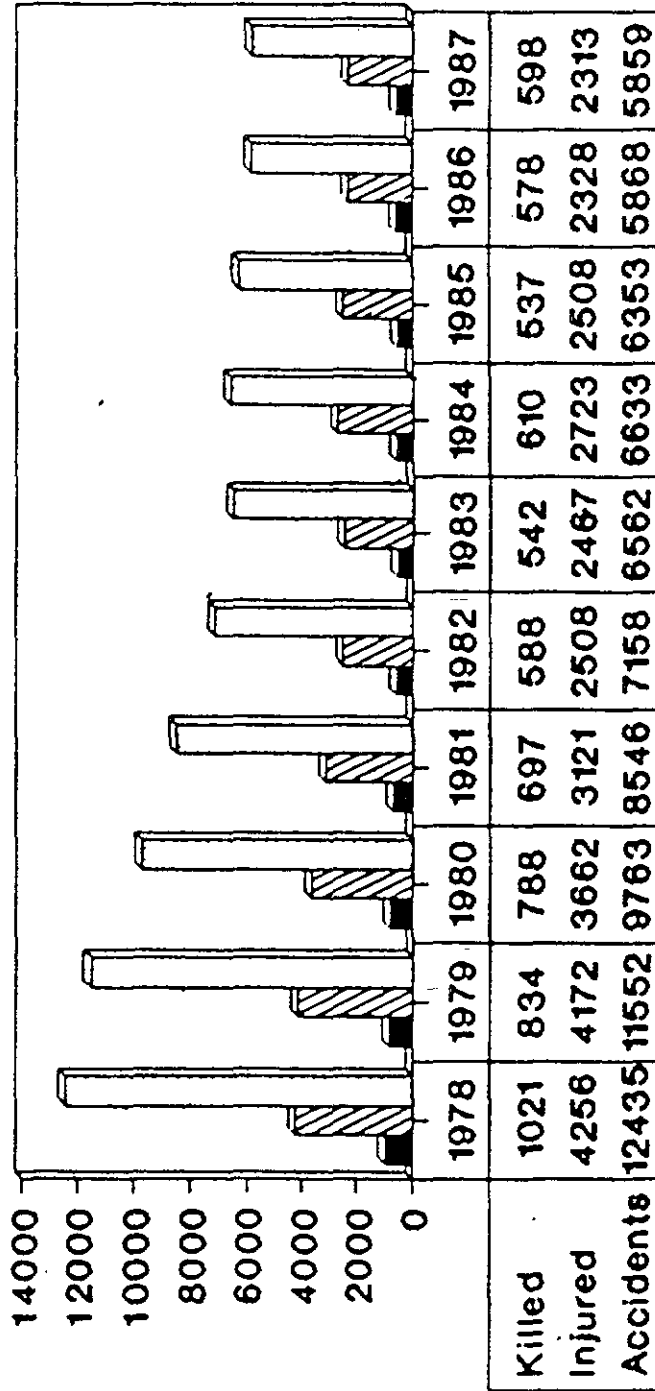
Source: GAO's analysis of FRA's data.

Accidents and Fatalities at Public Railroad Crossings, 1975-93



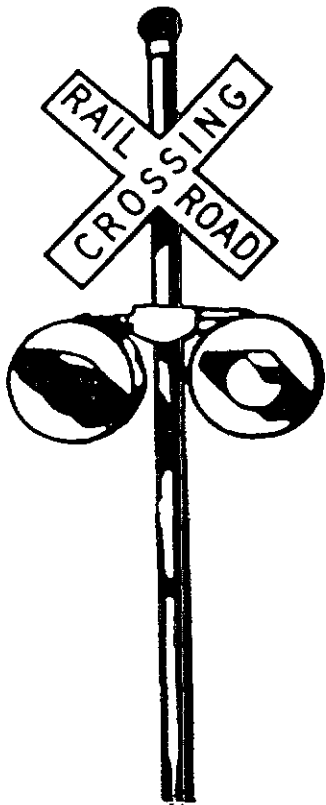
Source: GAO's analysis of FRA's data.

Rail-Highway Crossing Accidents Involving Motor Vehicles at Public Crossings, 1978-1987



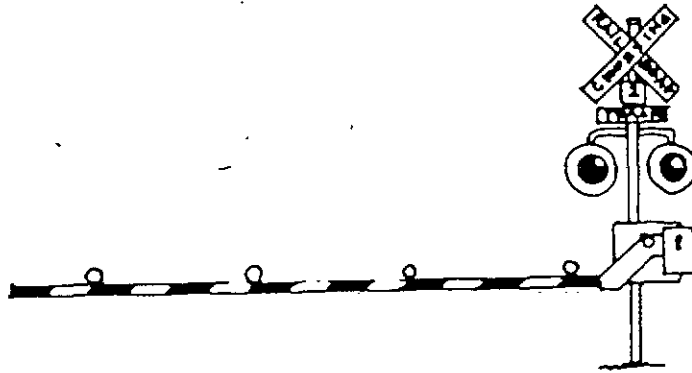
Source: Federal Railroad Administration

GRADE CROSSING WARNING DEVICES

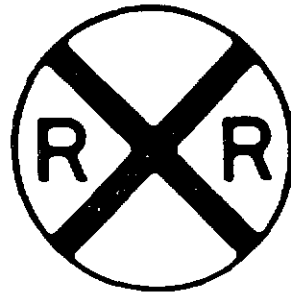


Flashing Lights

ACTIVE

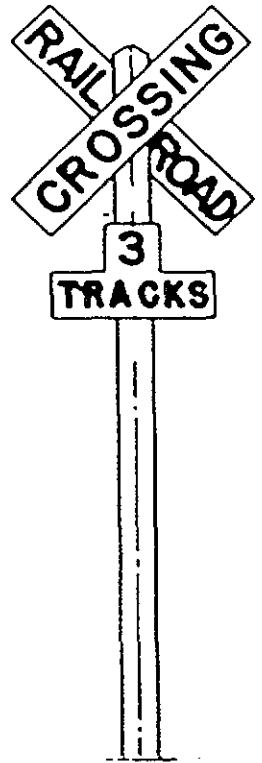


Flashing Lights and
Gates
ACTIVE



Advance
Warning
Sign

PASSIVE



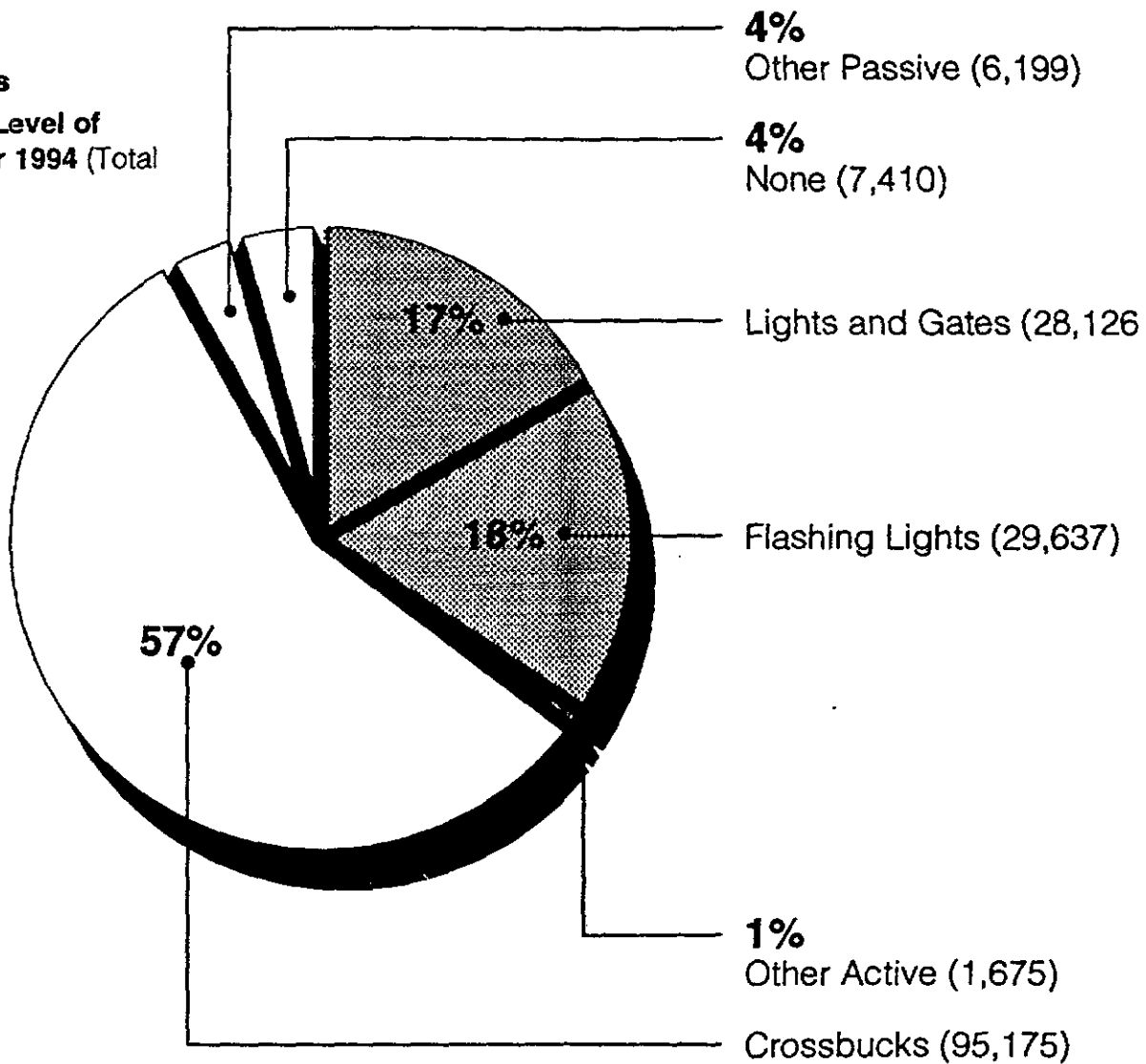
Crossbuck



PASSIVE

Source:



**Railroad Crossings
Categorized by Highest Level of
Warning Device, October 1994 (Total
Devices)**



 Active Warning Devices (35 percent)
 Passive Warning Signs (60 percent)

Note: Percentages may not add due to rounding.

Source: GAO's Analysis of Federal Railroad Administration's (FRA) data.

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