



National Transportation Safety Board

Washington, D.C. 20594

Safety Recommendation

Date: January 13, 1987

In reply refer to: R-86-61

Governors of the States
with Passenger/Commuter Operations
(addressees to follow)

The National Transportation Safety Board has had a longstanding objective to improve safety at railroad/highway grade crossings. In calendar year 1985, the Safety Board investigated 75 accidents involving passenger/commuter trains to determine safety issues that could be successfully addressed by Federal agencies, States, and other organizations responsible for the public's safety. As a result of a safety study ^{1/} based on these 75 accidents, the Safety Board remains concerned that the public (motor vehicle occupants and passengers on trains) and railroad employees are placed in life-threatening situations daily at grade crossing locations, where the Safety Board believes safety improvements can be accomplished.

From 1981 through 1985, the number of collisions between trains and motor vehicles at grade crossings averaged 7,350 annually. These collisions produce the largest single group of fatalities and injuries from railroad operations -- an average of 580 fatalities and 2,700 injuries a year. In 1985, the Safety Board undertook a special accident investigation program to look at passenger/commuter train and motor vehicle collisions at grade crossings. Certain collisions were selected for this special investigation primarily because the passenger loads on these trains elevated the risk exposure to the traveling public at these locations.

The Safety Board is particularly concerned about grade crossings with multiple tracks with no active warning devices to alert motor vehicle drivers of the approach of a high speed passenger train. The use of crossbucks is not adequate at these crossings. Few drivers can accurately assess the closing rate of a high speed passenger train or the distance it takes such a train to stop. Indeed, recent Federal Railroad Administration (FRA) data ^{2/} indicated that the average motor vehicle driver would perceive a train traveling directly toward the driver at 60 mph as moving at 12 mph. If the multiple track crossing is lengthy, some motor vehicle drivers will disregard passive warning signs and venture onto the crossing, thinking they can tell which track the train is on and stop before reaching that track.

^{1/} For more detailed information, read Safety Study Report—"Passenger/Commuter Trains and Motor Vehicle Collisions at Grade Crossings (1985)" (NTSB/SS-86/04).

^{2/} Mr. Phil Oleksyzk, Deputy Associate Administrator for Safety, FRA, "Train Speed Issues," presented at the Fourth National Operation Lifesaver Symposium, St. Louis, Missouri, June 18, 1986.

The crossbuck sign, the primary warning device found at the 122,959 locations throughout the nation, is inadequate to warn drivers of the dangers they face at multiple track intersections. The Safety Board addressed this related concern as early as 1976 in Safety Recommendations R-76-13 and -14 to the U.S. Department of Transportation (DOT) suggesting that (1) the DOT require flashing lights and gates as minimum protection at all grade crossings used by commuter trains and (2) that DOT contemplate a grade separation program. Issued 10 years ago, these recommendations had not been fully addressed by the DOT. The DOT's most recent response prepared by the FRA on August 5, 1986, requests that these recommendations be closed based on its efforts in conjunction with the Federal Highway Administration (FHWA) to provide to States an automated procedure for developing an initial listing of grade crossing projects in order of their potential benefit-to-cost ratio.

The Safety Board is cognizant that in certain sections of the country many grade crossings with low traffic activity do not meet "potential benefit-to-cost ratio" criteria. However, the risk of a passenger train and motor vehicle collision poses a constant and serious condition that can cost many lives. The Safety Board believes that grade separations or crossing closures are the most advantageous ways to eliminate grade crossing collisions. However, the high cost of separations often precludes action. Crossing closure, on the other hand, can be cost effective in some situations; however, the public quite often reacts adversely to this suggestion. Recognizing that neither of these two means are extensively used, the Safety Board, therefore, believes that a minimum standard must be set for all locations where high speed passenger/commuter train operations involve a larger number of individuals and intersect with motor vehicle operations. This was the Safety Board's intent in Safety Recommendations R-76-13 and -14.

However, since the States are now responsible for grade crossing improvements at these locations, the Safety Board believes that the States should determine the priorities for grade crossing safety improvements and should take actions to ensure that public grade crossings used by passenger or commuter trains are given higher priority for installation of active warning devices. Consequently, the Safety Board's Safety Recommendations R-76-13 and -14 to the DOT have been placed in a "Closed--Reconsidered" status. A new recommendation to those States that have passenger and commuter operations is being issued.

Another extremely dangerous condition at multiple track locations is the activation of active warning devices (flashing lights and/or gates) that halt motor vehicle traffic although no train appears. This situation most commonly occurs where railroad yard switching operations some distance from the grade crossing activate the warning devices. If railroad management and State highway departments allow such conditions to continue unabated, motor vehicle drivers become conditioned to believe that warning devices at grade crossings do not necessarily indicate that a train is approaching. This leads motorists to disobey the signals, thus establishing a pattern for additional collisions between trains and motor vehicles.

One promising approach to this problem has been implemented by the State of Texas, whose legislature directed the Texas Department of Public Safety (DPS) to establish a toll-free telephone service to receive calls reporting grade crossing signal malfunctions. The State Department of Highways and Public Transportation (SDHPT) was required to attach a sign with the toll-free telephone number and DOT-AAR grade crossing inventory number to each train-activated warning device on the State-maintained highway and road system. Members of the public can report problems

at these grade crossings to the DPS; the DPS then contacts the appropriate railroad to correct the reported condition. The railroads, according to those persons involved in implementing this system, have responded favorably to the system and have in a timely manner dispatched signal maintainers and others to correct the deficiencies reported.

So far, 3,400 such signs have been installed at 1,700 crossings in Texas. The system has generated 5,100 calls from the public in a 28-month period, or approximately 6 to 7 calls per day. The major malfunctions reported were "Signal Operating—No Train Visible" (84 percent), "Signal Not Operating Properly" (4.3 percent), "Vandalism" (2.7 percent), and "Other" (9 percent). Problems reported in the "Other" category included a truck stalled on the tracks, brush obstructing the view of the crossing, and a train blocking the intersection.

Legislation has been introduced in New York State that proposes a program comparable to the Texas program. However, New York's proposed legislation places more responsibility on the railroads operating in the State, requiring the carriers to:

- o Conduct regularly scheduled inspections of safety equipment (grade crossing).
- o Post at rail crossings the penalties for motorists who ignore warning lights or crossing gates.
- o File biannual reports to the State Department of Transportation outlining details of corrective action taken in response to reported incidents of malfunctioning equipment.
- o Keep records of equipment inspections and repairs on file for inspection by the Department.

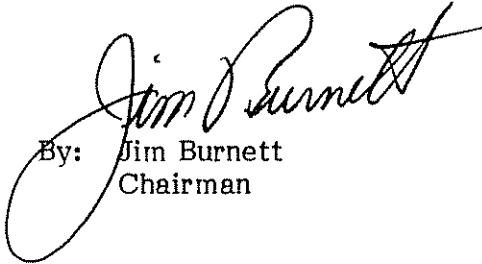
The Safety Board believes that the Texas and proposed New York programs warrant serious consideration by the FRA and the FHWA as a partial solution to the problem of active warning devices operating in the absence of a train near the crossing. The FRA and FHWA should evaluate the Texas system and the proposed New York system and, if warranted, develop an appropriate strategy to implement the concept in all States.

Therefore, as a result of its safety study of collisions at railroad/highway grade crossings, the National Transportation Safety Board recommends that the States of Alabama, Alaska, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Mississippi, Montana, Nebraska, Nevada, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, and Wisconsin:

In determining the priorities of your State's program for grade crossing safety improvements, ensure that public crossings used by passenger or commuter trains are given high priority for installation of active warning devices. (Class II, Priority Action) (R-86-61)

The National Transportation Safety Board is an independent Federal agency with the statutory responsibility "... to promote transportation safety by conducting independent accident investigations and by formulating safety improvement recommendations" (Public Law 93-633). The Safety Board is vitally interested in any actions taken as a result of its safety recommendations and would appreciate a response from you regarding action taken or contemplated with respect to the recommendation in this letter. Please refer to Safety Recommendation R-86-61 in your reply.

BURNETT, Chairman, GOLDMAN, Vice Chairman, and LAUBER and NALL, Members, concurred in this recommendation.



By: Jim Burnett
Chairman