



National Transportation Safety Board

Washington, D.C. 20594

Safety Recommendation

Date: December 13, 1990

In reply refer to: H-90-93

Mr. Robert K. Best
Director of Transportation
California Department of Transportation
1120 N. Street
Sacramento, CA 95814

About 9:38 a.m., Pacific standard time, on December 19, 1989, National Railroad Passenger Corporation (Amtrak) passenger train 708, consisting of one locomotive unit and five passenger cars, struck a TAB Warehouse & Distribution Company tractor semitrailer in a dense fog at a highway grade crossing near Stockton, California. The grade crossing has flashing lights and gates that were functioning at the time of the accident. The collision derailed the locomotive and all five passenger cars. A fire followed the train impact with the truck. The engineer, fireman, and truckdriver were killed in the collision and fire. Three of the 7 train crewmembers and 49 of the 150 passengers were injured. The total estimated damage was \$2,435,000.¹

As the truckdriver approached the Mariposa Road grade crossing he encountered two passive warning devices. These consisted of a standard railroad advance warning sign and pavement markings indicating that a railroad crossing was ahead. Neither warned if a train was approaching or was within the crossing. The railroad advance warning sign and pavement markings complied with both the Federal and California requirements for traffic control devices. The positioning of these passive warning devices was based on vehicle speeds of about 55 mph providing a 10-second reaction time to allow a driver extra time to make and execute a decision. The only active warning devices of a train approaching or within the crossing were the automatic flashing lights, the lowered crossing gate arm, and the sounding of the locomotive horn.

¹For more detailed information, read Railroad Accident Report-- "Collision of Amtrak Passenger Train No. 708 on Atchison, Topeka and Santa Fe Railway with TAB Warehouse & Distribution Company Tractor Semitrailer, Stockton, California, on December 19, 1989" (NTSB/RHR-90/01).

The Safety Board determined that the truck was about 1,879 feet from the crossing when train 708 activated the crossing warning system. The advance warning signs and pavement markings would only alert the truckdriver that a railroad/highway grade crossing was ahead. However, he either did not see them or he saw them and did not take appropriate action.

The most recent FRA report for grade crossing accident statistics shows that 6,025 grade crossing accidents were reported in 1988 of which 252 occurred in California.² The same report showed that 1,882 accidents occurred with weather conditions reported as a causal circumstance and that 82 of these accidents reported fog as the circumstance. The FRA report did not provide information for weather related accidents by State or number of casualties.

The installation of an active advance warning device located on, or in place of, the passive advance warning sign provides additional perception/reaction time for the motorist approaching a crossing to take appropriate action. The dense Tule fog that historically occurs in the San Joaquin Valley in winter and may last several days can impair driver visibility and increase the time needed to perceive and react to warning signals. If the Mariposa Road grade crossing advance warning sign had been provided with an active advance warning signal to alert the truckdriver that a train was in the crossing or approaching the crossing, about 766 feet would have been available for him to react and stop before his truck reached the crossing. The Safety Board believes that regulatory agencies should require the use of active warning devices in advance of railroad/highway grade crossings actuated by the railroad crossing warning system where sight distances are frequently reduced by dense fog.

Therefore, the National Transportation Safety Board recommends that the California Department of Transportation:

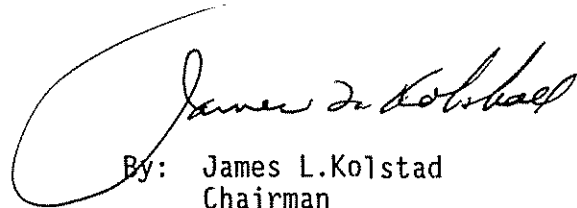
Require and install active warning devices in advance of all new and existing railroad/highway grade crossings actuated by the railroad crossing warning system where sight distances are frequently reduced by dense fog. Class II, Priority Action) (H-90-93).

Also, the Safety Board issued Safety Recommendations R-90-45 through -49 to the National Railroad Passenger Corporation, R-90-50 to the Atchison, Topeka and Santa Fe Railway Company, H-90-92 to the Federal Highway Administration, R-90-52 to the California Public Utilities Commission, H-90-94 and -95 to the TAB Warehouse & Distribution Company, H-90-96 and -97 to the California Trucking Association, and R-90-51 to the Federal Railroad Administration.

² Federal Railroad Administration "Rail-Highway Crossing Accident/Incident and Inventory Bulletin" number 11 published June 1989 for calendar year 1988.

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 action taken as a result of its safety recommendations. Therefore, it would appreciate a response from you regarding action taken or contemplated with respect to the recommendations in this letter. Please refer to Safety Recommendation H-90-93 in your reply.

KOLSTAD, Chairman, COUGHLIN, Vice Chairman, and LAUBER, BURNETT, and HART, Members, concurred in this recommendation.



By: James L. Kolstad
Chairman