



National Transportation Safety Board

Washington, D.C. 20594

Safety Recommendation

Date: December 13, 1990

In reply refer to: H-90-96 and -97

Mr. Thomas Schumacher
President
California Trucking Association
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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

Dense Tule fog reduces visual cues and masks physical features that alert motorists to upcoming conditions requiring driver action. To compensate, a driver in dense fog is forced into a state of readiness to detect what limited features are available. Because of the reduced visibility, alertness and vigilance must be maintained. The truckdriver had driven about 2 hours or longer (depending on his speed) in the dense fog from Fresno to Stockton, about 30 minutes from Stockton to Oakdale, and again about 30 minutes from Oakdale to Mariposa Road. Research into various aspects of human vigilance² indicates that performance deteriorates after 30 minutes; however, a break in maintaining attention can serve to abolish a performance decrement. Although the truckdriver had breaks between trip segments, research suggests his ability to maintain vigilance may have declined in the 30-minute drive between Oakdale and Mariposa Road. The

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).

²D. R. Davies and G. S. Tune, Human Vigilance Performance (New York: American Elsevier Publishing Company, 1969).

Safety Board believes that the truckdriver failed to properly assess his visual range in the dense fog and relate that distance to the stopping capability of his truck.

Despite the common existence of dense Tule fog in their service area, TAB Warehouse & Distribution Company does not provide any guidance or training for truckdrivers on how to cope with fog. The accident truckdriver had not received any guidance or training from the company on how to operate his vehicle in dense fog. Participation in Operation Lifesaver can provide an opportunity to train truckdrivers in how to cope with fog and to contend with railroad/highway grade crossings. The Safety Board believes that TAB needs to establish, and maintain with supervisory oversight, a structured recurrent training program designed to sustain the performance of its truckdrivers at high standards; include in this program instructions on safe operation in adverse weather conditions, with emphasis on overdriving visual range when operating in dense fog; and participate in Operation Lifesaver to develop and implement a grade crossing awareness training program to alert its truckdrivers to the dangers inherent at railroad/highway grade crossings.

Therefore, the National Transportation Safety Board recommends that the California Trucking Association:

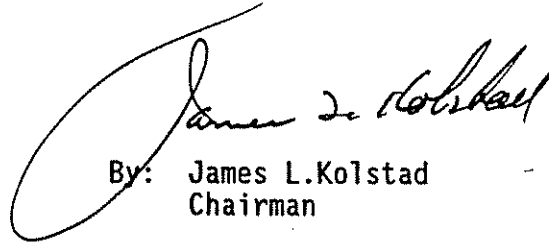
Establish, and maintain with supervisory oversight, a structured recurrent training program designed to sustain the performance of truckdrivers at high standards; include in this program instructions on safe operation in adverse weather conditions, with emphasis on overdriving visual range when operating with dense fog. (Class II, Priority Action) (H-90-96).

Participate in Operation Lifesaver to develop and implement a grade crossing awareness training program to instruct truckdrivers in the dangers at railroad/highway grade crossing. (Class II, Priority Action) (H-90-97).

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, H-90-93 to the California Department of Transportation, R-90-52 to the California Public Utilities Commission, H-90-94 and -95 to the TAB Warehouse & Distribution Company, and R-90-51 to the Federal Railroad Administration.

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(s) H-90-96 and -97 in your reply.

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



By: James L. Kolstad
Chairman