



SP-20  
Log H-515

# National Transportation Safety Board

Washington, D.C. 20594  
Safety Recommendation

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Date: June 27, 1989

In reply refer to: H-89-24 and -25

Mr. Jeffrey Miller  
Acting Administrator  
National Highway Traffic Safety Administration  
400 7th Street, S.W.  
Washington, D.C. 20590

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About 8:19 a.m. on April 28, 1987, a 1979 Ford LT 9000 semitractor with a conventional cab and pulling a dump semitrailer was traveling northbound on old U.S. Route 66 near Pontiac, Illinois. The vehicle turned right onto Livingston County Highway 8 and traveled east about 125 feet to an Illinois Central Gulf (ICG) grade crossing that intersected the roadway at a 64-degree angle to the truck's direction of travel. As the vehicle proceeded across the railroad tracks, it was struck by a northbound Amtrak passenger train. The truckdriver was fatally injured. The fuel tank of the locomotive was ruptured, and fuel spilled on the area but did not ignite. The front of the locomotive was damaged slightly due to the impact. The crossing was equipped with flashing lights and crossbucks. The crossing signals were operating properly, and the engineer reported that he had sounded his whistle. There was no evidence of driver fatigue or the use of drugs.

The driver's tasks were complex on the 125-foot approach to the crossing, especially for the 18-year-old driver who had driven commercially for only 7 months. During the first 50 feet of the approach, he was straightening his truck after making a right turn at 10 to 20 mph. During this time, he may have been watching the right rear of his trailer in the right mirror to make sure he cleared the corner. The fireman on the train reported that the truck then accelerated. If so, the truckdriver was probably shifting gears while ascending the 6-percent slope to the crossing. If it took 50 feet to straighten the vehicle and the flashing lights were 10 feet from the tracks, the driver had only 65 feet remaining on his approach. At 20 mph, the driver had about 2 seconds to observe the flashing lights. During this 2-second timeframe, each bulb in the flasher would have flashed only one or twice. Thus, it is possible that the driver may not have had enough time to observe or to react to the flashers.

The accident was probably due either to driver inattention or to a short approach (approximately 125 feet after making the right turn off of Route 66) to the crossing. During the investigation by the National Transportation Safety Board, investigators determined that the truckdriver's view of a train approaching from the right was obstructed by the "B" pillar (the rear door

frame and the closed portion of the cab behind the rear door frame) on the right side of the truck cab. The problem of obstructed view was confirmed during the interviews with drivers of conventional tractors who used the grade crossing. They explained that to avoid the visual obstruction of the "B" pillar and to see a train approaching from the right, the driver must either lean forward over the steering wheel to look out the passenger window or lean backward to see out the rear window. (The view out the rear window is also obstructed on vehicles equipped with sleepers.) The drivers' statements were reaffirmed by tests conducted by the Safety Board and the Illinois State Police using conventional truck tractors (see figure 1).

As part of the accident investigation, exploratory tests were conducted with a wide-angle window lens mounted on the right-side window of the cab. The driver's visibility was increased to the extent that the approaching train could easily be seen without the driver changing positions (see figure 2). If a wide-angle window lens had been mounted on the right-side window, the driver might have been able to see the approaching train while looking at his mirror when he turned the corner.

From 1976 through 1985, the Safety Board investigated 236 collisions at rail/highway grade crossings. Of 18 grade crossing accidents investigated in 1983 and 1984,<sup>1</sup> 9 accidents involved truckdrivers who did not see or hear the approaching train. In a 1985 study<sup>2</sup> of grade crossing accidents, the Safety Board determined that in 24 truck/train accidents investigated, 8 involved visibility (sight distance) problems. The Safety Board believes that devices that may enhance truckdriver visibility should be evaluated for effectiveness in improving the field of view for drivers of large trucks.

Therefore, the National Transportation Safety Board recommends that the National Highway Traffic Safety Administration:

Evaluate the effectiveness of a wide-angle window lens insert for the right-side window of trucks weighing more than 10,000 pounds to circumvent the visual obstructions that may occur as a result of vehicle construction and/or modification. (Class II, Priority Action) (H-89-24)

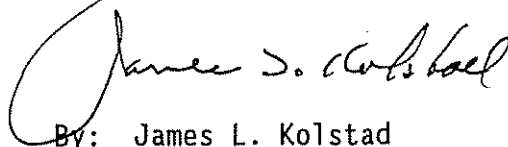
If the wide-angle window lens insert identified in Safety Recommendation H-89-24 is determined to be effective in improving driver visibility, amend the Federal Motor Vehicle Safety Standards for medium and large trucks to require installation of the device on such vehicles. (Class II, Priority Action) (H-89-25)

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<sup>1</sup>Safety Study--"Rail/Highway Grade Crossing Review--Calendar Years 1983 and 1984" (NTSB/SS-85/05).

<sup>2</sup>Safety Study--"Passenger/Commuter Train and Motor Vehicle Collisions at Grade Crossings (1985)" (NTSB/SS-86/04).

KOLSTAD, Acting Chairman, and BURNETT, LAUBER, NALL, and DICKINSON, Members, concurred in these recommendations.

A handwritten signature in cursive script that reads "James L. Kolstad". The signature is written in black ink and is positioned above the typed name.

By: James L. Kolstad  
Acting Chairman

Attachment

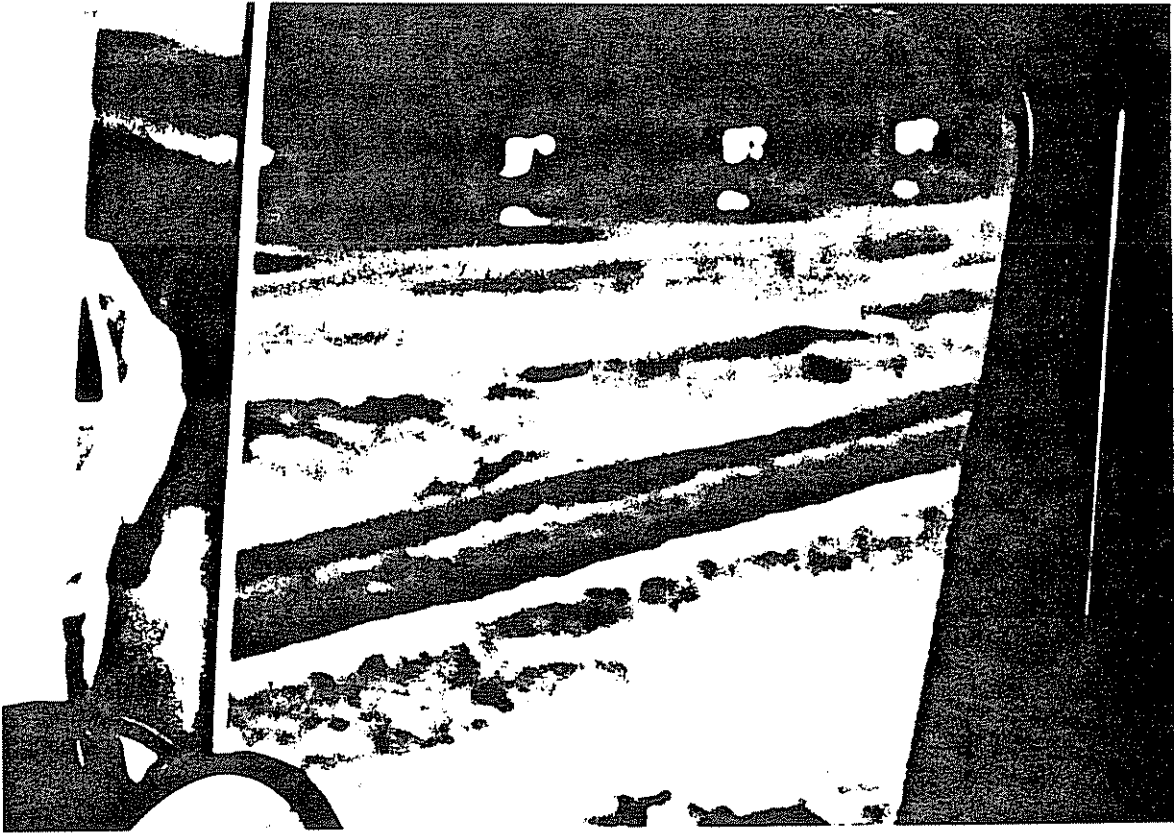


Figure 1.--View of grade crossing through side window.

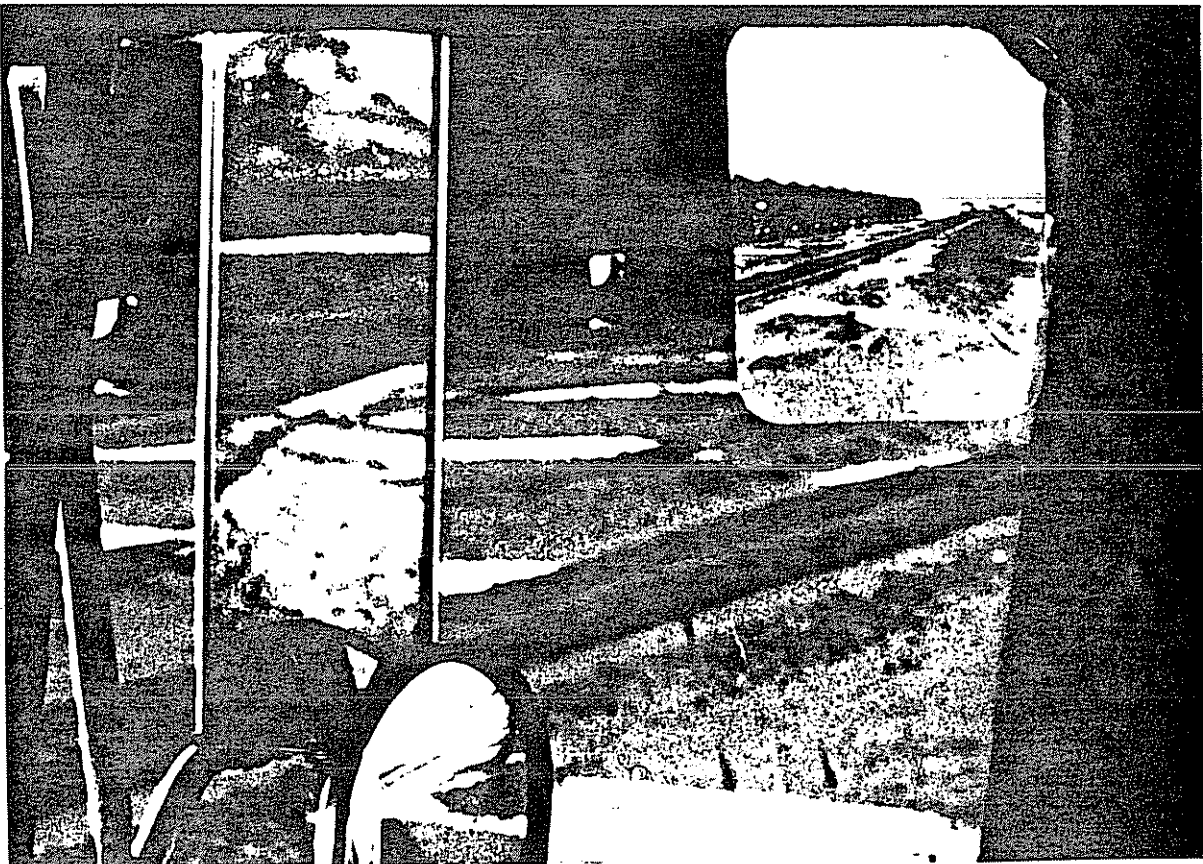


Figure 2.--View of grade crossing through side window with wide-angle lens.