

Log H-577C

NATIONAL TRANSPORTATION SAFETY BOARD

Washington, D.C. 20594



Safety Recommendation

Date: December 13, 1994

In Reply Refer To: H-94-15 and -16

Mr. Harlan Tull, President
National Association of State Directors
of Pupil Transportation Service
Post Office Box 1402
Dover, Delaware 19903

About 3:28 p.m. on November 10, 1993, near Snyder, Oklahoma, a tractor-semitrailer traveling southbound on U.S. Route 183 struck a 1993 Thomas Built Minotour school bus that was crossing the highway while traveling west on County Line Road. The 20-passenger school bus was occupied by the driver and nine children. The school busdriver said that she stopped at the stop sign and then proceeded to drive across Route 183. The truckdriver stated that the school busdriver hesitated and then pulled out in front of his truck. The school bus was struck in the right side behind the right-front entrance door. Eight children were not wearing the available lapbelts and were ejected. Four of the ejected children died; the injuries of the other four ranged from minor to serious. One child, the only occupant of the bus who was restrained, was not ejected; he received minor injuries. The school busdriver was not ejected, but she was not wearing the lap-shoulder restraint and sustained severe injuries from contact with various parts of the bus interior. The truckdriver, who stated that he was wearing his lapbelt, received minor injuries.¹

¹ For more detailed information, read Highway Accident Report--*Collision of School Bus with Tractor-Semitrailer near Snyder, Oklahoma, November 10, 1993* (NTSB/HAR-94-04).

The National Transportation Safety Board determines that the probable cause of the accident was that the school busdriver did not see the approaching truck because her view was obstructed, because she had not been provided with an effective strategy or other means for overcoming the view obstruction, and because she may have been distracted by the unruly passengers. Contributing to the severity of the accident was the truckdriver's failure to observe the speed advisory and Cornell's failure to systematically maintain the accident truck.

The Safety Board attempted to determine why the school busdriver drove in front of the approaching tractor-semitrailer. The weather was clear, the road was dry, and about 100 feet from the intersection, the view of the highway to the north is clear. The school busdriver was operating a vehicle that had been regularly assigned to her since the beginning of the school year. She was familiar with the highways and secondary roads because she had driven the same route for about 12 months--during the previous school year and the first 3 months of the current school year. She was apparently concerned about safety; for example, the school district's director of transportation said that this school busdriver had recommended the installation of CB radios and had reported the view obstruction problem on the right side of the Minotour school bus. In disciplining the passengers just before the accident, she followed the procedures prescribed in the training course; she stopped at the stop sign and then reprimanded the children. The Safety Board's view obstruction tests determined that the sun would not have affected the school busdriver's vision at the intersection. In addition, there is no evidence that the school busdriver was impaired by loss of sleep or by the use of alcohol or other drugs.

Nonetheless, the school busdriver stated that she did not see the approaching tractor-semitrailer when she started across Route 183. She said that she had looked twice for crossing traffic and that before entering the intersection, she had moved the school bus several feet forward to improve her view to the right. She apparently entered the intersection because she believed the highway was clear of traffic.

The right-front vertical support structure of the school bus created a view obstruction 8 1/2 inches wide. Safety Board investigators calculated an angle of obstruction between 75 and 83.5 degrees. The positions of the school bus and truck relative to each other in distance and time are not known. However, in four tests (two at 10 feet from the highway's edge and two at 30 feet) the tractor-semitrailer was obscured from view about 7 seconds from impact and remained obscured for 4 seconds.

The school busdriver told the Safety Board that she was aware of the view obstruction and had reported it to her supervisor. He told her to adjust to the view obstruction but offered no further guidance. The method she said she developed consisted of stopping at intersections, slowly moving forward, and stopping again. This technique would not circumvent the blind spot and would in fact prolong its duration because the occluded zone would move forward with the bus. Although the Safety Board's tests indicated a view obstruction of about 4 seconds in duration, these tests were conducted with a stationary school bus. Before the accident, however, the school bus, as well as the truck, was moving toward the point of impact, increasing the period of time that the truck was obstructed from the school busdriver's view. Therefore, the

Safety Board concludes that because of the right-front vertical support structure, the approaching truck may have been obscured from the school busdriver's view for 5 to 7 seconds before the collision.

A similar accident investigation in Canada supports these findings. On June 8, 1994, in Sudbury, Ontario, a 65,000-pound Freightliner dump truck traveling 55 mph in a 60-mph zone struck a 48-passenger Bluebird school bus that was crossing a 5-lane highway. The highway was straight and level, and the weather was clear, but the busdriver apparently did not see the truck. Transport Canada investigators conducted view-obstruction tests similar to those conducted by the Safety Board in the Snyder case. Transport Canada found that with the bus in a stationary position, the truck would have been obscured from the school busdriver's view for 3 to 5 seconds.

To ensure that she had an unobstructed view to the right, the Snyder school busdriver would have had to exercise special precautions, such as moving her head forward and rearward several times. However, the director of transportation had provided her with no such instructions. Furthermore, neither the Oklahoma School Board of Education nor your association has offered any guidance to school busdrivers on how to overcome the problem.

Therefore, the National Transportation Safety Board recommends that the National Association of State Directors of Pupil Transportation Service:

Notify your members of the circumstances of this accident and develop effective driving strategies for overcoming the view obstructions inherent in school bus design. (Class II, Priority Action) (H-94-15)

Cooperate with the National Highway Traffic Safety Administration to determine whether the view obstructions in school buses can be reduced through design or equipment modifications. (Class II, Priority Action) (H-94-16)

Also, the Safety Board issued Safety Recommendations H-94-10 and -11 to the National Highway Traffic Safety Administration, H-94-12 to the Federal Highway Administration, H-94-13 and -14 to the Governors of the 50 States and the mayor of the District of Columbia, and H-94-17 to the Cornell Construction Company, Inc.

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

Recommendations H-94-15 and -16 in your reply. If you need additional information, you may call (202) 382-6850.

Chairman HALL and Members LAUBER and HAMMERSCHMIDT concurred in these recommendations.

By: 
Jim Hall
Chairman