



National Transportation Safety Board

Washington, D.C. 20594

Safety Recommendation

Date: August 22, 1990

In reply refer to: H-90-74 through -78

Honorable Jerry Ralph Curry
Administrator
National Highway Traffic Safety Administration
Washington, D.C. 20590

About 7:34 a.m., central daylight time, on Thursday, September 21, 1989, a westbound school bus with 81 students operated by the Mission Consolidated Independent School District, Mission, Texas, and a northbound delivery truck operated by the Valley Coca-Cola Bottling Company, McAllen, Texas, collided at Bryan Road and Farm-to-Market Road Number 676 (FM 676) in Alton, Texas. Nineteen students died at the accident scene, and two died later in the hospital. The 21 fatalities were the result of drowning or complications related to the submersion. Furthermore, 3 students sustained serious injuries, 46 others sustained minor injuries, and 11 students were not injured.¹

At least 55 students exited the submerged bus through some of the 15 windows on the right side. Three to five students exited through the rear emergency exit door. The door closed on at least one student and prevented her escape; however, she eventually exited through a window. Rescuers also had difficulty keeping the door open, until they tied it back during postaccident activities. Therefore, the Safety Board believes that floor level emergency exits should be designed so that once opened they remain open during emergencies and school bus evacuations.

The school bus was not equipped with a lap shoulder belt for the driver. The Safety Board is unable to determine if this type of restraint system, because of the low speed of the collision, would have prevented the minor injury sustained by the driver. However, the Safety Board believes that lap

¹For more information, read Highway Accident Report--"Collision between Mission Consolidated Independent School District School Bus and Valley Coca-Cola Bottling Company, Inc., Tractor-Semitrailer, Intersection of Bryan Road and Texas Farm-to-Market Road Number 676, in Alton, Texas, September 21, 1989" (NTSB/HAR-90/02).

shoulder seat belts are beneficial to drivers in higher speed accidents, and, therefore, school buses should be equipped with lap shoulder belts at the driver position.

Because of time constraints, students will often be responsible for rescuing themselves and fellow passengers before help arrives from bystanders and public safety officials. Therefore, comprehensive guidance is needed to train school bus passengers to develop a personal escape plan and to train school busdrivers and public safety officials in emergency egress and the performance of rescues from a school bus. The final product should be a comprehensive guide that pupil transportation officials and emergency responders can use to implement training and drills.

As a minimum the guide should include specific objectives for pupil transportation officials to train passengers in making an emergency exit from a school bus that has been involved in an accident resulting from any of the following situations: the school bus remains on its wheels or is on its side or roof; all emergency exit doors may be used for evacuation or only some of the emergency exits may be used; fire, smoke, or toxic fumes are present; and the school bus is completely submerged on its side or roof upright. Also, passengers should be trained to use each type of emergency exit. Alternate means of escape should also be considered in case any of the designated emergency exits are blocked or disabled. A key component in this guide should be a section dealing with training each passenger to develop a personal escape plan for use on a school bus.

The guide should also contain information for emergency responders, including police and rescue personnel, to deal with the school bus accident situations mentioned above. These responders should have a rescue plan to deal with each type of school bus normally used by the various school systems in their jurisdiction. They should be familiar with all emergency exits as well as means of assisting passengers from the school bus if the emergency exits are not functioning. Also, they should be trained in getting to school bus wreckage under any difficult situations that would be found in their response area, for example, a bus route along waterways, bridges, or a ravine. Their participation in planning the guide is essential. The guide should also include recommendations for the frequency of providing periodic passenger exit drills and training for emergency responders to ensure that they are kept current on the appropriate escape and rescue procedures.

Further, the guide should reflect any updated information concerning emergency egress. It should involve contributions from students, pupil transportation officials, and school bus manufacturers. This guide should be developed and distributed nationally to public and private schools as well as to the private sectors that use school bus type vehicles to transport children to and from school and to and from other activities.

The Safety Board believes that because of its familiarity with pupil transportation, the National Association of State Directors of Pupil Transportation Services (NASDPTS) is in a position to provide key leadership in developing and distributing the guide. Further, the Safety Board believes that NASDPTS should convene a national task force in cooperation with the

National Highway Traffic Safety Administration (NHTSA) to prepare the comprehensive school bus emergency evacuation-rescue guide. The task force should be comprised of representatives from schools, State education-pupil transportation agencies, police, fire, and rescue departments. The Safety Board believes that representatives from the Parent Teachers Association, NASDPTS, the International Association of Chiefs of Police, the National Sheriffs Association, the National Association of State Emergency Medical Service Directors, the National Council of State Emergency Medical Service Coordinators, the NHTSA, and the International Association of Fire Chiefs should be involved with the task force. Among the items the task force should consider would be the final publication and distribution of the guide.

And finally, if the regular escape exits are blocked or inoperable, school bus passengers should be able to use the side windows as a means of egress. The 24-inch by 9-inch opening in standard school bus side windows do not have the vertical height (9 inches) to allow some larger students to make an emergency exit. Most school bus manufacturers offer as an option, a 24-inch-wide window with a 12-inch-vertical opening. If these windows were installed in school buses, the window size of 12 inches by 24 inches (a 33-percent increase of exit area per window) would improve escape opportunities.

The Safety Board recognizes that larger window openings may provide an easier means of passenger ejection, but larger windows would have improved passenger egress in the accident bus. The Safety Board also recognizes that side windows are not intended to be a substitute for designated emergency exits. However, larger windows with standardized opening devices are available, and emergency exit training programs can address their proper use. Therefore, the Safety Board believes provision for side window egress in an emergency needs to be evaluated.

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

Revise Federal Motor Vehicle Safety Standard 217, Bus Window Retention and Release, to include a requirement that floor level emergency exits should be designed so that once opened they remain open during emergencies and school bus evacuations. (Class II, Priority Action) (H-90-74)

Revise Federal Motor Vehicle Safety Standard 208, Occupant Crash Protection, to include a requirement that lap shoulder belt systems for the driver position be installed in all newly manufactured buses, including city, intercity, small, and large. (Class II, Priority Action) (H-90-75)

Cooperate with the National Association of State Directors of Pupil Transportation Services to prepare a comprehensive school bus emergency evacuation - rescue guide. (Class II, Priority Action) (H-90-76)

Conduct research to determine the safety benefits and disadvantages of larger school bus side windows. (Class II, Priority Action) (H-90-77)

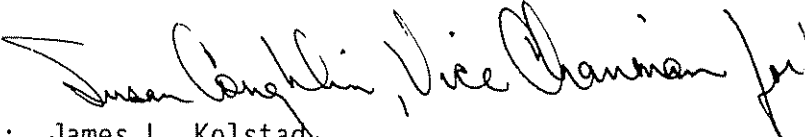
Revise Federal Motor Vehicle Safety Standard 217, Bus Window Retention and Release, to include a requirement for larger side windows in school buses if research proves that larger windows are more beneficial to school bus occupant safety. (Class II, Priority Action) (H-90-78)

In addition, the Safety Board reiterates the following safety recommendation to the National Highway Traffic Safety Administration:

Revise Federal Motor Vehicle Safety Standard 217, Bus Window Retention and Release, to require that school bus egress be based on vehicle occupant capacity and be no lower than those currently required for nonschool buses. (Class II, Priority Action) (H-89-5)

Also, the Safety Board issued Safety Recommendations H-90-79 through -80 to the Texas Department of Public Safety; H-90-81 to the Texas Education Agency; H-90-82 through -83 to the Hidalgo County; H-90-84 through -85 to the City of Alton; H-90-86 to the Mission Consolidated Independent School District; H-90-87 to the Coca-Cola Enterprises, Inc.; H-90-88 through -89 to the Valley Coca-Cola Bottling Co., Inc.; and H-90-90 to the National Association of State Directors of Pupil Transportation Services.

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


By: James L. Kolstad
Chairman