

Lessons Learned from Accident Investigations

Better School Bus Driver Training, Evacuation Drills Urged for Students

A school bus tragedy in Nebraska that left three students and one adult chaperon dead should be a wake up call for all school transportation officials, the National Transportation Safety Board (NTSB) warns. "The tragedy clearly points out that school officials must vigilantly focus on safety," NTSB Chairman Ellen Engleman-Conners said.

As a result of the accident, the NTSB is urging school transportation officials to make sure students receive pre-trip safety briefings for activity trips, participate in regular bus evacuation drills, are shown how to open emergency roof hatches on buses that have them, and make sure drivers are trained on unfamiliar buses they may be asked to drive.

"School buses are strong and sturdy and built to lessen the impact of crashes, but drivers, students, and school officials must be an integral part of the safety equation," Engleman-Conners said.

The crash occurred on Saturday, October 13, 2001, about 2 p.m. A model year 2000 Thomas Built, 78-passenger school bus carrying 27 students and 3 adult chaperons from Seward High School was traveling home from a band competition in Omaha through what the NTSB called a "poorly designed" highway-bridge construction work zone on U.S. Route 6 in Omaha.

As the Seward bus entered the narrow work zone lane shift at the approach to a bridge over a creek, it encountered a 1986 Motor Coach Industries 52-passenger motorcoach, traveling in the opposite direction and carrying students from Norfolk High School to the same band competition. No collision occurred, but the bus carrying the Seward students struck a barrier on the right as it passed the motorcoach, steered to the left and then steered abruptly back to the right, striking the barrier again and a three-rail barrier between a guardrail and a concrete bridge railing.

The bus passed through the remains of the three-rail barrier, rode up onto the bridge's sidewall, and rolled 270 degrees clockwise as it fell about 49 feet, landing on its left side in a

creek below the bridge. In addition to the fatalities, the remaining passengers and the bus driver sustained injuries ranging from serious to minor.

The NTSB said the probable cause of this accident was the failure of the Nebraska Department of Roads to recognize and correct the hazardous condition in the work zone created by the irregular geometry of the roadway, the narrow lane widths, and the speed limit.

Contributing to the accident, the NTSB said, was the accident bus driver's inability to maintain the bus within the lane due to the perceived or actual threat of a frontal collision with the approaching eastbound motorcoach and the accident bus driver's unfamiliarity with the accident vehicle.

However, the Safety Board emphasized that the safety issues of student emergency preparedness and bus driver training need to be addressed.

"Unless we pay attention to all the lessons learned in this school bus accident," Engleman-Conners said, "we will continually repeat them and unnecessarily jeopardize the lives of students."

For the complete accident report, visit the NTSB Web site at this address:
<http://www.nts.gov/publictn/2004/HAR0401.pdf>

- 30 -

Sidebar 1:

Students Didn't Know How to Open Emergency Hatches, Lacked Bus Evacuation Training

The National Transportation Safety Board (NTSB) investigation of the fatal Omaha school bus crash uncovered disturbing safety shortcomings.

Although Nebraska law required and Federal guidance recommends twice-yearly school bus evacuation drills for all students who ride school buses, very few of the students on the accident bus had received the training. Also, there had been no pre-trip safety briefing.

Students on the bus who survived the accident told investigators they kicked out the emergency roof hatches because they were unfamiliar with how to unlock them. The emergency

exit signage was obscured by the overhead racks, so students did not know where the emergency exit windows were; they only reported knowing where the doors were. In previous accidents investigated by the Safety Board, motorcoach passengers have reported a general sense of panic because they did not know what to do or how to get out of the bus.

“The Omaha accident demonstrates that pre-trip safety information may be critically important for students who ride school buses sporadically, since they may be less familiar with the bus’s general layout and escape routes than regular riders,” NTSB Chairman Ellen Engleman-Conners said.

The Safety Board concluded that if the school district had conducted emergency evacuation drills and demonstrations for all students, the passengers’ ability to open emergency exits and evacuate the vehicle in this emergency would have been greatly improved.

Unfortunately, the Omaha students’ lack of emergency evacuation training is common. According to a December 2003 survey of State Directors of Transportation conducted by the National Association of State Directors of Pupil Transportation Services, few States require that students who ride buses for extracurricular functions receive pre-trip safety information and require physical demonstration of the operation of emergency exits.

Despite the Federal guidelines that recommend operators conduct pre-trip briefings on the location and operation of emergency exits, the survey shows that most schools do not conduct pre-trip briefings before every school-related activity trip, and few States have adopted this practice. The Safety Board urges school districts to conduct pre-trip safety briefings and drills for all school-related activity trips.

- 30 -

Sidebar 2:

NTSB Urges Recurrent School Bus Driver Training and ‘Check Rides’

The fatal Omaha crash also points to another safety issue the National Transportation Safety Board (NTSB) has seen in numerous highway investigations: bus driver unfamiliarity with different types of vehicles. The longer, transit-style bus involved in the accident differed

from the driver's regular route bus, which was a conventional-type school bus, in several important operational and handling respects.

“This accident demonstrates the tragic consequences of underestimating key operational differences among bus types,” NTSB Chairman Ellen Engleman-Conners said. “We urge school officials to review their practices regarding assignment of drivers based upon familiarity with the bus, recurrent training, and ‘check rides’ for drivers who are assigned a bus that fundamentally differs from the type of bus upon which they developed their skills.”

In the Nebraska accident, the Safety Board also concluded that the accident bus driver's unfamiliarity with the accident vehicle, which differed both in its perceptual demands and in its handling characteristics from his regular route bus, may have contributed to his inability to accurately judge the lateral distance to the guardrail, bridge rail, and oncoming vehicle and to his inability to properly steer the bus through the work zone.

Because this driver had very limited recent experience operating a bus of this design, the driver's ability to judge the vehicle's spatial proximity to the bridge rail was probably limited, a factor that was compounded by the series of slight curves on the approach to the bridge, the NTSB said.

The Safety Board has found during investigations of other school bus accidents that most school transportation administrators usually try to assign drivers to a single bus, perhaps recognizing the value of the driver's familiarity with the particular features and idiosyncrasies of that vehicle. When a bus undergoes repairs—or in this case, the trip itinerary requires a specially designated vehicle with which the driver is less familiar—drivers may underestimate the differences associated with the vehicle's handling characteristics.