



National Transportation Safety Board

Washington, D.C. 20594

Safety Recommendation

Date: February 8, 2012

In reply refer to: H-11-48

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The National Transportation Safety Board (NTSB) is an independent Federal agency charged by Congress with investigating transportation accidents, determining their probable cause, and making recommendations to prevent similar accidents from occurring. We are providing the following information to urge you to take action on the safety recommendation in this letter. The NTSB is vitally interested in this recommendation because it is designed to prevent accidents and save lives.

The recommendation addresses the need to inform association members of specific aspects of the Gray Summit, Missouri, accident and implement solutions. This recommendation is derived from the NTSB's investigation of a multivehicle collision that occurred near Gray Summit on August 5, 2010, as traffic slowed in the approach to an active work zone on eastbound Interstate 44 (I-44), and motor vehicles merged from the closed left lane to the right lane. A 2007 Volvo truck-tractor with no trailer was traveling eastbound in the right lane and had slowed or stopped behind traffic. About 10:11 a.m. central daylight time, a 2007 GMC Sierra extended cab pickup truck merged from the left to the right lane and struck the rear of the Volvo tractor. This collision was the first in a series of three.

A convoy of two school buses from St. James High School, St. James, Missouri, was traveling eastbound in the right lane of I-44, approaching the slowed traffic and the collision ahead. Their destination was the Six Flags St. Louis amusement park in Eureka, Missouri. The lead bus was a 71-passenger school bus, occupied by 23 passengers. Following closely behind the lead bus was a 72-passenger school bus, occupied by 31 passengers. Seconds after the lead

bus passed a motorcoach that had pulled over and stopped on the shoulder, it struck the rear of the GMC pickup. This collision—the second in the series—pushed the pickup forward, overturning it onto the back of the Volvo tractor. The front of the lead bus was ramped upward, as it came to rest on top of the GMC pickup and the Volvo tractor. Moments later, the following school bus struck the right rear of the lead bus.

The driver of the GMC pickup and one passenger seated in the rear of the lead school bus were killed. A total of 35 passengers from both buses, the 2 bus drivers, and the driver of the Volvo tractor received injuries ranging from minor to serious. Eighteen people were uninjured.¹ As a result of this investigation, the NTSB has issued 13 safety recommendations, 1 of which is addressed to the National Association of State Directors of Pupil Transportation Services (NASDPTS), the National Association for Pupil Transportation, and the National School Transportation Association. This recommendation is consistent with the evidence we found and the analysis we performed. Information supporting this recommendation is discussed below. The NTSB would appreciate a response from you within 90 days addressing the actions you have taken or intend to take to implement our recommendation.

The NTSB determined that the probable cause of the initial Gray Summit collision was distraction, likely due to a text messaging conversation being conducted by the GMC pickup driver, which resulted in his failure to notice and react to a Volvo tractor that had slowed or stopped in response to a queue that had developed in a work zone. The second collision, between the lead school bus and the GMC pickup, was the result of the bus driver's inattention to the forward roadway due to excessive focus on a motorcoach parked on the shoulder of the road. The final collision was due to the driver of the following school bus not maintaining the recommended minimum distance from the lead school bus in the seconds preceding the accident. Contributing to the severity of the accident was the lack of forward collision warning systems on the two school buses.

Under 5 *Code of State Regulations* 30-261.010(1)(J), Missouri requires that all students in kindergarten through sixth grade participate in emergency evacuation drills on school buses at least once each semester. In addition, the St. James School District requires emergency evacuation drills for students in seventh and eighth grades. During postaccident interviews, the majority of students said that they had drills at least once while in grade school and that they were aware of where the exits were located, though some students were not familiar with how to operate the window exits. None of the interviewed occupants of either accident bus mentioned ever receiving a pretrip briefing on emergency evacuation prior to traveling to school sports activities or other school-sponsored events. To date, Missouri does not require emergency evacuation briefings prior to school activity trips on either a school bus or a school-chartered bus.

Despite the mandatory evacuation training required by the state and the St. James School District, students who do not normally ride a bus may not pay attention to the information because they feel that it does not apply to them. Instituting evacuation training prior to school

¹ For additional information, see *Multivehicle Collision, Interstate 44 Eastbound, Gray Summit, Missouri, August 5, 2010*, Highway Accident Report NTSB/HAR-11/03 (Washington, DC: National Transportation Safety Board, 2011), which is available on the NTSB website at <<http://www.nts.gov/>>.

activity trips would ensure that both regular bus riders and occasional bus riders alike obtain training at an applicable time. In an emergency evacuation situation, the success of any one person in unlatching an exit window affects how quickly and safely others can exit the bus. The NTSB concluded that the lack of school bus evacuation briefings prior to activity trips may hinder evacuation and pose a risk for all students.

In October 2001, the NTSB began an investigation of an Omaha, Nebraska, accident involving a school bus that plunged off a bridge and fell 49 feet into a creek.² NTSB investigators learned that very few of the 27 high school students on the bus had ever received emergency evacuation training. Most of the students did not ride a school bus to or from school and, therefore, did not receive the mandated evacuation training. The NTSB issued the following recommendation to NASDPTS:

Prepare a report that can be used by the State Directors to influence their States to require pretrip briefings before school-related activity trips on school buses or school-chartered buses and subsequently assist the States in developing criteria for such briefings, to include training all students regarding the location and use of emergency exits. (H-04-6)

In response to the NTSB recommendation, NASDPTS completed and distributed an information paper on the importance of pretrip briefings before school-related activity trips.³ The report encouraged state directors of pupil transportation to require that all students transported on such trips receive instruction about the location of all emergency exits, as well as a demonstration of their operation. In addition, the report discussed the importance of maintaining clear aisles and access to emergency exits and of being aware of hazardous highway conditions and other aspects of bus safety. Because this response surpassed NTSB expectations, Safety Recommendation H-04-6 was classified “Closed—Exceeds Recommended Action” in 2004.

In May 2010, the National Congress on School Transportation updated the *National School Transportation Specifications and Procedures* to discuss the need for emergency evacuation drills under “Evacuation Procedures for Activity and Field Trips.” This document provides detailed guidance on pretrip emergency evacuation training procedures.

The NTSB recognizes that the school bus-related issues identified in the accident report are not unique to Missouri and that it would be beneficial to disseminate, discuss, and resolve these issues. In addition to pretrip evacuation briefings, the report addresses driver distraction, proper driver scanning behavior, and the importance of maintaining a sufficient following distance at all times; emergency evacuation issues that might occur with certain emergency exit window designs; vehicle inspection issues due to insufficient oversight and procedures; and the potential safety benefits of technologies such as video event recorder and forward collision warning systems.

² *School Bus Run-off-Bridge Accident, Omaha, Nebraska, October 13, 2001*, Highway Accident Report NTSB/HAR-04/01 (Washington, DC: National Transportation Safety Board, 2004).

³ *Information Paper: Emergency Evacuation Training, School Activity Trips*, <<http://www.nasdpts.org/Documents/EmergEvacOmaha2004.pdf>>, accessed August 4, 2011

Therefore, as a result of its investigation of the Gray Summit accident, the National Transportation Safety Board makes the following safety recommendation to the National Association of State Directors of Pupil Transportation Services, the National Association for Pupil Transportation, and the National School Transportation Association:

Inform your members of the circumstances and events that contributed to the Gray Summit accident; discuss solutions for the driver, pretrip evacuation briefings, and vehicle, inspection, and technological issues presented in the report; and urge the implementation of these solutions among your members. (H-11-48)

The NTSB also issued new safety recommendations to the National Highway Traffic Safety Administration, the 50 states and the District of Columbia, the state of Missouri, the Missouri Department of Elementary and Secondary Education, CTIA–The Wireless Association, and the Consumer Electronics Association. The NTSB reiterated previously issued recommendations to the Federal Motor Carrier Safety Administration, the National Highway Traffic Safety Administration, and the American Association of Motor Vehicle Administrators.

In response to the recommendation in this letter, please refer to Safety Recommendation H-11-48. If you would like to submit your response electronically rather than in hard copy, you may send it to the following e-mail address: correspondence@ntsb.gov. If your response includes attachments that exceed 5 megabytes, please e-mail us asking for instructions on how to use our secure mailbox. To avoid confusion, please use only one method of submission (that is, do not submit both an electronic copy and a hard copy of the same response letter).

Chairman HERSMAN, Vice Chairman HART, and Members SUMWALT, ROSEKIND, and WEENER concurred in this recommendation. Chairman Hersman, Vice Chairman Hart, and Member Sumwalt each filed concurring statements, which are appended to the accident report.

[Original Signed]

By: Deborah A.P. Hersman
Chairman