



National Transportation Safety Board

Washington, D.C. 20594

Safety Recommendation

Date: January 22, 2002

In reply refer to: H-01-42

Honorable Mary E. Peters
Administrator
Federal Highway Administration
400 Seventh Street, S.W.
Washington, D.C. 20590

On March 28, 2000, about 6:40 a.m., a CSX Transportation, Inc., (CSXT) freight train traveling 51 mph struck the passenger side of a Murray County, Georgia, School District school bus at a railroad/highway grade crossing near Conasauga, Tennessee.¹ The accident occurred as the school bus was crossing the tracks at a speed of approximately 15 mph. During the accident sequence, the driver and three children were ejected. Two ejected passengers received serious injuries and one was fatally injured. The driver, who had been wearing a lap/shoulder belt that broke during the crash sequence, received minor injuries. Of the four passengers who remained inside the bus, two were fatally injured, one sustained serious injuries, and one, who was restrained by a lap belt, received minor injuries. The two train crewmembers were not injured.

In reviewing documents pertaining to Murray County school bus routes, National Transportation Safety Board investigators determined that route hazards, including grade crossings, apparently were not identified, nor were busdrivers told (other than through annual training) what actions to take in the area of potential hazards. The Murray County transportation director has stated that all routes have been reviewed since the accident and, as necessary, rerouted to use gated railroad crossings. The routes were also reviewed and, as appropriate, adjusted for other hazards, such as unsafe turns, curves, and pick-up and drop-off locations.

To assist the States in assessing grade crossing safety, the Federal Railroad Administration (FRA) compiles and maintains the U.S. Department of Transportation's (DOT's) Highway Rail Crossing Inventory.² In examining the database, the Safety Board found discrepancies between information contained in the database and existing conditions at the accident crossing and other crossings in the area. Investigators looked at 10 crossings in the Liberty Church Road vicinity and found that the inventory listed the track speed as 10 mph less than the actual speed in seven instances and did not list the track speed at all in one instance. The

¹ For more information, read: National Transportation Safety Board, *Collision of CSXT Freight Train and Murray County, Georgia, School District School Bus at Railroad/Highway Grade Crossing in Conasauga, Tennessee, on March 28, 2000*, Highway Accident Report NTSB/HAR-01/03 (Washington, DC: NTSB, 2001).

² Database intended to document every grade crossing in the United States <<http://safetydata.fra.dot.gov/officeofsafety/Crossing/Default.asp>>.

inventory listed 13 trains per day for five crossings, 16 trains per day for four crossings, and did not list the number of trains for one crossing. CSXT reported 30 to 35 trains traveling over each crossing daily.

States often use information from the inventory to develop a hazard index for railroad/highway grade crossings. The FRA developed a Web-based Accident Prediction System (WBAPS) that is based, in part, on information from the inventory, including data such as the type of warning device at the grade crossing, the exposure index,³ and the number of accidents at the location in the past 5 years. A private company, under contract to the FRA, completed an analysis of the WBAPS in June 1999, comparing the performance of the FRA model to other models used to predict accidents. The study found that differences were minimal and that no model retained a substantial edge over another.⁴ The public can use the WBAPS to help determine where best to direct highway grade crossing resources.⁵ Law enforcement personnel can use the system to target unsafe crossings for monitoring.

The FRA maintains the nationwide grade crossing inventory. As part of the 1998 passive grade crossing study, the Safety Board made the following recommendation concerning this system:

R-98-41

Modify the grade crossing inventory system to include information on (1) the sight distances available to a motorist, and (2) the presence of curves on the roadway and on the tracks. Direct the States to include these data as a part of the regularly scheduled updates of the database.

Because the FRA updated the grade crossing inventory database to include recommended elements, on January 4, 2000, the Safety Board classified Safety Recommendation R-98-41 “Closed—Acceptable Action.” However, as Safety Board investigators discovered, some information in the inventory is still outdated and incorrect. Of 10 sites in the area of the accident crossing surveyed by Safety Board investigators, the inventory listed incorrect maximum train speeds for 8 and incorrect number of trains per day for all 10.

In its April 6, 1999, response to Safety Recommendation R-98-41, the FRA stated that such discrepancies occur because updating the information is voluntary and the FRA lacks the authority to require States or railroads to upgrade information in the inventory. The FRA has encouraged the States to provide up-to-date information for the inventory, but the States have not done so. The Federal Highway Administration gives funds to the States annually for highway safety, including grade crossing safety, and provision of these funds could be contingent on updating the inventory regularly.

³ The exposure index includes the number of trains per day, the number of cars traversing the grade crossing, and the fastest train speed on the track.

⁴ May 8, 2000, letter from the Secretary of Transportation to the Chairman of the National Transportation Safety Board.

⁵ U.S. Department of Transportation, Federal Railroad Administration, “Using Data Produced by WBAPS Disclaimer.”

Because the States and others rely on this inventory for determining hazards and predicting accidents at grade crossings, inaccurate information can lead to invalid assessments. For example, the inventory lists the Liberty Church Road crossing as having 13 trains per day at a speed of 50 mph, which underestimates the 30 to 35 trains per day passing through at a maximum of 60 mph. When these underestimates are factored into equations that help users determine relative hazards, the resulting hazard index is similarly understated and hazardous grade crossings may not be recognized as such. The Safety Board concluded that though critical to assessing grade crossing hazards, the data in the Highway-Rail Grade Crossing Inventory are not always accurate and complete. Therefore, the National Transportation Safety Board recommends that the Federal Highway Administration:

Require States to update the Highway-Rail Crossing Inventory to accurately reflect current railroad operations. (H-01-42)

The Safety Board also issued safety recommendations to the States, the National Highway Traffic Safety Administration, the Georgia Department of Education, the National Association of State Directors of Pupil Transportation Services, and the school bus manufacturers. The Safety Board also reiterated a recommendation to the U.S. Department of Transportation.

Please refer to Safety Recommendation H01-42 in your reply. If you need additional information, you may call (202) 314-6607.

Chairman BLAKEY, Vice Chairman CARMODY, and Members HAMMERSCHMIDT, GOGLIA, and BLACK concurred in this recommendation.

Original Signed

By: Marion C. Blakey
Chairman