



National Transportation Safety Board

Washington, D.C. 20594

Safety Recommendation

Date: September 10, 2001

In reply refer to: H-01-28

Mr. John Horsley
Executive Director
American Association of State Highway and Transportation Officials
444 North Capitol Street, N.W.
Suite 249
Washington, D.C. 20001

The National Transportation Safety Board 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 your organization to take action on the safety recommendation in this letter. The Safety Board is vitally interested in this recommendation because it is designed to prevent accidents and save lives.

This recommendation addresses structural evaluations of wooden guardrails. The recommendation is derived from the Safety Board's investigation of the Custom Bus Charters, Incorporated (Custom), motorcoach accident that occurred in New Orleans, Louisiana, on May 9, 1999,¹ and is consistent with the evidence we found and the analysis we performed. As a result of this investigation, the Safety Board has reiterated 5 safety recommendations and issued 13 new safety recommendations, 1 of which is addressed to the American Association of State Highway and Transportation Officials. Information supporting this recommendation is discussed below. The Safety Board would appreciate a response from you within 90 days addressing the actions you have taken or intend to take to implement our recommendation.

During the accident sequence, the motorcoach struck the terminal end of a guardrail and fractured 11 wooden guardrail posts. The 27-inch-high guardrail at the accident scene was not designed to redirect vehicles as tall (center of gravity 39 inches above the ground) and heavy as a 35,250-pound motorcoach. Given an estimated speed of 60 mph and the approach angle of the motorcoach, it struck the guardrail with a force that was 62 times more than the guardrail was designed to absorb.

Although the presence of the guardrail system had little effect on the severity of the accident, Safety Board investigators were concerned that the extensive termite damage found in some of the guardrail posts could have compromised the safety of the smaller private passenger

¹ For more information, read: National Transportation Safety Board, *Motorcoach Run-Off-the-Road Accident, New Orleans, Louisiana, May 9, 1999*, Highway Accident Report NTSB/HAR-01/01 (Washington, DC: NTSB, 2000).

vehicles that the barrier system was designed to stop. According to the U.S. Department of Agriculture Forest Service Products Laboratory report, the original shear strength of the undecayed portions of the posts was above average. However, two of the four decayed samples were determined to have considerable insect damage, with clear indications of feeding galleries, excrement, and soil. These posts had suffered such severe attack from insects that their ability to resist impact loads was reduced, which suggests that the posts may have failed if hit by a passenger car.

The Safety Board concludes that although it is highly unlikely that the breakaway cable terminal and W-beam guardrail system would have redirected the bus, even had the posts been in good condition, the damaged and weakened condition of the posts before the accident makes it likely that they would have been inadequate at redirecting private passenger vehicles as well.

The AASHTO guidelines state that preservative-treated wooden posts, such as the ones used at the accident site, require almost no maintenance, except for an occasional cleaning and painting. However, evidence gathered from the accident site indicates that periodic inspections of wooden guardrail posts may be warranted. Therefore, the Safety Board recommends that the American Association of State Highway and Transportation Officials:

Inform your members about the weakened guardrail conditions due to termite infestation found in this accident and urge them to perform periodic structural inspections of wooden guardrail posts. (H-01-28)

The Safety Board also issued safety recommendations to the Federal Motor Carrier Safety Administration, the American Association of Motor Vehicle Administrators, the National Conference of State Legislatures, and the State of Louisiana Department of Transportation and Development. In addition, the Safety Board reiterated five recommendations from its 1999 bus crashworthiness special investigation² to the National Highway Traffic Safety Administration. In your response to the recommendation in this letter, please refer to H-01-28. If you need additional information, you may call (202) 314-6607.

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

Original Signed

By: Carol J. Carmody
Acting Chairman

² For more information, read: National Transportation Safety Board, *Bus Crashworthiness Issues*, Highway Special Investigation Report NTSB/SIR-99/04 (Washington, DC: NTSB, 1999).