

Log H-571H



**NATIONAL TRANSPORTATION SAFETY BOARD**

Washington, D.C. 20594

**Safety Recommendation**

---

**Date:** May 24, 1993

**In reply refer to:** H-93-23

Mr. Robert M. Clark  
General Manager  
Allison Transmission Division  
General Motors Corporation  
P.O. Box 894, L2  
Indianapolis, Indiana 46206-0894

---

At 3:24 p.m. on July 31, 1991, a 1989 72-passenger school bus operated by Mayflower Contract Services, Inc., was traveling eastbound on undivided, two-lane Tramway Road from the Palm Springs (California) Aerial Tramway parking lot. On board the bus were 45 girl scouts and 8 adult advisors. During the descent, the bus increased speed, left the road, plunged down an embankment, and collided with several large boulders. The busdriver and 6 passengers were killed; 47 passengers were injured.<sup>1</sup>

National Transportation Safety Board tests indicated that speeds between 13.3 (closed throttle) and 19.3 (full throttle) mph were necessary before the accident bus transmission would downshift from third to second gear. Since analysis determined that the accident bus was traveling above this speed range when it negotiated the curve at the guardrail/culvert, the transmission could not be forced to downshift into second, thereby negating transmission use for regaining speed control. Measurements and computations indicated that the bus was traveling 64 mph where the tire yaw marks began at the curve. Tests revealed that the transmission would normally upshift from third to fourth between 24.0 and 37.6 mph and would automatically upshift from third to fourth at 50.5 mph to protect against engine overspeed. If the busdriver had selected and kept the selector lever in third gear, the bus would have automatically upshifted from third to fourth

---

<sup>1</sup>For more detailed information, read Highway Accident Report--Mayflower Contract Services, Inc., Tour Bus Plunge from Tramway Road and Overtake Crash near Palm Springs, California, on July 31, 1991 (NTSB/HAR-93/01).

before the yaw marks began. However, any automatic upshift from third to fourth occurred after the busdriver had lost speed control. Because of the vehicle's degraded braking capacity, he could not decrease speed to effect a downshift.

The Safety Board concludes that although the Allison automatic transmission feature that permits automatic upshifts did not cause or contribute to this accident, an upshift occurrence may be the first warning that the transmission can no longer help maintain speed control and immediate action must be taken to reduce speed to effect a downshift back into the desired gear range.

To enable busdrivers to operate this transmission feature effectively, the Safety Board believes that Allison should furnish an advisory label with newly manufactured Allison automatic transmissions that have the automatic upshift feature. Allison should recommend to transmission purchasers that the label be mounted on each vehicle where it is clearly visible to the busdriver.

Therefore, the Safety Board recommends that the Allison Transmission Division:

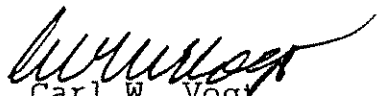
Furnish an advisory label with newly manufactured Allison automatic transmissions that have the automatic upshift feature. Recommend to transmission purchasers that the label be mounted on each vehicle where it is clearly visible to the driver. (Class II, Priority Action) (H-93-23)

Also, the Safety Board issued Safety Recommendations H-93-10 and -11 to the Federal Highway Administration, H-93-12 and -13 to the State of California, H-93-14 and -15 to the California Department of Education, H-93-16 and -17 to the California Highway Patrol, H-93-18 to the Mount San Jacinto Winter Park Authority, H-93-19 to the National Committee on Uniform Traffic Laws and Ordinances, H-93-20 to the American Association of State Highway and Transportation Officials, H-93-21 and -22 to the National Association of State Directors of Pupil Transportation Services, and H-93-24 through -26 to the Mayflower Contract Services, Inc.

The National Transportation Safety Board is an independent Federal agency with the statutory responsibility "to promote transportation safety by conducting independent accident investigations and by formulating safety improvement recommendations" (Public Law 93-633). The Safety Board is vitally interested in any action taken as a result of its safety recommendations. Therefore, it would appreciate a response from you regarding action taken or contemplated with respect to the recommendation in this letter. Please refer to Safety

Recommendation H-93-23 in your reply. If you need additional information, you may call (202) 382-6850.

Chairman VOGT, Vice Chairman COUGHLIN, and Members LAUBER, HART, and HAMMERSCHMIDT concurred in this recommendation.

By:   
Carl W. Vogt  
Chairman