62 FR 674

National Transportation Safety Board

Washington, D.C. 20594

Safety Recommendation

Date: August 28, 1997

In Reply Refer To: R-97-36

Honorable Rodney E. Slater
Secretary
U.S. Department of Transportation
Washington, DC 20590

About 5:39 p.m. on February 16, 1996, Maryland Rail Commuter (MARC) train 286 collided with National Railroad Passenger Corporation (Amtrak) passenger train 29 near Silver Spring, Maryland. En route from Brunswick, Maryland, to Union Station in Washington, DC, MARC train 286 was traveling under CSX Transportation Inc. (CSXT) operation and control on CSXT tracks. MARC train 286 passed an APPROACH signal before making a station stop at Kensington, Maryland; proceeded as if the signal had been CLEAR; and, then, could not stop for the STOP signal at Georgetown Junction, where it collided with Amtrak train 29. All 3 CSXT operating crewmembers and 8 of the 20 passengers on MARC train 286 were killed in the derailment and subsequent fire. The National Transportation Safety Board concluded that the catastrophic rupture of the Amtrak unit 255 fuel tank in the collision with the MARC cab control car 7752 released fuel, which sprayed into the interior of the cab control car, and resulted in the fire and at least 8 of the 11 fatalities. Eleven passengers on MARC train 286 and 15 of the 182 crewmembers and passengers on Amtrak train 29 were injured.[1]

During the investigation of this accident, the Safety Board identified several areas of safety deficiencies that should be addressed by passenger car safety standards for improved passenger safety. One of the identified areas was the failure of interior car materials to meet flammability and smoke standards.

The Maryland Department of Transportation purchase contract for 11 passenger cars, including cab control car 7752, contained the following smoke and flammability specifications:

> All materials used in the interior of the car (that is, all materials inboard of the structural shell and including, but not limited to, liners, floor panels, thermal and acoustic insulation, seats and cushions, floor covering materials, wainscots, carpeting, glazing materials, and light fixture lenses) shall have the highest degree of fire resistance and lowest smoke emission consistent

[1]For more detailed information, read Railroad Accident Report--*Collision and Derailment of Maryland Rail Commuter MARC Train 286 and National Railroad Passenger Corporation Amtrak Train 29, near Silver Spring, Maryland, on February 16, 1996* (NTSB/RAR-97/02).

> with the other qualities required. As a minimum, all materials used in the interior of the car shall meet the requirements of the U.S. Department of Transportation's [DOT's] "Proposed Guidelines for Flammability and Smoke Emission Specifications."

To determine the compliance of the MARC car interior materials with the flammability and smoke requirements, tests were conducted on materials from an exemplar MARC passenger car by the University of Maryland Department of Fire Protection Engineering at College Park, Maryland. These tests were governed by the Federal Railroad Administration (FRA) recommendations for testing the flammability and smoke emission characteristics for commuter and intercity rail vehicle materials. The tested materials, consisting of the major combustible items in the car, included the upholstered portion, but not the rigid plastic side-rail and back components, of the seats; the ceiling lining, which was similar, if not identical, to the other wall lining and partition materials; and the window mask material. The pad cushion materials of the seat passed the smoke criterion but failed the flammability criterion. The fabric upholstery seat covering passed the flammability test but failed the smoke test in the flaming mode. The vinyl seat coverings passed the flammability test but failed the smoke test in the nonflaming mode. The ceiling panel passed both the smoke and flammability criteria; however, the window mask material failed both criteria. Floor materials were not included in the tests because the cab control car 7752 floor was not destroyed by the fire.

The Safety Board recognizes that the materials taken from an exemplar MARC car may not have been identical to the materials that were installed on cab control car 7752 and that other factors, such as wear, can affect the performance of the car materials; nevertheless, the materials taken from the exemplar car were significantly similar to the materials in the accident car. Some of the interior materials from the exemplar MARC car failed current flammability and smoke emissions testing criteria, and the materials in the cab control car 7752 also most likely would have failed. Had the materials met current performance criteria, however, the outcome would not have been any different because of the presence of diesel fuel as an ignition source. The fire would have spread quickly whether or not the interior materials of the MARC passenger cars had met current performance criteria regarding flammability and smoke emissions characteristics; still, the Safety Board is concerned that the interior materials in the MARC passenger cars did not meet existing performance criteria for flammability and smoke emissions characteristics.

The current FRA information on the flammability and smoke emissions characteristics and the testing of commuter and intercity rail vehicle materials is based on guidelines, developed by the FRA and the Federal Transit Administration (FTA), that have not changed significantly in the past 30 years. The Safety Board concluded that the Federal guidelines on the flammability and smoke emissions characteristics and the testing of interior materials do not provide for the integrated use of passenger car interior materials and, as a result, are not useful in predicting the safety of the interior environment of a passenger car in a fire. Therefore, the Safety Board believes that the DOT should review the testing protocols within the various modal administrations regarding the flammability and the smoke emissions characteristics of interior materials and coordinate the development and implementation of standards for material performance and testing with the FRA and the FTA.

Therefore, the National Transportation Safety Board recommends that the U.S. Department of Transportation:

Review the testing protocols within the various modal administrations regarding the flammability and the smoke emissions characteristics of interior materials and coordinate the development and implementation of standards for material performance and testing with the Federal Railroad Administration and the Federal Transit Administration. (R-97-36)

Also, the Safety Board issued Safety Recommendations R-97-9 through -21 to the FRA; R-97-22 through -25 to the FTA; R-97-26 through -31 to the CSXT; R-97-32 through -35 to the Maryland Mass Transit Administration; R-97-37 to the Federal Emergency Management Agency; R-97-38 to the Governor and the General Assembly of Maryland; R-97-39 through -42 to the Association of American Railroads; R-97-43 to the Montgomery County Emergency Management Agency; R-97-44 to the Baltimore County Emergency Management Agency, the Baltimore City Emergency Management Agency, the Metropolitan Washington Council of Governments, the Jefferson County Commissioners, and the Berkeley County Commissioners; and R-97-45 to the American Short Line Railroad Association, the Brotherhood of Locomotive Engineers, the United Transportation Union, the International Brotherhood of Teamsters, and the American Public Transit Association. The Safety Board also reiterated Safety Recommendations R-87-16, R-92-10, and R-93-12 to the FRA; R-92-16 to the General Electric Company; and R-92-17 to the Electro-Motive Division of General Motors. If you need additional information, you may call (202) 314-6430.

Chairman HALL, Vice Chairman FRANCIS, and Members HAMMERSCHMIDT, GOGLIA, and BLACK concurred in this recommendation.

By: Jim Hall
Chairman