

Log R-6660



National Transportation Safety Board

Washington, D.C. 20594

Safety Recommendation

Date: March 12, 1996

In Reply Refer To: R-96-4 through -6

Mr. John A. Agro, Jr.
Administrator
Mass Transit Administration
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About 5:38 p.m. on February 16, 1996, eastbound Maryland Rail Commuter (MARC) train 286 collided with westbound National Railroad Passenger Corporation (Amtrak) train 29, the Capitol Limited, at milepost 8.55 on CSX main track near Silver Spring, Maryland. The MARC train was operating in the push mode in revenue service between Brunswick, Maryland, and Washington, D.C.; it consisted of a locomotive and three commuter cars. The Amtrak train, operating in revenue service between Washington, D.C., and Chicago, Illinois, consisted of 2 locomotives and 15 cars.

The left front quadrant of the MARC cab car (the leading passenger car) separated and was destroyed as a result of the collision. The fuel tank of the Amtrak lead locomotive ruptured on impact and the diesel fuel ignited. Fire engulfed the rear superstructure of the locomotive. Fuel spilled onto the MARC cab car, ignited, and destroyed the car.

One hundred sixty-four passengers, 13 on-board service personnel, 4 operating crew, and 1 mechanical rider were aboard the Amtrak train. The engineer, assistant engineer, and conductor received minor-to-moderate injuries.

Three operating crewmembers and 20 passengers were on board the MARC train. Two crewmembers and 7 passengers died of smoke inhalation, and 1 crewmember and 1 passenger died as a result of impact injuries; 11 of the 12 survivors were injured.

Safety Board investigators interviewed six U.S. Department of Labor Job Corps students who were passengers in the MARC cab car and two individuals who were passengers in the second MARC car.

The students stated that after the impact, the car quickly filled with smoke, making it very difficult to see. One student, who said he was sitting in the last seat on the right rear of the first car next to an emergency window, described the smoke as extending from the ceiling of the car to 2 feet above the floor. The student also stated that he did not have time to open the window and that he believed it would be faster to exit using the door through which he had entered. Another student said that he had to crawl to the rear of the car on his hands and knees because of the smoke. Two other students, seated near the rear of the first car, proceeded through the rear end interior door and made several unsuccessful attempts to open the left and right exterior side doors. They stated that no instructions were provided concerning the operation of the door handle in an emergency.

These two students made their way into the vestibule of the second car and escaped through an opening in the damaged left front corner of the second car. All surviving students, as well as a 26-year-old passenger who was also seated in the cab car, followed.

The upper half of the side exterior doors on the MARC Sumitomo cars are fitted with fixed polycarbonate windows. When opened, the single-panel exterior side doors slide into a pocket in the car body sidewall. Construction of the interior end doors, which have upper-half fixed windows, is similar to that of the exterior doors. These doors also slide into a wall pocket when opened; they are not equipped with emergency release mechanisms. The four exterior side doors are electrically operated and may be opened manually in an emergency by pulling an emergency handle located in one of four secured cabinets (two at each end of the passenger compartment). Each cabinet door is secured by two fasteners, which require a screwdriver or coin to open. Instructions for opening the cabinet doors are on the door's exterior. Instructions for operating the emergency handles to release the exterior doors are inside the cabinet.

The Safety Board is concerned that emergency quick-release mechanisms for the exterior doors are located in a secured cabinet some distance from the door they control. Emergency controls for each door should be readily accessible and identifiable. Therefore, the Safety Board believes that well-marked emergency quick-release mechanisms for exterior doors on MARC cars should be relocated so that they are immediately adjacent to the door they control and readily accessible for emergency escape purposes.

Examination of the first and second cars revealed that the left and right rear exterior side doors of the former, as well as the front interior end door and the right front exterior door of the latter, were jammed. None of the doors had removable windows or pop-out emergency escape panels (kick panels) for use in an emergency. The left front exterior door of the second car was destroyed. Thus, if the opening in the damaged car body of the second car had not provided an escape route for the surviving passengers of the cab control car, the loss of life in this accident could have been far greater.

Several students stated that they were unaware of the locations of the emergency exits, and none knew how to operate them. The Safety Board found that the interior emergency window decals were not prominently displayed and that one car had no interior emergency window decals. The Safety Board noted that the exterior emergency decals were often faded or obliterated and that the information on them, when legible, directed emergency responders to another sign at the end of the car for instructions on how to open emergency exits, which is a time-consuming process. The Safety Board believes that all emergency exits should be clearly identified and provided at the exit with easily understood operating instructions. These instructions should be prominently located on the car interior for use by passengers and on the exterior for use by emergency responders.

Therefore, the National Transportation Safety Board recommends that the Mass Transit Administration of the Maryland Department of Transportation:

Install removable windows or kick panels for emergency exits in interior and exterior passageway doors. (Class I, Urgent Action) (R-96-4)

Install an easily accessible interior emergency quick-release mechanism adjacent to all exterior doors. (Class I, Urgent Action) (R-96-5)

Install retroreflective signage on car interiors and exteriors at emergency exits that contains easily understood instructions and clearly marks all emergency exits (doors and windows). (Class I, Urgent Action) (R-96-6)

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's investigation of the MARC accident is continuing. The Safety Board is 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 recommendations in this letter. Please refer to Safety Recommendations R-96-4 through -6 in your reply. If you need additional information, you may call (202) 382-6840.

Chairman HALL, Vice Chairman FRANCIS, and Members HAMMERSCHMIDT, GOGLIA, and BLACK concurred in these recommendations.

By: 
Jim Hall
Chairman