

Log R-566



National Transportation Safety Board

Washington, D.C. 20594

Safety Recommendation

Date: January 15, 1987

In reply refer to: R-87-1 through -3

Mr. Graham Claytor
Chairman and President
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About 1:30 p.m. on January 4, 1987, National Railroad Passenger Corporation (Amtrak) train No. 94 operating from Washington, D.C., to Springfield and Boston, Massachusetts, on Amtrak's northeast corridor collided with three Consolidated Rail Corporation (Conrail) diesel/electric locomotive units near Chase, Maryland. Amtrak train No. 94 consisted of 2 electric locomotive units and 12 passenger cars containing over 500 passengers. Sixteen people died and more than 170 were injured. Preliminary damage estimates exceed \$15 million.

The accident is under intensive investigation by the National Transportation Safety Board and the initial findings indicate that the three-unit Conrail locomotive was operated past a stop signal, through a trailing point switch, and onto the main track immediately ahead of the Amtrak passenger train. The faster moving passenger train overtook and crashed into the rear unit of the Conrail locomotive.

The Safety Board is concerned that the Conrail locomotive was not equipped with a device which could have caused the locomotive to slow automatically and to comply with the appropriate signals thereby preventing entry into the high speed (over 100 mph) passenger train main track of the northeast corridor, which had been previously cleared for occupancy by Amtrak train No. 94. The lack of automatic train control devices on the Conrail diesel locomotives is difficult to reconcile with the fact that the diesel locomotives replaced electric locomotives that had been equipped with automatic train control devices.

The Safety Board previously expressed concern about the lack of an automatic device to stop a train in Safety Recommendation R-78-39 issued to Amtrak on June 23, 1978 as a result of an accident at Seabrook, Maryland, on June 9, 1978.

Require all trains that operate on the northeast corridor to be equipped with an automatic train control system.

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On November 28, 1980, Amtrak responded that as a result of R-78-39, the northeast corridor time table had been modified with an instruction:

Speed control/all divisions - 1562-A1. A train not equipped with a speed control system, or with the speed control system not in operative condition, must not pass a signal displaying a stop and proceed indication (291), except when the conductor or engineman has been given verbal authority to do so by the train dispatcher or operator when authorized by the train dispatcher. After having stopped at a signal displaying a stop and proceed indication (291), if the conductor or engineman of the train is unable to communicate with the train dispatcher or operator by radio or telephone to receive verbal permission, the train may proceed governed by the signal indication after having been stopped for three minutes. When verbal permission has been granted, the train dispatcher and operator will make a record on train and block record sheets.

Additionally, Amtrak wrote the Safety Board on August 7, 1981, stating that it was surveying all equipment in the northeast corridor to determine the scope of noncompliance with the recommendation. On February 10, 1982, Amtrak again wrote to the Safety Board stating:

All Amtrak-owned locomotives and self-propelled cars operated in revenue passenger service in the NEC are equipped with ATC and cab signals. Amtrak NEC time table order No. 1562-A1 was issued in accordance with recommendation R-78-39 specifically covering the operation on non-Amtrak vehicles which are not equipped with ATC apparatus. It is Amtrak's contention that service in the NEC would be disrupted significantly were Amtrak to further prohibit the operation of vehicles which are not equipped with ATC. Amtrak order 1562-A1 has been in effect for nearly 1 year and has not resulted in disruption of service. We, therefore, ask the Safety Board to reconsider the utility of this approach in meeting the intent of recommendation R-78-39.

On September 30, 1982, the Safety Board wrote Amtrak that in view of the information provided, Amtrak's actions were considered an acceptable alternative to the intent of the recommendation and consequently Safety Recommendation R-78-39 was placed in a "Closed—Acceptable Alternate Action" status.

Although the matter remains under investigation, the Safety Board believes that an automatic train control device on the Conrail locomotive probably would have prevented the accident at Chase, Maryland, on January 4, 1987. Further, it is apparent that Amtrak's northeast corridor time table order No. 1562-A1 did not provide the level of safety required by high speed passenger service. Consequently, the Safety Board believes that action must be taken to install automatic train control devices or an equivalent positive control system on all locomotives operating on the high speed passenger train trackage of the northeast corridor. Pending installation of automatic train control devices or an equivalent system, the Safety Board believes that positive control procedures must be established to ensure that trains cannot inadvertently enter the main tracks. These procedures should require that the operators of all trains not equipped with automatic train control devices who propose to enter the high speed passenger train trackage must stop before entry, regardless of signal aspect, and secure positive clearance to enter the track before proceeding further.

Another major concern of the Safety Board is the lack of an operable train radio on the Conrail locomotive, capable of providing communications between trains and/or fixed stations. The Conrail engineer stated that he broadcast an emergency message that he could not stop, but the Safety Board has no evidence that the message was ever made or received. The Conrail engineer used a portable type of radio for this transmission which was not suitable for train-to-train or train-to-fixed station communication. The Conrail locomotive radio, normally used for communication with railroad operating personnel, was inoperative. The Safety Board has long believed that operable radios are necessary for the safe operation of trains. Moreover, radios are essential to the proper implementation of a positive train control system.

The Safety Board believes that the conditions which resulted in the accident at Chase, Maryland, on January 4, 1987, still exist on the northeast corridor. The Safety Board further believes that all trains operating on the high speed passenger trackage of the northeast corridor should be equipped with devices which will control the train automatically as required by signal if the engineer fails to do so, that interim measures should be taken to ensure the safety of the system until such time as all trains are so equipped, and that all locomotives be equipped with an operable radio.

Therefore, the National Transportation Safety Board recommends that the National Railroad Passenger Corporation (Amtrak):

Immediately initiate a program which will assure that all locomotives operating on the high speed passenger train trackage of the northeast corridor are equipped with a device which will control the train automatically as required by the signal if the engineer fails to do so. (Class II, Priority Action) (R-87-1)

Pending the installation of the automatic train control devices or an equivalent positive control system on all locomotives operating on the high speed passenger train trackage of the northeast corridor, require that the operators of locomotives and trains not equipped with such devices stop before entry onto the high speed tracks regardless of signal aspect, and to request and receive permission before proceeding. (Class I, Urgent Action) (R-87-2)

Require all locomotives allowed to enter and operate on the high speed passenger train trackage of the northeast corridor to be equipped with an operable radio capable of train-to-train and train-to-fixed station communications. (Class I, Urgent Action) (R-87-3)

BURNETT, Chairman, GOLDMAN, Vice Chairman, and LAUBER and NALL, Members, concurred in these recommendations.

By: Jim Burnett
Chairman

