Log R-546A

NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

ISSUED: JAN 15 1986

Forwarded to:

Honorable John H. Riley
Administrator
Federal Railroad Administration
Washington, D. C.

SAFETY RECOMMENDATION(S)

R-85-129

About 6:50 a.m, on July 7, 1984, northbound Amtrak passenger train No. 60, the Montrealer, derailed while passing over a washed-out section of gravel embankment under the main track of the Central Vermont Railway (CV) near Essex Junction, Vermont. Two locomotive units and the forward seven cars of the train derailed and were destroyed or heavily damaged. Three passengers and an Amtrak sleeping car attendant were killed; one CV crewmember died about 3 hours after the accident as a result of injuries sustained in the accident. One CV crewmember, two Amtrak attendants, and 26 passengers were seriously injured. Damage was estimated to be $6,812,838. 1/

The accident location was in such a remote location that trees screened it from view in all directions, except along the railroad's right-of-way. It could not even be seen from the landfill access road. Nevertheless, had someone seen the washed-out embankment during the brief period of daylight and reported the fact to the CV dispatcher, there was little chance that the dispatcher could have contacted and warned the train crew. There were no open stations and there were no signals that could be set to stop the train. Only radio could be used to contact the crew, and the radios on the locomotive units were not equipped to operate on CV's frequencies. The train crew had small 5-watt portable radios with an effective range of 1 to 3 miles under optimum conditions, but the radios were not likely to receive a transmission unless they were close to one of the base stations, which were 25 miles or more apart. A measure of the ineffectiveness of the portable radios as replacements for the long-range radios on the locomotive units was the failure of the dispatcher to hear the extra brakeman's repeated calls for help over his portable radio, although the brakeman was about 2 miles away from the base station at Essex Junction.

Train No. 60 did not have a locomotive radio which would transmit and receive over the CV frequencies because Amtrak's motive power dispatcher permitted the train to leave New Haven, Connecticut, without one. There was a proper radio in fully serviceable condition at New Haven, but it was locked up in the radio shop. There was adequate time to correct the situation, but this was not done. CV was informed of the

1/ For more detailed information, read Railroad Accident Report—"Derailment of Amtrak Passenger Train No. 60, The Montrealer, on the Central Vermont Railway near Essex Junction, Vermont, July 7, 1984" (NTSB/RAR-85/14).

radio deficiency by Amtrak, and the train had been frequently accepted by CV without a proper radio in the past. There were no rules or regulations prohibiting this, but again the high degree to which CV relies on radio communication in its operations, the Safety Board believes this was a matter of poor judgment on the parts of both Amtrak and CV. Necessary steps were promptly taken after the accident to assure that such a situation would not occur again, but Amtrak should make certain that similar deficiencies do not occur elsewhere in operations that involve running its trains over several different railroads with different radio frequencies.

Even if the locomotive radio on train No. 60 had been equipped to function on the CV frequencies, it would not have been possible for the enginemen to communicate with the dispatcher because the locomotive battery boxes were destroyed when the locomotive units derailed. The location of the batteries under the frame of the locomotive units, which is peculiar to Amtrak's F4OPH units, makes them highly vulnerable when a locomotive unit derails and the carbody separates from the trucks. Such separation also occurred in the July 7 accident, the Amtrak derailment at Connellsville, Pennsylvania, on May 28, 1984, and the derailment of Amtrak's California Zephyr due to a washout near Granby, Colorado, on April 16, 1985. 2/ At Granby, as at Essex Junction, it was necessary for an engineman to walk about a half mile to reach a telephone and report the accident. In the Connellsville accident, an engineman walked 2 1/2 miles to use the telephone in a private residence. In all three accidents, the locations were relatively remote. Sixteen persons were seriously injured in the Granby derailment; 23 persons were injured, 4 seriously, in the Connellsville accident. In this day of almost total reliance on radios for communications on the railroads, it is intolerable that help for the injured occupants of passenger trains is delayed because it is necessary for train crewmembers to walk to the nearest telephone. The Safety Board believes that reliable emergency power for radio usage or an ability for the radio to broadcast an emergency message in the event of a serious accident is essential on Amtrak locomotives.

The Safety Board has long been interested in the application of radio use to railroad operations. Safety Recommendations have been issued to the Federal Railroad Administration (FRA) addressing the need for radios to be required equipment on trains, the need for compatibility of radios between railroad properties, and the need for standards governing the use of radios in the industry. Recommendations also have been issued to various individual properties on the same issues.

Since 1976, the Safety Board has issued to the FRA three safety recommendations on the use of operable radios onboard trains, as follows:

R-76-8

Require that trains be equipped with operable radios and that railroad management provide guidelines for their use in normal service and in emergency situations.

R-79-73

Establish regulations that would require all trains operating on a main track to be equipped with an operable radio.

R-81-81

Initiate rulemaking to require trains which operate on common trackage to have compatible radio equipment which will permit emergency communication.

2/ Railroad Accident/Incident Summary Reports--Derailment of Amtrak Passenger Train, The California Zephyr, Near Granby Colorado, April 16, 1985" (NTSB/RAR-85/01/SUM).

All three recommendations are being held in an "Open--Unacceptable Action" status. It is interesting to note that, while over the past 10 years the FRA has not acted to resolve this issue, concern has been expressed at the highest levels. During the National Transportation Safety Board's National Accident Investigation Symposium held in Washington, D.C., July 30 - August 1, 1984, you stated:

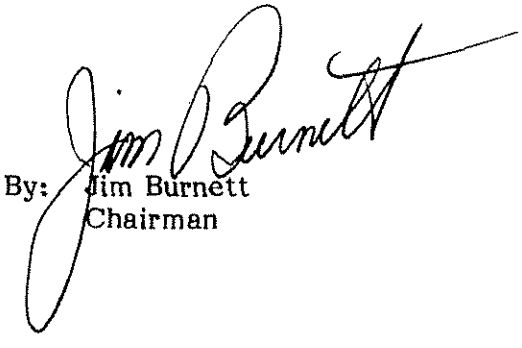
> There were two things that I found imponderable before coming to FRA. One was the difficulty in reaching an agreement among all of the parties that would address in a fair way the alcohol and drug issue.
>
> The second imponderable was why we have been unable to develop a consistent program of radio communication in the railroad industry. Having addressed the first problem, we do intend to move to address the second, and we are going to begin proceedings that deal with the issue of communication, radio communication among railroad operating vehicles.

The Safety Board appreciates the concern you expressed over a year ago and urges the FRA to move swiftly in its efforts to address the use of radios and radio communication standards to improve operational safety in the railroad industry. To underscore the Board's concern for this issue, Safety Recommendations R-76-8, R-79-73, and R-81-81 have been placed in a "Closed--Unacceptable Action/Superseded" status and a new recommendation is being issued which covers the general issue of radios in railroad transportation safety.

Therefore, as a result of its investigation, the National Transportation Safety Board recommends that the Federal Railroad Administration:

> Establish regulations that address the issues surrounding the use of radios for operational purposes on trains to include, but not be limited to, requirements for radios to be installed on trains; usage requirements for inter- and intra-train communications; usage requirements for dispatching and control operations; frequency compatibility requirements; and maintenance, inspection, and testing requirements. (Class II, Priority Action) (R-85-129)

BURNETT, Chairman, GOLDMAN, Vice Chairman, and LAUBER, Member, concurred in this recommendation.



By: Jim Burnett
Chairman