Log R-615

National Transportation Safety Board

Washington, D.C. 20594

Safety Recommendation

Date: May 31, 1989

In reply refer to: R-89-31 through -33

Mr. Gerald Grinstein
Chairman and Chief Executive Officer
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777 Main Street
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About 3:15 p.m. mountain daylight time on August 5, 1988, westbound National Railroad Passenger Corporation (Amtrak) train 7, The Empire Builder, derailed near Saco, Montana, while operating on the Burlington Northern (BN) Railroad. Five passengers and 1 Amtrak service crewmember received serious injuries; 87 passengers and 13 Amtrak service crewmembers received minor injuries. The estimated damage was $2,778,000.[1]

Several circumstances in concert produced the situation wherein the BN's track structure was unable to support the passage of Amtrak passenger train 7. A deviation in track surface that was discovered by the track inspector on August 3 was not adequately defined because the track inspector did not take any measurements of that deviation. Had the track inspector done so, it is likely the required corrective maintenance work would have been recognized as warranting closer scrutiny and immediate attention. The track maintenance to correct the deviation was eventually performed on August 5 during a period of hot weather, with wide variations in daily temperature extremes. BN maintenance-of-way officials were aware of these weather conditions as they existed. BN's maintenance rules currently preclude performing spot maintenance when ambient temperature exceeds 90^{0} F. A slow order restricting the speed of passing trains until the disturbed ballast section became consolidated may well have prevented this accident. However, the imposition of a slow order on August 5 rested with the judgment of the section foreman, and although the section foreman's supervisor visited the work site, the imposition of a slow order was not discussed. Neither of these personnel was issued, or in possession of, a rail thermometer.

Rail temperatures cannot be determined solely on the basis of ambient temperatures and, dependent on many factors, normally can be substantially higher than ambient temperatures. Direct exposure to sunlight in an open

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[1] For more detailed information, read Railroad Accident Report--"Derailment of National Railroad Passenger Corporation Train 7 on Burlington Northern Railroad near Saco, Montana, August 5, 1988" (NTSB/RAR-89/03).

environment, such as the rail in this case was, normally will result in a rail temperature substantially higher than ambient temperature. When track restraint is disturbed, as was the case in this instance, rail expansion tends to displace the track structure. The Safety Board believes that had a slow order been placed on the track after the maintenance work was performed on August 5, the accident probably would have been prevented.

Over 8 hours elapsed between the time train 7 derailed and the time toxicological samples were obtained from the train and engine crewmembers. The Safety Board believes the significant delay in obtaining the toxicological samples was unnecessary and could have been avoided. The unsequestered conductor and uninjured assistant conductor were allowed to be ". . . just sitting there on the track waiting for something to happen," before being engaged in determining passenger destinations. The conductor gave an interview to the media after the train was completely evacuated and before going to give toxicological samples. Later, four crewmembers were held at the accident scene for approximately 1 hour while the conductor received medical attention. The conductor could have been transported along with the another injured crewmember, and the delay for the uninjured crewmembers could have been avoided. The operating officers further delayed the collection of the toxicological specimens from the five crewmembers by stopping at the yard office in Havre, Montana, to deliver the multi-event recorder tapes before taking the crewmembers to the hospital.

The Safety Board addressed concern for the timely collection of toxicological samples on June 21, 1988, in its study on alcohol/drug use.[2] A review of sample collection times from 46 railroad accidents that occurred in 1987 revealed an average collection time of 5 1/2 hours, with a range from 1 1/2 to 14 hours. The study identified some of the reasons for the delays as:

-- general confusion at accident sites;
-- debriefing of the train crew;
-- lack of understanding of the rule's requirement;
-- inadequate management direction;
-- the need to treat injured crewmembers;
-- the train crew's participation in handling the emergency; and
-- long distances to hospitals or other sample collection sites.

There are indications that each of these reasons contributed to the delay of collecting toxicological specimens from the train crew involved in the Saco accident. Toxicological testing eventually revealed that no drugs or alcohol were identified in the specimens of any crewmember.

Sample collection delays seriously limit the ability of analysts to detect a parent drug or its psychoactive components for some of the major drugs (cocaine, some amphetmines, and phencyclidine (PCP)) for which testing is being undertaken. Clearly, the presence of these drugs in railroad

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[2] Safety Study--"Alcohol/Drug Use and Its Impact on Railroad Safety" (NTSB/SS-88/04).

personnel at the time of an accident must be confirmed or rejected, and that is possible only if sample collection is undertaken within the first few hours after the event. Sample collection delays, as in this accident, could preclude even alcohol detection. Most States recognize this and have established a 3-hour limit for the collection of breath/blood samples after highway accidents. The Safety Board strongly believes that appropriate toxicological samples must be collected within 4 hours and that the reasons for any delay should be documented.

Therefore, the National Transportation Safety Board recommends that the Burlington Northern Railroad Company:

> Establish a definition for disturbed track in the track maintenance program. (Class II, Priority Action) (R-89-31)
>
> Issue rail thermometers to appropriate track maintenance personnel, and reemphasize the necessity of using rail thermometers to determine actual rail temperature for track buckling countermeasures. (Class II, Priority Action) (R-89-32)
>
> Reemphasize to on-line officers involved in the sample collection process the need to collect toxicological samples promptly. (Class II, Priority Action) (R-89-33)

Also, the Safety Board issued Safety Recommendations R-89-34 and -35 to the National Railroad Passenger Corporation and R-89-36 to each Amtrak host railroad.

KOLSTAD, Acting Chairman, and BURNETT, LAUBER, NALL, and DICKINSON, Members, concurred in these recommendations.

By: James L. Kolstad
Acting Chairman