SP-20
Log R-472

NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

ISSUED: June 18, 1984

Forwarded to:

Honorable John Riley
Administrator
Federal Railroad Administration
Washington, D.C. 20590

SAFETY RECOMMENDATION(S)

R-84-30 and -31

At 5:32 a.m., c.d.t., on September 14, 1983, Seaboard System Railroad (SBD) train Extra 1751 North moved onto the main track from the north end of the siding at Sullivan, Indiana, and proceeded northward. About 5:37 a.m., after Extra 1751 North had attained a speed of approximately 18 mph and had traveled 1,939 feet beyond the siding switch, SBD train Extra 8051 North, moving about 35 mph, overtook and struck the rear caboose of Extra 1751 North. The impact derailed 2 cars and 2 cabooses of Extra 1751 North and 3 locomotive units and 25 cars of Extra 8051 North. The two crewmembers in the rear caboose of Extra 1751 North were killed, and three crewmembers on Extra 8051 North were injured. No hazardous material cars were involved in the derailment. 1/

The postaccident signal tests indicated that the last aspect displayed by the absolute signal at South Sullivan before the accident was an approach (yellow) aspect. A proper response to this signal indication would have been for the head brakeman of Extra 8051 North, since he was operating the train, to have reduced the speed of the train to no more than medium speed (30 mph) and to have proceeded prepared to stop at North Sullivan. The last aspect displayed by the absolute signal at North Sullivan, as determined by the postaccident tests, was stop (red). In order for the head brakeman to have operated the train past the absolute stop signal, special authority would have been required from the train dispatcher. Such authority was neither requested nor granted. The head brakeman should have stopped the train in approach to this signal, but he did not.

The signal at the Illinois Central Gulf Railroad crossing south of Sullivan and intermediate wayside signal 207.0 each displayed an approach medium signal aspect because the signal for the main track at North Sullivan was displaying a stop aspect after the passage of train No. 722. These aspects should have forewarned the head brakeman of Extra 8051 North to expect an approach aspect to be displayed by the signal at South Sullivan and a stop aspect to be displayed by the signal at North Sullivan. The head brakeman did not respond to these two signals as evidenced by his passing the approach aspect displayed by the signal at South Sullivan without reducing the speed of the train to the 30-mph medium speed and preparing to stop at the next signal as required by operating rule No. 285.

1/ For more detailed information, read Railroad Accident Report--"Rear End Collision of Seaboard System Railroad Freight Trains Extra 8051 North and Extra 1751 North, Sullivan, Indiana, September 14, 1983" (NTSB/RAR-84/02).

Had a procedure been in effect which required the engineer to radio the five wayside signal aspects between North Oaktown and North Sullivan to the conductor, the conductor might have been alerted to the inattentiveness of the enginecrew and been able to take preventive action. On September 10, 1976, the Safety Board recommended that the Federal Railroad Administration (FRA),

> Promulgate rules to require engine crews to communicate fixed signal aspects to conductors while trains are en route on signalized track. (R-76-50) 2/

On May 13, 1977, the FRA replied that "in keeping train crews alert, a diligent carrier conducted rules instruction and testing program on operating rules would be a great deal more effective than would be federally promulgated rules of the type recommended in R-76-50." The Safety Board reiterated this recommendation on April 7, 1981, following its investigation of an accident at Hermosa, Wyoming. 3/

Similar recommendations have been made to individual railroads and to the Association of American Railroads (AAR). None of the recommendation recipients has concurred in the recommendations. The Safety Board maintains its position that such a requirement would enable the conductor to better monitor the performance of the enginecrew and consequently the handling of the train. Likewise, it would serve to keep the rear crew alert. Based on the FRA's latest response, dated April 30, 1984, to Safety Recommendation R-76-50, it does not appear that the FRA will take action to fulfill the intent of the recommendation.

Therefore, as a result of its investigation of this accident, and based on a firm belief in the merit of the recommendations addressing the passing of wayside signal aspects from the head-end crew to the rear-end crew, the Safety Board is reissuing herein the procedures outlined in its previous recommendations in a new recommendation to the FRA. The recommendation will supersede recommendation R-76-50, which will be placed in a "Closed—Superseded" status.

Another measure that is available but not used on the SBD and a number of other railroads to prevent accidents is the deadman safety control and/or an alerting device. Historically, both of these devices have been abused and defeated by employees, and since they are not federally required, they are being removed from locomotives. However, the Safety Board believes that through a concerted effort by the railroad and supply industries, a functional, tamper-proof device can be developed. Following the investigation of an accident at Herndon, Pennsylvania, in 1972, 4/ the Safety Board recommended that the FRA:

> In cooperation with the Association of American Railroads, develop a fail-safe device to stop a train in the event that the engineer becomes incapacitated by sickness or death, or falls asleep. Regulations should be promulgated to require installation, use, and maintenance of such device. (R-73-8)

2/ Railroad Accident Report--"Head-on Collision of Two Penn Central Transportation Company Freight Trains near Pettisville, Ohio, February 4, 1976" (NTSB-RAR-76-10).
3/ Railroad Accident Report--"Rear-End Collision of Union Pacific Railroad Company Freight Trains, near Hermosa, Wyoming, October 16, 1980" (NTSB-RAR-81-3).
4/ Railroad Accident Report—"Head-on Collision of Two Penn Central Freight Trains at Herndon, Pennsylvania, March 12, 1972" (NTSB-RAR-73-3).

This recommendation was reiterated following the investigation of accidents at Indio, California, on June 25, 1973, and at Pacific Junction, Iowa, in 1983. 5/ On April 30, 1984, the FRA responded to Safety Recommendation R-73-8, which is being carried by the Safety Board in an "Open--Unacceptable Action" status. The Safety Board is classifying this recommendation as "Closed--Superseded" as a result of a new recommendation being issued herein as a result of this investigation.

The engineer of Extra 8051 North had about 11 drinks between 11 a.m. and 4:50 p.m. on September 13. Based on the bartenders' statements about the times these drinks were served and the amount of vodka in the drinks, the Safety Board calculates that the engineer's blood alcohol level (BAL) would have been only about 0.005 percent at 10:30 p.m. when he reported for work, assuming he did not consume any more alcohol between 4:50 p.m. and 10:30 p.m. The engineer contends that he did not drink any alcohol after 4:50 p.m.

However, the blood sample drawn from the engineer about 10 a.m. on September 14, 4 1/2 hours after the accident, revealed that the engineer's BAL was 0.27 percent. Using a metabolic rate of 0.015 percent per hour, the Safety Board calculates that the engineer's BAL would have been 0.33 percent at the time of the accident. Assuming that the engineer had a 0.005 percent BAL at 10:30 p.m. when he reported for work, he would have had to consume 18 ounces of an 80-proof alcoholic drink in the 6 1/2 hours between his reporting for duty and his going to sleep at Oaktown, Indiana, and giving control of the locomotive to the head brakeman.

In responding to previous Safety Board recommendations concerning a regulatory approach to curbing the abusive use of alcohol and drugs in the railroad industry, the FRA has expressed a desire and preference to trying a voluntary program approach to dealing with the alcohol/drug problem. The FRA and the rail labor unions have maintained consistently that the Federal government cannot regulate successfully the use of alcohol by railroad employees. However, the FRA did not rule out the development and promulgation of Federal regulations if the voluntary approach is unsuccessful in accomplishing the desired results.

One reason that the alcohol/drug problem has not been recognized in its true dimension is because of inaccurate statistics. For example, the FRA data for the period 1975-1982 show that only 11 of 63,000 reported accidents were said to be related to alcohol/drug abuse. 6/ These statistics are based on carrier-reported accident data, and it is seldom that a carrier attributes cause to the use of alcohol. The Safety Board believes that one circumstance that causes invalid statistical data on alcohol/drug-related accidents is the fact that toxicological tests are made only on employees who do not survive an accident. In this accident the State police officer was persistent in an attempt to have toxicological tests performed on the surviving as well as the deceased crewmembers. However, the tests were made only after the issuance of a court order and a search warrant obtained by the State police. It is clear that without the results of these toxicological tests, the degree of involvement of alcohol in this accident might have gone undetected or could not have been substantiated.

5/ Railroad Accident Reports--"Rear-End Collision of Two Southern Pacific Transportation Company Freight Trains, Indio, California, June 25, 1973" (NTSB-RAR-74-1); and "Rear End Collision of Two Burlington Northern Railroad Company Freight Trains, Pacific Junction, Iowa, April 13, 1983" (NTSB/RAR-83/09).

6/ Modern Railroads, January 1984, p. 51.

The Safety Board has recognized that a timely toxicological test is essential when investigators are attempting to reconstruct the sequence of events leading to an accident, and for the Safety Board and others to determine the probable cause of the accident. If crewmembers are faced with the possiblity of such a test, it may be a deterrent to the use of alcohol immediately before and while on duty.

A consensus from railroad industry groups indicates opposition to Federal legislation and enforcement programs to prevent employees from working while under the effects of alcohol or drugs. There is a resurgence of activity in the railroad industry regarding the alcohol/drug use problem in an effort to address the problem without Federal regulations. The formation of the National Planning Committee on Voluntary Alcohol and Drug Abuse Programs is another indication that railroad labor and management are trying to solve the alcohol and drug abuse problem by mutually agreeable voluntary means. The Safety Board is also aware that oftentimes committees and studies create a diversionary situation and delay corrective action to a problem. While the committee deals with the problem, the safety problem of preventing railroad employees from working when their ability is impaired by alcohol or drugs continues. The Safety Board will watch this closely.

At this time, the Safety Board is not issuing any new recommendations directed toward a federally regulated alcohol and drug abuse program; however, the Board reiterates the following Safety Recommendations issued on March 7, 1983, as a result of its investigation of alcohol-involved accidents, and encourages the FRA to review its position on the issue of Federal involvement:

> Immediately promulgate a specific regulation with appropriate penalties prohibiting the use of alcohol and drugs by employees for a specified period before reporting for duty and while on duty. (R-83-30)
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> With the assistance of the Association of American Railroads and the Railway Labor Executives Association, develop and promulgate effective procedures to ensure that timely toxicological tests are performed on all employees responsible for the operation of the train after a railroad accident which involves a fatality, a passenger train, releases of hazardous materials, an injury, or substantial property damage. (R-83-31)
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> With the assistance of the Association of American Railroads and the Railway Labor Executives Association, develop and promulgate a requirement that alcohol/drug abuse involvement accident/incidents be fully reported to the FRA. (R-83-32)

As a result of this accident investigation, the National Transportation Safety Board recommends that the Federal Railroad Administration:

> Promulgate rules requiring enginecrews to communicate to the rear crews the aspects displayed by all wayside signals governing the progress of the train, irrespective of the signal indication. (Class II, Priority Action) (R-84-30)

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Develop and promulgate a requirement that locomotives operated in main track service be equipped with an alerting device which will stop a train if the engineer fails to respond to an alarm indicating that he or she has fallen asleep or has become incapacitated. (Class II, Priority Action) (R-84-31)

BURNETT, Chairman, GOLDMAN, Vice Chairman, and BURSLEY and GROSE, Members, concurred in these recommendations.

By: Jim Burnett
Chairman