R-428B

NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

ISSUED: July 11, 1983

Forwarded to:

Mr. R. G. Flannery
President and Chief Operating Officer
Missouri Pacific Railroad Company
Missouri Pacific Building
St. Louis, Missouri 63103

SAFETY RECOMMENDATION(S)

R-83-57 through -59

About 4:15 a.m., on October 3, 1982, a Missouri Pacific Railroad Company (MP) southbound freight train Extra UP 2948 South collided with the eighth car ahead of the caboose of an opposing freight train, MP Extra UP 2437 North, at a rail junction known as Glaise Junction on the MP near the community of Possum Grape, Arkansas. The three-unit locomotive and the following nine cars of the southbound train derailed, and the second through eighth cars ahead of the caboose on the northbound train derailed. The engineer and the head brakeman of the southbound train were killed on impact; the conductor of the northbound train was injured and hospitalized. Fire broke out at the overturned lead unit. Damage was estimated to be $1,047,000.

MP operating rule G prohibits the use and possession of intoxicants or narcotics while on duty. Five cans of beer were found lying on the right-of-way near the derailed lead unit. The cans were unopened and cooler than the ambient temperature. Five cans of the same brand of beer were found in a charred cooler that was in the lead unit's cab. The identification stamp on all the cans was traced to retailers in the Mountain Home, Arkansas, area. When questioned regarding their knowledge of beer being brought onto the train, neither a deadheading crew which had been on board the train earlier nor the surviving members of the assigned crew admitted knowing that the beer was present.

The MP had arranged lodging for the use of train crews at a motel in Mountain Home during their away-from-home layovers. The motel lounge sold alcoholic beverages, and the beer could have been purchased there; however, no witnesses would confirm that any member of the two crews on board Extra UP 2948 South purchased the beer while there during their layover. The crews were transported in a motor vehicle supplied by the motel to travel the 12 miles between Mountain Home and Cotter, Arkansas. No MP supervising official was on duty when the assigned crew reported for duty at Cotter Yard before beginning their 245-mile freight train operation.

1/ For more detailed information, read Railroad Accident Report—"Side Collision of Two Missouri Pacific Railroad Company Freight Trains at Glaise Junction, Near Possum Grape, Arkansas, October 3, 1982" (NTSB/RAR-83/~~05~~06).

The results of toxicological tests performed on the engineer suggest that he had been drinking shortly before going on duty, and perhaps while on duty. Since the engineer's blood had a 0.04 percent blood alcohol concentration (BAC) when tested 24 hours after the accident, which occurred about 4 hours after he reported to work, it is likely that he boarded the train at Cotter Yard with a BAC as high as 0.10 percent. At Newport, Arkansas, where the deadheading crew detrained, the engineer's BAC would have been about 0.04 percent if there had been no drinking en route after leaving Cotter Yard. This is based upon using the figure of the engineer's blood metabolizing the alcohol at a rate of 0.015 percent per hour. In addition, the 0.11 percent urine alcohol concentration indicates that the engineer's body was in a "post absorptive" phase and that prior to the accident his BAC was higher than 0.04 percent. Therefore, the Safety Board believes both that the engineer was not in compliance with rule G when he brought beer with him when he boarded the train, and that he was under the influence of alcohol at the time.

The deadheading engineer operated the train between Newport and Glaise Junction at the assigned engineer's request. The assigned engineer assumed control of the train at Newport. However, the head brakeman was operating the train at the time of the accident. The conductor, who is responsible for the performance of the crewmembers while they are on duty, did not take action on the lack of compliance with rule G. The head brakeman, the assigned backup for the engineer, did not take adequate action (if he took any) to prevent the alcohol-influenced engineer from operating the locomotive, for even a short time, when the train left Newport. The reason the head brakeman took over operation of the locomotive between Newport and Glaise Junction could not be determined.

A conversation involving the assigned engineer, the assigned conductor, and the deadheading engineer during which the assigned conductor asked the deadheading engineer to operate the train was overheard by the deadheading conductor. Although the assigned conductor later denied knowledge of the deadheading crew's presence on the train or of his reported request that the deadheading engineer operate the train, the Safety Board believes that he did have knowledge of both the fact that a deadheading crew was on the train and that the deadheading engineer had been asked to operate the train.

The conductor is in charge of the train and should evaluate his crewmembers' fitness for duty. This conductor's allowing the deadheading engineer to operate the train was not proper and was contrary to MP rule Q. A conscientious conductor would have exercised his authority to prohibit the substitution of engineers; he would have informed MP officials of the assigned engineer's physical condition and obtained an engineer who was fit for duty. If the conductor thought that the assigned engineer was not able to perform his job for any reason, concern for his own safety as well as that of his fellow crewmembers and the public along the route should have led the conductor to execute his job responsibilities in compliance with company rules.

At Newport, the assigned engineer was seated at the controls of the locomotive as the deadheading engineer detrained; however, none of the assigned crewmembers who survived could say who actually operated the train after it left Newport. The assigned engineer and the head brakeman were alone in the lead locomotive unit of Extra UP 2948 South when it left Newport. While the MP Timetable Special Instructions required that the rear brakeman ride in the cab of the lead locomotive unit when possible, the rear brakeman rode on the second locomotive unit instead of the lead unit to avoid the

engineer because of a previous altercation. The conductor, alone in the caboose, did not know what was taking place in the locomotive, and he did not know who was operating the locomotive after the train left Newport. The conductor's failure to keep in radio contact with the engineer made him unaware that the unqualified head brakeman had taken over operation of the train. The conductor explained that since he was unable to communicate because of radio "dead spots," he could not ascertain who was operating the train. While the Safety Board acknowledges that "dead spots" along the route might have been encountered, the Board believes it highly unlikely that they blanketed the entire route.

The conductor shares with the engineer the responsibility for the train's safety. When the conductor is in the caboose of a long freight train, he is often unable to see signal aspects before the locomotive passes them. He has no device in the caboose to indicate the speed of the train, but rather must rely on his experience. He cannot usually monitor the engineer and the front brakeman. During Extra UP 2948 South's operation from Cotter yard to the accident site, the conductor did not attempt to fulfill any of these responsibilities. Since the conductor shares the responsibility for the safety of the train, he must be continually aware of conditions that affect the movement of his train.

On September 10, 1976, as a result of an accident investigation, 2/ the Safety Board recommended that the FRA:

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

On March 3, 1981, a similar recommendation was issued, as a result of another accident investigation, 3/ to the Association of American Railroads (AAR):

> Encourage member railroads to establish rules that require enginecrews to communicate fixed signal aspects to conductors while trains are en route on signalized track. (R-81-48)

The status of both recommendations is currently "Open--Unacceptable Action" and "Closed-Unacceptable Action," respectively. The FRA has not adopted such a requirement, nor has the AAR given its support to such action; rather, the AAR has stated that the recommendation has limited value and might be counterproductive. Despite this, some railroads believe this procedure has merit and have implemented a procedure which requires an acknowledgment from the conductor. 4/ The Safety Board continues to believe that general adoption of the procedure reinforces the alertness of the entire train crew, allows the conductor to better exercise his authority, and provides other traincrews within radio coverage with useful information. Had such a procedure been followed in this instance, the accident might have been avoided.

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--"Side Collision of Norfolk and Western Railway Company Train No. 36 with Extra 1539 West, near Welch, West Virginia, September 6, 1980" (NTSB-RAR-81-2).
4/ Railroad Accident Report--"Head-on Collision Between Baltimore & Ohio Railroad Company Train No. 88 and the Brunswick Helper, near Germantown, Maryland, February 9, 1981" (NTSB-RAR-81-6).

Since the crewmembers reported for duty at a location where they were not observed by an operating department official, the MP did not have an effective means to verify their fitness for duty. A long interdivisional operation over a railroad places increased demands on the crew to stay especially alert. Such demands can be met only by crewmembers who are physically and mentally fit. Safety Board investigations of other train collisions also have revealed these factors in long interdivisional operations in which crewmembers have similarly reported for work without a railroad official evaluating their fitness for duty. 5/ Upon completion of its investigations of accidents at Orleans Road, West Virginia, on February 12, 1980, 6/ and at Welch, West Virginia, on September 6, 1980, 7/ the Safety Board made the following recommendation to the Baltimore and Ohio Railroad (R-80-40) and to the Norfolk and Western Railway (R-81-38):

> Establish supervisory procedures at crew-change terminals to insure that all operating department employees coming on duty at any hour of the day are physically fit and capable of complying with all pertinent operating rules.

Both railroads recently responded that they would revise their operating plans to increase the frequency of supervisors being in contact with employees; however, they did not anticipate putting additional supervisors on duty during nighttime working hours at terminals. The Board has not evaluated these recent responses.

If MP officials had been aware of the engineer's condition, the engineer of Extra UP 2948 South probably would not have been permitted to work. Consequently, the Safety Board believes that the MP should develop a method through which crewmembers can be evaluated around-the-clock by supervisors either before, or while reporting for, work at crew-change terminals.

The Safety Board concludes that this accident could have been prevented had the crewmembers complied with pertinent MP operating rules. Furthermore, the Safety Board believes that the MP needs more effective training and closer monitoring of practices to make conductors more effective as supervisors and brakemen more willing to assert their authority for rule compliance when conductors and engineers fail to perform adequately. The Safety Board recognizes that training of employees to assert themselves effectively when superiors fail to comply with operating rules is a very difficult undertaking. However, since brakemen are assigned a backup role in the MP's safety system, the MP should find some way to ensure that brakemen assert themselves consistently through proper action when the circumstances require it.

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 Consolidated Rail Corporation Freight Trains ALPG-2 and APJ-2, near Roversford, Pennsylvania, October 1, 1979" (NTSB-RAR-80-2).

6/ Railroad Accident Report--"Head-on Collision of Baltimore and Ohio Freight Trains Extra 6474 East and Extra 4367 West, Orleans Road, West Virginia, February 12, 1980" (NTSB-RAR-80-9).

7/ Railroad Accident Report--"Side Collision of Norfolk and Western Railway Company Train No. 86 with Extra 1539 West, near Welch, West Virginia, September 6, 1980" (NTSB-RAR-81-2).

Therefore, the National Transportation Safety Board recommends that the Missouri Pacific Railroad Company:

Establish rules to require enginecrews to communicate fixed signal aspects to conductors while trains are en route on signalized track. (Class II, Priority Action) (R-83-57)

Establish supervisory procedures at crew-change terminals to insure that all operating department employees coming on duty at any hour of the day are physically fit and capable of complying with all pertinent operating rules. (Class II, Priority Action) (R-83-58)

Enhance the training of all operating employees, especially conductors, in their responsibilities and duties so that they understand their responsibility to monitor the performance of other employees and to take positive action when rules violations occur. (Class II, Priority Action) (R-83-59)

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" (P.L. 93-633). The Safety Board is vitally interested in any actions taken as a result of its safety recommendations and would appreciate a response from you regarding action taken or contemplated with respect to the recommendations in this letter.

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

By: Jim Burnett
Chairman