

Log R-461

NATIONAL TRANSPORTATION SAFETY BOARD  
WASHINGTON, D.C.

ISSUED: February 22, 1984

Forwarded to:

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

SAFETY RECOMMENDATION(S)

R-84-10

About 4:35 p.m. on July 18, 1983, 58 cars of Burlington Northern Railroad Company (BN) freight train No. MTC-0718, moving about 52 mph, were derailed on the main track near Crystal City, Missouri. Two of the derailed cars came to rest in the Mississippi River. Within the train's 94 cars were 17 maintenance-of-way (MN), ballast-laden hopper cars being transported to MW work locations north of St. Louis, Missouri. The train was being operated in revenue service without restriction. No one was injured in this accident, and no hazardous materials were involved. Damage was estimated to be about \$1,058,330. 1/

The Safety Board determined that the probable cause of this accident was the displacement of the outer rail in a curve by a truck on an MW car, which could not slue to the track curvature because of a cracked and displaced centerplate. Contributing to the accident was the BN's failure to enforce its inspection and maintenance procedures for MW cars or to impose restrictions on their movement in revenue freight trains. Also contributing to the accident was the Federal Railroad Administration's (FRA) failure to establish car safety standards or operating restrictions for MW cars in revenue freight trains.

Postaccident examination of the derailed equipment disclosed that the body centerplate from one end of hopper car BN 958200 had separated from the car body during the accident and had multiple fractures with rust-covered surfaces. The examination also disclosed that two other ballast-laden hopper cars that were derailed in the accident, BN 958104 and NP 85412, had fractured body centerplates with rusted surfaces. The cars were not overloaded. All three of the ballast cars were stenciled "MW" in accordance with 49 CFR 215.305 and were dedicated to ballast hauling services.

On July 22, 1983, two Safety Board investigators went to the stone quarry near Hoxie, Arkansas, where the ballast cars involved in the accident had been loaded. They examined 21 hopper cars at that location that were loaded with ballast and ready for

1/ For more detailed information, read Railroad Accident Report—"Derailment of Burlington Northern Railroad Company Freight Train No. MTC-0718, near Crystal City, Missouri, July 18, 1983" (NTSB/RAR-84/01).

movement. Of the 21 cars, 2 cars were found to have fractured centerplates. GN 78206 was found to have fractured centerplates at both ends of the car. BN 958123 was found to have a fractured centerplate at the "B" end of the car. These conditions were brought to the attention of BN officials who then ordered the two cars to be transferred to the repair track at Memphis. Car GN 78206 received extensive repairs and was returned to service; car BN 958123 was later condemned and scrapped.

MW cars, especially those which are used in ballast hauling service, generally are subjected to severe operating practices. This is particularly true during periods of seasonally intensive railroad MW work, such as major ballasting and track-surfacing operations. During these periods MW cars often are subject to quick turnaround and extended use, hauling ballast between source sites and various work project locations. Further, MW cars used in ballast service often are subject to rough handling while being unloaded. MW crews unload such cars using chains and/or timbers affixed to the bottom outlet doors so as to regulate the flow of ballast onto the track while the car is moved at a slow pace. Often the ballast becomes obstructed and the flow slows unacceptably or stops prematurely. A common practice to restart the flow of unloading ballast is to rapidly gather and stretch the slack in the work train, thereby inducing a shock to dislodge the obstructed ballast. These induced shocks place severe stresses on the component members of the cars.

Most MW cars are older railroad freight cars which have been removed from revenue service and relegated to MW service. The Safety Board concludes that the severe stresses placed on equipment which has already deteriorated substantially in years of revenue service hastens component failures in MW cars. These component failures, such as the failed car body centerplates found on MW cars BN 958200, BN 958104, and NP 85412 at Crystal City, and on cars GN 78206 and BN 958123 at Hoxie, normally would be detected through routine periodic inspections if in revenue service. However, MW cars are exempt from the periodic inspection and mechanical requirements of the FRA's freight car safety standards.

The FRA sets forth certain minimum safety standards for railroad freight cars in 49 CFR Part 215, Railroad Freight Car Safety Standards. However, 49 CFR 215.3(c)(3) excludes from the application of that part "... Maintenance-of-way equipment ... if that equipment is not used in revenue service and is stenciled in accordance with section 215.305 of this part." The term "revenue service" is not defined in the CFR. Because hopper car BN 958200 was stenciled in accordance with 49 CFR 215.305 and was restricted to ballast hauling service by the BN, it was not required to conform to Part 215.

The FRA issued a Notice of Proposed Rulemaking (NPRM) on January 5, 1979, to revise its Railroad Freight Car Safety Standards, in which it proposed that MW cars (except those used exclusively in work train service) be required to comply with the safety standards. The Safety Board supported making the MW cars subject to the safety standards. However, when the FRA issued its revised standards on March 1, 1980, MW cars were exempted from compliance with the standards, provided those cars were stenciled "MW" and were not used in revenue service. The standards do not address the placement of MW cars into revenue freight trains.

On May 27, 1980, the Safety Board recommended that the FRA:

Amend 49 CFR Part 215 to prohibit any car which does not comply with the Railroad Freight Car Safety Standards from being operated in a revenue train unless adequate restrictions are provided for its safe operation. (R-80-21)

The FRA responded that it had,

... concluded that the substantial cost of either replacing maintenance-of-way cars which do not comply with the Freight Car Safety Standards or restricting their movement to work trains cannot be justified. Railroads impose restrictions on the use of these cars to assure safe operation. Maintenance-of-way cars are limited to slow speeds and local trains. . . . FRA will continue to exempt maintenance-of-way cars from compliance with the Railroad Freight Car Safety Standards since these cars are not used in revenue service. There is no intent to allow maintenance-of-way cars to be used as revenue cars which operate at timetable speeds in free interchange service.

Because of the FRA's response, the Safety Board placed Recommendation R-80-21 in a "Closed—Unacceptable Action" status on March 22, 1982.

The Safety Board has investigated other accidents involving MW cars being moved in revenue trains. On Conrail at Hughes, Ohio, on June 7, 1976, the chain securements on a load of prefabricated panels of track loosened on an MW car, and the load of track panels shifted because of being improperly fastened. The panels struck an oncoming train on the adjacent main track. A locomotive engineer was killed, and a fireman and a brakeman were injured. Damage was estimated to be about \$57,000. The MW car carrying the panels was being moved in a revenue train to a repair facility despite the fact that the draft assembly on the MW car had failed while the MW car was being moved in another revenue train. The draft assembly was of a type that had been restricted from revenue service because of a high rate of failure.

In a derailment on the Seaboard Coastline Railroad at Auburndale, Florida, on November 17, 1979, an MW car in ballast hauling service, and thus exempt from the periodic inspection provisions of the freight car safety standards, caused the derailment of 38 cars in a revenue train when a dragging fractured truck bolster on the MW car struck a main track switch. Although there were no injuries, hazardous materials that were being transported in the train were spilled, and damage amounted to about \$834,333.

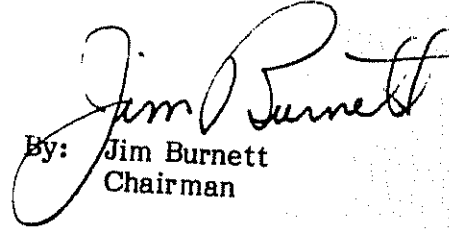
The Safety Board recognizes that many railroads may restrict MW cars to local train service when it is available. However, as in the cases of the accidents at Crystal City, Hughes, and Auburndale, MW cars often are moved within revenue freight trains at maximum authorized track speeds. Thus, MW cars regularly are moved in trains which may be carrying hazardous materials and operating without restrictions or operating in proximity to passenger-carrying trains. From the standpoint of operational safety, there is no practical difference whether a defective car is carrying revenue freight or a defective MW car is carrying company material in a revenue train operating at maximum authorized speeds. Since the BN does not operate scheduled local train service over the route on which this accident occurred, it regularly moves MW cars in its scheduled revenue freight trains contrary to FRA beliefs, as stated in the FRA's response to the Safety Board's Safety Recommendation R-80-21.

The FRA's stated position of exempting MW cars being operated in revenue freight trains from the Railroad Freight Car Safety Standards constitutes a tacit condonation of a continuing hazard to the safety of railroad employees as well as the general public. The Safety Board holds that the FRA should correct the hazards of operating exempt MW cars in revenue freight trains without restrictions.

Therefore, the National Transportation Safety Board recommends that the Federal Railroad Administration:

Require that maintenance-of-way cars meet the Railroad Freight Car Safety Standards or, in the alternative, impose operating restrictions on maintenance-of-way cars being moved in revenue freight trains to compensate for the actual mechanical condition of the cars. (Class II, Priority Action) (R-84-10)

BURNETT, Chairman, and BURSLEY, ENGEN, and GROSE, Members, concurred in this recommendation. GOLDMAN, Vice Chairman, did not participate.

  
By: Jim Burnett  
Chairman