

R-413

NATIONAL TRANSPORTATION SAFETY BOARD  
WASHINGTON, D.C.

ISSUED: JUN 18 1982

Forwarded to:

Mr. R. B. Claytor  
Chairman of Board & Chief Executive  
Officer  
Norfolk & Western Railway Company  
8 North Jefferson Street  
Roanoke, Virginia 24042

SAFETY RECOMMENDATION(S)  
R-82-43 through -46

About 8:20 a.m. on Saturday, November 28, 1981, Norfolk & Western Railway Company (N & W) freight train No. 6BS78, after receiving a clear signal indicating a clear main track route, entered a misaligned crossover leading from the eastbound main track onto yard track No. 1 at Crewe, Virginia, and sideswiped coal-laden hopper cars being handled by the yard shifter, and then caromed into freight cars of freight train No. 67HNP, which was on the adjacent westbound main track. Two locomotive units and seven cars of train No. 6BS78, nine cars of train No. 67HNP, seven cars on yard track No. 1, and four cars standing on yard track No. 3 were derailed or damaged. The conductor of train No. 67HNP and the front brakeman of train No. 6BS78 received minor injuries as a result of the accident. Damage was estimated to be about \$690,305. 1/

Shortly before 8:20 a.m., train No. 6BS78 was arriving at the Crewe yard on the eastbound main track. The engineer radioed the yardmaster and received permission to enter the Crewe yard limits. The engineer and front brakeman called out the signal indications to each other at signal Nos. 1304 and 1296 as required by the operating rules. Both signals indicated green (clear) aspects. As the train approached the crossover from the eastbound main track to yard track No. 1, it was proceeding through a 2-degree curve to the right. Because the engineer was preparing to stop the train for a change of crews, the speed of the train had been reduced from about 45 miles per hour to about 27 miles per hour. The engineer and brakeman observed the switch lined into yard track No. 1 when they were about one or two car lengths away from the switch, and they both applied the automatic air brake in emergency at the same time. They then lay on the floor. The train entered the west switch of the crossover at about 27 miles per hour and was routed from the eastbound main track to yard track No. 1 where it collided with the coal hopper cars being handled by the yard shifter. Train No. 6BS78 then struck the hopper cars of train No. 67HNP on the westbound main track.

1/ For more detailed information, see Railroad Accident Report—"Side Collision and Derailment of Norfolk & Western Railway Company Trains Nos. 6BS78, Yard Shifter, and 67HNP, Crewe, Virginia, November 28, 1981" (NTSB-RAR-82-3).

Investigation of the west switch of the crossover revealed that the right-hand switch point and its mating stock rail had been recently renewed. The Safety Board also noted that the stock rail had not been drilled to accept the rail connectors for the shunt wires leading to the switch circuit controller. The shunt wires and rail connectors were found lying unconnected in the ballast under the stock rail. The rail connector studs were bent over and the stud ends exhibited fracture surfaces which were covered with rust. Even though the Safety Board believes that the section foreman may have requested the services of a signal maintainer, the Board believes that a signal maintainer was not present during the replacement of the switch point and stock rail. A qualified and experienced signal maintainer would not have broken off the connector studs in a manner that rendered them unfit for reuse and would not have left the shunt wires unconnected to the new stock rail. The Maintenance of Way and Signal and Communication Departments' lack of specific procedures and guidelines to coordinate requests for a signal maintainer's assistance may have contributed to the failure to establish a working arrangement between the section foreman and the signal maintainer. The Board also noted that signal system tests and inspections were not being performed in a timely and proper manner as required by both Federal regulations and N & W company rules.

The installation of a series break-type circuit, a variation of the shunt circuit which was involved in this accident, would have provided more positive protection. The involved shunt circuit was not designed on the closed-circuit principle and did not have the inherent fail-safe feature of the series break-type circuit, which would have caused the signal to display a red (stop and proceed) aspect under similar circumstances. Even though the signal system was ineffective, the Safety Board believes that this accident could have been averted if local supervision had ensured strict compliance with the operating rules regarding the requirement to line crossover switches in their normal position when not in use for an immediate move through the crossover. Testimony indicated that switches have been left lined against the main tracks and that yardmasters and switchtenders may have been leaving crossover switches improperly aligned routinely. The Board believes that supervisory personnel should ensure adherence to these operating rules.

As a result of its investigation of this accident, the National Transportation Safety Board recommends that the Norfolk and Western Railway Company:

Replace, as soon as practicable on a priority basis, track shunt circuit switch protection that does not have series break-type circuits, with series break-type circuits. (Class II, Priority Action) (R-82-43)

Establish effective coordination procedures in the Maintenance of Way and Signal and Communication Departments to make certain that maintenance of way work which involves the signal system will not result in improper functioning of the signal system. (Class II, Priority Action) (R-82-44)

Review and revise, where necessary, procedures presently in effect in the Signal and Communication Department governing the maintenance and tests of signals to make certain that tests and inspections are performed in accordance with the Federal Railroad Administration's Rules, Standards, and Instructions. (Class II, Priority Action) (R-82-45)

Enforce effective supervisory monitoring practices in the Operating Department to seek consistent compliance with operating rules regarding switches. (Class II, Priority Action) (R-82-46)

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

  
By: Jim Burnett  
Chairman