



National Transportation Safety Board

Washington, D.C. 20594

Safety Recommendation

Date: October 25, 2006

In reply refer to: R-06-20

Mr. Matthew K. Rose
Chairman, President and Chief Executive Officer
BNSF Railway Company
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The National Transportation Safety Board is an independent Federal agency charged by Congress with investigating transportation accidents, determining their probable cause, and making recommendations to prevent similar accidents from occurring. We are providing the following information to urge your organization to take action on the safety recommendation in this letter. The Safety Board is vitally interested in this recommendation because it is designed to prevent accidents and save lives.

This recommendation addresses the adequacy of the amount of time available for track inspections conducted by the BNSF Railway Company's (BNSF's) employees. The recommendation is derived from the Safety Board's investigation of the April 3, 2005, derailment of Amtrak (National Railroad Passenger Corporation) passenger train No. 27, near Home Valley, Washington,¹ and is consistent with the evidence we found and the analysis we performed. As a result of this investigation, the Safety Board has issued four recommendations, one of which is addressed to the BNSF. Information supporting this recommendation is discussed below. The Safety Board would appreciate a response from you within 90 days addressing the actions you have taken or intend to take to implement our recommendation.

On April 3, 2005, about 9:35 a.m., westbound Amtrak passenger train No. 27, consisting of a single locomotive unit and four passenger cars, derailed at milepost (MP) 58.56² on the BNSF's Northwest Division. The train was traveling 60 mph on single main line track when it derailed as it was traveling through a cut section of the Columbia River Gorge on the north side of the Columbia River near Home Valley, Washington. The train remained upright; however, the cars came to rest leaning up to approximately 35° against the outside curved embankment. There were 106 passengers and 9 Amtrak employees on board. Thirty people (22 passengers and 8

¹ For additional information, see National Transportation Safety Board, *Derailed of Amtrak Passenger Train No. 27, Home Valley, Washington, April 3, 2005*, Railroad Accident Brief NTSB/RAB-06/03 (Washington, DC: NTSB, 2006).

² MP 58.56 is on the Fallbridge Subdivision.

employees) sustained minor injuries; 14 of those people were taken to local hospitals. Two of the injured passengers were kept overnight for further observation; the rest were released. Track and equipment damages, in addition to clearing costs associated with the accident, totaled about \$854,000.

The National Transportation Safety Board determined that the probable cause of the April 3, 2005, derailment of Amtrak passenger train No. 27 near Home Valley, Washington, was the BNSF Railway Company's inadequate response to multiple reports of rough track conditions that were subsequently attributed to excessive concrete crosstie abrasion, which allowed the outer rail to rotate outward and create a wide gage track condition. Contributing to the accident was the Federal Railroad Administration's (FRA's) failure to provide adequate track safety standards for concrete crossties.

During the 12 days prior to the accident, four separate "rough riding" reports were made regarding the area where the train later derailed. The first report of rough track was submitted by an FRA inspector who was riding in the locomotive of Amtrak passenger train No. 27. The inspector e-mailed an FRA inspection report to the BNSF roadmaster in charge of track maintenance for that area. The roadmaster did not inform the track inspectors about the FRA report, nor did he order a followup inspection before the accident.³ The roadmaster did order followup inspections in response to the three subsequent rough riding reports.

The investigation determined that the point of derailment was at MP 58.56 in curve No. 58B. Around that location, there were 19 consecutive concrete crossties that exhibited rail seat abrasion, which ranged in depth from 1/16 inch to 1 1/4 inches into the concrete surface on the field side of the outside curve rail. The abrasions created voids between the bottom of the rail base and the top of the concrete crossties, which allowed the rail to deflect downward and rotate outward under load. This rotation of the rail resulted in gage widening as trains passed over the area. The locomotive unit of Amtrak passenger train No. 27 was the first vehicle to derail. It appeared that a wheel first derailed near the deepest abrasion.

A second location, about 400 feet east of the derailment, also was discovered to have significant concrete rail seat abrasion. There were 11 concrete ties in this area that had abrasions at least 5/8 inch in depth, which correspond to a track gage of 58 inches. The maximum allowable gage in 49 *Code of Federal Regulations* 213.53 for Class 4 track is 57 1/2 inches. Three other locations with consecutive abraded concrete crossties that had gage measured at 57 11/16-inches, 57 13/16-inches, and 57 15/16-inches also were discovered in this area.

Because of the high amount of train traffic,⁴ the track inspector said that he had about 1/2 hour or less to get from station to station while inspecting track from a hi-rail vehicle. Stations were about 10 to 15 miles apart. He stated that his track inspection speed varied from 20 to 25 mph. The BNSF did not require that curves be visually inspected via a walking inspection at the time of the accident, but now requires walking inspections of curves on a periodic basis. This is a

³ The FRA *Inspection Compliance Manual* recommends that the reporting inspector conduct a followup inspection within 30 to 60 days.

⁴ Approximately 57 trains traversed this track daily. On average, that would be a train every 25 minutes.

good practice for identifying crosstie abrasion; however, the Safety Board is concerned that track inspectors may not have sufficient time on track to perform quality inspections.⁵

Therefore, the National Transportation Safety Board makes the following safety recommendation to the BNSF Railway Company:

As part of your track inspector audit program, determine whether inspectors are provided adequate track time to perform their duties, and take corrective action if necessary. (R-06-20)

The Safety Board also issued safety recommendations to the Federal Railroad Administration, the Association of American Railroads, the American Short Line and Regional Railroad Association, and the American Railway Engineering and Maintenance of Way Association. In your response to the recommendation in this letter, please refer to Safety Recommendation R-06-20. If you need additional information, you may call (202) 314-6177.

Chairman ROSENKER, Vice Chairman SUMWALT, and Members HERSMAN and HIGGINS concurred in this recommendation.

[Original Signed]

By: Mark V. Rosenker
Chairman

⁵ Another Amtrak passenger train derailed on January 28, 2006, on the BNSF's Northwest Division in Sprague, Washington. The BNSF identified concrete crosstie abrasion and wide gage as factors in that accident.