

Log R-649C

## NATIONAL TRANSPORTATION SAFETY BOARD

Washington, D.C. 20594



### Safety Recommendation

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**Date:** November 23, 1994

**In Reply Refer To:** R-94-18

Mr. Dick Davidson  
Chairman and Chief Executive Officer  
Union Pacific Railroad  
1416 Dodge Street  
Omaha, Nebraska 68179

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On November 11, 1993, about 12:24 a.m. Pacific Standard Time, a Burlington Northern (BN) freight train collided head on with a Union Pacific (UP) freight train at BN milepost 102.8 south of the Longview Junction South interlocking near Kelso, Washington.<sup>1</sup> As a result of the accident all five crewmembers from both trains were killed.

The Safety Board believes that the Federal Railroad Administration (FRA), the BN, and the UP should identify and evaluate all potential safety and business benefits of the positive train control system currently proposed for the northwest region of the United States. The value of these benefits should be considered in the overall assessment of the system.

Positive train separation (PTS) control systems require specific information about the train speed and location to perform their functions. The control system also requires a data link communications platform to share the information with traffic control centers to ensure safe operation and to avoid conflicts with other trains in the vicinity. Once this information is made available to the PTS control system, it may be possible to use the information for other safety functions. For example, once a train's speed, direction, and exact location are known, it may be possible to provide information to motor vehicles waiting at grade crossings. Information could be displayed on an electronic display installed at the crossing. The display could be used

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<sup>1</sup>For more information, read Railroad Accident Report--*Head-On Collision and Derailment of Burlington Northern Freight Train 01-111-10 and Union Pacific Freight Train NPSEZ-09, Kelso, Washington, November 11, 1993* (NTSB/RAR-94/02).

to advise the motorists of such things as the presence of two trains converging at a double track crossing.

During the Rail Safety Summit sponsored by the Department of Transportation on September 30, 1994, panelists mentioned the possibility of using a PTS control system to send train movement information directly to individual vehicles. This possibility was also mentioned in the FRA's report to Congress.<sup>2</sup> The ability to communicate information to individual vehicles could be incorporated in the Department of Transportation's Intelligent Transportation System program (formally The Intelligent Vehicle Highway System). The Safety Board concludes that PTS data and information may be useful in enhancing grade crossing safety.

The need for PTS goes beyond the economic benefits of accident avoidance. It is impossible to fully assess the impact of fatalities, serious injury, property damage, environmental damage, or damages awarded through litigation on railroad employees, railroad passengers, or members of the general public. As railroad traffic increases, the risk of major accidents involving passenger trains and freight trains also increases. Public sentiment demands that the railroads be safe. The risk of injuring or killing train crewmembers and passengers or members of the general public, as well as the risk of environmental damage caused by hazardous material spills, is unacceptable. Using PTS control systems is one way that the railroads can act to prevent a great number of human performance or human error accidents.

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

In conjunction with the Burlington Northern Railroad, identify and evaluate all potential safety and business benefits of the positive train control system currently proposed for the northwest region of the United States. Consider the value of these benefits in your overall assessment of the system. (Class II, Priority Action) (R-94-18)

Also, the Safety Board issued Safety Recommendations R-94-13, -14 and -15 to the Federal Railroad Administration, R-94-16 to the Association of American Railroads, and R-94-17 to the Burlington Northern Railroad.

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" (Public Law 93-633). The Safety Board is vitally interested in any action taken as a result of its safety recommendations. Therefore, it would appreciate a response from you regarding action taken

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<sup>2</sup>U.S. Department of Transportation, FRA. *Railroad Communications and Train Control*. Report to Congress, July 1994.

or contemplated with respect to the recommendation in this letter. Please refer to Safety Recommendation R-94-17 in your reply. If you need additional information, you may call (202) 382-6840.

Chairman HALL and Members LAUBER and HAMMERSCHMIDT concurred in these recommendations.

  
By Jim Hall  
Chairman