



# National Transportation Safety Board

Washington, D.C. 20594

## Safety Recommendation

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**Date:** June 29, 2006

**In reply refer to:** R-06-10

Honorable Joseph H. Boardman  
Administrator  
Federal Railroad Administration  
1120 Vermont Avenue, N.W.  
Washington, D.C. 20590

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About 5:46 p.m., central daylight time, on May 19, 2004, two BNSF Railway Company (BNSF) freight trains collided head on near Gunter, Texas. The southbound train, BNSF 6789 South, was traveling about 37 mph, and the northbound train, BNSF 6351 North, was traveling about 40 mph when the collision occurred. The trains were being operated under track warrant control rules on non-signalized single track. The collision resulted in the derailment of 5 locomotives and 28 cars. About 3,000 gallons of diesel fuel were released from the locomotives and resulted in a fire. The southbound train engineer was killed, and the southbound train conductor was airlifted to a hospital in Dallas with serious burns. The crewmembers on the northbound train were transported to a local hospital, where they were admitted. Estimated property damages exceeded \$2 million.<sup>1</sup>

The National Transportation Safety Board determined that the probable cause of the May 19, 2004, collision near Gunter, Texas, was the southbound train (BNSF 6789 South) crew's failure to adhere to an after-arrival track warrant requiring them to stay at Dorchester until the northbound train (BNSF 6351 North) arrived. Contributing to the accident was the BNSF's use of after-arrival track warrant authority in non-signalized territory, and the Federal Railroad Administration's (FRA's) failure to prohibit the use of such authority. Also contributing to the accident was the train dispatcher's informal communications regarding planned train meeting locations.

Non-signalized (dark) territory presents a unique problem for rail safety. In dark territory there are no signals to warn trains as they approach each other, and the avoidance of collisions relies solely on dispatchers and train crews adhering to operating procedures. Issuing after-arrival track warrants under these conditions only exacerbates an already potentially tenuous and contingent work situation. While the railroad industry contends that after-arrival track warrants facilitate the expedient and efficient movement of trains and reduce the amount of wasted resources, and the FRA sees merit in the industry's logic,<sup>2</sup> ultimately, the role of human error and the cost of human casualties also must be considered in this equation. The FRA acknowledges

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<sup>1</sup> For additional information, see National Transportation Safety Board, *Collision Between Two BNSF Railway Company Freight Trains Near Gunter, Texas, May 19, 2004*, Railroad Accident Report NTSB/RAR-06/02 (Washington, DC: NTSB, 2006).

<sup>2</sup> FRA letter to the Safety Board dated October 3, 2003.

that “until positive train control can be fully achieved, we need to take those steps that will decrease the risk of collisions that may occur as a result of employee error.”<sup>3</sup> Yet, the FRA has not taken the proactive steps to address this issue as the Safety Board has recommended.

The Safety Board has investigated a number of accidents involving track warrants in non-signalized territory. In 1996, in Smithfield, West Virginia,<sup>4</sup> the Board investigated a head-on collision between two CSX Transportation freight trains. CSX Transportation subsequently discontinued the use of after-arrival authorities in non-signalized territory. In 1997, the Board investigated a collision between two Union Pacific Railroad freight trains in Devine, Texas.<sup>5</sup> As a result of the Devine investigation, the Board issued Safety Recommendation R-98-27, which advised the FRA to permanently discontinue the use of after-arrival orders in non-signalized territory. Safety Recommendation R-98-27 was classified “Closed—Unacceptable Action” on June 29, 1999.

In 2002, the Safety Board investigated a collision between two BNSF trains in Clarendon, Texas.<sup>6</sup> In its accident report, the Board issued Safety Recommendation R-03-2, which advised the FRA to limit the use of after-arrival orders in non-signalized territory to trains that have stopped at the location at which they will meet the opposing train. Safety Recommendation R-03-2 was classified “Closed—Unacceptable Action” on August 6, 2004. In Safety Recommendation R-03-3, the Board also recommended that the General Code of Operating Rules Committee add language to its track warrant rules to ensure the same. In response to the Clarendon investigation, the BNSF established procedures requiring a train to stop before receiving an after-arrival track warrant and to make positive radio contact with the train to be met in non-signalized territory. After the Gunter collision, the BNSF further strengthened these procedures by requiring more communication between the restricted train, the train(s) to be met, and the dispatcher.

The FRA has declined to implement either of the Safety Board’s recommendations (R-98-27 and R-03-2) regarding after-arrival track warrants that were developed in response to the Devine and Clarendon, Texas, accidents. The FRA’s final written response to Safety Recommendation R-03-2, dated October 3, 2003, indicated that disallowing after-arrival orders in non-signalized territory would reduce flexibility and hinder the efficient movement of trains. The FRA also stated that like the industry, it expects that railroad employees will adhere to all applicable operating rules. Unfortunately, expecting employees to always adhere to all applicable rules is more often an ideal than a reality. The Board has investigated too many railroad accidents in which the avoidance of a collision depended on the use of an operating rule or standard practice that proved to be insufficient to prevent accidents caused by human error.

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<sup>3</sup> FRA letter to the Safety Board dated October 3, 2003.

<sup>4</sup> National Transportation Safety Board, *Head-On Collision, Trains Q317-19 and Q316-18, CSXT Railroad, Smithfield, West Virginia, August 20, 1996*, Railroad Accident Brief NTSB/RAB-98/13 (Washington, DC: NTSB, 1998).

<sup>5</sup> National Transportation Safety Board, *Collision and Derailment of Union Pacific Railroad Freight Trains 5981 North and 9186 South in Devine, Texas, June 22, 1997*, Railroad Accident Report NTSB/RAR-98/02 (Washington, DC: NTSB, 1998).

<sup>6</sup> National Transportation Safety Board, *Collision of Two Burlington Northern Santa Fe Freight Trains Near Clarendon, Texas, May 28, 2002*, Railroad Accident Report NTSB/RAR-03/01 (Washington, DC: NTSB, 2003).

Even though the BNSF strengthened its procedures for after-arrival track warrants after the Clarendon accident, the BNSF 6789 South crew still did not make positive radio contact to verify that the train they were passing was the train listed on their track warrant. In the Gunter accident, the BNSF 6789 South crew had already stopped at the location where they were to meet the opposing train, BNSF 6351 North. Therefore, the circumstances of this accident also raise concerns regarding the effectiveness of limiting the issuance of after-arrival orders to trains that have already stopped at the location at which they will meet the opposing train. Regardless of how the after-arrival order is implemented, this practice places full responsibility for ensuring a proper meet on the crew involved. When a crew does not follow procedures in non-signaled territory, as occurred in the Gunter accident, there are no additional warnings to either train. By contrast, when after-arrival track warrants are used in territory with automatic block signals, both trains receive restrictive signals requiring the trains to slow and eventually stop short of a collision point. Although there may be some circumstances where the use of after-arrival orders in non-signaled territory is beneficial, the accident record has demonstrated that any use of these procedures increases the risk of train collisions.

The Safety Board recognizes that unless an automated collision avoidance system is in place, there is no assurance that a collision will not occur. The Board remains convinced that the ultimate safety goal is positive train control (PTC). However, even if PTC becomes more widely adopted, the current non-signaled areas of the U.S. railroad network will probably be among the last to be outfitted with PTC for the same reasons they remain non-signaled now—train volume and type of traffic. Consequently, non-signaled territories will remain higher risk areas for collisions. The incremental steps taken to date by the BNSF and other railroads have not been sufficient. The Safety Board concluded that the use of after-arrival track warrants for train movements in dark (non-signaled) territory creates an unacceptable risk of collision.

The Safety Board is also concerned about the FRA's failure to prohibit or limit the use of after-arrival track warrants in non-signaled territories as previously recommended by the Board. Staff from the Board and the FRA met on March 17, 2004, to discuss open recommendations related to railroad safety. Safety Recommendation R-03-2 was specifically addressed at the meeting, and FRA staff stated that although it shared the Board's concerns about the problems with after-arrival orders, it was reluctant to prohibit their use at that time. However, the FRA staff did state that if another accident occurred because of an after-arrival order, it would issue an emergency order. The Gunter accident occurred on May 19, 2004, and the FRA has yet to take action to address this continuing problem. The Safety Board concluded that had the FRA required railroads to permanently discontinue the use of after-arrival orders in dark territory as advised in Safety Recommendation R-98-27, this accident would not have happened. Further, the Safety Board has investigated several other accidents involving after-arrival orders in non-signaled territory and believes that the FRA has delayed action too long.

The National Transportation Safety Board therefore makes the following safety recommendation to the Federal Railroad Administration:

Prohibit the use of after-arrival track warrants for train movements in dark (non-signaled) territory not equipped with a positive train control system.  
(R-06-10)

The Safety Board also issued safety recommendations to the BNSF Railway Company, the Association of American Railroads, and the American Short Line and Regional Railroad Association. In addition, Safety Recommendation R-03-3, previously classified “Open—Unacceptable Response,” was reclassified “Closed—Reconsidered.” In your response to the recommendation in this letter, please refer to Safety Recommendation R-06-10. If you need additional information, you may call (202) 314-6177.

Acting Chairman ROSENKER and Members HERSMAN and HIGGINS concurred in this recommendation.

*[Original Signed]*

By: Mark V. Rosenker  
Acting Chairman

