



# National Transportation Safety Board

Washington, D.C. 20594

## Safety Recommendation

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**Date:** Sep 24, 2001

**In reply refer to:** R-01-20

Mr. W. Dan Pickett  
International President  
Brotherhood of Railroad Signalmen  
National Headquarters  
601 West Golf Road  
Mount Prospect, Illinois 60056

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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 signal maintenance procedures. The recommendation is derived from the Safety Board's investigation of the collision of National Railroad Passenger Corporation (Amtrak) train 304-26 with a highway vehicle at a highway-rail grade crossing in McLean, Illinois, on September 26, 1999, and is consistent with the evidence we found and the analysis we performed.<sup>1</sup> As a result of this investigation, the Safety Board has issued four safety recommendations, one of which is addressed to the Brotherhood of Railroad Signalmen. 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 September 26, 1999, about 5:08 p.m. (central daylight time), northbound Amtrak train 304-26, which was en route from St. Louis, Missouri, to Chicago, Illinois, collided with an automobile, which was westbound on U.S. Route 136. The collision occurred where the Union Pacific Railroad's (UP's) St. Louis Division main line and U.S. Route 136 cross near McLean, Illinois. The automobile driver and passenger were killed as a result of the collision. Amtrak train 304-26 did not derail, and no injuries to the train crewmembers or passengers were reported. Neither the flashing lights nor the gates for the grade crossing activated to warn the automobile driver of the approaching train. A UP signal maintainer had worked on the grade

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<sup>1</sup> For additional information, see forthcoming Railroad Accident Report NTSB/RAR-01/03: *Collision of Amtrak Train 304-26 with a Highway Vehicle at a Highway-Rail Grade Crossing, McLean, Illinois, September 26, 1999* (Washington, DC: National Transportation Safety Board, 2001).

crossing warning devices earlier that day; he had finished his work and left the McLean grade crossing area about 4:30 p.m.

The National Transportation Safety Board determined that the probable cause of the accident was the failure of the signal maintainer to remove a jumper wire from the grade crossing control relay and, as required by the Union Pacific Railroad's written procedures, to verify the operational status of the grade crossing equipment after he had completed the maintenance work.

During its investigation, the Safety Board found that, in addition to leaving the jumper wire on the crossing control relay on the day of the accident, the UP signal maintainer did not perform his work near the U.S. Route 136 grade crossing in accordance with UP rules. First, in a deviation from UP rules, the signal maintainer failed to obtain authority from the dispatcher while he worked on the track connection to provide protection against train movements for himself and for highway vehicles crossing the tracks while the crossing gates and lights were disabled by the false energizing of the crossing control relay.

The signal maintainer further deviated from the railroad's rules by not performing operational tests, as required by the UP, on the grade crossing warning devices at the U.S. Route 136 crossing after he recalibrated the grade crossing predictor. Data from the grade crossing event recorder and the video monitoring system confirm that no operational tests were conducted on the crossing warning system after the recalibration.

Had the signal maintainer performed these operational tests of the grade crossing equipment after the recalibration, he would have detected the failure of the warning devices to activate. Thus alerted, he would have rectified the situation by removing the jumper wire from the crossing control relay, which would have left the grade crossing warning devices capable of activating when a train was detected. Consequently, the Safety Board concluded that because the signal maintainer failed to fulfill the UP's requirement to conduct operational tests on the grade crossing warning devices after he performed a recalibration of the grade crossing predictor, he did not realize that the jumper wire was still attached to the crossing control relay.

The Safety Board appreciates that signal personnel are required at times to conduct their work at grade crossings under heavy traffic without the aid of flagmen to provide highway traffic control. Although undesirable, these situations often require signal personnel to use jumper wires to totally or partially disable the grade crossing warning devices. The Safety Board considers, however, that means are available that would make the use of jumper wires in such situations safer and more regimented.

Some railroads provide their signal personnel with maintenance vehicles equipped with specialized electronic rack units that are designed to notify signal personnel when a jumper wire is missing from the rack with both an audible warning alarm and a visual light signal. These warning systems provide a double-checking mechanism that helps the railroad safeguard against its employees leaving jumper wires in unsafe locations.

Such warning equipment provides an automatic and reliable means of ensuring that signal employees keep track of the jumper wires they use on the job, thus offsetting human errors caused by distraction, habit, or carelessness. By using such equipment, the railroad can greatly reduce the possibility of a jumper wire being left in an unsafe location, as occurred in the

McLean accident. The Safety Board concluded that had the UP provided its signal personnel with automatic warning equipment that alerted them when they failed to retrieve all jumper wires before leaving a work location, the signal maintainer would not have left the U.S. Route 136 grade crossing without removing the jumper wire that was still attached to the crossing control relay.

Therefore, the National Transportation Safety Board makes the following safety recommendation to the Brotherhood of Railroad Signalmen:

Inform your members of the circumstances of the September 26, 1999, grade crossing accident in McLean, Illinois, and emphasize the importance of conducting operational tests and accounting for all jumper wires after performing maintenance or repair tasks. (R-01-20)

The Safety Board also issued safety recommendations to the Federal Railroad Administration and the Union Pacific Railroad. In your response to the recommendation in this letter, please refer to Safety Recommendation R-01-20. If you need additional information, you may call (202) 314-6607.

Acting Chairman CARMODY and Members HAMMERSCHMIDT, GOGLIA, and BLACK concurred in this recommendation.

By: Carol J. Carmody  
Acting Chairman