



# National Transportation Safety Board

Washington, D.C. 20594

## Safety Recommendation

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**Date:** Sep 24, 2001

**In reply refer to:** R-01-17

Honorable Allan Rutter  
Administrator  
Federal Railroad Administration  
1120 Vermont Avenue, N.W.  
Washington, D.C. 20590

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On September 26, 1999, about 5:08 p.m. (central daylight time), northbound National Railroad Passenger Corporation (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 crossing warning devices earlier that day; he had finished his work and left the McLean grade crossing area about 4:30 p.m.<sup>1</sup>

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.

Among the issues considered by the Safety Board during this investigation was the postaccident toxicological testing conducted. All the Amtrak train crewmembers were exempt from Federal Railroad Administration (FRA) mandatory postaccident toxicological testing of railroad personnel because of the exemption in 49 *Code of Federal Regulations* (CFR) 219.201(b), which states that "No test shall be required in the case of a collision between railroad rolling stock and an automobile or other highway conveyance at a rail/highway grade crossing." Under the same exemption for railroad personnel, mandatory postaccident testing requirements did not apply to the UP signal maintainer.

The UP could have required the signal maintainer to undergo toxicological testing for "reasonable suspicion" under Federal regulations if specific appearances or behaviors were

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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).

observed. Reasonable suspicion alcohol and drug testing (as detailed in 49 CFR 219.300) must be conducted when a railroad has reason to believe, based on observation of the employee's appearance, behavior, speech, and other physical factors, that an employee may be under the influence of alcohol or controlled substances. The UP manager of signal maintenance evaluated the signal maintainer while at the accident scene and considered that the signal maintainer exhibited no evidence of drug or alcohol impairment at that time. Based on his evaluation, the manager of signal maintenance decided not to require the signal maintainer to undergo reasonable suspicion drug or alcohol testing.

The UP could also have required the signal maintainer to be tested for drugs or alcohol based on "reasonable cause," as authorized at 49 CFR 219.301 and under the UP's reasonable cause drug and alcohol testing provisions. The Federal regulations describe reasonable cause for breath alcohol testing (49 CFR 219.301[b][2]) and urine drug testing (49 CFR 219.301[c]) as

The employee has been involved in an accident or incident... and a supervisory employee of the railroad has a reasonable belief, based on specific, articulable facts, that the employee's acts or omissions contributed to the occurrence or severity of the accident or incident....

Similarly, the UP's reasonable cause provisions call for reasonable cause testing to be conducted when

An employee's acts or omissions result in the violation of any safety or operating rule which has the potential to (1) result in an accident and/or personal injury to self or others or (2) actually results in personal injury or significant property damage....

In the case of the McLean accident, during the immediate aftermath of the accident, several witnesses stated that the crossing warning devices at the U.S. Route 136 crossing did not activate as Amtrak train 304-26 approached the crossing. At 7:18 p.m., the crossing event recorder data were downloaded in the presence of the UP manager of signal maintenance. The recorder data showed that a recalibration of the equipment had been performed earlier in the day. The data further showed that no operational tests had been performed on the equipment following the recalibration, as was required by UP rules. The UP manager of signal maintenance stated that around this time, the signal maintainer told him that he had performed the recalibration and worked on the U.S. Route 136 crossing equipment earlier that day.

The Safety Board considers that the postaccident events indicating problems with the U.S. Route 136 grade crossing equipment, coupled with the knowledge that the signal maintainer had worked on this equipment earlier in the day and had broken the UP rule calling for operational tests to be conducted after he had finished the work, should have caused the UP officials to invoke the UP reasonable cause testing requirement. Because this requirement calls for testing to be performed when an employee has violated a safety or operating rule that has the potential to result in an accident, the signal maintainer's violation of the operational testing rule, which was known to UP officials after the event recorder data had been downloaded, should have triggered reasonable cause testing of the signal maintainer. The Safety Board therefore concluded that the UP should have submitted the signal maintainer for reasonable cause toxicological testing but failed to do so.

This accident was unusual in that, because the crossing event recorder was downloaded shortly after the accident occurred, the UP had nearly immediate evidence of a rule violation. Under many, if not most, circumstances, this information would not have been so readily available to the railroad. In the confusion and disorder that follow most accidents, it might take many hours or even days before the railroad has evidence (such as that provided by event recorder data) of a rule violation with bearing on the accident.

Drug and alcohol testing must be conducted in a timely fashion or the results of the testing become meaningless. Federal regulations (49 CFR 219.302[b]) recognize the importance of timeliness in testing and state that

No employee shall be required to participate in breath alcohol or urine drug testing... after the expiration of an eight hour period....

Under most postaccident circumstances, therefore, even if the UP applied its reasonable cause testing requirement scrupulously, the testing might not be conducted within 8 hours of the accident, so the results of the testing would be of limited value to the investigation.

The Safety Board, however, has more far-reaching concerns about the application of postaccident drug testing for grade crossing accidents. As already noted, Federal regulations at 49 CFR 219.201(b) exempt all railroad personnel from mandatory postaccident testing requirements in the case of an accident involving a highway-rail grade crossing. The Safety Board appreciates that this exemption was provided because most grade crossing accidents are not caused by the actions or omissions of train crew personnel. The circumstances of this accident, however, suggest that such a broad exemption may be imprudent. For example, in this accident, the railroad signal maintainer, whose actions had a direct bearing on the cause of the accident, was automatically exempted from mandatory postaccident testing requirements.

Although the Safety Board recognizes that train crew personnel may not need to be tested following a grade crossing accident, it considers that, in some cases, other railroad personnel should be tested. There are a variety of circumstances in which errors on the part of railroad maintenance personnel might affect the rail equipment or conditions so that a grade crossing accident results. But because of the exemption at 49 CFR 219.201(b), such personnel are excused from postaccident testing following grade crossing accidents, regardless of the accident circumstances.

Because the UP signal maintainer, who was the person most responsible for the McLean accident, was exempt from mandatory postaccident drug and alcohol testing requirements and was not tested for drug or alcohol use, the Safety Board concluded that exempting all railroad personnel from mandatory postaccident drug and alcohol testing following a grade crossing accident has the potential to exclude from testing obligations some railroad employees whose actions may have significantly contributed to the occurrence or severity of an accident. Exempting all such employees from postaccident testing obligations greatly increases the likelihood that no postaccident drug and alcohol testing will be performed on them in a timely fashion, and the lack of this information could impede future accident investigations. Therefore, the Safety Board believes that the FRA should modify 49 CFR 219.201(b) as necessary to ensure that the exemption from mandatory postaccident drug and alcohol testing for those involved in highway-rail grade crossing accidents does not apply to any railroad signal, maintenance, and

other employees whose actions at or near a grade crossing involved in an accident may have contributed to the occurrence or severity of the accident.

In addition to the major safety issues investigated by the Safety Board as a result of this accident, the Board also learned some disturbing information about the FRA's grade crossing accident database. The Safety Board determined that after the McLean accident, Amtrak and the UP submitted the required "Rail Equipment Accident/Incident" and "Highway-rail Grade Crossing Accident/Incident" reports to the FRA in accordance with Federal requirements. The FRA made these reports accessible to the public through the FRA website. The UP's initial report indicated that the primary cause of the accident had been vehicle driver inattentiveness. Amtrak's initial report indicated that the accident had been caused by the vehicle being driven around or through the gate at the crossing.

At the conclusion of its subsequent investigation of the McLean accident, the FRA found that the probable cause of the accident was not driver inattentiveness or wrongdoing but the fact that the crossing control relay remained falsely energized during the approach and passage of Amtrak train 304-26. The FRA issued violations to both the UP and Amtrak for failing to submit revised accident/incident reports to the FRA after the cause of the accident became known to them. Nevertheless, the initial UP and Amtrak reports, with their inaccurate probable cause statements, remained available through the FRA website for a number of months after the actual circumstances of the accident became known.

The grade crossing accident database information available through the FRA website forms the factual and statistical basis for numerous studies and investigations involving grade crossing safety issues. As a frequent user of the FRA accident database, the Safety Board is concerned with ensuring that the information available from it is consistently reliable and current. The Safety Board recognizes that it is difficult, given the technical and budgetary demands of database and website maintenance, to ensure that all data available through a website are up to date at all times. But preserving and publishing outdated or incorrect information greatly reduces the value and reputation of such a database and could skew the results of studies that draw on database information. Poor information can also negatively affect the safety decisions that are reached based on research involving FRA database information. Consequently, the Safety Board encourages the FRA to make the updating and maintenance of its accident database information a priority.

Therefore, the National Transportation Safety Board makes the following safety recommendation to the Federal Railroad Administration:

Modify 49 *Code of Federal Regulations* 219.201(b) as necessary to ensure that the exemption from mandatory postaccident drug and alcohol testing for those involved in highway-rail grade crossing accidents does not apply to any railroad signal, maintenance, and other employees whose actions at or near a grade crossing involved in an accident may have contributed to the occurrence or severity of the accident. (R-01-17)

The Safety Board also issued safety recommendations to the Union Pacific Railroad and the Brotherhood of Railroad Signalmen.

Please refer to Safety Recommendation R-01-17 in your reply. 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