



# National Transportation Safety Board

Washington, D.C. 20594

## Safety Recommendation

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**Date:** September 26, 2002

**In reply refer to:** R-02-20 and -21

Mr. William Millar  
President  
American Public Transportation Association  
1666 K Street, N.W.  
Washington, D.C. 20006

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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 recommendations in this letter. The Safety Board is vitally interested in these recommendations because they are designed to prevent accidents and save lives.

These recommendations address the adequacy of the Chicago Transit Authority's (CTA's) programs for ensuring compliance with its operating rules and the adequacy of the CTA's system safety program plan and its internal safety audit program for identifying and resolving systemic safety issues. The recommendations are derived from the Safety Board's investigation of two CTA train collisions at Chicago, Illinois, in 2001 and are consistent with the evidence we found and the analysis we performed. As a result of this investigation, the Safety Board has issued five safety recommendations, two of which are addressed to the American Public Transportation Association (APTA). Information supporting the recommendations 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 recommendations.

Within a 2-month period in 2001, the CTA experienced two similar rear-end collisions involving CTA rapid transit trains. Both accidents were preceded by the train operators' having failed to comply with operating rules designed to prevent collisions. The investigation of the two accidents highlighted deficiencies in the CTA management's approach to ensuring rules compliance among its operators.<sup>1</sup>

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<sup>1</sup> For additional information, see forthcoming Railroad Special Investigation Report—*Two Rear-End Collisions Involving Chicago Transit Authority Rapid Transit Trains at Chicago, Illinois, June 17 and August 3, 2001* (NTSB/SIR-02/01).

The first accident occurred about 11:40 a.m., central daylight time, on Sunday, June 17, 2001, when CTA train 104, en route from downtown Chicago to O'Hare Airport, collided with standing CTA train 207. Each train consisted of four passenger cars. About 75 passengers were on train 104, and about 40 passengers were on train 207. Eighteen passengers, an off-duty CTA employee, and both train operators sustained minor injuries. The CTA estimated damages at \$30,000.

The Safety Board determined that the probable cause of the accident was the failure of the operator of train 104 to comply with operating rules. Contributing to the accident was the failure of CTA's management to exercise adequate operational safety oversight.

The second accident occurred about 9:04 a.m., central daylight time, on Friday, August 3, 2001, when CTA train 416, en route from Kimball to downtown Chicago, collided with standing CTA train 505. Each train consisted of six passenger cars. The accident occurred during morning rush hour, and both trains had standing loads estimated at 90 passengers per car. Chicago Police Department logs indicate that 118 people were transported to area hospitals with minor injuries, none of which were life threatening. The CTA estimated damages at \$136,138.

The Safety Board determined that the probable cause of the accident was the failure of the operator of train 416 to comply with operating rules. Contributing to the accident was the failure of CTA's management to exercise adequate operational safety oversight.

In both accidents, operators knowingly violated operating rules. Both accident operators indicated that they had observed similar rule violations by other employees or managers; and, in fact, Safety Board investigators observed a CTA manager violating a CTA operating rule. Limited field interviews with CTA operating personnel indicated such rules violations were more widespread than the occurrence of two accidents might suggest.

The CTA's system safety program plan not inappropriately assigns primary responsibility for operations rules compliance to the operations department. During the course of the investigation, the Safety Board found that the actual implementation of the CTA's rules compliance program did not match the description in the plan. For example, the primary ways management was supposed to monitor operators' rules compliance was by having rail supervisors and line managers do ride checks and point checks. But the twice yearly monitoring of operators by training instructors described in the plan was not being done. Also, the CTA safety department checks were not being made, at least in the cases of the two accident operators.

But even if the point checks and ride checks had been performed in accordance with the established schedule, the Safety Board is not convinced that they would have been effective in ensuring that operators strictly and consistently adhered to operating rules. For example, point checks are performed at a station and, thus, do not permit an evaluation of most operating rules. Ride checks are performed inside the operating cab, and the operator is aware of the evaluator's presence. Operators may be expected to follow the rules to the letter during such evaluations, but management has no assurance that the operator will exercise the same diligence when he or she is not being observed. The Safety Board concluded that the CTA's program for the enforcement of operating rules was inadequate in design and execution and that, consequently, rules violations, such as those related to these two accidents, were not uncommon.

The CTA does not have unannounced efficiency tests or tests for rules compliance in which the operator is not aware that a test is in progress, nor does the Federal Transit Administration require such tests. In contrast, the Federal Railroad Administration (FRA) regulations (49 *Code of Federal Regulations* 217.9) specifically address a program of operational tests, inspections, and record-keeping on railroads subject to FRA jurisdiction. Such rules compliance programs typically include check rides and efficiency tests.<sup>2</sup> Most railroads also periodically review event recorder data to confirm that engineers are following the rules.

In the view of the Safety Board, rules compliance enforcement programs can be as effective in preventing accidents in the transit industry as they are in the railroad industry. The CTA would benefit from a comprehensive program of evaluations and efficiency tests similar to those in the railroad industry and in other transit agencies. The Safety Board, therefore, believes that the CTA should develop and implement systematic procedures for performing and documenting frequent management checks to ensure all operating personnel are complying with CTA operating rules, including speed restrictions and signal rules.

Such a rules compliance program might include procedures for supervisors to follow in making unannounced observations, field audits at stop signals and of speed restrictions, and periodic reviews of event recorder data.

A potential resource for transit agencies in establishing and maintaining a safe transit system is APTA's standards and best practices that are currently in development. The Safety Board believes that APTA should include specific guidance for transit operators on performing unannounced rules compliance observations and efficiency tests as the General Rule Standard for Rule Compliance and Implementation is developed.

In addition to its own internal safety audit program, the CTA has also engaged APTA to conduct periodic safety audits. The last APTA safety audit before the accident, which was conducted in 1998, took no exception to how transportation line management oversaw operators' rules compliance. APTA's audit did not include a checklist item specifically addressing the training department's program of twice-yearly check rides with operators or the safety department's monitoring of operating rules compliance. The APTA audit process creates a unique checklist for every transit system it audits. The checklist is based on the transit system's system safety program plan.

Item 12 on the APTA System Safety Checklist in the *Manual for the Development of Rail Transit System Safety Program Plans* addresses rules/procedure reviews. The manual indicates that records reviews and supplemental spot checks are the methods to use in determining whether rules are being followed. There is little specific guidance on what rules compliance programs should entail or how they should be efficiently implemented.

The Safety Board concluded that the APTA manual, published on August 20, 1991, does not contain the necessary specific guidance for assessing the effectiveness of rules compliance programs; as a result, the guidelines are not effective tools for regulatory authorities or transit agencies.

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<sup>2</sup> Efficiency tests involve setting up a scenario, such as a stop signal, and documenting the operating crew's actions to verify that applicable rules are complied with.

The Safety Board, therefore, believes that APTA should modify the manual to provide specific guidance for transit agencies to use in auditing the effectiveness of their operating rules compliance programs by referencing the APTA standard covering transit rules compliance and efficiency test programs as audit criteria.

Therefore, the National Transportation Safety Board makes the following safety recommendations to the American Public Transportation Association:

Include specific guidance for transit operators on performing unannounced rules compliance observations and efficiency tests as the General Rule Standard for Rule Compliance and Implementation is developed. (R-02-20)

Modify the *Manual for the Development of Rail Transit System Safety Program Plans* to provide specific guidance for transit agencies to use in auditing the effectiveness of their operating rules compliance programs by referencing the American Public Transportation Association standard covering transit rules compliance and efficiency test programs as audit criteria. (R-02-21)

The Safety Board also issued safety recommendations to the Federal Transit Administration and the Chicago Transit Authority. In your response to the recommendations in this letter, please refer to Safety Recommendations R-02-20 and -21. If you need additional information, you may call (202) 314-6177.

Chairman BLAKEY, Vice Chairman CARMODY, and Members HAMMERSCHMIDT, GOGLIA, and BLACK concurred in these recommendations.<sup>3</sup>

*Original Signed*

By: Carol J. Carmody  
Acting Chairman

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<sup>3</sup> At the time the report was adopted (September 4, 2002), Ms. Marion C. Blakey was the Chairman.