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NATIONAL TRANSPORTATION SAFETY BOARD

Public Meeting of November 19, 2014
(Information subject to editing)

Special Investigation Report: Metro-North Railroad Accidents

This is a synopsis from the NTSB's Special Investigation Report and does not include the Board's rationale for the conclusions and safety recommendations. NTSB staff is currently making final revisions to the report from which the attached conclusions and safety recommendations have been extracted. The attached information is subject to further review and editing.

INTRODUCTION

During the time period between May 2013 and March 2014, the National Transportation Safety Board (NTSB) launched investigative teams to five significant accidents on the Metro-North Railroad (Metro-North): (1) the May 17, 2013, derailment and subsequent collision in Bridgeport, Connecticut; (2) the May 28, 2013, employee fatality in West Haven, Connecticut; (3) the July 18, 2013, CSX derailment on Metro-North tracks in The Bronx, New York; (4) the December 1, 2013, derailment in The Bronx, New York; and (5) the March 10, 2014, employee fatality in Manhattan, New York. In combination, these accidents resulted in 6 fatalities, 126 injuries and more than $28 million in damages. The continued safe operation of Metro-North is vital to New York City and the tri-state area of New York, New Jersey, and Connecticut.

As the NTSB investigations progressed, it became apparent that several organizational factors issues were involved in the accidents. The November 2013 NTSB investigative hearing on the Bridgeport and West Haven accidents (the NTSB hearing) explored the role of Metro-North and the Federal Railroad Administration (FRA) organizational factors in these accidents. The NTSB was not alone in observing that organizational factors were relevant to the series of Metro-North accidents. Subsequent actions by the FRA, which conducted a focused audit, and the Metropolitan Transportation Authority (MTA), which formed a Blue Ribbon Panel (BRP) to review safety and created an MTA Board Safety Committee to monitor safety, have reinforced the need to examine both the role of Metro-North and FRA organizational factors in relation to these five accidents.

This special investigation report discusses all five of the recent Metro-North accidents investigated by the NTSB, examines some of the common elements of these accidents, and addresses the steps that Metro-North, the MTA, and the FRA have taken as a result of these investigations. The report also highlights lessons learned and provides recommendations to Metro-North, MTA, and several other entities to improve railroad safety on Metro-North and elsewhere.

FINDINGS

1 Metro-North Railroad did not effectively use its System Safety Program Plan or Priority One Program for their intended purposes of providing guidance for managing the safety of the Metro-North Railroad operations and employees.

2 The Metro-North Railroad Safety and Security Department was ineffective in identifying and resolving operational or process safety issues across its departments, and the organizational structure of Metro-North Railroad and its safety programs did not support effective safety risk management of all its departments and functions.

3 Metro-North Railroad did not effectively investigate accidents and incidents and address known deficiencies to continuously improve and revise processes to prevent recurrences.

4 Metro-North Railroad did not have an effective system for identifying, monitoring, analyzing, and mitigating safety risks.

5 Metro-North Railroad did not have an effective program that encouraged all employees to report safety issues and observations.

6 The Metro-North Railroad program of operational testing for speed compliance was inadequate at the time of the December 1, 2013, derailment in The Bronx.

7 Metro-North Railroad lacked an effective oversight and enforcement program to ensure that employees and managers understand and comply with established safety procedures.

8 Metro-North Railroad managers often lacked the ability to effectively conduct audits, operational testing processes, and safety risk management actions as described in the Metro-North Railroad System Safety Program Plan.

9 Metro-North Railroad current medical protocols lacked appropriate guidance regarding sleep disorders and medications.

10 Metro-North Railroad and the Long Island Railroad did not have adequate protocols to screen employees, especially those performing safety-sensitive functions, for sleep disorders despite implementation of a protocol at New York City Transit.

11 Had the Metropolitan Transportation Authority implemented uniform screening protocols across all of its properties based on the success at New York City Transit, the Metro-North Railroad engineer's sleep disorder could have been detected and controlled prior to the December 1, 2013, derailment in The Bronx.

12 Metropolitan Transportation Authority was ineffective in sharing safety failures and successes across Metropolitan Transportation Authority rail properties.

13 Without evaluating safety-sensitive employees for sleep disorders or other medical conditions, increased risk to employees, passengers, and the general public will remain, and the Federal Railroad Administration has not adequately addressed the issue.

14 Had the Federal Railroad Administration implemented National Transportation Safety Board recommendations R-02-24 and R-12-16, or complied with the legislated time limit in the Rail Safety Improvement Act of 2008 to require fatigue management plans by railroads, Metro-North Railroad would have been required to appropriately screen, evaluate, and treat the engineer for obstructive sleep apnea prior to the December 1, 2013, derailment in The Bronx, and thus could have prevented the accident.

15 A robust method to assess the effectiveness of the Federal Railroad Administration's proposed requirements for system safety programs will be critical to identifying and addressing deficiencies.

16 Although data from 2005 through 2013 for all commuter railroads and Amtrak indicating there has been an increase in accidents and incidents is not a full measure of the effectiveness of the National Inspection Plan, it does indicate that current methodology may not be effective in identifying systemic safety issues.

17 The Federal Railroad Administration system for prioritizing enforcement efforts was ineffective and resulted in a lower Federal Railroad Administration presence on Metro-North Railroad at the same time that track conditions were deteriorating, thereby increasing the risk of a catastrophic accident.

18 The Federal Railroad Administration approach to allocating inspection resources does not adequately consider potential consequences when evaluating overall risk.

19 In many instances, primary care providers do not adequately evaluate their patients for obstructive sleep apnea, as occurred in the case of the engineer in the December 1, 2013, derailment, and insufficient health care provider training on the topic is the most likely cause.

PROBABLE CAUSE

Probable causes for each of the five accidents were noted in the accident briefs, which were issued on October 24, 2014.

RECOMMENDATIONS

New Recommendations

As a result of this investigation, the National Transportation Safety Board makes the following new safety regulations:

To Metro-North Railroad:

1. Establish and implement a system to collect and analyze operational data to identify and mitigate adverse safety trends.

2. Require, as part of your risk management program, that representatives from all your divisions and labor organizations (1) regularly review safety and operational data from all divisions to identify safety issues and trends and (2) share the results across divisions.

3. Implement a confidential close call reporting system, or similar nonpunitive safety reporting program, to encourage all employees to report safety incidents, and ensure reports are regularly reviewed as part of a safety risk management program with the results shared across all divisions of the organization.

4. Develop and implement a robust internal audit and oversight program, in coordination with your safety risk management process, to ensure that all employees and managers comply with your established safety procedures.

5. Develop and implement a comprehensive training program for your employees on how to conduct effective internal auditing, operational testing, safety risk management analysis, and corrective action implementation.

6. Revise your medical protocols for employees in safety-sensitive positions to include specific protocols on sleep disorders, including obstructive sleep apnea.

7. Develop and publicize to your safety-sensitive employees a list of medications, including over-the-counter and prescription medications, that may not be used by locomotive engineers or conductors in active service.

8. Develop and implement protocols to routinely screen and fully evaluate your safety-sensitive employees for sleep disorders and ensure that such disorders are adequately addressed if diagnosed.

To the Long Island Railroad:

9. Develop and implement protocols to routinely screen and fully evaluate your safety-sensitive employees for sleep disorders and ensure that such disorders are adequately addressed, if diagnosed.

To the Metropolitan Transportation Authority:

10. Require representatives from your operating divisions to regularly review safety and operational data from all divisions to identify safety issues and trends and share the results across your operating properties.

11. Establish a program to systematically evaluate deficiencies identified on one Metropolitan Transportation Authority property, and determine the applicability of safety mitigations to other Metropolitan Transportation Authority properties.

12. Develop an oversight and tracking process to ensure that the recommendations from the various investigations and reviews of Metro-North Railroad are coordinated, addressed, and resolved at all Metropolitan Transportation Authority properties.

To the Federal Railroad Administration:

13. When the proposed system safety program regulation is promulgated, develop and implement a robust performance-based audit program to ensure that railroads are maintaining effective system safety programs.

14. Review and revise your National Inspection Plan procedures to ensure that sufficient inspection resources are being allocated to railroads having the greatest potential risk for high-consequence accidents.

To the Association of American Railroads, the American Public Transportation Association, the American Short Line and Regional Railroad Association, the Brotherhood of Locomotive Engineers, and the Sheet Metal, Air, Rail and Transportation Workers:

15. Collaborate to develop a model national labor agreement that supports effective programs for addressing sleep disorders and other medical conditions among safety-sensitive train operating personnel.

To the American College of Physicians:

16. Enhance initial and ongoing training to ensure that Board-certified physicians in Internal Medicine can successfully identify the risk factors for, evaluate, and effectively treat obstructive sleep apnea among their patients.

To the American Academy of Family Physicians:

17. Enhance initial and ongoing training to ensure that Board-certified physicians in Family Medicine can successfully identify risk factors for, evaluate, and effectively treat obstructive sleep apnea among their patients.

Previously Issued Recommendations

As a result of these accident investigations, the National Transportation Safety Board previously issued the following recommendations:

To the Federal Railroad Administration:

As a result of the Bridgeport, Connecticut, accident:

1. Revise the Track Safety Standards specified in Title 49 *Code of Federal Regulations* 213.233(b)(3), removing the exemption for high-density commuter railroads and requiring all railroads to comply with these requirements: (1) to traverse each main track by vehicle or inspect each main track on foot at least once every 2 weeks, and (2) to traverse and inspect each siding, either by vehicle or on foot, at least once every month. (R-14-11) (*Open—Await Response*)

To the Metro-North Railroad:

As a result of the employee fatality in West Haven, Connecticut:

1. Immediately implement redundant signal protection, such as shunting, for maintenance-of-way work crews who depend on the train dispatcher to provide signal protection. (R-13-17) (Urgent) (*Closed—Acceptable Action*)

As a result of the December 1, 2013, derailment in The Bronx, New York:

1. Survey your system and install approach permanent speed restriction signs where permanent changes in train speed apply, to alert train operating crews of the reduced speeds. (R-14-07) (*Open—Acceptable Response*)

2. Require the installation, in all controlling locomotive cabs and cab car operating compartments of crash- and fire-protected inward- and outward-facing audio and image recorders capable of providing recordings to verify that train crew actions are in accordance with rules and procedures that are essential to safety as well as train operating conditions. The devices should have a minimum 12-hour continuous recording capability with recordings that are easily accessible for review, with appropriate limitations on public release, for the investigation of accidents or for use by management in carrying out efficiency testing and systemwide performance monitoring programs. (R-14-08) (*Open—Acceptable Response*)

3. Regularly review and use in-cab audio and image recordings in conjunction with other performance data, to verify that train crew actions are in accordance with rules and procedures that are essential to safety. (R-14-09) (*Open—Acceptable Response*)

As a result of the Bridgeport, Connecticut, accident:

1. Revise your track inspection program to include requirements (1) to traverse each main track by vehicle or inspect each main track on foot at least once every 2 weeks, and (2) to traverse and inspect each siding, either by vehicle or on foot, at least once every month. (R-14-12) (Open—Acceptable Action)

Previously Issued Recommendations Reclassified in This Report

To Metro-North Railroad:

1. Survey your system and install approach permanent speed restriction signs where permanent changes in train speed apply, to alert train operating crews of the reduced speeds. (R-14-07) Reclassified *Open—Acceptable Response* in section 3.4.1 of this report.

2. Revise your track inspection program to include requirements (1) to traverse each main track by vehicle or inspect each main track on foot at least once every 2 weeks, and (2) to traverse and inspect each siding, either by vehicle or on foot, at least once every month. (R-14-12) Reclassified *Open—Acceptable Action* in section 3.1.3 of this report.

To the Federal Railroad Administration:

1. Require redundant signal protection, such as shunting, for maintenance-of-way work crews who depend on the train dispatcher to provide signal protection. (R-08-06) Reclassified *Open—Unacceptable Response* in section 4.4.2 of this report.

Previously Issued Recommendations Reiterated in this Report

As a result of this accident investigation, the National Transportation Safety Board reiterates the following previously issued safety recommendations:

To the Federal Railroad Administration:

1. Require railroads to medically screen employees in safety-sensitive positions for sleep apnea and other sleep disorders. (R-12-16)

2. Develop medical certification regulations for employees in safety-sensitive positions that include, at a minimum, (1) a complete medical history that includes specific screening for sleep disorders, a review of current medications, and a thorough physical examination, (2) standardization of testing protocols across the industry, and (3) centralized oversight of certification decisions for employees who fail initial testing; and consider requiring that medical examinations be performed by those with specific training and certification in evaluating medication use and health issues related to occupational safety on railroads. (R-13-21)

To the Metro-North Railroad:

3. Revise your national inspection program to include specific emphasis on roadway worker activities, including emphasizing hazard recognition and mitigation in job briefings. (R-14-12)