



National Transportation Safety Board

Washington, DC 20594

Safety Recommendation

Date: June 17, 2013

In reply refer to: R-08-6 (Reiteration)

The Honorable Joseph C. Szabo
Administrator
Federal Railroad Administration
Washington, DC 20590

We are providing the following information to urge the Federal Railroad Administration (FRA) to take action on the safety recommendation reiterated in this letter. This recommendation addresses redundant protection for maintenance-of-way work crews. The recommendation is derived from the NTSB's investigation of the January 9, 2007, Massachusetts Bay Transportation Authority (MBTA) accident in Woburn, Massachusetts,¹ and our ongoing investigation of the Metro-North Railroad (Metro-North) accident that occurred on May 28, 2013, in West Haven, Connecticut. This recommendation is consistent with the evidence we found and the analysis we performed. As a result of our investigation to date, the National Transportation Safety Board (NTSB) is issuing one urgent safety recommendation to Metro-North and is reiterating one safety recommendation to the FRA. Information supporting the reiterated recommendation is discussed below.

Background

On May 28, 2013, at 11:57 a.m. eastern daylight time, Metro-North passenger train 1559, traveling westbound at 70 mph, struck and killed a track foreman working on the Metro-North New Haven Line, Subdivision 7, in West Haven, Connecticut. The accident occurred at milepost (MP) 69.58 on main track 1.

About 8:15 a.m., the Subdivision 7 track supervisor conducted a morning job and safety briefing for that day's work activities with his subordinates, including the track foreman. The track foreman, in turn, briefed a crane operator and three other employees before they departed to the work location. The track configuration at the work location consists of main tracks 1, 2, and 4, and industrial track 5.² The track foreman's planned work for the day consisted of

¹ National Transportation Safety Board, Collision of Massachusetts Bay Transportation Authority Train 322 and Track Maintenance Equipment near Woburn, Massachusetts, January 9, 2007, RAR 08/01 (Washington, DC: National Transportation Safety Board, 2008).

² The Metro-North New Haven Line consists of four main tracks. The tracks are geographically oriented in a north-to-south direction, with timetable direction east to west. The MP numbering increases in the eastward

relocating rail segments from main track 1 to industrial track 5 between control point (CP) 266 and CP 271 near the West Haven Station using a locomotive crane. After the rail was moved, main track 1 was going to be raised and surfaced in preparation for the installation of passenger access bridge plates to span above industrial track 5 from the westward station platform to main track 1.

At 10:41 a.m., the track foreman contacted the Metro-North District G rail traffic controller (RTC) at Metro-North's Operations Control Center in New York, New York, to request a Form M, Line 3 authority to remove main track 1 from service between CP 266 and CP 271.³ The District G RTC placed blocking devices on the computer console between these CPs to prevent trains from entering the area, giving the track foreman and crane operator exclusive track occupancy.⁴ At 10:42 a.m., the District G RTC granted authority to the track foreman to work on main track 1 between CP 266 and CP 271 until 4:00 p.m., placing the track out of service.

At 10:55 a.m., the track foreman contacted the District F RTC to request authority to proceed from CP 257 to CP 266 with the locomotive crane. The District F RTC granted the authority on main track 2. When the crane arrived at CP 266, the track foreman requested authorization from the District G RTC to proceed with the crane from main track 2 to main track 1 (the out-of-service track). Upon arrival at CP 271, the track foreman requested permission to move the crane from main track 1 to industrial track 5. The District G RTC gave the track foreman permission to make this movement.

Once on industrial track 5, the track foreman proceeded west with the crane about 1.5 miles to the work location at the West Haven Station platform (MP 69.58). At this location, the track foreman and the crane operator determined they would not need to de-energize the overhead catenary wires.⁵ They then checked to see if there was sufficient clearance between the crane counterweight and the platform area. Once they were satisfied that the crane could swing without contacting the station platform, they began moving sections of rail from main track 1 to industrial track 5. This process involved the track foreman attaching rail tongs to the rail and then letting the crane pick up and move the rail toward industrial track 5, working in a westerly direction with the crane facing east and the track foreman facing west.

About the time the crane operator began moving two sections of rail from main track 1 to industrial track 5, the three other work crewmembers arrived. Simultaneously, the crane operator heard the horn of a train approaching from the east. The crane operator continued looking east and observed a train approaching, but he could not tell which track the train was on because of the track curvature. As the train neared, he realized the train was on main track 1 (the out-of-service track) and tried to warn the track foreman. The crane operator swung the crane's

direction. Tracks are numbered from north to south, 3, 1, 2, and 4. West of control point 271, main track 3 becomes industrial track 5.

³ Form M, Line 3 authority allows a work crew to occupy the track. Trains are not supposed to operate over the track when it is occupied (out of service).

⁴ Supervisory Control and Data Acquisition systems (train trackers) are used to view and control the location of trains and the aspect or display of absolute signals and switches. Blocking devices are used to prevent erroneous track authorizations into occupied work locations.

⁵ *Catenary wires* provide the source of power for electric train locomotives.

boom clear of main track 1 and continued to try to warn the track foreman of the approaching train but was unsuccessful. The train then struck and killed the track foreman and continued through the out-of-service track area, striking rail that was laid across the north rail of main track 1 and knocking the remainder of the rail into the center ditch between main track 1 and industrial track 5.

Protection for Maintenance-of-Way Workers

There were two RTCs assigned to Division G: (1) a qualified RTC and (2) a student RTC, who was training under the mentorship of the qualified RTC. The student RTC was receiving on-the-job training and was the RTC who applied the blocking devices for this work crew and issued the Form M, Line 3 authority.

At 11:47 a.m., the student RTC removed the blocking devices protecting main track 1 between CP 266 and CP 271 without the track foreman releasing the Form M, Line 3 authority to the RTC and the RTC repeating the release of authority to the track foreman, before removing the blocking devices. The recorded radio messages and telephone conversations did not reveal any communication between the track foreman and either the qualified RTC or the student RTC at Division G, canceling the authorization. The qualified RTC said that he may have momentarily stepped away from the console, as he had not seen the student RTC remove the blocking devices.

Prior to this accident, on May 4, 2013, an RTC removed the blocking devices from an occupied track, in error. On May 6, 2013, Metro-North instituted additional operation control procedures, including a software enhancement that requires RTCs to validate their intent to release track authorizations before the RTCs remove the blocking devices. Despite the additional procedures, this accident occurred on May 28, 2013, killing a Metro-North employee.

The NTSB has investigated other accidents involving train movements on tracks occupied by work crews. On January 9, 2007, southbound Massachusetts Bay Transportation Authority (MBTA) passenger train 322 operated by the Massachusetts Bay Commuter Railroad struck a track maintenance vehicle that was on the track near Woburn, Massachusetts.⁶ The track maintenance vehicle was pushed about 210 feet; the train did not derail. Of the six maintenance-of-way employees working on or near the track maintenance vehicle, two were killed, and two were seriously injured. The NTSB determined that the probable cause of that accident was (1) the failure of the train dispatcher to maintain blocking that provided signal protection for the track segment occupied by the maintenance-of-way work crew, and (2) the failure of the work crew to apply a shunting device that would have provided redundant signal protection for their track segment. Contributing to the accident was Massachusetts Bay Commuter Railroad's failure to ensure that maintenance-of-way work crews applied shunting devices, as required by its own rules. One of the safety issues identified in that investigation included train dispatcher procedures for blocking track segments to protect maintenance-of-way work crews occupying the track.

⁶ National Transportation Safety Board, RAR-08/01.

As a result of the MBTA accident, the NTSB made the following recommendation to the FRA:

Require redundant signal protection, such as shunting, for maintenance-of-way work crews who depend on the train dispatcher to provide signal protection. (R-08-6)

Safety Recommendation R-08-6 is currently classified “Open—Acceptable Response.”

The NTSB continues to believe that a redundant means of protecting railroad maintenance-of-way workers from train movements is critically needed and is concerned that these preventable accidents continue to occur. Therefore, the NTSB reiterates Safety Recommendation R-08-6 to the FRA.

The NTSB is also issuing an urgent safety recommendation to Metro-North to implement redundant protection for maintenance-of-way work crews.

NTSB investigators are still examining issues related to the West Haven, Connecticut, accident. At this time, the NTSB has not yet determined the probable cause of this accident. Nonetheless, the NTSB has identified the safety issue described above, which needs to be addressed.

Chairman HERSMAN, Vice Chairman HART, and Members SUMWALT, ROSEKIND, and WEENER concurred in this recommendation.

The NTSB is vitally interested in this recommendation because it is designed to prevent accidents and save lives. We would appreciate receiving a response from you within 90 days detailing the actions you have taken or intend to take to implement it. When replying, please refer to Safety Recommendation R-08-6 (Reiteration). We encourage you to submit your response electronically to correspondence@ntsb.gov.

By: