



DEPARTMENT OF TRANSPORTATION

Federal Railroad Administration

Safety Advisory 2024-01; Roadway Maintenance Machines – Importance of Communications and Compliance with Red Zone Procedures

AGENCY: Federal Railroad Administration (FRA), Department of Transportation (DOT).

ACTION: Notice of safety advisory.

SUMMARY: FRA is issuing Safety Advisory 2024-01 to emphasize the importance of rules and procedures regarding the safety of roadway workers who operate or work near roadway maintenance machines (RMMs). This safety advisory recommends that railroads and contractors review and update their rules regarding communication between roadway workers who work near RMMs and the operators of those RMMs, and increase monitoring of their employees for compliance with existing rules and procedures (including through operational testing). This safety advisory also recommends that railroads review and update their rules regarding work/red zones and evaluate the work/red zone distances for each type of RMM. In addition, this safety advisory recommends that railroads and contractors conduct additional safety briefings to raise worker awareness of the hazards associated with operating and working around RMMs.

FOR FURTHER INFORMATION CONTACT: Yu-Jiang Zhang, Staff Director, Track and Structures Division, Office of Railroad Safety, FRA, 1200 New Jersey Avenue, SE, Washington, DC 20590, at telephone: (202) 493-6460, or email: yujiang.zhang@dot.gov.

Disclaimer: This Safety Advisory is considered guidance pursuant to DOT Order 2100.6A (June 7, 2021). Except when referencing laws, regulations, policies, or orders, the information in this Safety Advisory does not have the force and effect of law and is

not meant to bind the public in any way. This document does not revise or replace any previously issued guidance.

SUPPLEMENTARY INFORMATION:

Background

In September 2023, FRA issued Safety Advisory 2023-06, titled *Roadway Maintenance Machines – Importance of Clear Communications and Compliance with Applicable Rules and Procedures*. FRA addressed two accidents in that Safety Advisory, each involving a railroad contractor working on a main line and being fatally injured by an RMM. In Safety Advisory 2023-06, FRA recommended that railroads and contractors review and update their rules regarding the safety of roadway workers who operate or work near RMMs, communicate any resulting changes to their employees, and increase monitoring of roadway workers, railroad employees, and contractors for compliance with all applicable rules and procedures.

To date, in calendar year 2024, two roadway workers have been fatally injured while working in the vicinity of RMMs. This Safety Advisory is based on FRA's preliminary findings and the respective railroads' latest reporting and is not intended to attribute a cause or assign responsibility for these incidents on the acts or omissions of any person or entity.

The following is a summary of the circumstances involved in the incidents:

In February 2024, an RMM struck and fatally injured a track foreman working on CSX's main line in Roanoke Rapids, North Carolina. FRA's preliminary investigation shows that at the time the incident, the track foreman was part of a four-person work group tasked to flag a highway-rail grade crossing for a ballast regulator that would be entering the crossing. When the work group arrived at the crossing, the track foreman walked to the north of the ballast regulator and stood in the gage of the track approximately seventeen feet from the ballast regulator. As the ballast regulator moved

north to pull ballast into the track, the foreman was not visible to the operator of the ballast regulator and the machine struck and fatally injured the track foreman.

In April 2024, a Union Pacific manager was fatally injured when he was struck by an RMM while working on the main line in McNeil, Arkansas.¹ The manager was serving as the roadway worker in charge (RWIC) of a work group filling areas along an embankment with ballast. The RWIC was directing the on-track operations of a track-hoe excavator (e.g., instructing the excavator operator where to dump ballast). The RWIC positioned himself alongside the excavator, which was in a blind spot of the operator, and was struck and fatally injured by the bucket while it was being retracted.

These incidents represent the worst-case scenario that can occur when roadway workers are working on or near RMMs. These incidents highlight the continued need for railroads to examine their rules and procedures for protecting roadway workers who operate or work near RMMs and the need for roadway workers to be vigilant in maintaining a safe distance from any operating RMM.

Recommendations

Considering the above discussion, FRA recommends that railroads and railroad contractors:

1. Review and update work/red zone procedures² to:
 - a. Address differences in sight distances and line of sight for different types of RMMs; and
 - b. Prohibit a roadway worker from entering the work/red zone of any RMM unless communication is established and maintained between that roadway worker and the RMM operator.

¹ FRA issued a Safety Bulletin in response to this incident. *See* Safety Bulletin 2024-03 (*available at* <https://railroads.dot.gov/elibrary/safety-bulletin-2024-03-employee-fatality-working-around-track-equipment>).

² Although individual railroads define the “work zone” or “red zone” surrounding RMMs differently, generally the “work zone” or “red zone” is the area surrounding the RMM, which, if entered by an individual creates the potential for injury as a result of being struck by the equipment.

2. Ensure work/red zones are discussed in job briefings anytime an RMM will be part of a work group.
3. Increase monitoring (including operational testing under 49 CFR part 217) of roadway workers, railroad employees, and contractors for compliance with all existing applicable rules and procedures (and any updated rules and procedures to result from paragraphs (1 and 2)), particularly those involving the operation of RMMs and roadway workers working on and in the vicinity of RMMs.
4. Conduct additional safety briefings to raise worker awareness of the hazards associated with operating and working around RMMs.
5. Review Safety Advisory 2023-06; *Roadway Maintenance Machines – Importance of Clear Communications and Compliance with Applicable Rules and Procedures* during the additional safety briefings.

FRA considers this Safety Advisory responsive to NTSB Safety Recommendation R-23-23³ and FRA encourages all railroad industry members to take actions consistent with the recommendations of this Advisory. FRA may modify this Safety Advisory, issue additional safety advisories, or take other appropriate action necessary to ensure the highest level of safety on the Nation’s railroads, including pursuing other corrective measures under its rail safety authority.

Issued in Washington, DC.

John Karl Alexy,
Associate Administrator for Railroad Safety,
Chief Safety Officer.

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³ NTSB Safety Recommendation R-23-23 recommends that FRA “[i]ssue a safety alert to railroads regarding the importance of establishing roadway maintenance machine standoff distances that take into account the ability of an operator to see a worker or object in the track gauge behind a roadway maintenance machine.”