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RAILROAD



PIPELINE

September 17, 2026

Railroad Investigation Report RIR-26-15

Prohibit Riding Railroad Equipment During Shoving Movements

Introduction

The National Transportation Safety Board (NTSB) is providing the following information to urge the Federal Railroad Administration (FRA) and the US rail industry to act on the safety recommendations in this report.¹ These recommendations are derived from our investigations of 16 accidents since October 2020 in which railroad workers were fatally or seriously injured as a result of riding railroad equipment during a shoving movement.² In these 16 accidents, 14 workers were fatally injured and two were seriously injured. The NTSB is issuing safety recommendations to the FRA, the American Short Line and Regional Railroad Association, and all Class I railroads.³

Background and Analysis

Title 49 *Code of Federal Regulations (CFR)* 218.99 currently allows railroad employees to ride equipment, such as on the side of trains, to provide point protection during shoving movements. (See figure 1.) Point protection is the use of visual confirmation to avoid obstructions or collisions, facilitating the safe movement

¹(a) Visit [ntsb.gov](https://www.ntsb.gov) to find additional information in the [public dockets](#) for these NTSB investigations. Use the [CAROL Query](#) to search safety recommendations and investigations. (b) A *shoving movement* is the process of pushing railcars from the rear with a locomotive. Shoving movements are common in switching operations.

² See appendix A for a list of completed investigations and appendix B for a list of ongoing investigations.

³ The Surface Transportation Board categorizes rail carriers into three classes by operating revenue. In 2024, the last time thresholds were adjusted for inflation, Class I carriers were those with an annual operating revenue of more than \$1.05 billion. Class II carriers had an annual operating revenue of less than \$1.05 billion and more than \$47.3 million. Class III carriers had an operating revenue below \$47.3 million.

of rail equipment. The riding equipment method of point protection exposes employees to unacceptable risk. Since October 2020, 16 NTSB accident investigations have involved an employee riding equipment while protecting a shoving movement. In 14 of the accidents, the employee was fatally injured, and in two, the employee was seriously injured.



Figure 1. Railroad employees ride the side of a railcar. (Photo: Chase Gunnoe, *Trains Magazine*.)

Accidents Related to Riding Shoving Movements

The 16 completed and ongoing NTSB investigations discussed in this report identified risks of death and injury when riding railroad equipment during shoving movements, including close clearances (areas too tight or narrow for workers to avoid contact with an object, structure, or piece of equipment), employees falling from the train into its path, collisions with vehicles at highway-railroad grade crossings, and train derailments and collisions.

These dangers account for a high percentage of conductor fatalities. Of the 20 conductor fatalities reported to the FRA between January 2020 and July 2025, 14

(70%) involved conductors riding trains during shoving movements. Similarly, in 2023, the Switching Operations Fatality Analysis (SOFA) Working Group analyzed data on 34 switching fatalities from 2011 to 2021, noting that 27 of these fatalities (79%) involved a shoving movement.⁴

Close Clearances

According to SOFA, one in four switching operations fatalities is due to a close clearance.⁵ Some close clearance conditions are permanent, such as those near buildings and switches, between close-set yard tracks, and at loading docks. Others, such as those near parked rolling stock that is not in active service, are temporary and may not be marked or documented. (See figure 2.)

⁴ The SOFA flyer, "[Care During Shove Moves](https://railroads.dot.gov/railroad-safety/divisions/partnerships-programs/switching-operations-fatalities-analysis-sofa)," can be accessed at the SOFA website at <https://railroads.dot.gov/railroad-safety/divisions/partnerships-programs/switching-operations-fatalities-analysis-sofa>, along with other historical information on shoving movements. The SOFA Working Group is an established, voluntary, nonregulatory workplace-safety partnership. It was formed to look for commonalities among the fatalities that occur during switching operations and to develop findings and recommendations that will aid in preventing railroad employee deaths. The group includes representatives from the FRA; the Association of American Railroads; Brotherhood of Locomotive Engineers and Trainmen; the International Association of Sheet Metal, Air, Rail and Transportation Workers; and the American Short Line and Regional Railroad Association.

⁵ For more, see <https://railroads.dot.gov/elibrary/sofa-brief-close-clearance>.



Figure 2. A marked close-clearance area in the La Mirada, California, accident investigation.

Shoving movements that pass through locations with close clearances can cause conductors to be pinned or crushed, as in a 2021 accident in La Mirada, California, in which a BNSF Railway (BNSF) conductor was fatally injured when he was pinned between the boxcar he was riding and a locomotive parked on an adjacent track. The close-clearance area was marked, but our investigation found the markings were difficult for the conductor to see from his vantage point on the railcar. In a 2023 accident in Cumberland, Maryland, a CSX Transportation (CSX) conductor trainee was fatally injured when he passed through a temporary close clearance during a shoving movement and was caught between the railcar he was riding and a parked locomotive. The close clearance existed only when equipment was stored on the adjacent track; it was not marked.

Falls

When positioned on the lead railcar of a shoving movement, railroad workers can fall or be pulled into a train's path. In Tuscola, Illinois, in 2020, a conductor riding

the lead railcar of a shoving movement reached out to move a gate that was obstructing the track ahead but was pulled from the train and fatally injured. Slack action, or the free movement between connected railcars, can surprise conductors with sudden forces during changes in speed and can cause falls; this risk is made worse by railcars that do not provide secure riding positions.⁶ In Tupelo, Mississippi, in 2020, a Kansas City Southern Railway conductor was fatally injured while directing a shoving movement from the end of the lead railcar during switching operations when an unexpected slack action caused him to fall from the railcar he was riding into the path of the moving train.⁷ In 2023, a CSX conductor in Baltimore, Maryland, was riding the lead railcar during a shoving movement and fell into the path of the train, which struck and fatally injured him. In our investigations of the Tupelo and Baltimore accidents, we found that the conditions of the conductors' riding locations made the conductors unstable and left them vulnerable to slipping and falling.

Grade Crossing Collisions

Conductors can be struck by highway motor vehicles while riding shoving movements through highway-railroad grade crossings, including those in industry yards that lack gates and/or active warning lights designed to prevent collisions. We investigated two accidents—one in Houston, Texas, in 2021 and one in Cleveland, Ohio, in 2023—in which conductors were fatally injured after a motor vehicle collided with the lead railcar of a shoving movement. In both accidents, the train entered the grade crossing at the same time as the vehicle, and the conductor was riding on the lead railcar of the shoving movement. We are currently investigating a similar accident in Ontario, California, in 2025, in which a Union Pacific Railroad (UP) brakeman riding the lead railcar in a shoving movement was fatally injured when the railcar collided with a tractor-trailer vehicle at a grade crossing.

Derailments or Equipment Collisions

In a derailment or collision involving railroad equipment, railroad workers riding railcars are at a higher risk of death or serious injury than if they are positioned

⁶ (a) *Slack action* is a result of the couplers and draft systems used in freight trains. These systems are designed to connect railcars securely, manage forces during train operations, and allow limited motion between railcars to absorb shocks and reduce stress on railcar components. (b) Railcar design is varied. Certain railcars may provide a rider with platforms or handholds that afford a less stable riding position, leaving the rider more susceptible to fatigue or less secure against unanticipated movement.

⁷ Kansas City Southern Railway is now Canadian Pacific Kansas City Railroad.

on the ground or in a separate vehicle, as the exterior of a train does not have seatbelts, fall restraints, or enclosures for protection that are federally required for other types of equipment designed to be occupied or ridden (for example, motor vehicles or hi-rail machinery). An employee riding a railcar can lose their grip during a collision or derailment, leading to a fall. Employees can also be caught under an overturning railcar during a derailment. We investigated accidents in which conductors riding railcars during shoving movements were fatally injured when a derailed railcar toppled onto them in El Paso, Texas, in 2022 (UP), and again in Denver, Colorado, in 2025 (BNSF). (See figure 3.) Similarly, a CSX conductor was fatally injured in Calera, Alabama, in December 2025 by a railcar that fell onto him after a collision with standing equipment during a shoving movement.

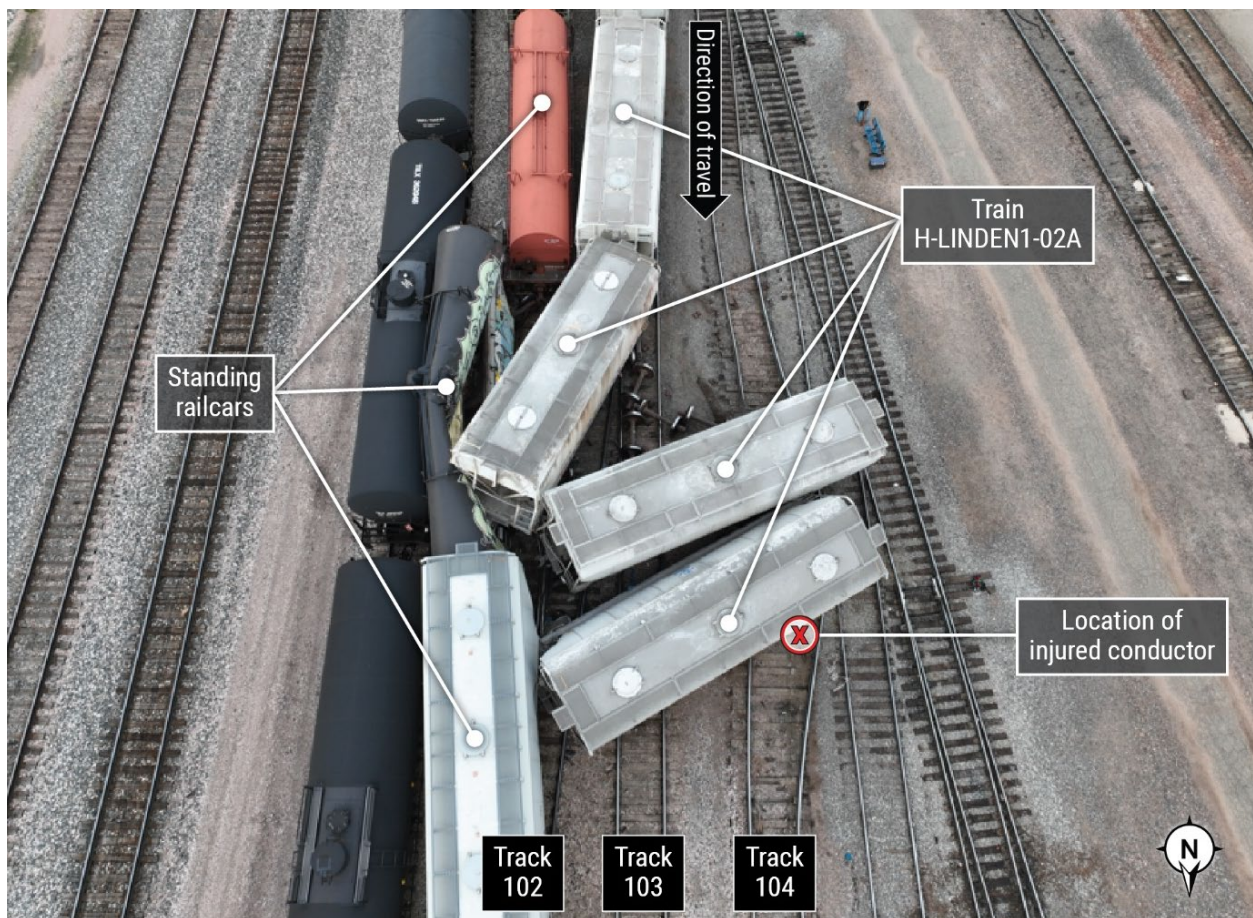


Figure 3. Railcars after the 2025 collision and conductor injury in Denver, Colorado. (Photo: BNSF.)

Railroad workers can be pinned or crushed between, against, or under rolling stock or other obstructions while riding rail equipment. We investigated a 2020 accident in Richmond, Virginia, in which a CSX employee was riding on the platform of the leading railcar in a shoving movement, which he was operating via remote

control. He was fatally injured when his train struck railcars that were fouling the track.⁸ In 2024 in Melrose Park, Illinois, a UP conductor positioned on the leading end of a tank car during a shoving movement was pinned between colliding trains and fatally injured. In 2025 in Nacogdoches, Texas, a UP conductor was riding the lead railcar during a shoving movement when his train sideswiped a railcar fouling an adjacent yard track, causing fatal injuries. (See figure 4.)



Figure 4. Accident site in Nacogdoches, Texas.

Risks and Alternatives

The FRA has issued safety bulletins on the dangers associated with riding equipment during shoving movements. Bulletin 2023-04, which followed the 2023 Baltimore accident, encouraged railroads to identify location-specific safety issues to

⁸ *Fouling* refers to equipment or persons close enough to an adjacent track to make contact and cause potential damage or injury.

cover during safety briefings and to train or retrain their employees to increase awareness of the dangers of riding moving equipment.⁹ After the Cumberland accident, the FRA issued safety bulletin 2023-05, which urged railroads to identify close-clearance areas in yards and on main tracks where employees should not ride equipment and include these findings in railroads' operating rules, special instructions, and timetables.¹⁰ Both bulletins contained this statement: "Employees should only ride equipment when necessary for job duties, and only after the process for doing so is discussed in a job briefing." Notably, the bulletins then directed employees to make their own determination of safety: "Further, employees should only ride equipment after determining it is safe to do so."

A 2025 NTSB safety alert noted that railroads play a critical role in reducing the risks associated with riding shoving movements by:

- Providing vehicles and safe walking conditions as alternatives to riding,
- Using technology such as cameras to protect movements,
- Marking the locations of permanent close clearances, and
- Prohibiting riding through ungated highway-railroad grade crossings or other high-risk areas.

Additionally, railroads should offer hands-on training and mentorship to ensure employees understand equipment limitations and yard hazards. We also urged conductors to identify hazards before riding shoving movements, consider safer alternatives such as walking or using vehicles, and conduct thorough job briefings.¹¹ When riding is unavoidable, conductors should inspect equipment for safe riding positions, maintain three points of contact, and remain alert for slack action and obstacles.

In many of the investigations addressed in this report, the NTSB observed that in practice, employees' decisions to ride equipment are based primarily upon the two main options readily available in most railyards: riding on the side of a railcar or walking. Although riding equipment is generally faster than walking on the ground, particularly over long distances, and can take less energy and result in less physical fatigue, it is not the only available method of point protection. For example,

⁹ For more, see [FRA Safety Bulletin 2023-04](#).

¹⁰ For more, see [FRA Safety Bulletin 2023-05](#).

¹¹ For more, see safety alert SA-103, [Shoving Movements: Avoid the Risks](#).

employees can be positioned at the end of the movement and can alert the train crew to approaching hazards. Employees can walk alongside the train, ride in a utility vehicle, use shove lights, or use camera-assisted technology.¹²

Fixed cameras are used in some railyards, with a live feed viewable at various kiosks throughout the yard so that employees can use the feed to protect a shove in that area. For instance, UP recently introduced camera-assisted technology to assist with point protection in its railyards, although at present the cameras are locomotive-mounted and are not yet used in shoving movements.¹³ Emerging technologies like unmanned aerial vehicles (drones) can also be explored for their utility in point protection. Alternative methods of providing point protection remove the employee from a vulnerable position on moving equipment. In doing so, these methods can prevent serious injuries or fatalities associated with unidentified temporary and permanent close clearances; collisions; derailments; or falls from slack action, fatigue, or unstable riding positions.

In many of our investigations, we have observed that employees rode equipment without supervisory objection, even when safer methods of point protection were available. In our investigation of the Nacogdoches accident, we interviewed the trainmaster who had worked with the fatally injured conductor on the day of the accident. He noted that sometimes the conductor would ride railcars for short distances, adding that in those cases it would have been easier to walk: "There's a certain point to where it's faster walking than it is riding, and there's certain times where it's faster ... riding than [walking]." In this case, though the trainmaster stated he did not consider riding equipment for short distances to be an efficient use of time, he did not discourage the practice.

Railroad employees riding shoving movements when safer methods are available represents a preventable exposure to high-risk conditions. As the Nacogdoches accident demonstrates, although riding can be more efficient than walking, safer alternative methods of point protection may be available to mitigate the safety risks associated with shoving movements, like using additional employees for point protection, monitored cameras, or shove lights. The NTSB concludes that riding railroad equipment during shoving movements is unjustifiably used within the

¹² *Shove lights* are fixed signal indicators connected to track circuitry that display a simple aspect. They can alert railroad employees whether the track ahead is clear and eliminate the need to ride a railcar to protect a shoving movement.

¹³ ["A Clearer View: Union Pacific's Point Protection Tech is Boosting Visibility." UP, 2025.](#)

railroad industry given the risk of bodily injury or death associated with the practice and the availability of alternative methods of point protection.

Federal Requirements for Shoving Movements

Title 49 *CFR* 218.99(b) establishes the following federal requirements for shoving movements:

- A job briefing,
- No unrelated tasks (the employee must direct all their attention toward the shoving movement), and
- Point protection.

Title 49 *CFR* 218.99(b)(2) specifies that the employee directing the shoving movement “shall not engage in any task unrelated to the oversight” of the movement. This requirement is at times unenforced, such as when conductors who are training new employees must also protect a shove. In the Cumberland accident, a CSX conductor and his trainee were completing a shove when the trainee struck the handrail of a locomotive parked on an adjacent track and was fatally injured. The conductor told the NTSB that he was focused on the movement itself and the trainee, and could not recall how close the train came to the parked locomotives. The 2023 Baltimore accident also involved a conductor trainee, who was controlling the shoving movement from one side of the lead railcar under the supervision of a conductor on the other side of the railcar. In both accidents, the duty to participate in on-the-job training conflicted with the requirement to not engage in tasks unrelated to the shoving movement. The NTSB therefore concludes that federal regulations prohibiting employees from completing unrelated tasks during shoving movements do not offer sufficient protection against injuries when the regulations conflict with regular railroad duties.

Title 49 *CFR* 218.99(b)(3) further specifies requirements for point protection:

Point protection shall be provided by a crewmember or other qualified employee by: (i) Visually determining that the track is clear. The determination that the track is clear may be made with the aid of monitored cameras or other technological means, provided that it and the procedures for use provide an equivalent level of protection to that of a direct visual determination by a crewmember or other qualified employee properly positioned to make the observation as prescribed in this section and appendix D to this part; and (ii) Giving signals or instructions necessary to control the movement.

The use of technology is encouraged by the text of the regulation in 49 *CFR* 218.99. Directives regarding the safety of in-person point protection for shoving movements are less clear, simply specifying that employees be “properly positioned to make the observation.” In other words, the regulation only states employees must ensure they can see the movement, not that they are in the safest position during the movement itself. This minimal guidance leads to employees determining their own level of safety, which in practice has had mixed results. This report documents the many hazards of riding equipment during shoving movements. The NTSB therefore recommends that the FRA prohibit railroads from allowing employees to provide point protection by riding equipment during shoving movements.

A hazard-focused job briefing advances safety by reducing risk. Title 49 *CFR* 218.99(b)(1) specifies that in shoving movements, job briefings must “include the means of communication to be used between the locomotive engineer and the employee directing the move and how point protection will be provided.” The requirements do not specify that the briefings must address any safety hazards related to the shoving movement. A 2025 FRA safety advisory states that job briefings must cover “procedures for establishing and verifying that the track meets [federal] ‘track is clear’ criteria,” but 49 *CFR* 218.99(b) itself does not contain this directive.¹⁴ A 2020 SOFA alert regarding job briefings reported that one in five switching operations fatalities involved an inadequate job briefing.¹⁵ In many of the accidents the NTSB has investigated, the job briefings that preceded the shoving movement were perfunctory—only addressing instructions for the tasks assigned and not the hazards associated with them. The effectiveness of a job briefing in mitigating hazards is limited when the briefing does not address those hazards or the locations and conditions that might be encountered during a shoving movement.

During our investigation of the Denver accident, which was caused by a misaligned switch on the track into which the BNSF crew was shoving their train, the NTSB interviewed the yardmaster on duty at the time of the derailment. He described the general nature of what BNSF called “job safety briefings” at that location, noting that the average briefing “can happen on the lead, it can happen on a locomotive, it can happen in a crew room, it happens anywhere.” He noted that in general, these briefings address the functions of the job, relevant rules, planned movements and tasks, and conditions to watch for, like water on the track. He further clarified that he

¹⁴ FRA. 2025. Safety Advisory: Track Is Clear Determination During Shoving or Pushing Movements Across Highway-Rail Grade Crossings Equipped Only with Flashing Lights or Passive Warning Devices. Safety Advisory 2025-02. Washington, DC: FRA.

¹⁵ For more, see <https://railroads.dot.gov/elibrary/sofa-lifesavers-job-brief>.

would not characterize these briefings as job safety briefings and that they generally did not address specific hazards or other risks associated with the tasks. Similarly, the engineer of the train in the Denver accident stated that job briefings generally focused on the requirements of the task at hand.

The NTSB reviewed radio recordings of the Denver accident, which did not indicate any discussion between crew members regarding the alignment of any of the switches in the intended route. Of further note, neither 49 *CFR* 218.99 nor the *General Code of Operating Rules* (GCOR) require job briefings to identify and prepare crew members for potentially dangerous situations before a shoving movement.¹⁶ In the Denver investigation, for example, we found that a hazard-focused job briefing could have prompted the conductor to validate the proper alignment of all switches in the intended route before the shoving movement. The BNSF term for the briefing was “job safety briefing,” but in practice it was primarily task-focused. The NTSB concludes that because job briefings as defined in federal regulations do not require identification of known and potential hazards of a shoving movement such as track conditions, close clearances, visibility limitations, or switch positions, or plans for employee safety, they do not result in employees being provided with the opportunity to address or mitigate these hazards.

Federal requirements for shoving movements should address both the hazards related to riding equipment and the importance of hazard-focused job briefings to foster safer work practices in the industry. A site-specific hazard analysis would determine the safest method of point protection for shoving movements and would facilitate a hazard-focused job briefing. Therefore, the NTSB recommends that the FRA require railroads to 1) conduct, document, and reevaluate as necessary a site-specific hazard analysis for planned work locations that includes employee safety; track, walkway, and roadway conditions; visibility limitations; location of switches and derails; close clearances; and availability of applicable technology to determine the safest methods of shove protection and 2) communicate the results of the analysis to employees. The NTSB further recommends that the FRA require job briefings conducted before shoving movements to address hazards associated with specific job tasks and information from the site-specific hazard analysis described in Safety Recommendation R-26-13.

¹⁶ GCOR is a set of operating rules for US railroads set by a consortium of participating railroads. The ninth and current edition was effective September 23, 2025.

Railroad Operating Rules for Shoving Movements

Railroad operating rules incorporate the requirements of existing federal regulations and prescribe their own policies and procedures, which may be more restrictive than the regulations and may provide instructions to employees when no regulation exists. GCOR is adopted by most Class II railroads, along with some Class I and short-line railroads. Some railroads further adapt GCOR rules to suit their specific operations and requirements. GCOR rule 6.5, "Shoving Movements," states that to the extent of the observer's range of vision and the portion of the track that is to be used for the intended movement is clear, the track will remain clear to the location where movement will be stopped, and switches and derails are properly lined for the intended movement.

Industry safety rules for riding equipment can be broad, stating that employees may ride equipment "only if necessary" (BNSF) or "only when duties require" (UP) and, as in FRA safety bulletins, directing employees to make their own determination of safety. These safety rules, which are separate from operational rules, offer guidelines for making this determination and often further prohibit certain practices. For example, UP rules state that employees must not ride on the side of equipment when close-clearance conditions exist or on the side of equipment with one vertical handhold. Similarly, BNSF prohibits riding the no-clearance side of equipment in no-clearance areas and riding equipment when track conditions cannot clearly be observed because of debris, snow, ice, or other material.

These rules rely heavily on the employee's own judgment to determine whether to ride equipment while providing point protection (protecting a shove). In the list of factors for determination in BNSF's safety rules, employees are encouraged to "consider" various aspects of the movement, wording that appears alongside clearer directives like "do not ride or knowingly allow others to ride." Rules are of limited utility if the railroad or railyard infrastructure or other rail equipment has deficiencies. In the Cumberland accident, parked locomotives created a temporary close-clearance area on an adjacent track to one on which a CSX conductor and his trainee were completing their shove. In this accident, the close-clearance area was not marked as such. CSX safety rule 2102.1 prohibits employees from riding equipment through close-clearance areas, but in our investigation, the NTSB found no evidence that the conductor had seen the close clearance, so he and his trainee proceeded to ride the train through it. Without necessary information about the upcoming close-clearance hazard, the conductor and trainee could not mitigate the risk of the unidentified close-clearance area, contributing to the fatal injury of the conductor trainee.

The nature of switching movements necessitates some level of flexibility, but this flexibility can result in rules that contradict one another or confuse the employee. The railroads themselves recognize that the hazards of riding vary depending on the different types of railroad equipment, and in many cases, they have tailored their safety rules accordingly. At UP, safety rule 81.7 contains several illustrated subsections with rules related to riding flat cars, intermodal well cars, tank cars, bulkhead or center beam flat cars, and coil cars, all of which have different configurations of riding surfaces and safety appliances. In our investigation of the 2023 Baltimore accident, we noted that at the time of the accident, the fatally injured conductor trainee was following an operational rule specific to grade crossings, which prohibited employees from riding the bottom step of equipment in that scenario. Because the rule restricted his foot placement in a way that reduced his stability, we found that CSX operating rules were deficient.

Many railroads allow employees to ride equipment through grade crossings after determining it is safe to do so. Often, however, the position of the employee riding the shove does not offer an unobstructed view; when visibility is limited, the rules do not protect the employee from a collision. In our investigation of the Houston accident, the train crew did not provide ground protection for the shoving movement into a grade crossing. The conductor observed no traffic approaching the crossing, so he directed the engineer to shove the train through it. A tractor-trailer entered the crossing and collided with the tank car the conductor was riding. Before the accident, Watco, the railroad holding company that owns the railroad, followed GCOR rule 6.32.1, which allows train crews to proceed through certain grade crossings without ground protection when the crew can clearly see no traffic stopped at or approaching the crossing. As a result of the accident, Watco changed their rule on all 47 of their US-based railroads to eliminate the exception, but the GCOR rule remains unchanged. Regulations in 49 *CFR* 218.99(e)(4)(iv) are similar to GCOR's, as are the operating rules of the Northeast Operating Rules Advisory Committee (NORAC) and the railroads Canadian National Railway (CN) and Norfolk Southern Railway (NS). We therefore recommended that the FRA:

Revise 49 *CFR* 218.99(e)(4)(iv) to require ground protection when conducting shoving movements through highway-railroad grade crossings equipped only with flashing lights or passive warning devices.
(R-23-19)¹⁷

¹⁷ Safety Recommendation R-23-19 was issued on October 24, 2023, and is classified Open–Await Response.

We also recommended that GCOR, NORAC, CN, and NS:

Revise your operating rules to prohibit railroad employees from riding shoving movements through highway-railroad grade crossings equipped only with flashing lights or passive warning devices unless ground protection is provided. (R-23-20)¹⁸

In an informal response on March 5, 2026, the FRA told the NTSB that the definition of “track is clear” in 49 *CFR* 218.93 is sufficient and noted that Safety Advisory 2025-02 can help the railroad industry determine if the “track is clear.” Although improved guidance to the industry is helpful, more can be done to eliminate fatalities associated with shoving movements. By prohibiting the practice of riding equipment to provide point protection, Safety Recommendation R-26-12 would eliminate the need for separate rules specific to riding shoving movements through grade crossings. Safety Recommendation R-23-19 is classified Closed-Superseded.

On January 22, 2024, NORAC and GCOR responded that although they manage railroad operating rules, they are not involved in railroad safety rules, which include many rules related to riding equipment. Both cited the increased risk of injury to employees from ground-based point protection and stated that they would make no rule changes without a change to federal regulations. Implementing Safety Recommendation R-26-12 would necessitate the FRA making a change to its federal regulations and would eliminate the need for separate rules related to riding shoving movements at grade crossings. Safety Recommendation R-23-20 is classified Closed-Superseded.

Based on our accident investigations since 2020 related to shoving movements, the NTSB concludes that railroad industry rules depend on individual employees’ ability to judge whether it is safe, necessary, or even permissible to ride on the outside of rail equipment. As a result, employees are vulnerable to undocumented hazards like temporary close clearances, novel situations like unfamiliar yards and railcars with unusual safety appliances, hard-to-see dangers like traffic approaching skewed highway-railroad grade crossings, and unintended diversions into equipment from derails, misaligned switches, or crossovers. Therefore, the NTSB recommends that all Class I railroads prohibit employees from providing point protection while riding equipment during shoving movements. The NTSB also recommends that all Class I railroads conduct, document, and reevaluate

¹⁸ Safety Recommendation R-23-20 was issued on October 24, 2023, and is classified Open–Initial Response Received.

as necessary a site-specific hazard analysis for planned work locations that includes employee safety; track, walkway, and roadway conditions; visibility limitations; location of switches and derails; close clearances; and availability of applicable technology to determine the safest methods of shove protection and communicate the results of the analysis to employees. The NTSB recommends that all Class I railroads require job briefings conducted before shoving movements to address hazards associated with specific job tasks and information from the site-specific hazard analysis described in Safety Recommendation R-26-16.

The American Short Line and Regional Railroad Association, which represents Class II and Class III railroads, plays a critical role in raising awareness of the hazards of riding equipment during shoving movements. Therefore, the NTSB recommends that the American Short Line and Regional Railroad Association advise its members of report RIR-26-15 and the hazards associated with riding equipment during shoving movements.

Conclusions

Findings

1. Riding railroad equipment during shoving movements is unjustifiably used within the railroad industry given the risk of bodily injury or death associated with the practice and the availability of alternative methods of point protection.
2. Federal regulations prohibiting employees from completing unrelated tasks during shoving movements do not offer sufficient protection against injuries when the regulations conflict with regular railroad duties.
3. Because job briefings as defined in federal regulations do not require identification of known and potential hazards of a shoving movement such as track conditions, close clearances, visibility limitations, or switch positions, or plans for employee safety, they do not result in employees being provided with the opportunity to address or mitigate these hazards.
4. Railroad industry rules depend on individual employees' ability to judge whether it is safe, necessary, or even permissible to ride on the outside of rail equipment. As a result, employees are vulnerable to undocumented hazards like temporary close clearances, novel situations like unfamiliar yards and railcars with unusual safety appliances, hard-to-see dangers like traffic approaching skewed highway-railroad grade crossings, and unintended diversions into equipment from derails, misaligned switches, or crossovers.

Recommendations

New Recommendations

The National Transportation Safety Board makes the following new safety recommendations.

To the Federal Railroad Administration:

Prohibit railroads from allowing employees to provide point protection by riding equipment during shoving movements. (R-26-12)

Require railroads to 1) conduct, document, and reevaluate as necessary a site-specific hazard analysis for planned work locations that includes employee safety; track, walkway, and roadway conditions; visibility limitations; location of switches and derails; close clearances; and availability of applicable technology to determine the safest methods of shove protection and 2) communicate the results of the analysis to employees. (R-26-13)

Require job briefings conducted before shoving movements to address hazards associated with specific job tasks and information from the site-specific hazard analysis described in Safety Recommendation R-26-13. (R-26-14)

To all Class I railroads:

Prohibit employees from providing point protection while riding equipment during shoving movements. (R-26-15)

Conduct, document, and reevaluate as necessary a site-specific hazard analysis for planned work locations that includes employee safety; track, walkway, and roadway conditions; visibility limitations; location of switches and derails; close clearances; and availability of applicable technology to determine the safest methods of shove protection and communicate the results of the analysis to employees. (R-26-16)

Require job briefings conducted before shoving movements to address hazards associated with specific job tasks and information from the site-specific hazard analysis described in Safety Recommendation R-26-16. (R-26-17)

To the American Short Line and Regional Railroad Association:

Advise your members of report RIR-26-15 and the hazards associated with riding equipment during shoving movements. (R-26-18)

Previously Issued Recommendations Classified in this Report

The National Transportation Safety Board classifies the following safety recommendations.

To the Federal Railroad Administration:

Revise Title 49 *Code of Federal Regulations* 218.99(e)(4)(iv) to require ground protection when conducting shoving movements through highway-railroad grade crossings equipped only with flashing lights or passive warning devices. (R-23-19)

Safety Recommendation R-23-19 is classified Closed–Superseded.

To the General Code of Operating Rules Committee, Northeast Operating Rules Advisory Committee, Canadian National Railway, and Norfolk Southern Corporation:

Revise your operating rules to prohibit railroad employees from riding shoving movements through highway-railroad grade crossings equipped only with flashing lights or passive warning devices unless ground protection is provided. (R-23-20)

Safety Recommendation R-23-20 is classified Closed–Superseded.

BY THE NATIONAL TRANSPORTATION SAFETY BOARD

JENNIFER L. HOMENDY
Chairwoman

THOMAS CHAPMAN
Member

MICHAEL E. GRAHAM
Vice Chairman

JOHN DELEEuw
Member

Report Date: September 17, 2026

Board Member Statement

Member John DeLeeuw filed the following concurring statement on September 17, 2026. Vice Chairman Michael E. Graham joined in this statement.

Thanks to the staff for this detailed Safety Recommendation Report, and I concur with the findings and recommendations.

As this report demonstrates, we continue to see the same safety issues over and over again in rail accidents that result in worker fatalities and injuries. In this case, the risks involved when riding railroad equipment during shoving movements. While it is necessary to provide point protection to ensure the safe movement of rail equipment, doing so should not expose employees to unacceptable risk. These risks are well known and documented, by the work of the Switching Operations Fatality Analysis (SOFA) Working Group, the Federal Railroad Administration through its issuance of multiple safety bulletins, and our own investigations, safety alerts, and recommendations.

Implementation of safety management systems (SMS) is a needed safety improvement that the NTSB has seen in investigations and made recommendations for across all the modes of transportation. As the railroads' required Risk Reduction Plans (RPP) are developed and implemented, including with the associated key principles of SMS (including top-down ownership and policies, analysis of operational incidents and accidents, hazard identification and risk management, prevention and mitigation programs, and continuous evaluation and improvement programs), they should be reviewed to ensure effectiveness and safety, as the Board has recommended.

This includes an emphasis to the railroad industry and railroad workers on the importance of voluntarily reporting all known or potential safety hazards, especially those related to point protection of rail cars during shoving movements. Effective Safety Management Systems are those that encourage and promote employee voluntary reporting of general or specific safety concerns. Specifically, this will allow the Railroad Industry, Labor Associations, and the Federal Railroad Administration to assure the effectiveness of these safety recommendations as well as identify new or unknown hazards with rail cars during shoving movements. Data gathered from the voluntary safety reports will provide assurance that the proposed safety recommendations in this report have appropriately mitigated the known risk.

I recognize that there are differences between the confidential reporting programs among the modes, particularly between aviation and rail. I look forward to

collaborating with my fellow Board members, NTSB staff, and stakeholders on these issues and how lessons learned can be shared to improve safety.

Appendixes

Appendix A: Accidents Analyzed for This Report

See Table A-1 for the completed accident investigations related to shoving movements analyzed for this report. Final reports have been released for most of the accidents and are listed if applicable. The dockets for the investigations are available via NTSB's [CAROL Query](#).

Table A-1. Accidents analyzed for this report, 2020-2025.

NTSB Case Number	Date	Location	Accident Description	Final Report
RRD21LR001	10/12/2020	Richmond, Virginia	A CSX Transportation (CSX) employee was fatally injured while riding on the outside platform of a train when the train collided with three standing rail cars in Acca Rail Yard. The employee, working alone, was operating the train in reverse by remote control. As he shoved rail cars down the yard lead, the train struck the corner of a railcar positioned in an adjacent track but fouling the yard lead.	RIR-22-12
RRD21FR004	11/11/2020	Tuscola, Illinois	A Decatur & Eastern Illinois Railroad conductor was fatally injured during a shoving movement while riding the lead railcar in the direction of movement. During the movement, the train encountered a gate fouling the track. From the end ladder of the railcar, the conductor attempted to open the gate to clear the track but was instead pulled from the ladder onto the track, where he was struck by the train.	RIR-22-02
RRD21LR006	12/23/2020	Tupelo, Mississippi	A Kansas City Southern Railway Company conductor was struck during switching operations while directing a shoving movement from the end of the lead railcar in the Tupelo Rail Yard. When the engineer slowed the train in anticipation of coupling a set of railcars, the conductor fell from his position and into the path of the train, where he sustained fatal injuries.	RIR-22-08
RRD21FR008	3/3/2021	La Mirada, California	A BNSF Railway train conductor riding on the side ladder of a boxcar during a shoving movement in Buena Park Yard was fatally injured when he was pinned between the boxcar he was riding and a locomotive parked in an adjacent track in a location that created a temporary close clearance point, or narrow space between his train and three locomotives stored on an unusually close adjacent track.	RIR-23-01

NTSB Case Number	Date	Location	Accident Description	Final Report
RRD22LR002	10/29/2021	Houston, Texas	A Watco Dock and Rail conductor was fatally injured while protecting a shoving movement. The conductor was riding on the platform of the leading railcar of his train when the train entered a highway-railroad grade crossing and collided with a truck tractor/semitrailer vehicle that had entered the crossing at the same time.	RIR-23-13
RRD22FR013	08/29/2022	El Paso, Texas	A Union Pacific Railroad (UP) conductor was fatally injured when two railcars derailed during a shoving movement in Alfalfa Yard. The conductor was riding on the lead end of a railcar when the train encountered a derail that had been placed for a separate project. When the two railcars derailed, one of them overturned, landing on its side and striking the conductor.	RIR-24-03
RRD23LR007	03/07/2023	Cleveland, Ohio	A Norfolk Southern Railway conductor was fatally injured when his train collided with a dump truck as it entered a private highway-railroad grade crossing in the Cleveland-Cliffs Incorporated steel plant. The conductor was riding the lead railcar during a shoving movement and was pinned between the railcar and the dump truck during the collision.	RIR-24-06
RRD23FR012	06/26/2023	Baltimore, Maryland	A CSX conductor trainee was fatally injured while riding the lead railcar during a shoving movement at Seagirt Marine Terminal. The conductor trainee was in an unstable riding position and fell from an intermodal railcar when a change in speed resulted in slack action. He was then struck by the train he had been riding.	RIR-25-09
RRD23FR016	08/06/2023	Cumberland, Maryland	A CSX conductor trainee was fatally injured during switching operations in Cumberland Yard. The conductor trainee was riding on the side of a railcar during a shoving movement that passed through a temporary close clearance location. During this movement, he was caught in the 7-inch gap between the railcar he was riding and an adjacent locomotive handrail.	RIR-24-08
RRD24LR013	07/06/2024	Melrose Park, Illinois	A UP conductor was fatally injured while riding a train during a shoving movement in Proviso Yard. At the time of the accident, the conductor's train was traveling west along a converging track toward a switch. At the same time, another train was traveling west toward the same switch along the tangent (straight) track. The conductor, positioned on the leading end of a tank car, was caught between the trains when they collided.	RIR-25-08

NTSB Case Number	Date	Location	Accident Description	Final Report
RRD25FR013	06/09/2025	Nacogdoches, Texas	A UP conductor was fatally injured during switching operations in Nacogdoches Yard. Shortly before the accident, the involved crew set out a cut of railcars on the main track north of a switch, positioning them so that the southernmost railcar fouled an adjacent yard track. Later, when the conductor rode the lead railcar during a shoving movement through the switch onto this yard track, his train sideswiped the southernmost railcar. The conductor was struck in the collision.	N/A*
RRD25FR015	06/25/2025	Lexington, Nebraska	A UP conductor on a yard job was seriously injured while riding the lead tank car during a shoving movement on an industry lead track at the Chief Ethanol Fuels facility. The conductor was struck when the lead tank car sideswiped a stationary trackmobile fouling the industry lead track.	RIR-26-09
RRD25FR022	08/05/2025	Denver, Colorado	A BNSF conductor was seriously injured in a raking collision between a moving train and standing railcars in Globeville Yard. The BNSF train crew was performing a shoving movement to place the remainder of their train into another track when the train traversed a crossover switch lined for an adjacent track. The train collided with standing railcars in the track, derailing three of the standing railcars and five of its own railcars. The conductor was thrown from the railcar he was riding, and it toppled onto him.	RIR-26-11

* The final report for accident RRD25FR013 is in development, but the docket has been released.

Appendix B: Ongoing Accident Investigations

See Table B-1 for railroad accidents related to shoving movements that are currently under investigation by the NTSB. More information on [active accident investigations](#) can be found on the NTSB website.

Table B-1. Ongoing accident investigations through 2025.

NTSB Case Number	Date	Location	Accident Description
RRD25FR014	06/16/2025	Fairfield, Alabama	A Fairfield Southern Company employee was fatally injured during switching operations at US Steel Flintridge Yard. The crew was performing a shoving movement moving from one track to another when the employee, riding on the lead railcar in the direction of the movement, struck the stationary railcar on an adjacent track.
RRD26FR003	12/03/2025	Ontario, California	A UP brakeman was fatally injured while riding a railcar during a shoving movement northbound across a highway-railroad grade crossing. The brakeman was riding on the platform of the lead railcar along with the train conductor as the railcar collided with a tractor-trailer that entered the grade crossing.
RRD26FR005	12/13/2025	Calera, Alabama	A CSX conductor was fatally injured while performing a switching operation on main track. The conductor was riding on a railcar that was being shoved from the main track into an auxiliary track. During the shoving movement, the train struck another railcar that had been cut from the train and left on the main track. The railcar on which the conductor was riding overturned onto him.

The NTSB is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in the other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)).

For more detailed background information on this report, visit the [NTSB Case Analysis and Reporting Online \(CAROL\) website](#) and search for NTSB accident ID DCA26SR010. Recent publications are available in their entirety on the [NTSB website](#). Other information about available publications also may be obtained from the website or by contacting –

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