Approved: July 7, 2025 Railroad Investigation Report: RIR-25-10

Norfolk Southern Railway Conductor Injury

Location	Norfolk, Virginia
Date	August 27, 2024
Accident type	Conductor injury
Train	Yard job UL30 1 engineer, 1 conductor 3 locomotives, 40 hopper cars
Track	Yard track
Hazardous materials	None
Fatalities	0
Injuries	1
Property Damage	None

Summary

On August 27, 2024, about 10:10 p.m. local time, a Norfolk Southern Railway (NS) conductor was seriously injured while coupling coal railcars at the NS Empty Yard in Lambert's Point Yard in Norfolk, Virginia.[1] The conductor was part of a crew using locomotives to move railcars that had been gravity fed (rolled down-grade without a locomotive) into yard track 11. He made multiple attempts to couple railcar 19, the last railcar coupled to his train, to railcar 20 by directing the engineer in the lead locomotive to reverse short distances to bump the couplers together (see figure 1).[2] During the last of these attempts, the conductor radioed the engineer to reverse the train a quarter railcar-length, which bumped the railcars together and caused railcar 20 to roll up-grade.[3] Eighteen seconds later, the conductor radioed the engineer to stop the train and apply three-step protection, which the engineer did.[4] Less than a minute after the conductor asked for protection, railcar 20 rolled down-grade and struck him. He radioed

[1] Visit ntsb.gov to find additional information in the public docket for this NTSB accident investigation (case number RRD24FR015), including detailed factual reports about the circumstances of the accident.

[2] Railcar 20 was part of a set of free-rolling railcars. The others were free to move during coupling attempts, but none struck the conductor.

[3] Railroad employees commonly measure distance in *railcar lengths*; a railcar length is 50 feet.

[4] *Three-step protection* is a means of securing railcars coupled to a locomotive by applying the locomotive brakes, placing the reverser in the neutral position, and opening the generator field switch, all of which prevent an accidental throttle input from causing movement.

the engineer again, in distress and asking the engineer to pull the train forward. Soon afterward, other NS employees found him injured near railcar 19. At the time of the accident, visibility conditions were dark but illuminated by yard lighting and the conductor's secondary light source; the weather was 78°F with no precipitation.[5]

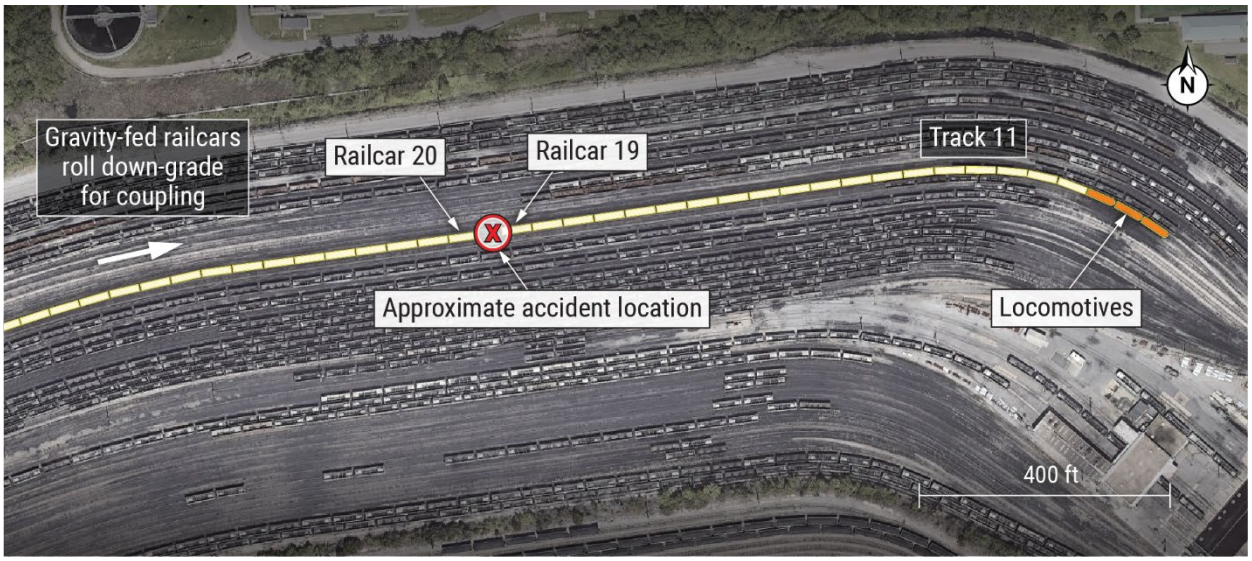

Figure 1. Accident scene. (Source: Google Earth.)

The National Transportation Safety Board (NTSB) examined the coupler on railcar 19 and found that it was missing its coupler knuckle pin and that the lock was damaged, which prevented the knuckle from closing and coupling properly with railcar 20 (see figure 2). Railcar 19 underwent a mechanical inspection when it arrived in Lambert's Point Yard before the accident, which did not identify any defects. Between this inspection and the accident, the railcar was uncoupled from other hopper cars, gravity-fed to a coal dumper, and inverted—flipped upside down by the dumper—to unload its contents before being gravity rolled into the yard track where the accident occurred. No attempts were made to couple the railcar between its arrival and positioning on yard track 11.

[5] A *secondary light source* can be a headlamp or flashlight. Interview statements did not agree on which type the conductor was using.

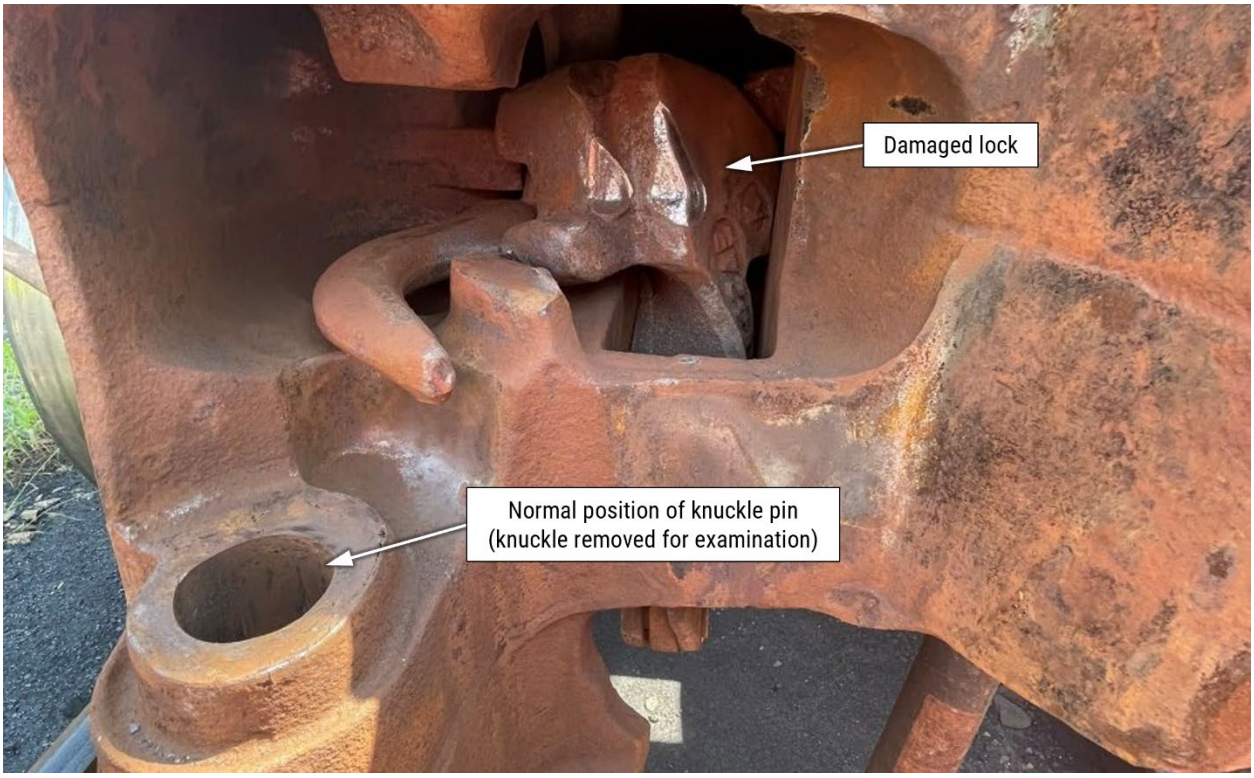

Figure 2. Damaged coupler.

During the NTSB's reenactments, the disabled coupler on railcar 19 would bump into the coupler on railcar 20, causing railcar 20 to roll up-grade, stop, and roll back down-grade.[6] The distance that railcar 20 rolled up-grade varied with the speed of the attempted coupling but generally exceeded 50 feet. NS Operating Rule 22, in place at the time of the accident, requires that "[e]mployees must not go between standing separated cars or locomotives for any reason unless the equipment is separated by at least 50 feet."

Analysis

The conductor was injured after he did not secure free-rolling stock against movement or confirm that it was stationary before standing between pieces of equipment. Instead, he remained in the path of the railcar (or in the foul of the track) until struck, and there is no evidence that he was aware of the danger until the moment of impact.

[6] During the on-scene investigation, the NTSB removed the inoperable knuckle from the coupler on railcar 19 after determining that it could not close.

The conductor was probably positioned between railcars because he was struggling to adjust one or more couplers to join railcars 19 and 20. The NTSB's examination of the involved railcars showed that coupling these railcars was impossible because of a damaged coupler on railcar 19. Specifically, the coupler was missing a knuckle pin, and the deformation of the coupler lock was consistent with a coupling attempt exceeding the knuckle's intended range of motion, which is normally limited by the pin. If the knuckle pin was in place when the railcar arrived at Lambert's Point Yard, it likely fell out when the railcar was inverted by the dumper. Normally, this is prevented by a cotter pin that holds the knuckle pin in position. The last mechanical inspection performed on railcar 19 did not note any defects—such as a missing cotter pin—but the absence of alternative explanations suggests that the inspection failed to identify either a missing knuckle pin or a missing cotter pin.

However, an ineffective inspection would not have ultimately resulted in a serious injury if the conductor had maintained separation between railcars. During the NTSB's reenactments of the accident, railcar 20 consistently rolled back down-grade even after being bumped by a train and rolling more than 50 feet; the distance it rolled immediately before the accident is unknown, as is whether the conductor observed equipment back rolling down-grade during previous coupling attempts.

While the NS operating rule requires a minimum separation for employees standing or moving between pieces of equipment, it does not explicitly instruct employees to secure free-rolling stock with a hand brake or other method under conditions likely to result in movement, such as on descending grades. The lack of a specific instruction to protect against unexpected down-grade movements—such as by applying hand brakes—was a missed opportunity to tailor the rule to hazards specific to the area of Lambert's Point Yard where the accident occurred.

The omission of this instruction by NS probably contributed to this accident because the conductor likely did not realize that the free-rolling stock had not come to a complete stop. During on-scene observations, the NTSB determined that lighting conditions in the yard were adequate, but the darkness and dependence on a secondary light source likely made tracking the motion of railcars more difficult than in daylight conditions. It is probable that the conductor thought that the free-rolling railcars had come to a complete stop when they paused at their farthest point. In the absence of a specific instruction to confirm that it had stopped or secure it with a hand brake, he likely returned his attention to adjusting the coupler on railcar 19, where it remained until he was struck.

Probable Cause

The NTSB determines that the probable cause of the Norfolk Southern Railway (NS) conductor being struck and injured by a railcar was his working in the path of free-

rolling stock without first confirming that it was stationary or securing it against movement; NS operating rules did not explicitly instruct employees to ensure that separation was maintained on downhill grades by securing railcars against movement, and the rules' incomplete coverage of switching operations on a downhill grade reduced the conductor's ability to perform his duties safely.

Lessons Learned

This accident occurred because a conductor was working near unsecured equipment. NS had rules about minimum separation distances, but these rules could have made clearer both the hazard posed by free-rolling stock on downhill grades and the actions employees should take to mitigate it. Following the accident, NS issued a special instruction for Lambert's Point Yard to add safety procedures in the area where the accident occurred. These procedures include a doubled separation distance of 100 feet between pieces of equipment and a directive to approach equipment within 5 feet and ensure that it is completely stopped before fouling a track. If equipment is not completely stopped, it must be secured with hand brakes.

NS conducted a 10-day safety stand-down and training in August–September 2024. The training included issues specific to the accident and general safety training. NS also undertook a campaign of face-to-face contacts between employees and managers to confirm understanding of changed procedures; distributed a job aid with a review of rules, highlighted rule changes, and links to explanatory videos; and set up a supervisor verification program to confirm and document that employees had completed training and could access the job aid.

The FRA issued Safety Bulletin 2024-06 in response to this accident. The bulletin notes the importance of adequate training programs, risks associated with switching operations, and regular railroad review of operating rules. The bulletin also reminds railroads of FRA Safety Advisory 2013-03 and the Switching Operations Fatality Analysis Working Group's Recommendation #1, both of which recommended ensuring that free-rolling stock is completely stopped and applying hand brakes when necessary before fouling a track.[7]

These postaccident actions underscore the importance of making sure employees know how to apply safety principles and general rules—like maintaining safe separation between pieces of equipment when fouling a track—in their actual operating environments, which may pose unique environmental hazards.

[7] See the FRA's Emergency & Safety library for a complete list of its Safety Advisories and Safety Bulletins. For more on the Switching Operations Fatality Analysis Working Group's recommendations, see its report, "Findings and Advisories of the SOFA Working Group Volume I: SOFA Report with Appendix A," March 2011, FRA/RRS-11/01, Washington, DC: FRA.

Although the accident occurred because of unsecured equipment, the accident sequence began with an inspection that failed to identify a missing knuckle pin. After the accident, NS re-affirmed during pre-shift meetings with yard employees the importance of replacing missing knuckle pins during inspections, properly securing knuckle pins, and, if the pins cannot be replaced or secured, removing the affected railcars from service until they can be repaired.

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For more detailed background information on this report, visit the NTSB Case Analysis and Reporting Online (CAROL) website and search for NTSB accident ID RRD24FR015. 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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