Issued: April 21, 2026 Railroad Investigation Report: RIR-26-06

Norfolk Southern Railway Conductor Injury

Location	Muscle Shoals, Alabama
Date	April 9, 2025
Accident type	Serious injury of conductor
Train	2 locomotives and 55 mixed freight railcars
Crew	Crew of yard job AH-01
Track	Yard track in Sheffield Yard
Hazardous materials	None
Fatalities	0
Injuries	1
Property Damage	None

Summary

On April 9, 2025, about 1:15 p.m. local time, a Norfolk Southern Railway (NS) conductor on yard job AH-01 was seriously injured while performing switching operations at NS's Sheffield Yard in Muscle Shoals, Alabama.[1] (See figure 1.) The conductor was found on the ground near the north rail of track 5 in the receiving yard with severe injuries to his lower legs and feet.[2] The Sheffield Yard supervisor called 911; emergency medical services arrived on the scene and airlifted the conductor to the University of Alabama at Birmingham Medical Center, where he was admitted for treatment of his injuries. Visibility conditions at the time of the accident were daylight and clear; the weather was 63°F with no precipitation.

[1] (a) Visit ntsb.gov to find additional information in the public docket for this NTSB accident investigation (case number RRD25FR010). Use the CAROL Query to search safety recommendations and investigations. (b) *Switching* is moving railcars from one track to another track or to different positions on the same track.

[2] A *receiving yard* is a rail yard where freight railcars are detached from their locomotives, inspected for mechanical problems, and sent to a classification yard, where the railcars are sorted and trains built.

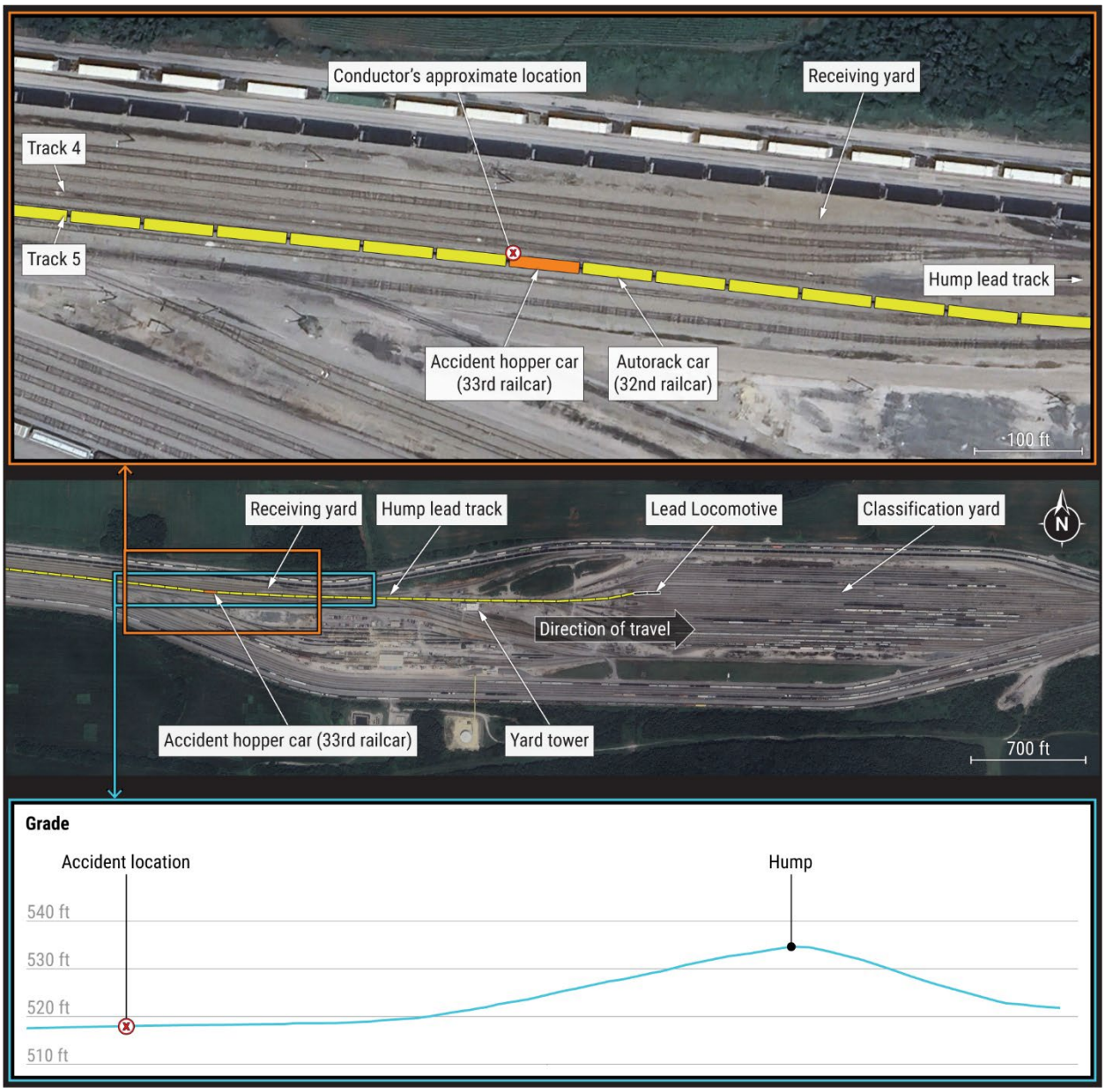

Figure 1. Accident site in Sheffield Yard.

Before the Accident

The crew of yard job AH-01 consisted of an engineer and a conductor. On the day of the accident, the crew was switching railcars in Sheffield Yard to build a freight train for further transportation. Sheffield Yard was an automated hump yard that was transitioned to a conventional switching yard in 2020. The yard retained the hump and the characteristics of a hump yard, with an ascending grade toward the hump and a

descending grade away from the hump.[3] The receiving yard of Sheffield Yard was to the west of the hump, and the classification yard was to the east of the hump. The receiving yard had 6 tracks and the classification yard had 32 tracks. The hump lead track connected the tracks in the receiving yard and the classification yard.[4]

Accident Sequence

On the day of the accident, the crew was using two head-end locomotives to pull 55 mixed freight railcars out of track 5 in the receiving yard toward track 16 of the classification yard over the hump lead track.[5] The engineer was in the lead locomotive, and the conductor was on the ground in the receiving yard giving instructions to the engineer through his handheld radio. The crew was preparing to switch 32 railcars onto track 4 of the receiving yard. To perform the switching movement, the conductor needed to secure the 33rd railcar (a loaded covered hopper car, hereafter referred to as the hopper car) by applying its hand brake and then uncouple the 32nd railcar (a loaded autorack car) from the hopper car.[6]

Shortly before the accident, the engineer pulled the cut of railcars out of the receiving yard over the hump lead track toward the classification yard in an eastward movement. At 1:14:14 p.m., the conductor radioed the engineer and asked him to stop (switching movements require stopping to couple and uncouple railcars).[7] The engineer stopped the locomotive at 1:14:48 p.m.[8] At this time, the hopper car and the 32nd railcar were positioned in the receiving yard on a descending grade from the hump. At 1:15:15 p.m., the conductor called on his radio for help. The engineer as well as

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[3] A *hump yard* uses gravity, enabled by a hump, to sort and classify freight railcars by destination. A hump is a hill-like structure in a hump yard.

[4] A *lead track* connects one or more yard tracks to other yard tracks. The lead track in Sheffield Yard was referred to as a *hump lead track* because it traversed the hump.

[5] The railcars were not connected to the locomotive's airbrake system.

[6] (a) A *hopper car* is a freight railcar that is used to transport dry bulk commodities such as grain. (b) Railcars are *uncoupled* or separated from one another by manually opening the mechanical device located at each end of the railcar. (c) An *autorack car* is a freight railcar that is used to transport automobiles. (d) According to Norfolk Southern Railway's Gulf Division Memphis Subdivision Timetable, Number 1 (revised on March 16, 2025), the conductor was required to apply one hand brake to secure railcars in the receiving yard of Sheffield Yard.

[7] Based on the NTSB's review of radio communication between the engineer and the conductor.

[8] Based on the NTSB's review of data from the two head-end locomotives to create a combined timeline of events.

employees in the yard tower at Sheffield Yard heard the conductor's call for help and responded. Employees at Sheffield Yard found the conductor on the ground near the north rail of track 5 at the rear end (or B-end) of the hopper car, close to the hand brake. (See figure 2.)

Figure 2. The hand brake at the rear end of the hopper car.

After the Accident

While on scene, NTSB investigators examined the hopper car and did not find any defects that may have contributed to the accident. However, investigators found that the hopper car's hand brake was partially applied and that the hopper car had rolled about

16 feet west after striking the conductor. Investigators did not find any evidence that the conductor was using a brake stick at the time of the accident.[9]

Accident Conductor

The accident conductor was employed by NS since 1994 and had passed the conductor certification rule check evaluation on October 17, 2024. In the year before the accident, NS management had tested the conductor for rules compliance 226 times and on one occasion found him noncompliant with established rules. Specifically, NS had issued discipline to the conductor on September 22, 2024, for crossing a track without maintaining the required distance of separation from the end of equipment positioned on the track. The NTSB's review of radio communication between the conductor and the engineer on the day of the accident showed that the conductor had requested 3-step protection before fouling equipment during a switching movement earlier on that day to ensure that the railcars would not move. However, the conductor did not request 3-step protection during the switching movement that led to the accident.

Norfolk Southern Railway Rules

NS's *Safety and General Conduct Rules* contain guidance for applying hand brakes in the section "Operating Hand Brakes." Rule 1100 in this section requires employees to either use an approved telescoping brake stick when standing on the ground or to mount the side ladder to apply vertical-wheel, end-mounted hand brakes, such as the hand brake on the accident hopper car. The rule explains that when employees are not using a brake stick, they should apply the hand brake from a position where their left foot is on the end ladder rung, their right foot on the brake platform, their left hand on the end ladder rung or top grab iron, and their right hand on the outer rim of the brake wheel. The rule prohibits employees from operating vertical-wheel, end-mounted hand brakes while standing on the ground.[10]

[9] A *brake stick* is a tool used to operate hand brakes from the ground without having to mount the railcars.

[10] Norfolk Southern Corporation. *Safety and General Conduct Rules*. Operating Hand Brakes: Vertical-Wheel, End-Mounted Hand Brakes. Revised January 13, 2025. p. 35–39.

NS's *Operating Rules* contain practices employees must follow while performing their duties. Rule 22(d), Fouling Equipment, in the section "Safety Critical Rules," includes detailed instructions about requesting 3-step protection before fouling equipment:[11]

- Employees need to request 3-step protection from the engineer;
- When 3-step protection is requested, the engineer must fully apply the independent brake, place the reverser lever in neutral position, and open the generator field switch;
- After receiving 3-step protection, employees must allow slack to adjust before fouling equipment; and
- The engineer must acknowledge that 3-step protection has been established and released.[12]

At the time of the accident, NS provided guidance to testing officers for monitoring employees through a program, developed in compliance with Title 49 *Code of Federal Regulations* 217.9 and approved by FRA in June 2024, called *RP-1*.[13] The *RP-1* program requires testing officers to ensure employees are compliant with rules by conducting a specific number of performance standard engagements and rule checks each month.[14] Before this accident, NS relied on 12 field safety representatives to provide oversight of testing officers to ensure they are compliant with the requirements outlined in the *RP-1* program.[15]

Analysis

On April 9, 2025, about 1:15 p.m. local time, an NS conductor was struck and seriously injured by a loaded hopper car during a switching operation in Sheffield Yard as the conductor was applying the hand brake located at the rear of the hopper car. The

[11] (a) Norfolk Southern Corporation. *Operating Rules*. Section 22: Fouling Equipment: Establishing and Releasing 3-Step Protection. Revised March 7, 2025. p. 22–24. (b) *Fouling equipment* means the placement of an individual or equipment in such proximity to railcars or other equipment on track that the individual or equipment could be struck when the railcar or equipment on track moves.

[12] *Slack action* is the amount of free movement of one railcar before it transmits its motion to a connected railcar, and it often results in a sudden change in a railcar's velocity.

[13] Norfolk Southern Corporation. *RP-1: Supervisor Guidelines for Conducting Performance Standard Engagements (PSE) and Rule Checks*. Revised June 14, 2024.

[14] *Testing officers* observed, tested, and inspected employees for compliance with NS's rules.

[15] NS's *field safety representatives* were responsible for the oversight of the *RP-1* program.

NTSB's investigation concluded that the condition of the hopper car, including the hand brake, did not contribute to the accident.

The NTSB investigators found that the hand brake on the hopper car was partially applied, indicating that the conductor was likely in the process of applying the hand brake when he was struck. The hopper car was probably stationary when the conductor began to apply the hand brake (conductors usually apply the hand brake when railcars are stationary and the conductor had instructed the engineer to stop). The postaccident position of the hopper car relative to where the conductor was found indicates that the hopper car had struck the conductor and had continued to move about 16 feet on the descending grade from the hump. The NTSB's review of the event recorder showed that the engineer did not move the train for 27 seconds between bringing the locomotive to a stop and the conductor's call for help. Because the locomotive was stopped, the only other reason for the railcar's movement was slack adjustment. Consequently, this indicates that the hopper car moved because of slack adjustment while the conductor was attempting to apply the hand brake.

According to NS rules, when applying the hand brake before uncoupling railcars, the conductor must ensure that the railcars are stopped by requesting 3-step protection from the engineer, receiving confirmation that 3-step protection has been established, and then waiting for the cut of railcar's slack to adjust before fouling equipment. This rule protects employees from the effects of any unexpected movement of the locomotive and from slack adjustment, which was the source of the movement in this accident. Although the conductor did not request 3-step protection (or receive confirmation that 3-step protection had been established), the locomotive did not move immediately before the accident, which confirms that the 3-step protection did not contribute to the accident (the hopper car moved immediately before the accident).[16] The movement of the hopper car after the locomotive was stopped and the subsequent striking of the conductor by the hopper car indicates that the conductor did not allow enough time for slack to adjust before fouling the equipment.

NS rules state that the conductor should have mounted the railcar to apply the hand brake when not using a brake stick. The nature of the conductor's injury is consistent with the hopper car striking him while his feet were positioned on the north rail. This indicates that the conductor was most likely standing on the track to reach the hand brake rather than mounting the railcar, as required by NS rules. The accident would have been prevented by compliance with NS rules requiring that conductors allow time

[16] Of note, because the railcars were not connected to the locomotive's airbrake system, the railcars could have moved freely even if 3-step protection had been established to stop the locomotive, which supports the argument that the absence of 3-step protection was not linked to the accident.

for slack to adjust or mount the railcar to apply the hand brake, and it may also have been prevented or mitigated by the use of a brake stick.

The manager of terminal operations as well as the operations supervisor at Sheffield Yard told NTSB investigators that they had seen other cases of noncompliance with rules in Sheffield Yard. NS's *RP-1* program required testing officers to validate that their employees were compliant with rules when uncoupling railcars (including waiting for slack action before applying the hand brake) by conducting a minimum number of tests, observations, or inspections. The NTSB's investigation found that in the year before the accident, testing officers had not performed the minimum number of required tests, observations, or inspections. The lack of consistent management oversight by NS likely contributed to diminished adherence to safety rules and standards because employees did not receive the instructions and corrections that deter unsafe behavior. The lack of instruction and correction to promote compliance with safety rules created conditions that made this accident more likely to happen.

Probable Cause

The National Transportation Safety Board determines that the probable cause of the April 9, 2025, Norfolk Southern Railway (NS) accident was the conductor's noncompliance with NS's operating rules. Contributing to the accident was NS's inadequate oversight to validate that employees were routinely following operating rules established to promote safety while performing switching operations.

Lessons Learned

This accident highlights the importance of following operating rules and being aware of the risks associated with slack movement before fouling the track or equipment positioned on the track. This accident also emphasizes the importance of consistent management oversight to ensure the safety of their employees through their compliance with rules. Railroads can improve supervision of switching operations with techniques such as unannounced observations and reviews of radio transmissions. To prevent similar accidents, railroads can also require employes to stay aware of each other's actions and confirm that others are paying attention and following rules.

Postaccident, NS hired 14 new field safety representatives (to augment the 12 existing field safety representatives) to strengthen their *RP-1* program oversight to ensure employees were compliant with rules designed to promote their safety. NS also enhanced their performance standard engagements and rule checks dashboard for easier identification of noncompliance.

The NTSB's safety alert, *Unexpected Movement of Unsecured Equipment on Railroad Track: Know the Risk of Fouling Track*, issued on November 5, 2025, addresses

the risk of fouling track without ensuring that all equipment on the track is stationary and properly secured against movement and cautions railroad employees that "slack action can lead to sudden and unexpected movement of railcars."[17]

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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 RRD25FR010. 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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[17] The full text of the safety alert is accessible at: https://www.ntsb.gov/advocacy/safety-alerts/Pages/SA-104.aspx