Issued: October 06, 2025 Railroad Investigation Report: RIR-25-13

Norfolk Southern Railway Conductor Injury

Location	Norfolk, Virginia
Date	July 19, 2024
Accident type	Switching injury with equipment strike
Track	Yard/restricted limits
Hazardous materials	None
Fatalities	0
Injuries	1

Summary

On July 19, 2024, about 12:35 p.m. local time, a Norfolk Southern Railway (NS) conductor suffered serious injuries during a gravity-fed switching operation at Lambert's Point Yard in Norfolk, Virginia.[1] The accident occurred when the accident conductor—part of a crew tasked with releasing coal cars, one at a time, down a descending grade at the gravity-fed switching facility in the Barney Yard section of Lambert's Point Yard—was struck by a coal car that had unexpectedly rolled in his direction.[2] (See figure 1.) The coal car ran over his lower-right leg and lower-right arm, amputating both extremities. The weather at the time of the accident was 81°F with no precipitation. No additional injuries were reported.

[1] (a) All times in this report are local. (b) Visit ntsb.gov to find additional information in the public docket for this NTSB accident investigation (case number RRD24FR014), including detailed factual reports about the circumstances of the accident. (c) *Gravity-fed switching operations* refers to the process of breaking up railcars in a descending yard and manually releasing them at the top of the grade, at which point they roll down a slope by the force of gravity alone through a series of switches until they come to rest at the dumper house for unloading.

[2] Barney Yard is a gravity-fed switching facility that operates on a westward-descending grade.

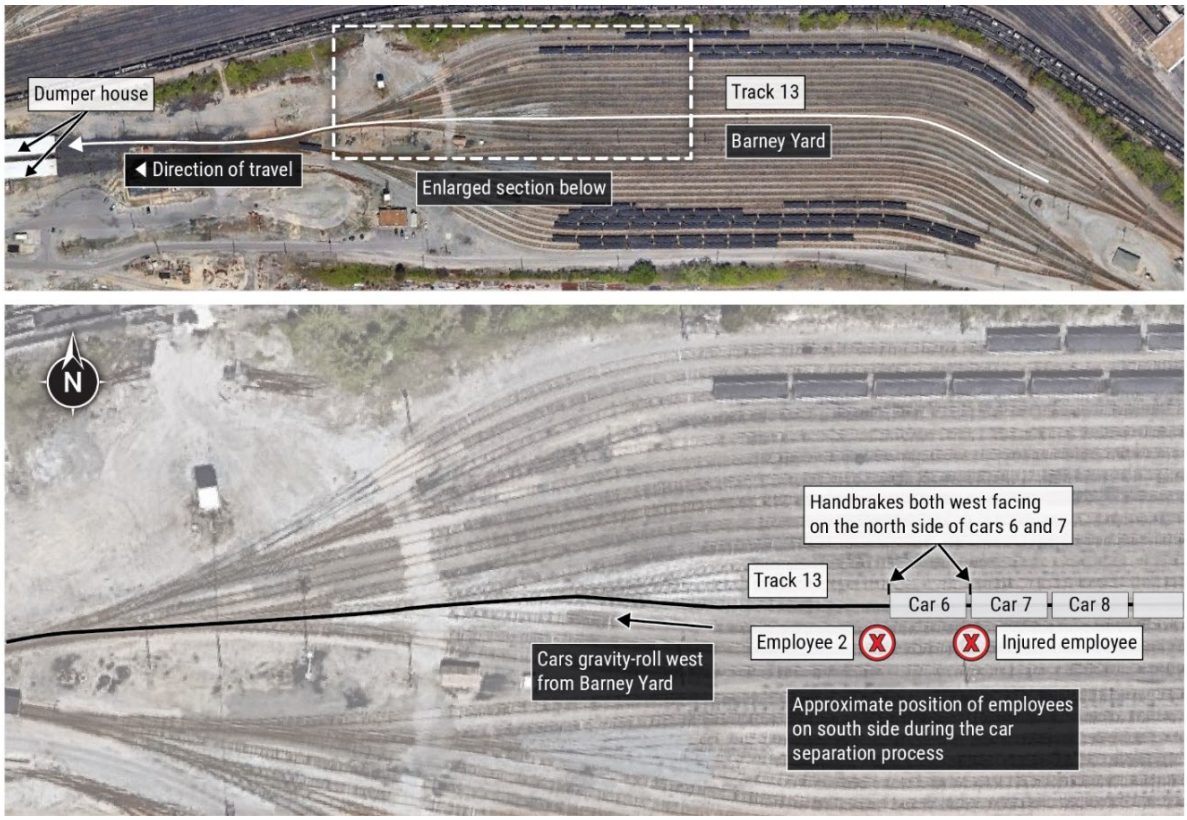

Figure 1. Overhead view of NS's Lambert's Point Yard. (Source: Google Earth via NS.)

About 7:00 a.m. on the morning of the accident, the switching crew of train UC02-19 met at Barney Yard for a job briefing led by the pier master.[3] The crew was divided into three separate two-person teams and a foreman. Each two-person team was assigned to one of several tracks lined with stationary coal cars and instructed to carry out the gravity-fed switching operation. The operation involved releasing brakes and uncoupling coal cars positioned on tracks so that, when instructed by the foreman, the railcars would then be released to roll down a westward-descending grade one at a time for unloading at the yard dumper house. Once the briefing was complete, the crew prepared to start their work.

During interviews with the National Transportation Safety Board (NTSB), crew members described the steps required to uncouple coal cars and release them one at a time off the end of the westward-descending grade without letting other railcars roll freely. (See table.) Figure 2 depicts the process for relieving tension between couplers.

[3] Crew UC02-19 consisted of 7 people: the accident conductor (the injured employee), the accident brakeman (the crewmember working directly with the accident conductor), the foreman, the four other crewmembers. The pier master is not considered a part of the actual crew, but rather the person that supervises the coal dumping process and supervises the crews working in the Barney Yard.

Table. Step-by-step coal car uncoupling process.

Step	Action	Details
1. Initial securement of a cut of cars to be sorted	Yard crew places a cut of cars into a designated track	▪ A yard switching crew places the cut of cars into a gravity-fed sorting track and secures the cars with at least two hand brakes, plus a sufficient amount of hand brakes as required to prevent movement. ▪ Once secured, the locomotive is decoupled, triggering an emergency brake application on the remaining cars.
2. Releasing a single car from the cut of cars	Foreman gives release order	▪ A yard switching crew pulls the bleed rod on the first car to release its brakes.
3. Normal coupler release	Coupler opens between first and second car	▪ Crew opens the coupler between the first and second car. ▪ The first car rolls downhill toward the coal blending facility. ▪ The second car remains secured via its brakes and its coupling to the rest of the cut of cars.
4. Coupler will not open due to tension	Relieve tension between cars	▪ Crew checks for tension between the first and second car. ▪ If tension is present, the crew will - Apply hand brake on the first car. - Pull the bleed rod on the second car. - Open the coupler between the second and third car. - The second car will then roll forward to the first car, relieving the coupler tension.
5. Secure first and second car	Secure both cars before release	▪ The second car, now separated from the cut, is held by the first car's hand brake. ▪ The switching crew will apply a hand brake on the second car to secure it.
6. Final release of first car	Detach and release the first car	▪ The crew pulls the cut lever between the first and second car opening the couplers. ▪ The crew then releases the first car's hand brake. ▪ The first car then rolls downhill to the coal blending facility.

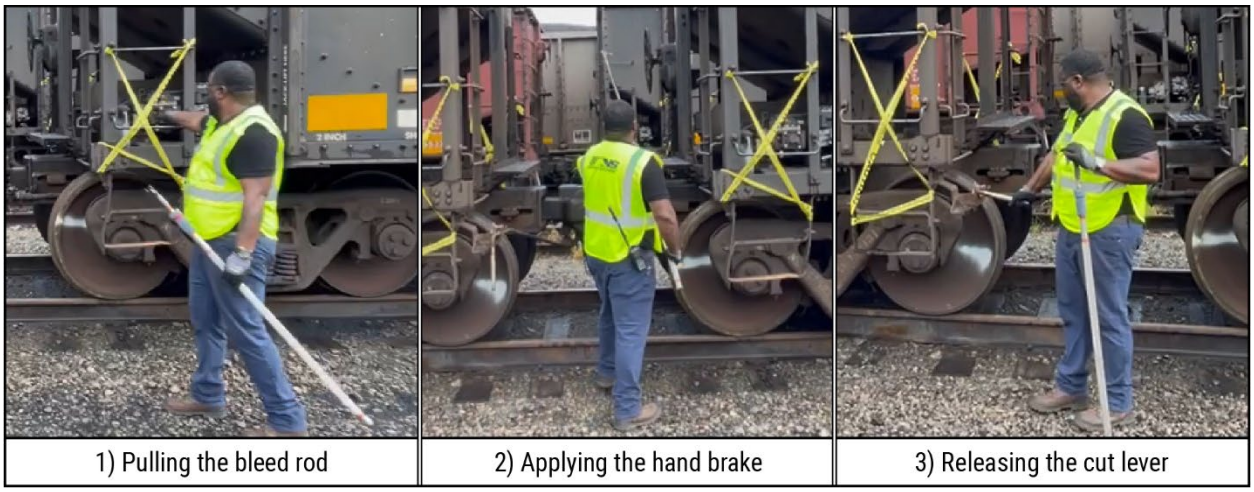

Figure 2. NS employee demonstrating the removal of tension between couplers. (Note: caution tape was installed postaccident to identify the accident cars and prevent usage.)

Just before the accident occurred, the train UC02-19 crew was working on Track 13, releasing coal cars under the direction of a crew foreman who was providing radio instructions from a yard tower. The crew had released the first 5 of the 11 single coal cars in the cut from Track 13 without incident. As the accident crew began to release coal car six, they encountered a set of couplers that were stretched out and could not be opened because of excessive drawbar tension on the coupler pin, preventing them from opening to release the car. [4]

During his interview, the accident brakeman stated that the following steps were taken in order to release the set of coal cars down the gravity-fed track to the dumper house when the accident occurred:

1. The hand brake on coal car six was applied.
2. The accident conductor moved between coal cars seven and eight to open the couplers and allow coal car seven to roll into coal car six and relieve the coupler tension.
3. The accident conductor then applied a hand brake on coal car eight and uncoupled the seventh and eighth coal cars.
4. The accident conductor then pulled the bleed rod on coal car seven to release its brakes and allow it to roll forward into coal car six.

[4] (a) *Stretched out* refers to the drawbar having been extended out in an amount of draft (pulling) force. (b) *Drawbar tension* refers to the longitudinal forces of either the draft (pulling) or buff (pushing) forces transmitted through the drawbars and couplers that mechanically link railroad cars.

5. Once the coupler tension between coal cars six and seven was relieved, the accident conductor applied the hand brake on coal car seven, pulled the bleed rod on coal car six, and instructed the accident brakeman to release the hand brake on coal car six.

The accident brakeman also stated that he then released the hand brake on coal car six using a brake stick and the hand brake's quick-release mechanism.[5] As he watched coal car six proceed down the track, he stated he suddenly heard a scream. When he turned around, he saw the accident conductor underneath coal car seven, which by then was rolling down the track toward the dumper house.

Investigators reviewed the training and work history of the train UC02-19 crew and found that the injured conductor had been employed by NS since 2017. His training was current, and he was qualified on all NS operating rules, including those pertaining to the securing of equipment, the use of brake sticks, and fouling equipment. Additionally, he was found to be knowledgeable of the territory and qualified to perform switching work in Barney Yard.

Following the accident, the NTSB conducted a thorough inspection that included review of surveillance recordings and extensive examination of both railcars involved, including their air brake systems, mechanical brake linkages, hand brake assemblies, brake shoes, and coupler mechanisms. All components were found to be in proper working order, with no evidence of mechanical failure or defect. The coal car that struck the conductor had a fully functional air brake system, and its hand brake release lever and brake shoes showed no signs of abnormal wear or malfunction. Furthermore, the surveillance video showed a brake stick hanging from the hand brake and resting diagonally across the coupler. This telescoping brake stick was later found attached to coal car seven's hand brake vertical wheel in the fully compressed position.[6] Upon examination, the hand brake did have signs of postaccident damage at the bottom of the handle (crushed) from having been coupled between coal cars at the coal dumping house. The brake stick, however, was found to be in complete working order and showed no signs of malfunction or damage.

Analysis

In this accident, a conductor sustained serious injuries when he was struck by a coal car that unexpectedly moved during a gravity-fed switching operation. According to

[5] A *brake stick* is a tool used by train crews to safely and efficiently operate railcar hand brakes, align knuckles, and control other brake components. It allows workers to perform these tasks from a distance, reducing the need to climb on cars or stand between them, which improves safety.

[6] Using a fully extended brake stick allows for the crewmember to use the tool from a position outside the gauge of the track; otherwise, using a fully compressed or partially extended brake stick would require fouling the track over couplers or draft gear, which is extremely unsafe practice and against protocol.

the accident brakeman, the coal car that struck the conductor (coal car seven) had been secured with a hand brake before the accident. NTSB investigators conducted a series of controlled reenactments using the same railcars on Track 13 under similar environmental and track conditions to assess the effectiveness of the second railcar's hand brake under different applications. These reenactments confirmed that the hand brake on coal car seven functioned properly and, therefore, could not have been applied before the release of coal car six. Consequently, once it was uncoupled from the remainder of the line of cars, coal car seven (the accident car) rolled freely and ultimately struck the conductor.

Analysis of the surveillance recordings, which showed the accident conductor's brake stick hanging from the hand brake and resting diagonally across the coupler, indicated that the conductor had attempted to apply the hand brake from the opposite side of the coal car. In addition, he was using a telescoping brake stick, which was found fully compressed, meaning that it was not extended to the length required to successfully apply the hand brake. The location and position of the brake stick seen in the surveillance footage identified that the accident conductor was within the track gauge, and positioned between coal cars six and seven, as they began to roll downhill. The NTSB determined that the accident conductor's attempted use of a retracted brake stick from a position over the draft gear and on the opposite side of the coal car placed him within the foul of the track at the time of impact.

Since the accident, NS has established multiple operating rules to protect employees from the hazards associated with the unexpected movement of equipment while working on or near the tracks. These rules specifically address the fouling and securement of rail equipment.

NS's equipment securement rules prohibit employees from relying solely on a railcar's air brake to prevent railcar movement. Instead, employees are required to apply hand brakes to any railcars that are left standing or uncoupled from a locomotive under control, prior to fouling tracks or equipment, or before going between any equipment.

Under NS's Safety and General Conduct Rules, employees must follow specific procedures when applying hand brakes. They may either use an approved telescoping brake stick or climb the railcar using the side ladder, ascending to the level of the hand brake and moving laterally on the end ladder to the hand brake. Although the use of a brake stick is optional, if one is used, it must be adjusted to a length that keeps the employee outside the track gauge and away from the equipment.

When properly followed, both of these rules help to ensure that employees remain clear of equipment when working and are protected from the unexpected equipment movement.

The NTSB concluded that the accident conductor had received sufficient training, evaluation, and qualification on NS operating rules related to performing work on or near the tracks. However, the conductor's decision to position himself within the track gauge while using a fully collapsed brake stick to secure the equipment did not comply

with established NS securement procedures. This action directly contributed to the accident when the railcar unexpectedly moved, resulting in the conductor's injuries.

Probable Cause

The National Transportation Safety Board determines the probable cause of the July 19, 2024, Norfolk Southern employee injury at the Lambert's Point Yard was the accident conductor attempting to apply the hand brake within the track gauge while using a retracted brake stick for unknown reasons. Contributing to the accident was the accident conductor's inadequate application of hand brakes, and failure to comply with established company rules governing track and equipment fouling.

Lessons Learned

This incident underscores the critical importance of compliance with operating rules, particularly those governing track fouling, equipment securement, and the safe use of brake sticks.

After the accident, NS issued a serious incident notice to all employees outlining the circumstances of the accident and reinforcing the importance of hazard identification, risk mitigation, and strict observance of established operating rules and procedures. In addition, NS conducted a comprehensive operational safety review of the Barney Yard. This review led to the reinforcement of existing safety protocols and the continuation of ongoing compliance audits. NS further developed a series of standardized procedural documents to serve as job aids for specific yard operations. These procedural enhancements have been integrated into on-the-job training programs for conductors at Lambert's Point to ensure consistent application and adherence to safety standards.

On September 3, 2024, the Federal Railroad Administration (FRA) issued Safety Bulletin 2024-05, titled "Conductor Struck by Railcar while Gravity Switching in a Yard." The bulletin served as a nationwide reminder to railroads, employees, and contractors of the importance of comprehensive job safety briefings and effective training programs, thorough understanding of operating rules, protocols, and the hazards associated with track fouling, equipment handling, and car switching operations.[7] Additionally, the FRA recommended that railroads review "The Five Life Savers" memorandum developed by the Switching Operations Fatality Analysis working group and revisit the guidance

[7] Follow the link for further information regarding FRA issued Safety Bulletin 2024-05.

provided in the 2011 advisory titled "Following Procedures When Going Between Rolling Equipment."[8]

These actions reflect independent efforts by both NS and the FRA to address the root causes of the incident and to strengthen operational safety through enhanced training, procedural clarity, and regulatory oversight.

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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 RRD24FR014. 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—

National Transportation Safety Board

[8] Follow the link for further information regarding the Switching Operations Fatality Analysis working group guidance, "The Five Life Savers." These safety actions offer protection to rail workers and are listed as follows: secure equipment before action is taken; protect employees against moving equipment; discuss safety at the beginning of a job or when a project changes; communicate before action is taken; and mentor less experienced employees to perform services safely.

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