

# National Transportation Safety Board

Office of Railroad, Pipeline and Hazardous Materials

Washington, DC 20594



RRD24FR009

## **HUMAN PERFORMANCE**

Specialist's Factual Report

September 24, 2024

## TABLE OF CONTENTS

A. INCIDENT .....	3
B. HUMAN PERFORMANCE .....	3
C. SUMMARY .....	3
D. FACTUAL INFORMATION .....	3
1.0 ENGINEER (STRIKING TRAIN NS 268).....	3
1.1 Interview.....	3
1.2 Work Schedule .....	5
2.0 CONDUCTOR (STRIKING TRAIN NS 268).....	6
2.1 Interview.....	6
2.2 Work Schedule .....	8
E. REPORT CONTRIBUTORS .....	9

## **A. INCIDENT**

Location: Easton, PA  
Date: March 2, 2024  
Time: 7:11 a.m. local time  
11:11 a.m. universal time  
Train: Eastbound NS intermodal train 268 (Striking Train)

## **B. HUMAN PERFORMANCE**

The System Safety Division (RPH-40) joined the rail operations group for the purpose of documenting human performance issues in this incident. See the operations group factual report in the docket for additional information. The RPH-40 system safety chief participated in the on-scene interviews, while a system safety investigator reviewed the evidence and developed this report.

## **C. SUMMARY**

For a summary of the incident, refer to the Accident Summary in the docket for this investigation.

## **D. FACTUAL INFORMATION**

This factual report contains information about the Norfolk Southern employees operating the striking train involved in this incident. Refer to other NTSB reports in the public docket for additional information, including the operations factual report for a chronological narrative of the accident.

### **1.0 Engineer (Striking Train NS 268)**

#### **1.1 Interview**

The operations group conducted multiple interviews, and a transcript of each is available in the docket. The notes in this section pertain to human performance topics. Refer to the NTSB operations factual report in the public docket for operational information.

The engineer said that he started working as a conductor in 2007, then received an engineer license in 2016.<sup>1</sup> He indicated that he was familiar with the area where the incident occurred.

The engineer provided this description of the time preceding the collision:

*"It was being run by the PTC. We had an approach signal at CP 87. At that time, it throws it into manual control. I take control of it. We had a restricting signal at the 85, automatic signal. We had the speed down to about 15 miles an hour. Took the signal, watching out for a hind end. Came around a curve, and I saw the hind end of the other train, applied some air, the dynamic brake, and I didn't slow down as quick as I thought it would."*

He said, "All I remember is applying the air and dynamic brake just to hope - hopefully safely get the train stopped." He said, "the train did not go into emergency until after we hit them and that's probably when the derailment happened."

The engineer observed that "the weather conditions were rainy." He indicated that he was operating at restricted speed, which entailed a maximum speed of 19 mph, and required that he be able to stop the train "half the distance that you can see." He said that "the curves is what we have to be careful of" because "you can't see around them. So you have to kind of judge it a little bit after that." He indicated that when navigating the train through curves, one should "probably go a little slower than you would on the straight away."

The engineer indicated that he slept well and received adequate rest before his shift.

Regarding training, the engineer said that "at least once a year, they do a banner check." He provided this description:

*"They pick a block, and they'll put an obstruction banner out there. You've got to come at a restricted speed, and stop before -- within half the distance."*

The engineer providing the following description of the radio communications requirement in emergency situations:

*"When you go into emergency, you should announce it on the radio, emergency, emergency, emergency. I didn't comply. I didn't think about it at the moment with everything going on."*

---

<sup>1</sup> Document: Interview Engineer 268

He did not believe that the conductor announced the emergency over the radio either.

The engineer provided the following description of how the train energy management software impacted his skills as an engineer:

*"It decreases probably -- if anything, it decreases our skills due to the fact that we're just sitting there letting a computer run it. You don't get the, you know, okay. I mean you know where your grades are and stuff like that.*

He said:

*"It's like your car. If you've got it on auto control, you don't know how much it's accelerating or decelerating, going up and down the hills on the highway. Same thing with energy management."*

And:

*"And then you get thrown into a manual mode. Now, you've got to sit and figure, okay, how much do I need to apply, how much do I need to accelerate, you know."*

## **1.2 Work Schedule**

The engineer reported for work at 2:15 a.m. on the day of the incident, which occurred at about 7:11 a.m. on March 2, 2024.<sup>2</sup> He had been on duty for about 4 hours and 56 minutes when the incident occurred. Prior to the start of that shift, he had been off duty for about 12 hours and 2 minutes. In the 14 days leading up to the incident (including the hours worked on the day of the incident before it occurred), the engineer had worked about 75 hours and 51 minutes. His longest shift was about 12 hours and 24 minutes, which started at 11:45 p.m. on February 27, 2024, and ended at 12:09 p.m. on February 28, 2024.

---

<sup>2</sup> Document: Work Schedule Engineer 268

Military	Local Clock Time	Local Date													
		2/18/2024	2/19/2024	2/20/2024	2/21/2024	2/22/2024	2/23/2024	2/24/2024	2/25/2024	2/26/2024	2/27/2024	2/28/2024	2/29/2024	3/1/2024	3/2/2024
0:00	12:00:00 AM														
1:00	1:00:00 AM		1:45 AM												
2:00	2:00:00 AM														
3:00	3:00:00 AM														
4:00	4:00:00 AM														
5:00	5:00:00 AM														
6:00	6:00:00 AM														
7:00	7:00:00 AM				7:25 AM	6:34 AM									
8:00	8:00:00 AM														
9:00	9:00:00 AM														
10:00	10:00:00 AM														
11:00	11:00:00 AM														
12:00	12:00:00 PM														
13:00	1:00:00 PM														
14:00	2:00:00 PM														
15:00	3:00:00 PM	3:00 PM	2:30 PM												
16:00	4:00:00 PM														
17:00	5:00:00 PM														
18:00	6:00:00 PM				6:40 PM										
19:00	7:00:00 PM														
20:00	8:00:00 PM														
21:00	9:00:00 PM														
22:00	10:00:00 PM														
23:00	11:00:00 PM														
	Time (hh:mm)	10:45	9:20		9:25	11:54					7:54	12:24		9:13	4:56
	Time Away (hh:mm)	34:54	12:45		22:10	11:15					118:26	10:51		40:51	12:02

Table 1. Engineer Work Schedule Preceding the Incident. Hours worked are generally shown in green/outlined blocks that correspond to the 24 hours of the day (y-axis). The specific shift start and end times are written at the top and bottom of the green/outlined blocks. The estimated incident time (7:11 a.m.) is shown in orange. At the bottom of the table, 'Time' indicates the total shift time, and 'Time Away' indicates the total time between shifts.

## 2.0 Conductor (Striking Train NS 268)

### 2.1 Interview

The conductor said that he started working with Norfolk Southern around November of 2021, and that he had been a conductor the entire time.<sup>3</sup> He was initially qualified at the Croxton yard in New Jersey, and at the time of the interview was qualified in "Jersey, Hagerstown, Harrisburg, Enola, Philly." He indicated that he qualified on the area where the incident occurred "a few months ago," and had taken about 15 - 20 trips through the area. He also completed a rules exam at the time as the qualification.

He said that he worked a "regular job" (as opposed to working the extra board). He had been working with the engineer for "about two weeks," and the two had completed "about 10" trips together.

<sup>3</sup> Document: Interview Conductor 268

Investigators asked the conductor to describe the sequence of events before the incident. The conductor said that he and engineer were *"having a brief conversation just about life."* He said that it had been raining, though *"It actually stopped raining,"* before they came around a corner and saw a train in front of them. At that point, he said he *"felt like we still had plenty of room to stop, but I guess the rain on the rails and everything else, it just, it just didn't grip good enough and it happened [the collision]."* He provided the following description:

*"The engineer did everything he could to... to stop the train, pulling the independent brake and, you know, I thought he had control of it, and as we was coming in, it -- I mean everything was happening so fast, I kind of just felt like the way we was coming in, the windows being there, I didn't want to be in the seat. So I just of braced for impact."*

He believed that they were about *"five to seven cars"* away when he observed Train 24X in front of them, at which point he verbally expressed concern and the engineer *"took action."* Prior to the incident, the conductor believed that the engineer was operating safely.

The conductor indicated that he did not put the train into emergency. He *"thought [the engineer] had control."* He did not know if the engineer placed the train in emergency. He said that the engineer was operating at restricted speed, which is a maximum of 19 mph (he estimated that they were traveling at 15 mph). Restricted speed also requires *"being able to stop half the distance."* He was not aware of any issues with the brakes on the train.

Regarding the events after the impact, he said:

*"After the impact, and I got off of the floor, we just kind of settled into what just happened, and the engineer made the call to the dispatcher. He called him on the radio. He didn't answer, and then the train ahead of us also called. So we basically called around the same time and he answered 24X first and, you know, they explained that we just felt a bump. I don't know what's going on but we just felt a bump. And then my engineer interrupted, came in and said we just hit the 24X and, you know, and that was that."*

The conductor indicated that *"depending on the circumstances,"* there is a rule that requires that emergencies be broadcast over the radio. He provided the following description of why they did not do so after the impact:

*"Not at the impact because, you know, once we, once we hit and I mean we reached out, but we didn't know what the emergency was behind our train. Once he said the air was restored, we kind of thought everything was fine. We didn't hear anything drop to where it determined it to be an emergency call to stop all movement, you know."*

Investigators asked the conductor to discuss if he was aware that Train 24X was in front of them, and when he recognized that it was stopped. The conductor said that he *"knew after we left Rutherford that they were going to be the train ahead of us."* The conductor discussed the radio communications regarding Train 24X:

*"We -- there was radio traffic, you know, it was a lot because there was a few trains all around coming out of Allentown. So we did hear that the 24X was ahead. I didn't know that they was - I don't recall them saying. There was a lot of communication. So I don't really recall if he said that they were stopped. He just said that they were ahead."*

The conductor said that when they came around the bend near the incident location, they *"just wasn't expecting the cars to be -- the hind end to be where it was."*

Investigators asked the conductor if they had considered reducing their speed through the bend below 15 mph due to the limited sight distance, to which he replied: *"At the moment, no."*

The conductor said that on the day of the incident, he went on duty at 2:15 a.m. and *"had my 10 hours"* of rest.

## **2.2 Work Schedule**

The conductor reported for work at 2:15 a.m. on the day of the incident, which occurred at about 7:11 a.m. on March 2, 2024.<sup>4</sup> He had been on duty for about 4 hours and 56 minutes when the incident occurred. Prior to the start of that shift, he had been off duty for about 12 hours and 2 minutes. In the 14 days leading up to the incident (including the hours worked on the day of the incident before it occurred), the conductor had worked about 84 hours and 36 minutes. His longest shift was about 12 hours and 22 minutes, which started at 11:45 p.m. on February 27, 2024, and ended at 12:07 p.m. on February 28, 2024.

---

<sup>4</sup> Document: Work Schedule Conductor 268



Military	Local Clock Time	Local Date													
		2/18/2024	2/19/2024	2/20/2024	2/21/2024	2/22/2024	2/23/2024	2/24/2024	2/25/2024	2/26/2024	2/27/2024	2/28/2024	2/29/2024	3/1/2024	3/2/2024
0:00	12:00:00 AM														
1:00	1:00:00 AM														
2:00	2:00:00 AM														
3:00	3:00:00 AM														
4:00	4:00:00 AM														
5:00	5:00:00 AM	5:00 AM			5:00 AM	5:35 AM		5:00 AM			5:00 AM			5:00 AM	
6:00	6:00:00 AM														
7:00	7:00:00 AM														
8:00	8:00:00 AM														
9:00	9:00:00 AM		9:29 AM						9:46 AM						
10:00	10:00:00 AM														
11:00	11:00:00 AM	11:13 AM													
12:00	12:00:00 PM				12:33 PM						12:52 PM	12:07 PM			
13:00	1:00:00 PM							1:34 PM							
14:00	2:00:00 PM														
15:00	3:00:00 PM					3:57 PM									
16:00	4:00:00 PM														
17:00	5:00:00 PM														
18:00	6:00:00 PM														
19:00	7:00:00 PM														
20:00	8:00:00 PM														
21:00	9:00:00 PM														
22:00	10:00:00 PM														
23:00	11:00:00 PM	11:59 PM									11:45 PM				
	Time (hh:mm)	6:13	9:30		7:33	10:22		8:34	8:01		7:52	12:22		9:13	4:56
	Time Away (hh:mm)	39:04	12:46		43:31	17:02		37:03	12:11		43:14	10:53		40:53	12:02

Table 2. Conductor Work Schedule Preceding the Incident. Hours worked are generally shown in green/outlined blocks that correspond to the 24 hours of the day (y-axis). The specific shift start and end times are written at the top and bottom of the green/outlined blocks. The estimated incident time (7:11 a.m.) is shown in orange. At the bottom of the table, 'Time' indicates the total shift time, and 'Time Away' indicates the total time between shifts.

### E. REPORT CONTRIBUTORS

Submitted by:

Bob Beaton, Ph.D., CPE  
Chief, System Safety Division

/s/ August 28, 2024

Mike Hoepf, Ph.D.  
System Safety Investigator

/s/ August 28, 2024