

# **NATIONAL TRANSPORTATION SAFETY BOARD**

**Office of Railroad, Pipeline and Hazardous Materials Investigations**

**WASHINGTON, D. C. 20594**



## **RRD18FR009 Operations Factual Report**

### **ACCIDENT**

Description: BNSF Train vs BNSF Train Collision

Location: Kingman, Arizona

Accident Date: June 5, 2018

NTSB accident number: RRD18FR009

**PARTY MEMBERS**

Tomas Torres  NTSB-Operations Group Chairman  tomas.torres@ntsb.gov	Dave Carr  FRA Operating Practices Inspector
John Remington  BNSF Superintendent of Operating Practices	Scott Jones  SMART National Safety Team
	Ron Sprague  BLET- Safety Task Force

**Events Prior to the Accident**

The crew of Train S-MEMSCO1-02 included a Locomotive Engineer and a Conductor. They first went on duty at 9:16 a.m. MDT, June 5, 2018 in Needles, California. This was the home terminal for the crew members and each received more than the statutory off-duty period prior to reporting for duty. The Engineer received 52 hours, 57 minutes rest. The Conductor received 29 hours and 40 minutes rest.

*Hours of Service and Rest Cycle* - Title 49 CFR Part 228 – **Hours of Service of Railroad Employees**, requires that railroad operating employees not work over 12 hours in a given shift and must have a minimum of 10 hours off duty between shifts.<sup>1</sup>

Their assigned freight train consisted of three locomotives, 72 loaded cars, 0 empty cars, and was 6,574 feet in length, weighted 7,552 tons.

The crew was called as a relief crew when they went on duty. They were first instructed to relieve a train that had expired under the hours of service at Franconia, Arizona. After the crew brought the train into the Needles, California yard, the Conductor contacted the BNSF Dispatcher and asked for instructions for their next assignment. The BNSF train dispatcher instructed the crew to taxi to Berry, Arizona to relieve the train crew on train S-MEMSCO1-02. While enroute the train dispatcher contacted the crew and instructed them to meet train S-MEMSCO1-02 at Peach Springs, Arizona instead. When the train arrived, the crew took charge of the train, contacted the BNSF train dispatcher, initialized PTC and headed westward on a clear signal indication.<sup>2,3</sup>

After the train crew departed East Peach Springs they encountered three signal indications required them to take action, the first, (approach medium) flashing yellow aspect at Cherokee (MP 473.62), second signal indication (approach) yellow aspect at intermediate signal 476.1 (MP 476.56), then a third signal indication (restricting ) red aspect at intermediate signal 478.1 (MP 478.707).<sup>4</sup> The train crew made the decision to stop the train at the restricting signal instead of

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<sup>1</sup> For Additional information on Hours of Service of Railroad employees refer to title 49 CFR Part 228.

<sup>2</sup> PTC- Positive Train Control is a system to prevent train to train collision, overspeed derailment, incursion into established work zone limits, the movement of a train through a Main Track switch in the improper position.

<sup>3</sup> Clear Signal- aspect is green, means to proceed.

<sup>4</sup> Approach Medium – Signal Aspect is flashing yellow- Proceed prepared to pass next signal not exceeding 40 MPH and be prepared to enter diverging route at prescribed speed.

continuing at restricted speed .<sup>5</sup> The investigators asked the Engineer why they decided to stop at the restricting signal at 478.1 (MP 478.07). The Engineer said “Because Crozier Canyon's almost 3 miles long with blind curves, and we -- I briefed with my Conductor. I said do you want to flag this signal? And he said no, let's just wait to see if we get a better signal”. Page 7 As the train came to a stop, the crew heard a radio transmission from the W NEESGM1-05R work train crew stating to the train dispatcher that they needed 45 more minutes to work. The Crew of the S-MEMSCO1-02 waited at the signal for about 1 hour before they departed.

While they were stopped, the train crew was run around by two westbound trains on Main Track 2. During the interview the Engineer said “We were just waiting, and two westbound trains went by us on Main Track 2. And that's what peaked us to something must be up. You know, what's -- so I asked him, do you want to -- well, we talked, do you want to creep down? He said yeah, let's go down, let's see”. Page 8 The investigators asked the Conductor if the decision to

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Approach -Signal aspect is yellow- Proceed prepared to stop at next signal. Trains exceeding 30 MPH immediately reduce to that speed. (Note: Speed is 40 MPH for passenger and active PTC trains).

Restricting – Signal aspect is red-Proceed at restricted speed.

<sup>5</sup> **BNSF Operating Rule 6.27 Movement at Restricted Speed**

When required to move at restricted speed, movement must be made at a speed that allows stopping within half the range of vision short of:

- Train.
- Engine.
- Railroad car.
- Men or equipment fouling the track.
- Stop signal.

or

- Derail or switch lined improperly.

When a train or engine is required to move at restricted speed, the crew must keep a lookout for broken rail and not exceed 20 MPH.

Comply with these requirements until the leading wheels reach a point where movement at restricted speed

is no longer required. **BNSF Special Instructions GCOR 6.27 Restricted Speed, Supplemental Instruction**

Where PTC is in effect, PTC will enforce a 16 MPH maximum speed when entering authorized limits requiring Restricted Speed, and a 20 MPH maximum speed while moving within authorized limits requiring Restricted Speed (e.g., non-signalized Yard Limits, Restricted Limits or block signal requiring Restricted Speed). The actual speed which allows trains to stop within 1/2 the range of vision will not be enforced. The crew is required to make the movement at the appropriate speed for compliance with this rule.

proceed west was based because they got run around by 2 trains on Main Track 2, he replied yes. The Conductor said, “the trains that ran around us were a manifest train and a vehicle train, and there's no way that those trains are going to be clearing Z-trains, which is how it works up here”.

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The S-MEMSCO1-02 crew then made the decision to proceed past the intermediate signal 478.1 at restricted speed. During the interview NTSB investigators asked the Engineer if they tried to communicate with anybody or with the Train Dispatcher before departing. The Engineer replied, “we did not”. Page 8. The engineer further explained they knew that the work train was out of ahead of them. After the train passed the intermediate at signal MP478.1, the train gradually increased the speed to 15 mph. Both crew members felt that the speed was appropriate for the grade and curvature. The Engineer said during the interview that he and the Conductor knew that there was the W NEESGM1-05R work train ahead of them. He said that in his mind he thought the work train was farther down the hill.

The S-MEMSCO1-02 train traversed on a right hand 8-degree curve and the view was obstructed by trees and vegetation. As the train negotiated around the curve, they came upon the W NEESGM1-05R work train. When the train crew of the S-MEMSCO1-02 initially saw the approaching work train, they assumed that it was traveling east on Main Track 2. Moments later, both crew members realized it was on Main Track 1 and called out emergency, the Engineer and Conductor simultaneously placed the train into emergency.



Figure 1 Photo courtesy of BNSF



*Figure 2 Photo is of an exemplar train approaching in a westward direction the curve where the accident occurred. View of the curve is obstructed by vegetation.*

When the trains collided, the Conductor landed on top of the Engineer, the locomotive came to rest leaning to the right, diesel fuel started to leak into the locomotive cab. Both crew members got out of the locomotive and started looking for the crew members of the work train. They immediately found the Brakeman of the W NEESGM1-05R work train. A Herzog employee that was part of the work train notified the Engineer and Conductor that there were two other Herzog employees trapped in the RUM truck on the south side of the tracks. The Conductor said he managed to pull one of the Herzog employees out of the cab of the Rail Unloading Machine (RUM) truck.



*Figure 3 Photo courtesy of SMART, photo is looking east at the westbound S-MEMSCO1-02 lead locomotive came to rest leaning to the right in direction of travel.*

**Train Crew of the W NEESGM1-05R**

The train crew of the W NEESGM1-05R went on duty on June 5, 2018 at 6:00 a.m. in Needles, California. The train crew of train W NEESGM1-05R included a locomotive Engineer, Conductor and a Brakeman. This was the home terminal for the crew members and each received



more than the statutory off-duty period prior to reporting for duty. The Engineer received 11 hours, 44 minutes rest, the Conductor received 11 hours and 45 minutes rest. The Brakeman received 11 hours, 50 minutes rest.

The crew was transported to their train by the BNSF Trainmaster. The work train W NEESGM1-05R was parked in the auxiliary track at Truxton adjacent to Main Track 1. The crew took charge of the ribbon rail train and had a job briefing with maintenance of way (MOW) supervisor. During the job briefing the Engineer asked what kind of protection they were going to use, Track and Time or form B. <sup>6,7</sup> The Assistant Roadmaster told the engineer that the work train moves would be protected by signal indication (the information conveyed by the aspect of signal relative to speed and conditions on the track ahead).

The Engineer said during the interview that while they were laying ribbon rail along the right of way, they were operating with two radios; each radio on a different channel. The locomotive radio was on channel 60 and was used to communicate with the Herzog employees

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<sup>6</sup> **5.4.1 Temporary Restrictions**

Track bulletins, track warrants, or general orders may restrict or stop train movements because of track conditions, structures or men or equipment. Yellow flags are used to indicate temporary speed restrictions. Yellow-red flags are used to indicate when a train may be required to stop. When flags are not displayed, that information will be included in the track bulletin, track warrant, or general order.

When a restriction spans adjoining subdivisions, separate temporary restrictions may be issued on each subdivision. For additional information refer to Appendix 1 at end of report BNSF Operating Rules 5.4.3, 5.4.7

<sup>7</sup> **10.3.1 Protection of Limits**

Before granting track and time, the control operator must apply blocking or marking devices to the control machine to prevent movement into the limits. The control operator may only grant track and time:

1. If the limits are clear.
2. If the limits are occupied by a train with track and time or that will receive track and time.
3. For an engine to switch a train standing within the limits. Crew members on the engine must provide protection against possible movement of the standing train, if necessary.  
or
4. After all trains moving within the limits that do not have track and time have passed the location where the track will be occupied, and the employee has been notified that authority is granted behind such trains.

Blocking or marking devices must not be changed or removed until limits have been released to the control operator.

and MOW employees. The Conductor's handheld radio was on channel 36 and was used to communicate with the BNSF train dispatcher. The Engineer said that he was monitoring channel 60, and the Conductor was monitoring channel 36. The Brakeman was at the rear of the train under the direction of the Herzog employee, he relayed to the Engineer instructions to move the train either in east or west directions with a specified distance. The Engineer said, there were times that the crew would switch channels on the locomotive radio from channel 60 to 36 in order to communicate with the BNSF train dispatcher.

The work train consisted of 2 forward facing locomotives ,29 loads, 0 empties, 3830 tons, 1740 feet in length.



Figure 4 NTSB photo of exemplar Rail Unloading Machine ( RUM) truck.



*Figure 5 Photo courtesy of BNSF, this is a photo of the work train a day prior to the accident. The Rail Unloading Machine (RUM) truck is attached to the rear of the work train.*

The work train made several Eastward and Westward movements laying ribbon rail on four curves on Main Track 2. The W NEESGM1-05R work train then crossed over to Main Track 1 and laid ribbon rail on four curves before making the final reverse movement (Eastward) prior to the incident. With the Herzog RUM truck attached to the rear of the work train the speed was restricted to 10 mph during reverse movements, and 15 mph in forward movements. The Brakeman was on the rear of the train riding inside the cab on the driver side of the RUM truck to provide point protection during the reverse movement to return the BNSF Track Supervisor to his truck. There were two Herzog employees who were riding in the operator station located behind the cab of the RUM truck.

In the eastward direction of travel, the train traversed on a left hand 8-degree curve and the view was obstructed by trees and vegetation.

During the interview the Brakeman said “When we were done laying rail, we started

shoving back to drop off maintenance of way person at the truck. We entered the curve, I could see 10 cars, so I gave a 10-car count. Right after that, I saw the train coming around the corner”.

Page 6 He initially thought the westbound train was traveling on Main Track 2, he called out over the radio “hot rail”. Page<sup>8</sup> 6 The Brakeman quickly realized the westbound train was also traveling on Main Track 1 and called out emergency on his radio. The brakeman stated that he depressed the emergency brake button in the RUM vehicle. The Brakeman managed to jump out of the RUM truck on the field side, (North side) of Main Track 1. During the interview the Engineer said, “There was communication just before the incident of somebody on the radio saying, stop, stop work train, and then plug it”.<sup>9</sup> Page 12A

PTC is in effect on the BNSF Seligman Subdivision

Both trains were equipped with and operating with PTC in effect.

### **Maintenance of Way (MOW) Crew**

MOW crew went on duty at 0600, and completed the job briefing at Kingman, AZ and traveled to meet the work train crew at East Peach Springs. The job briefing was conducted by the BNSF Track Supervisor with MOW group and the train crew of the W NEESGM1-05R work train. The job briefing consisted of a description of the work to be performed and everyone’s responsibilities. The Track Supervisor also emphasized that anyone could stop the movement. The Engineer of the work train asked again if they were going to work under a Form B or track and time. He was told that they would work under signal indication.

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<sup>8</sup> Hot Rail is railroad jargon, it is used to warn other personnel that may be walking on or near the tracks that there is an approaching train on the adjacent track.

<sup>9</sup> “Plug it” is railroad jargon in reference to making an emergency train brake application. The type of brake application made when a train must be stopped in the minimum distance possible.

During the interview the BNSF Assistant Roadmaster said that the work train form of protection would be provided by the train crew by contacting the train dispatcher and through signal indication. During the interview the Assistant Roadmaster was asked by investigators who makes the decision on the method of protection for a work train she replied, "It's always signal indication. That's -- I mean, we don't unload rail under track and time. It would -- it's not -- it's impossible. I mean, we could, but you'd have to get three blocks in a row". Page 7 The Assistant Roadmaster further explained that it would not make sense to use a Form B to unload rail nor have Track and Time been used to unload rail, "It's always been signal indication". Page 9 The Assistant Roadmaster also said that it did not make sense to line another train behind a work train that is going back and forth, stopping and going slow. The investigators asked the Assistant Roadmaster if she was familiar with the signal indications, her reply was "Kind of. It goes red, flashing yellow, and something else. I don't -- yellow, green. I don't know. It's not really my deal". Page 27 The Assistant Roadmaster explained that main concern was safety from trains passing on the adjacent track and not the trains traveling on the same track as the W NEESGM1-05R work train.

The W NEESGM1-05R work train crew used the locomotive radio to communicate with the MOW and Herzog employees and used the Conductor's hand held radio to communicate with the train dispatcher.

As the work train was shoving Eastward to drop the Track Supervisor off at his personal vehicle, MOW employees reported hearing someone call out emergency over the radio.



*Figure 6 NTSB Photo*

The Track Supervisor said that prior to impact, he saw the door of the operator station of RUM opened and close by one of the Herzog employees. The track supervisor said he jumped off on the south side of Main Track 1 and landed on the southside of the tracks. The track foreman and track laborer held on and rode out the collision.

The two Herzog employees riding in the operator station of the Rail Unloading Machine (RUM) truck remained inside.

The MOW employees riding on the platforms of the ribbon rail cars ran to the rear of the train to look for the Brakeman and the Herzog employees.

The track laborer said he saw the track supervisor trying to extract one of the two Herzog employees that were in the cab of the RUM truck. The track laborer ran over to the train crew of the westbound train to ask them to assist in extracting the Herzog employees trapped inside the RUM operator station. They managed to pull one of the Herzog employees free from the wreckage and noticed he sustained a gash to one of his arms, so they provided first aid and tried to comfort the operator until help arrived.

During the interview, the MOW employees stated the westbound train should not have passed the red intermediate signal indication without talking to the train dispatcher and that signals were the work train's protection from other train movements coming into their limits.

### **Train Dispatchers**

The first shift train dispatcher went on duty 5:30 a.m. mountain time. He said that upon coming on duty he had a job briefing with the outgoing train dispatcher. He said he dispatched the work train out of Truxton eastbound on Main Track 1 and crossed them over to Main Track 2 at Cherokee. The train dispatcher said that while he was on duty the work train remained working on Main Track 2 until he went off duty. The train dispatcher was asked how he provided protection to the work train he said "The signal system was their only protection when I was working with them. Other than that -- they were just on signals". Page 8 He stated he does not dispatch following movements behind the work train. The train dispatcher explained that to protect the limits of the work train, he could place tags, or block the signals at the control points and dispatch train around the work train on the adjacent Main Track. During the interview the train dispatcher was asked if he provides additional information to other trains when a work train is performing work, he said he did not.



The second shift train dispatcher went on duty at 2:30 p.m. CDT. He said he had a job briefing with the first shift dispatcher on the trains that were operating on the Seligman Subdivision. The train dispatcher was asked if he dispatched the work train from Main Track 2 to Main Track 1, he replied by saying that he did not. He said that the train was already stacked for Main Track 1 when he went on duty. The train dispatcher was asked if he had communicated with the train crew on the S-MEMSCO1-02, he replied that he did not. He also said that he did not dispatch the S-MEMSCO1-02 from East Peach Springs. The train dispatcher said during the interview that he did give a proceed signal to train S-MEMSCO1-02 at Cherokee to continue westbound. He explained that when he went on duty, he had a notification that a transport van had been ordered to pick up the work train at Walapai. During the interview the dispatcher said, "It was my understanding the work train was done and going to be heading west from Cherokee to Hualapai because the van had been ordered for the crew". Page 6 The train dispatcher explained that was the is reason he gave the S-MEMSCO1-02 a proceed indication at the Cherokee control point to follow the work train on Main Track 1. He thought at that time the work train was now just a westbound. He also said that the work train did not have bi-directional authority (track and time), it allowed him to dispatch the S-MEMSCO1-02 behind the work train, per signal indication and operating rules, "that's perfectly fine". Page 16

The train dispatcher said during the interview that after noticing that the W NEESGM1-05R work train was not moving, he made 9 attempts to communicate with the work train crew. He wanted to know what the delay was. After a period of time the W NEESGM1-05R work train crew contacted the train dispatcher and explained that they would be done laying rail in 45 minutes. The train dispatcher was asked on the stack signal system type where everything is in a work progression, if there was any reason for him to believe that the work train was not doing any work?

The train dispatcher answered "Correct". Page 15

### **Train Dispatcher Recording Transcript**

DS11: Okay. How much more work do you have? Over.

**(Talking clock: 15:44:04)**

6613: About 45 minutes, sir, yes.

DS11: Forty-five minutes, and then we're, we're done with

dumping rail? Over.

6613: That's correct.

The Foreman of Engines called the BNSF Train Dispatcher to inquire about the accident.

### **Train Dispatcher Transcript**

RF: What, what's going on there?

DS11: 480.6, the work train was dumping rail. I had a train

in behind them. Apparently they must have been going east, I would hope, within the same signal block. And I have a westbound train lined in behind them, and the westbound hit them.

RF: How did they, how did they hit them? I'm not

understanding. At 480.6 the work train is on what track?

DS11: Main 1.

RF: Okay. You have a train behind them going westbound on

main 1?

DS11: Correct.

RF: And then an eastbound train hit them on main 2?

DS11: No.

RF: On main 1? How do we got, how do we got east and west  
on main 1?

DS11: Okay, man, you're going to have to call the chief.

### **Sight Distance Observation**

6/10/18 Operations Group and Track Group conducted a Sight-Distance Observation.

A west facing locomotive and a Herzog RUM truck were used and observation was held at approximately the same time of day as the accident. Sight-Distance Observation details will be posted on the docket.

**PTC** logs showed that the S-MEMSCO1-02 train encountered the following signals.

**Approach Medium** - Proceed prepared to pass next signal not exceeding 40 MPH and be prepared to enter diverging route at prescribed speed.

**Approach** - Proceed prepared to stop at next signal. Trains exceeding 30 MPH immediately reduce to that speed. (Note: Speed is 40 MPH for passenger and active PTC trains).

**Restricting** - Proceed at restricted speed.

### **Operating Documents**

The *General Code of Operating Rules* (GCOR), the *BNSF Special Instructions*, the *BNSF Southwest Division Timetable*, and BNSF specific rules governed the crews. This territory was part of the BNSF Kansas Division Area Timetable No. 1.

The BNSF operating rules and supplements were as follows:

- *General Code of Operating Rules*, Sixth Edition, effective April 1, 2015
- *BNSF System Special Instructions*, effective October 4, 2017
- *BNSF Southwest Division Timetable No.6*, effective November 8, 2017
- *TY&E Safety Rules*, effective January 1, 2015
- *Airbrake and Train Handling Rules*, effective April 1, 2015
- *Maintenance of Way Operating Rules*, effective November 6, 2008

### **Method of Operations**

The Seligman Subdivision is part of the BNSF Southwest Division and extends from East Winslow, MP 284.5 to MP 578.4 Needles, California in a timetable east-west direction. The maximum authorized speed on the subdivision is 70 mph for freight trains with permanent speed restrictions between posted timetable mileposts.

Signal indications of a centralized traffic control system govern train movements on the BNSF Seligman Subdivision. The subdivision consists of Main Track 1 and Main Track 2.

### **Drug and Alcohol Test Results**

Federal Railroad Administration Post-Accident Forensic Toxicology Result Reports indicate the one fatal employee and six surviving employees tested had negative test results.

### **Employee Certification Records**

**S-MEMSCO1-02 Engineer Certification Information**

Hire Date	12/16/2011
Engineer Certification Date	05/30/2017
Engineer Certification Expiration Date	05/29/2020
Hearing Exam	01/03/2014
Vision Exam	Missing information
Territory Certification Rules	05/23/2018
Knowledge Rules Exam	05/23/2018
Performance Skill Evaluation	04/13/2018
PTC Transportation Initial	08/04/2014
Last Operations Test	04/13/2018
6 Operations Tests Prepared to Stop	Pass
3 Operations Test Restricted Speed- Stop	Pass
2 Operations Banner Test	Pass
2 Operations Test Stop and Proceed	Pass
14 Operational Test in the last 12 months	Pass

**S-MEMSCO1-02 Conductor Certification Information**

Hire Date	09/30/2013
Conductor Certification Date	01/10/2017
Conductor Certification Expiration Date	01/09/2020
Hearing Exam	01/03/2017
Vision Exam	No record found
Territory Certification Rules	05/03/2018
Knowledge Rules Exam	05/03/2018
Performance Skill Evaluation	No record found
PTC Transportation Initial	08/08/2014
Last Operations Test	04/13/2018
11 Operations Tests Stop Signal	Pass

1 Operations Banner Test	Pass
1 Stop and Proceed	Pass
4 Operations Test Restricted Speed- Stop	Pass
7 Operations Signal Awareness Form	Pass
27 Operational Test in the last 12 months	Pass

**W NEESGM1-05R Engineer Certification Information**

Hire Date	11/23/1998
Engineer Certification Date	07/19/2017
Engineer Certification Expiration Date	07/18/2020
Hearing Exam	01/04/2014
Vision Exam	Missing information
Territory Certification Rules	01/04/2017
Knowledge Rules Exam	01/04/2017
Skill Ride Evaluation	06/28/2017
PTC Transportation Initial	02/27/2014
<b>Last Operations Test</b>	
6 Operations Tests Prepared to Stop	Pass
3 Operations Test Restricted Speed- Stop	Pass
2 Operations Banner Test	Pass
2 Operations Test Stop and Proceed	Pass
14 Operational Test in the last 12 months	Pass

**W NEESGM1-05R Conductor Certification Information**

Hire Date	02/23/2004
Conductor Certification Date	12/04/2016
Conductor Certification Expiration Date	12/03/2019

Hearing Exam	01/03/2017
Vision Exam	Missing information
Territory Certification Rules	04/14/2016
Knowledge Rules Exam	04/14/2016
Skill Ride Evaluation	
PTC Transportation Initial	02/27/2014
<b>Last Operations Test</b>	
19 Operations Tests Prepared to Stop	Pass
3 Operations Test Restricted Speed- Stop	Pass
8 Operations Banner Test	Pass
12 Operations Test Stop and Proceed	Pass
16 Operational Test in the last 12 months	Pass

**W NEESGM1-05R Brakeman Certification Information**

Hire Date	10/21/2013
Conductor Certification Date	N/A
Conductor Certification Expiration Date	N/A
Hearing Exam	N/A
Vision Exam	N/A
Territory Certification Rules	02/15/2018
Knowledge Rules Exam	02/15/2018
Skill Ride Evaluation	N/A
PTC Transportation Initial	05/02/2014
<b>Last Operations Tests</b>	
14 Operations Tests Prepared to Stop	Pass
5 Operations Test Restricted Speed- Stop	Pass
8 Operations Banner Test	Pass
3 Operations Test Stop and Proceed	Pass
16 Operational Test in the last 12 months	Pass

**S-MEMSCO1-0210 Day Work History**

*Table. Engineer 10 Day Work History*

On Duty- Date/Time	Off Duty- Date/Time	Total Time On Duty
05/26/2018-9:50 p.m.	05/27/2018-5:28 a.m.	7 hours, 38 minutes
05/28/2018-4:55 p.m.	05/29/2018-3:30 a.m.	10 hours, 35 minutes
05/29/2018-6:32 p.m.	05/30/2018-12:20 a.m.	5 hours, 48 minutes
05/31/2018-10:55 p.m.	06/01/2018-9:17 a.m.	10 hours, 22 minutes
06/01/2018-7:11 p.m.	06/02/2018-1:51 a.m.	6 hours, 40 minutes
06/02/2018-5:30 p.m.	06/03/2018-4:19 a.m.	10 hours, 49 minutes
06/05/2018-9:16 a.m.	06/05/2018-4:51 p.m. day of accident	7 hours, 35 minutes

*Table. Conductor 10 Day Work History*

On Duty- Date/Time	Off Duty- Date/Time	Total Time On Duty
05/26/2018-9:16 a.m.	05/26/2018-8:04 a.m.	10 hours, 48 minutes
05/27/2018-7:33 a.m.	05/27/2018-7:13 p.m.	11 hours, 40 minutes
05/28/2018-7:10 p.m.	05/29/2018-12:52 a.m.	5 hours, 42 minutes
05/29/2018-10:01 a.m.	05/29/2018-2:20 p.m.	4 hours, 39 minutes
05/31/2018-10:00 a.m.	05/31/2018-12:36 p.m.	2 hours, 36 minutes
05/31/2018-11:59 p.m.	06/01/2018-4:45 a.m.	4 hours, 26 minutes
06/01/2018-5:05 p.m.	06/02/2018-1:11 a.m.	8 hours, 6 minutes
06/02/2018-5:30 p.m.	06/03/2018-5:17 a.m.	11 hours, 47 minutes
06/03/2018-6:00 p.m.	06/04/2018-2:26 a.m.	8 hours, 36 minutes



06/05/2018-9:16 a.m.	06/05/2018-4:51 p.m. day of accident	7 hours, 35 minutes
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**W NEESGM1-05R Train Crew 10 Day Work History**

*Table. Engineer 10 Day Work History*

On Duty- Date/Time	Off Duty- Date/Time	Total Time On Duty
05/26/2018-2:00 p.m.	05/26/2018-9:00 p.m.	7 hours,
05/27/2018-12:30 p.m.	05/27/2018-10:02 p.m.	9 hours, 32 minutes
05/29/2018-1:01 p.m.	05/29/2018-7:25 p.m.	6 hours, 24 minutes
05/31/2018-7:26 p.m.	05/31/2018-11:14 p.m.	3 hours, 48 minutes
06/02/2018-12:29 p.m.	06/02/2018-10:49 p.m.	10 hours, 20 minutes
06/04/2018-6:00 a.m.	06/04/2018-6:15 p.m.	12 hours, 15 minutes
06/05/2018-6:00 a.m.	06/05/2018-4:51 p.m.	10 hours, 51 minutes

*Table. Conductor 10 Day Work History*

On Duty- Date/Time	Off Duty- Date/Time	Total Time On Duty
05/26/2018-2:00 p.m.	05/26/2018-9:00 p.m.	7 hours, 0 minutes
05/27/2017-12:30 p.m.	05/27/2018-10:02 p.m.	9 hours, 32 minutes
05/29/2018-1:01 p.m.	05/29/2018-7:25 p.m.	6 hours, 24 minutes
05/31/2018-7:26 p.m.	05/31/2018-11:14 p.m.	3 hours, 48 minutes
06/02/2018-12:29 p.m.	06/02/2018-10:49 p.m.	10 hours, 20 minutes
06/04/2018-6:00 a.m.	06/04/2018-6:15 p.m.	12 hours, 15 minutes

06/05/2018-6:00 a.m.	06/05/2018-4:51 p.m. day of accident	10 hours, 51 minutes
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*Table. Brakeman 10 Day Work History*

On Duty- Date/Time	Off Duty- Date/Time	Total Time On Duty
05/26/2018-7:20 a.m.	05/26/2018-1:41 p.m.	6 hours, 21 minutes
05/27/2018-7:01 a.m.	05/27/2018-12:47 p.m.	5 hours, 46 minutes
05/28/2018-9:00 a.m.	05/28/2018-7:00 p.m.	5 hours, 46 minutes
05/29/2018-6:35 a.m.	05/29/2018-6:45 p.m.	12 hours, 10 minutes
05/31/2018-11:01 a.m.	05/31/2018-9:30 p.m.	10 hours, 29 minutes
06/01/2018-10:00 a.m.	06/01/2018-9:40 p.m.	11 hours, 40 minutes
06/02/2018-10:12 a.m.	06/02/2018-8:40 p.m.	10 hours, 28 minutes
06/03/2018-11:13 a.m.	06/03/2018-4:04 p.m.	4 hours, 51 minutes
06/04/2018-6:00 a.m.	06/04/2018-6:10 p.m.	12 hours, 10 minutes
06/05/2018-6:00 a.m.	06/05/2018-4:51 p.m. day of accident	10 hours, 51 minutes



## BNSF Post Accident Actions, New Train Dispatcher's Operating Rule:

### *BNSF RAILWAY MDPR JOB SAFETY BRIEFING NO. 28*

**Date:** July 22, 2018  
**To:** Dispatchers & Chief Dispatchers  
**From:** Manager Dispatching Practices and Rules  
**Subject:** New rule effective August 1, 2018 - **TDCOM 40.28 Trains Performing Work Associated with Track Maintenance**

The System Work Train Policy is located in item 29 of the BNSF System Special Instructions. This rule, will be renamed to **"Trains Performing Track Maintenance Work"** on August 1, 2018, and will be amended to include requirements for a conductor of a train performing work associated with track maintenance in signaled territory to notify the train dispatcher of milepost limits where work will be performed *before* beginning work.

In coordination with these amendments to SSI 29, a new rule has been created in the **Train Dispatcher's and Control Operator's Manual**. This new rule is **TDCOM 40.28 Trains Performing Work Associated with Track Maintenance**.

#### **SSI Item 29 – Trains Performing Track Maintenance Work (in part)**

In signaled territory, when at the intended work location and before performing work associated with track maintenance (i.e., dumping ballast, loading/unloading track materials, etc.) the conductor must:

- Notify the train dispatcher of the milepost limits where the work will be performed.
- Notify the train dispatcher when the work has been completed.

*Changes to SSI item 29 effective August 1, 2018.*

#### **TDCOM 40.28 Trains Performing Work Associated with Track Maintenance:**

In signaled territory, when notified by the conductor of a train performing work associated with track maintenance (i.e., dumping ballast, loading/unloading track materials, etc.), the following will apply:

##### In CTC

- Job Brief with the conductor to ensure a clear understanding of the milepost limits to be used by the train performing work associated with track maintenance.
- Place a restrictive informational tag(s) in the control system at the affected location and notify any following train within the same limits about the train performing work associated with track maintenance and the limits where they are working.
- Prior to authorizing a train to enter a track that allows direct access to the milepost limits identified by the conductor of the train performing work associated with track maintenance, inform crew of train being authorized about the train performing work associated with track maintenance and the limits where they are working.

##### In ABS

- Job Brief with the conductor to ensure a clear understanding of the milepost limits to be used by the train to perform work associated with track maintenance.
- Place a restrictive informational tag(s) in the control system at the affected location and notify any following train(s) within the same or overlapping limits about the train performing work associated with track maintenance and the limits where they are working.

Maintain the restrictive informational tag and continue notifications until advised by the conductor that work associated with track maintenance is complete.

*New TDCOM rule 40.28, effective August 1, 2018.*

I have read and approve the Report

Tomas R Torres – Operations NTSB

//s//

Date \_\_02/07/18\_\_

Dave Carr

FRA Operating Practices Inspector

//s//

Date \_\_12/06/18\_\_

John Remington

BNSF Superintendent of Operating Practices

//s//

Date \_No\_Reply\_\_

Ron Sprague

BLET Safety Task Force

//s//

Date \_\_12/07/18\_\_

Scott Jones

SMART National Safety Team

//s//

Date \_No Reply\_\_