

National Transportation Safety Board

Office of Railroad, Pipeline and Hazardous Materials

Washington, DC 20594



RRD24FR001

OPERATIONS

Group Chair's Factual Report

BNSF derailment near Pueblo, Colorado
October 15, 2023

Table of Contents

A.	ACCIDENT.....	3
B.	OPERATIONS.....	3
C.	ACCIDENT SUMMARY.....	4
D.	DETAILS OF THE INVESTIGATION	4
1.0	DESCRIPTION OF THE PIKES PEAK SUBDIVISION	4
2.0	EVENTS PRIOR TO THE ACCIDENT	4
3.0	THE ACCIDENT.....	5
4.0	POST ACCIDENT SITE DESCRIPTION.	6
5.0	ACCIDENT TIMELINE.....	6
6.0	TRAIN AND CONSIST INFORMATION.....	6
6.1	Lead Locomotive Event Recorder review.....	6
6.2	Distributed Power Unit event recorder review	7
6.3	Lead locomotive Outward Video.....	8
6.4	Lead locomotive Inward Video.	9
7.0	RADIO RECORDINGS.	9
8.0	CREW OPERATIONAL INFORMATION.	9
8.1	Crew certification information.....	9
8.2	Crew Hours of service (HOS) information.....	10
9.0	INTERVIEWS CONDUCTED ON-SCENE.....	10
10.0	INTERNAL OVERSIGHT.	10
10.1	BNSF Operating rules in effect at the time of the accident.....	10
11.0	EXTERNAL OVERSIGHT.	11
11.1	The Federal Railroad Administration.	11
11.2	FRA post-accident testing.....	11
11.3	Federal regulations relating to the accident.....	11
11.3.1	Part 217–Railroad operating rules.	11
11.3.2	Part 218- Railroad operating practices.	11
11.3.3	Part 220- Railroad communications.	11
12.0	COLORADO DEPARTMENT OF TRANSPORTATION.	12

A. ACCIDENT

NTSB Accident No: RRD24FR001

NTSB Keys number:

Accident Type: Derailment with highway bridge collapse.

Location: Pueblo, Colorado

Date of accident: October 15, 2023

Time of accident: 15:24 Mountain Time

Carrier: BNSF

Train type/Designation: Freight- coal/ CNAMCRD0-31D

Fatalities: 1 (non-railroad)

Injuries: 0

B. OPERATIONS

IIC/Operations Richard Skolnekovich
Operations Group Chair
National Transportation Safety Board (NTSB)

Party Coordinator JD Archie
Railroad Safety Inspector (Operations)
Federal Railroad Administration (FRA)

Party Coordinator Michael Cook
General Director of Safety
BNSF Railroad

Party Coordinator Steve Facklam
STF Investigator
BLET

Party Coordinator Brad Warren
National safety team Investigator
Smart-TCU

C. ACCIDENT SUMMARY

On October 15, 2023, about 3:24 p.m. southbound BNSF Railway (BNSF) coal train CNAMCRD0-31D derailed 30 railcars at milepost 109.654 on the Pikes Peak Subdivision in Pueblo West, Colorado. The derailment occurred near a track switch east of a railroad bridge that crossed over Interstate 25.

Derailed railcars struck the bridge, six dropping to the interstate below and one or more striking a northbound truck-tractor in combination with a utility trailer (combination vehicle). The eastern span of the bridge partially collapsed over the interstate's northbound lanes.

The combination vehicle came to rest beneath the collapsed bridge span, derailed railcars, and lading. (See figure.) The truck driver was killed; no members of the train crew were injured. At the time of the derailment, visibility conditions were daylight and clear; the weather was 71°F with no precipitation.

D. DETAILS OF THE INVESTIGATION

1.0 Description of The Pikes Peak subdivision

The Pikes Peak subdivision extends 119.2 miles between milepost 0.0 in Denver, CO to milepost 119.2 in Pueblo, CO. The subdivision's method of operation is primarily centralized train control (CTC) with a positive train control (PTC) overlay.

Two segments of main track 2 is designated as track warrant control (TWC) with a maximum authorized speed of 60 m.p.h. The maximum speed at South Bragdon is 55 mph for trains under 100 tons per operative brakes (TPOB), and 45 mph for trains above 100 (TPOB).

2.0 Events prior to the Accident

Train CATMCRD 031D was crewed by a BNSF conductor and engineer assigned to the crew base located in Denver, Colorado.

The crew went on duty at 0900. During NTSB interviews, both conductor and engineer stated that upon arriving at the BNSF Denver on-duty point, they downloaded all necessary paperwork to their BNSF issued I pad's. They conducted a job briefing, in which they discussed the slow orders that they would encounter along their route and then conducted a face-to-face briefing with the inbound crew regarding the condition and performance of the train they were receiving.

Both the engineer and conductor stated that the train and equipment performed as expected and that they did not encounter any mechanical or signal

issues prior to the accident. The crew stated that the lead engine was equipped with PTC and that it was enabled and functioned correctly throughout their trip. They stated that the lead engine in their train was not equipped with a Trip Optimizer (TO) or any other similar method trip management.

3.0 The Accident

Train CNAMCRD0-31D departed Denver, Colorado, at 9:41 a.m. on the day of the derailment, bound for La Junta, Colorado. The train consisted of 2 locomotives at the head end, 3 distributed power units, and 124 hopper cars loaded with coal.

As the train approached the bridge located at BNSF milepost (MP) 109.654 the train began to derail at a point near a track switch that was located just east of a railroad bridge that spanned over Interstate 25.

During interviews with the crew, they stated that as they began to approach the bridge, that they felt a section of rough track and that it caused "real bad shaking to the left and to the right." When this occurred, the engineer stated that he began to apply his airbrakes to slow the train down. He then looked at the information screen on his engineer's console and saw that he had received a train line emergency.

The engineer then stated that he then placed the automatic brake valve into emergency until the train stopped. He stated that he was not aware that the train had derailed at that point in time due to the clouds of dust obscuring the cars in his mirror.

As the dust cleared, the engineer stated that he could see that some cars were "knocked over to the right" and that they were pouring out their coal. He then stated that the first four cars behind the two locomotives were upright.

At this point, the conductor began to issue out an emergency alert over the radio and climbed off of the lead locomotive to inspect his train. During his interview with investigators, the conductor stated that as he walked back towards the bridge, that he could see that the bridge was partially collapsed, and that there were several cars piled up leading to the collapse.

Once he was at the bridge, he stated that he could see the "semi" underneath the bridge, and that the highway traffic was backing up. He said that he made a quick inspection of the scene to determine if there were any other vehicles under the bridge, and then called 911 on his radio.

He stated that after the 911 call, that emergency responders arrived on scene within 5 to 10 minutes.

4.0 Post Accident site description.

The accident location intersects Interstate I-25 with a Colorado state owned Rail-bridge. The tracks crossing this bridge are owned by BNSF and is named Main Track 1. This track is part of the BNSF Powder River Division, Pikes Peak Sub-division. This section of track is designated by timetable as Centralized Traffic Control (CTC) and is dispatched and controlled from the BNSF Network Operations Center (NOC) in Fort Worth, Texas

5.0 Accident Timeline

BNSF Crew departed Denver Colorado at 09:41 MT and travelled timetable South to BNSF CP South Bragdon where at 15:24 their train derailed (MT) at BNSF MP 109.654. Train speed at the time of derailment was 32 mph.

6.0 Train and consist information

The train originated at Antelope Mine in Converse Junction, Wyoming with a destination of the Salt River Project's Coronado plant in St. Johns, Arizona.

Train derailment of BNSF southbound train CATMCRD031D at MP 109.7MP, main track one, on BNSF Pikes Peak Subdivision.

Locomotive	Location in consist	Facing	Type	Consist information
BNSF 9015	Line 1 - Lead unit	West	SD70ACE	Train consists – 124 loads 0 empties 17,719 trailing tons 6,583 ft length
BNSF 9231	Line 2 -Second unit	East	SD70ACE	
BNSF 5682	Line 127 (DP)	West	AC44CW	
BNSF 5753	Line 128 (DP)	East	ES44AC	
BNSF 8487	Line 129 (DP)	West	SD70ACE	

6.1 Lead Locomotive Event Recorder review.

On 18 October 2023, the operations group conducted an Event Recorder review of the lead accident locomotive. The following table captures the event recorder data within the last two minutes prior to the derailment¹.

¹ All times are in Central Daylight-Saving time.

Time offset between lead locomotive and DP unit - 15:43:40 (MT) for lead unit/15:43:44 (MT) for the controlling DP unit.

Lead Unit - BNSF 9015

MP	Time	MPH	Throttle	PCS	Brake Cylinder	Brake Pipe	
108.68	16:22:46	34	DB 5	Closed	0	82	
109.3	16:23:48	35	DB 5	Closed	0	86	
109.45	16:24:04	32	DB 4	Closed	0	88	
109.48	16:24:07	34	DB 3	Closed	0	88	
109.52	16:24:11	34	DB 2	Closed	0	88	
109.63	16:24:23	34	DB 1	Closed	0	88	
109.66	16:24:26	34	DB 5	Closed	0	88	
109.67	16:24:27	34	DB 7	Closed	0	88	
109.69	16:24:29	34	DB 6	Closed	0	88	
109.74	16:24:34	34	DB 5	Closed	0	88	
109.76	16:24:36	34	DB 4	Closed	0	88	
109.78	16:24:38	33	DB 5	Closed	0	88	
109.78	16:24:39	33	DB 6	Closed	0	88	
109.8	16:24:41	32	DB 6	Closed	0	55	
109.81	16:24:42	31	DB 6	Closed	0	0	
109.82	16:24:43	28	DB 6	Open	5 lbs.	0	
109.83	16:24:46	24	DB 6	Open	26 lbs.	0	EIE
109.86	16:24:50	17	DB 6	Open	17 lbs.	0	
109.89	16:25:01	0	DB 6	Open	66 lbs.	0	

6.2 Distributed Power Unit event recorder review

On 18 October 2023, the operations group conducted an event recorder review of the second distributed power unit located in the accident train. The following table captures the event recorder data within the last two minutes prior to the derailment.

Linked DP Unit BNSF 5682

MP	Time	MPH	Throttle	PCS	Brake Cylinder	Brake Pipe	
108.68	16:22:46	36	Idle	Closed	0	82	
109.3	16:23:48	35	N 4	Closed	0	81	
109.45	16:24:04	34	N 5	Closed	0	87	
109.48	16:24:07	34	N 6	Closed	0	87	

109.52	16:24:11	34	N 6	Closed	0	87	
109.63	16:24:23	34	N 6	Closed	0	87	
109.66	16:24:26	34	N 6	Closed	0	87	
109.67	16:24:27	34	N 6	Closed	0	87	
109.69	16:24:29	34	N 6	Closed	0	87	
109.74	16:24:34	34	N 6	Closed	0	87	
109.76	16:24:36	34	N 6	Closed	0	87	
109.78	16:24:38	34	N 6	Closed	0	87	
109.78	16:24:39	34	N 6	Closed	0	87	
109.8	16:24:41	33	N 6	Closed	0	87	
109.81	16:24:42	33	N 6	Closed	0	87	
109.82	16:24:43	33	N 6	Closed	0	87	
109.83	16:24:45	32	Idle	Open	0	0	
109.83	16:24:46	32	Idle	Open	0	0	
109.86	16:24:50	29	Idle	Open	45 lbs.	0	
109.89	16:25:01	20	Idle	Open	46 lbs.	0	
	16:25:20	0	Idle	Open	46 lbs.	0	

6.3 Lead locomotive Outward Video.

On 18 October 2023, the operations group conducted an Outward Facing Camera review from Train C NAMCRD0 31D Leading Locomotive. During this review Investigators identified a possible broken rail on the North side of main track 1 that proceeded the accident train.



6.4 Lead locomotive Outward Video.

On 18 October 2023, the operations group conducted an Outward Facing Camera review from Train C BTMSPS0 33D Trailing DPU. During this review Investigators identified a possible broken rail on the North side rail of main track 1 that would have preceded the accident train.



7.0 Radio recordings.

The Operations working group reviewed BNSF audio recordings relating to this accident. This recording captured the post-accident radio transmissions between the crew of CNAMCRD0-31D and the Denver South dispatcher immediately following the accident.

8.0 Crew operational information.

8.1 Crew certification information.

NAME	HIRE DATE	CRAFT	ENGINE SVC	LAST CERT	LAST OP RULES EXAM
Accident engineer	4/2/2018	engineer	5/20/2019	9/2/2022	1/24/2022
Accident conductor	3/27/2006	conductor	N/A	1/5/2023	1/4/2023

8.2 Crew Hours of service (HOS) information.

NAME	DATE	TL HRS ON DUTY	PRIOR OFF-DUTY	ON-DUTY OS
Accident engineer	10/15/2023	5:24	12:10	Denver, Colorado
Accident conductor	10/15/2023	5:24	12:01	Denver, Colorado

9.0 Interviews conducted on-scene.

The investigative team conducted five interviews relating to this accident. These interviews were held on October 17, 2023, and were conducted at the Hampton Inn conference room located in Pueblo, Colorado.

1. Accident engineer
2. Accident conductor.
3. BNSF Welder.
4. BNSF Track supervisor.
5. BNSF Roadmaster

Please refer to the docket for the full interview's transcripts.²

10.0 Internal oversight.

10.1 BNSF Operating rules in effect at the time of the accident.

Operating Rules that were in effect at the time of the accident and include the following:

- General Code of Operating rules (GCOR), effective April 1, 2020.
- BNSF System special instructions No. 3, effective August 1, 2022.
- BNSF Air Brake & Train Handling rules, effective February 1, 2018.
- PTC Interoperability instructions, effective September 1, 2019.
- BNSF Powder River Division timetable No. 4, effective October 26, 2022.
- Pikes Peak Subdivision General order no. 42, effective October 6, 2023.
- Pikes Peak Subdivision General notice no. 569, effective February 25, 2022.
- Powder River Division General Notice No. 569

² The complete interview transcripts are located in the docket at the following web address:
<https://data.ntsb.gov/Docket/?NTSBNumber=RRD24FR001>

11.0 External oversight.

11.1 The Federal Railroad Administration.

The Federal Railroad Administration (FRA) is the primary agency responsible for the creation and enforcement of federal railroad safety regulations. The FRA exercises these responsibilities for regulating railroad safety standards through the issuance, implementation, and enforcement of railroad safety regulations.

Rail safety regulations that govern FRA inspection and enforcement activities are documented under Title 49, Subtitle B, Chapter II of the Code of Federal Regulations (CFR)³.

11.2 FRA post-accident testing.

FRA post-accident drug and alcohol tests were administered to the engineer and conductor of the accident train. The results of this test were negative for both crew members. No other BNSF employees were tested.

11.3 Federal regulations relating to the accident

11.3.1 Part 217–Railroad operating rules.

Through the requirements of this part, the Federal Railroad Administration learns the condition of operating rules and practices with respect to trains and other rolling equipment in the railroad industry, and each railroad is required to instruct its employees in operating practices.

11.3.2 Part 218- Railroad operating practices.

This part prescribes minimum requirements for railroad operating rules and practices. Each railroad may prescribe additional or more stringent requirements in its operating rules, timetables, timetable special instructions, and other special instructions.

11.3.3 Part 220- Railroad communications.

This part prescribes minimum requirements governing the use of wireless communications in connection with railroad operations. In addition, this part sets forth prohibitions, restrictions, and requirements that apply to the use of personal and railroad-supplied cellular telephones and other electronic devices. So long as

³ An electronic version of Title 49, Subtitle B, Chapter II of the CFR can be found at the following web address: <https://www.ecfr.gov/current/title-49/subtitle-B/chapter-II>

these minimum requirements are met, railroads may adopt additional or more stringent requirements.

12.0 Colorado Department of Transportation.

The Colorado department of transportation, and the Colorado State patrol responded to this accident. This agency did not seek party status for this investigation but did provide their investigative documentation to assist in this investigation.⁴

E. PARTIES TO THE INVESTIGATION

The below listed Investigation representatives attended the NTSB technical review held virtually (Teams) on May 20, 2024. At the conclusion of this meeting, the party representatives attested that the information contained in this factual report regarding the NTSB's accident investigation RRD24FR001 of the BNSF Railroad derailment that occurred at Pueblo, Colorado is a factually accurate representation of the information collected during the investigation, to the extent of their best knowledge and contribution in this investigation.

1. BNSF: Michael Cook
2. BNSF: John (Duke) Remmington
3. FRA: Vence Haggard
4. BLET: Steve Facklam

Submitted by:
Richard Skolnekovich
Operations GC

⁴ Colorado DOT documentation can be found at the following docket location:
<https://data.nts.gov/Docket/?NTSBNumber=RRD24FR001>