BROTHERHOOD OF LOCOMOTIVE ENGINEERS AND TRAINMEN

A DIVISION OF THE RAIL CONFERENCE

INTERNATIONAL BROTHERHOOD OF TEAMSTERS

SAFETY TASK FORCE

INDEPENDENCE, OHIO

BEFORE THE NATIONAL TRANSPORTATION SAFETY BOARD

NTSB Accident Number: RRD24FR001

Class: Regional

July 2, 2024

Proposed findings, probable cause, and safety recommendations, in connection with the Burlington Northern Santa Fe Railway ("BNSF") train derailment near Pueblo, Colorado on October 15, 2023.

L.R. Fannon, BLET-Safety Task Force, National Chairman

S. Facklam, BLET-Safety Task Force, Party Spokesman

Final Submission

The Brotherhood of Locomotive Engineers and Trainmen ("BLET"), a division of the International Brotherhood of Teamsters ("IBT"), was assigned party status by the Board in the above-referenced investigation. BLET respectfully submits these proposed findings, probable cause, and safety recommendations to the Board for consideration.

Accident Synopsis

On October 15, 2023, at approximately 3:24 p.m. Mountain Standard Time ("MST"),[1] a southbound BNSF loaded unit coal train (C-ATMCRD0-31D) derailed thirty (30) railcars at milepost ("MP") 109.654 near Pueblo, Colorado. The derailment occurred near a main track switch on the eastern end of a railroad bridge that crossed over Interstate ("I") 25.

In the derailment, five (5) railcars struck the railroad bridge, and six (6) railcars dropped to the I-25 below. One (1) of the derailed railcars struck a northbound semi-truck in combination with a utility trailer ("combination vehicle"). As a result of the derailment, the eastern span of the railroad bridge partially collapsed over I-25's northbound lanes. The combination vehicle came to rest beneath the collapsed railroad bridge span, derailed railcars, and lading. As a result of the derailment and the ensuing collision with the combination vehicle, the semi-trucks driver was fatally injured.

Figure 1 – Overhead view of accident site *(Photo courtesy of Colorado State Police)*

[1] All times throughout this report will be in Mountain Standard Time.

Accident Narrative

Train Information:

Train C-ATMCRD0-31D consisted of two (2) locomotives positioned on the front of the train (BNSF 9015, BNSF 9231), with three (3) additional locomotives positioned at the rear of the train that were being utilized as Distributed Power Units ("DPU's).[2] The train was a loaded unit coal train [3] and was made up of 124 loaded railcars. The train weighed 17,719 tons and was 6,583 feet in length.

The train crew of the C-ATMCRD0-31D consisted of a Locomotive Engineer and a Conductor. The train originated at Antelope Mine in Converse Junction, WY with a destination of the Salt River Project's Coronado Plant in St. Johns, AZ.

Method of Operation:

When the derailment occurred, the C-ATMCRD0-31D was operating on the BNSF Pikes Peak Subdivision,[4] which is part of the BNSF Powder River Division. The BNSF Pikes Peak Subdivision extends from MP 0.0 (near 20th Street in Denver, CO) to MP 120.2 (near Pueblo, CO). The subdivision consists of segments of both single and multiple main tracks.

The primary method of operation on the BNSF Pikes Peak Subdivision is Centralized Traffic Control ("CTC") [5] with a positive train control ("PTC") [6] overlay. Additionally, there are two (2) segments of Main Track No. 2 that are designated as track warrant control ("TWC"). [7] At the derailment location, there is a maximum authorized speed ("MAS") of fifty-five (55) miles per hour ("MPH") for trains under 100 tons per operative brake ("TOB"), and forty-five (45) MPH for trains above 100 TOB.

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[2] The term "Distributed Power Unit" and/or "DP Train" is a term referring to the physical distribution of locomotives at intermediate points throughout the train. The distributed locomotives are remotely controlled from the controlling locomotive.
[3] A "unit train" is a train in which all railcars carry the same commodity and are shipped from the same origin to the same destination, without being separated or stored enroute.
[4] *See* Appendix A at the end of this report for relevant portions of the BNSF Powder River Division timetable.
[5] "Centralized Traffic Control" is a signaling system that uses block signal systems to authorize train movements.
[6] "Positive Train Control" is a system of functional requirements for monitoring and controlling train movements and is a type of train protection system.
[7] "Track warrant control" is a verbal/handwritten form of an authorization system that gives authority to a specific train to occupy a specific section of main track between named locations.

All train movements on the BNSF Pikes Peak Subdivision are coordinated by the BNSF Train Dispatcher, who is located in Ft. Worth, TX.

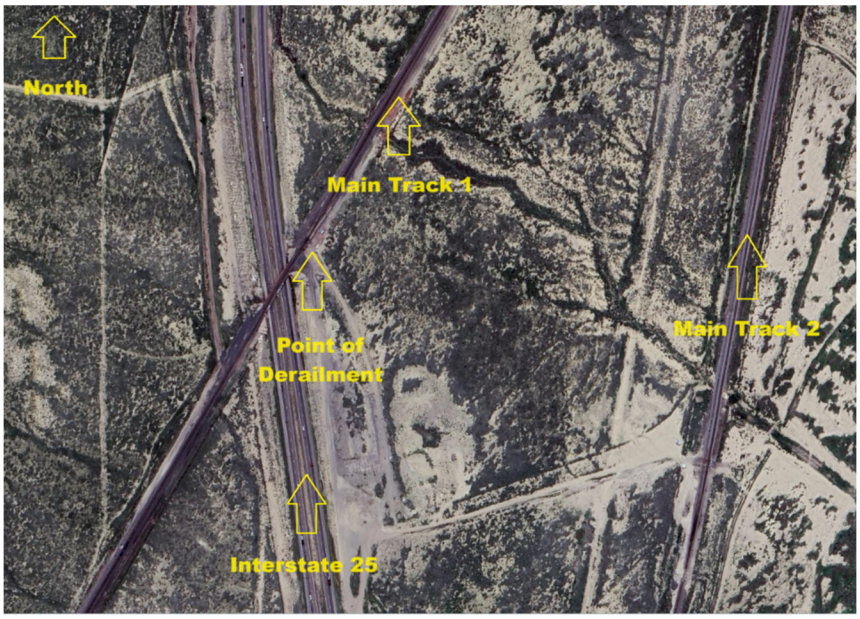

Figure 2 – Schematic of accident site *(Photo courtesy of Google Earth)*

BNSF Documents for T.Y. & E. [8] Employees:

Below is the list of the documents governing T&E employees provided by BNSF at the time of the accident and investigation:

- 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*

No additional information was provided regarding the documentation and/or rules in effect at the time of this accident.

[8] Train, Yard and Engine

Crew Information:

Locomotive Engineer:

The Locomotive Engineer began his employment with BNSF in 2018. He was subsequently promoted to Locomotive Engineer in 2019. He completed his last recertification exam on September 2, 2022. He had no medical conditions that would affect his performance and was deemed fit for duty.

Conductor:

The Conductor began his employment with BNSF in 2006. He completed his last recertification exam on January 5, 2023. He had no medical conditions that would affect his performance and was deemed fit for duty.

Movements of train C-ATMCRD0-31D:

On the day of the accident, the train crew of train C-ATMCRD0-31D went on duty at 9:00 a.m. at the BNSF Denver Depot. Upon arriving at the BNSF Denver Depot, the train crew received all necessary digital paperwork on their BNSF issued iPads. They conducted a job safety briefing in which they noted the temporary speed restrictions that they would encounter along their route. The train crew noted that their train was restricted to a MAS of forty-five (45) MPH due to being over 100 TOB. They also spoke to the inbound train crew to inquire about the condition and performance of the train. The Locomotive Engineer and Conductor departed the BNSF Denver Depot crew change point at 9:41 a.m.

According to post-accident interviews, the train crew stated that the trip was normal, and all systems were functioning properly on their train. They approached the railroad bridge located at MP 109.654 traveling in a southward direction at a speed of thirty-four (34) MPH on Main Track No. 1. The train crew stated 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 Locomotive Engineer stated that he began to apply the train's air brakes to slow the train down. He then looked at the information

screen on the locomotive's computer console and noticed that the train had experienced an undesired emergency brake application ("UDE"). [9]

The Locomotive Engineer then stated that he then placed the lead locomotive's automatic brake valve [10] handle into the emergency position until the train came to a complete stop. At this time, the Locomotive Engineer and Conductor were not aware that the train had derailed, primarily due to the clouds of dust that were obscuring the railcars behind the lead locomotives. As the dust settled, the Locomotive Engineer stated that he could see that some cars were "knocked over to the right" and that they were "pouring out their coal". He also noted that the four (4) railcars behind the lead locomotives did not appear derailed due to standing upright.

Once the train crew realized that the train had derailed, the Conductor began to issue out an "emergency" alert over the locomotive's radio. He deboarded the lead locomotive and began a walking inspection of the train. The Conductor stated that as he walked back towards the railroad bridge, he noted that the railroad bridge was partially collapsed and that there was a semi-truck and trailer under the collapsed section of the railroad bridge. The Conductor called 911 on his portable handheld radio to notify the Train Dispatcher of the situation and to request that emergency responders be notified. According to the Conductor's post-accident interview, emergency responders arrived on scene within five (5) to ten (10) minutes.

Post-Accident Toxicological Testing:

The toxicological specimens of the Locomotive Engineer and Conductor of the C-ATMCRD0-31D were sent for post-accident testing. The results of the tests were negative for both train crew members. No other BNSF employees were post-accident toxicologically tested.

[9] "Undesired Emergency Brake Application" refers to the emergency application of a train's air brakes not initiated by an action from a train crew member. Emergency application of the brakes is caused by a rapid exhaust of the train's brake pipe air system. This action results in maximum braking effort on a train.

[10] The "automatic brake valve" is a valve that sets and releases brakes on all railcars in the train by setting the train's brake pipe pressure**.** Typically, the automatic brake valve has positions for release, minimum service, a service zone, full service, continuous service, and emergency.

Locomotive Event Recorder ("LER") Evaluation:

As part of the investigation, National Transportation Safety Board ("NTSB") Operations investigation group conducted a review of the LER of the C-ATMCRD0-31D's lead locomotive (BNSF 9015). The following table captures the LER data within the final two (2) minutes prior to the derailment:

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	
109.89	16:25:01	20	Idle	Open	46 lbs.	0	
	16:25:20	0	Idle	Open	46 lbs.	0	

The LER data from the lead locomotive (BNSF 9015) established that the train handling methods utilized by the Locomotive Engineer were within the normal operating procedures for the area and investigators took no exceptions to the actions of the train crew.

Track Image Recorder ("TIR") / Outward Facing Camera Footage:

In addition to a review of the LER, the NTSB Operations investigation group conducted a review of the TIR or outward facing camera footage from the lead locomotive of the C-ATMCRD0-31D (BNSF 9015). During this review, a broken rail can be observed on the north rail of Main Track No.1 just prior to the train traversing over the area.

Figure 3 – Photo from the outward facing camera of lead locomotive (BNSF 9015) showing a broken rail on the north rail of Main Track No.1 at MP 109.654 *(Photo courtesy of NTSB Operations Group Factual Report)*

Probable Cause

The Brotherhood of Locomotive Engineers and Trainmen concludes that the probable cause of the October 15th, 2023, derailment on Main Track No.1 at MP 109.654 on the BNSF Pikes Peak Subdivision was a break in the north rail of Main Track No.1.

Figure 4 – Photo showing the break in the thermite weld at MP 109.654 *(Photo courtesy of NTSB)*

Additionally, there were two (2) significant causal factors to this accident:

- According to the NTSB Track Group Factual report findings, the segment of rail that was compromised was sent to the NTSB laboratory for analysis in December of 2023. Their findings concluded that this section of rail had suffered a prior break on May 24, 2023, in which a thermite weld was used to repair it. This thermite weld repair suffered contamination along the edges during its application. The contamination created a weak point that, over the course of the next 144 days of rail traffic and weather, suffered cracking and micro fractures until catastrophic failure occurred on October 15th, 2023.
- Although this rail break occurred on a section of track that was overlaid with both CTC and PTC, the broken rail did not result in a Stop signal governing train movements or a track indication for the Train Dispatcher. This notification failure was due to the broken rail occurring between the opposing signals of a Control Point within CTC. Essentially a "blind spot" is created between these opposing signals, and no warnings are provided to the Train Dispatcher or approaching trains.

Proposed Recommendations

To BNSF:

1. Increase the frequency for main track inspections over BNSF tracks until regulations or guidance are published for appliances that could alert an operating train crew to compromised track, broken rail within opposing signals of a Control Point, or damage to its infrastructure.

To the Federal Railway Administration ("FRA"):

1. Implement rulemaking to revisit the value of guidance, regulations or orders for currently unregulated appliances, that may mitigate or prevent similar accidents in the future such as:
    - switch position monitoring devices or indicators
    - broken rail indicators to detect breaks between opposing signals of a Control Point

- radio, remote control, or other power-assisted switches
- hot box, high water, or earthquake detectors
- remote control locomotive zone limiting devices
- slide fences
- grade crossing video monitors
- track integrity warning systems; and other similar rail safety technologies

2. Develop and implement a program to enhance technology within CTC territories that identifies broken rail within opposing signals of a Control Point. Require all Class I rail carriers to participate in the development of this technology.

3. Until regulations or guidance are published for appliances or technology that could alert an operating crew to compromised track or its infrastructure, or broken rail within a Control Point, increase the minimum required frequency for main track inspections for all rail carriers.

To NTSB:

1. Due to the number of significant accidents on multiple Class I rail carriers in the US, open additional special investigations into the organization and safety culture of all Class I rail carriers. These special investigations could be done on an individual basis with each rail carrier (with involvement of management, employees and rail union labor leaders) with a goal of ensuring that they all have active and productive safety plans and policies, as well as a safety culture that fosters good working relationships, with participation and input from employees and rail union labor leaders at all levels.

CERTIFICATE OF SERVICE

I certify that on July 2, 2024, I have electronically served upon Mr. Richard Skolnekovich [redacted]), Investigator in Charge, National Transportation Safety Board, a complete and accurate copy of these proposed findings regarding the October 15, 2023, BNSF train derailment which occurred in the vicinity of Pueblo, CO (NTSB Docket No. RRD24FR001). An electronic copy of same was also forwarded to the individuals listed below in this certificate of service, as required by 49 CFR § 845.27 (Proposed Findings)

Mr. Richard Skolnekovich
Investigator-in-Charge, RRD24FR001
National Transportation Safety Board
490 L'Enfant Plaza, SW
Washington, DC 20594
[redacted]

Vence Haggard, FRA
Regional Administrator
[redacted]

Michael Cook, BNSF
General Director of Safety
[redacted]

Brad Warren, SMART-TD
SMART-TD National Safety Team
[redacted]

Gene Thompson, BMWED
Investigator
[redacted]

Sincerely yours,

[redacted]

L. Randy Fannon
BLET National Vice President
Safety Task Force National Chairmen
Brotherhood of Locomotive Engineers & Trainmen
[redacted]

Appendix A

BNSF Railway Safety Vision

We believe every accident or injury is preventable. Our vision is that BNSF Railway will operate free of accidents and injuries. BNSF Railway will achieve this vision through:

A culture that makes safety our highest priority and provides continuous self-examination as to the effectiveness of our safety process and performance...

A work environment, including the resources and tools, that is safe and accident-free where all known hazards will be eliminated or safe-guarded...

Work practices and training for all employees that make safety essential to the tasks we perform...

An empowered work force, including all employees, that takes responsibility for personal safety, the safety of fellow employees, and the communities in which we serve.

BNSF RAILWAY

Powder River Division

Timetable No. 4

In Effect at 0800
Mountain Continental Time
October 26, 2022

Division General Manager
Leif Smith
Denver, CO
[redacted]

General Director Transportation
Chris Sanford
Denver, CO
[redacted]

TOC Home

SOUTHWARD	Length of Siding (Feet)	Station Nos. UPRR	Station Nos. BNSF	Mile Post	Siding Switch	Pikes Peak Subdivision MAIN LINE STATIONS	Rule 4.3	Type of Oper	Line Seg.	Miles to Next Stn.	NORTHWARD
	Adjoining Sub: Brush Subdivision Boundary: Pikes Peak, MP 0.0 / Brush, MP 541.7										
	8,216 MT2			0.0		20TH STREET	JX	CTC 2 MT	477	1.6	
				1.6		WALNUT STREET Adj. RR: UP, MP 1.5	JX			0.8	
	7,131 MT2			2.4		8TH AVE.				2.1	
		WD 635	41134	4.5		SOUTH DENVER Adj. RR: UP, MP 4.5	J	X(2)		3.5	
		WD 631	57680	8.0		ENGLEWOOD	X(2)	CTC 3 MT		4.3	
		WD 629	57660	12.3		LITTLETON	X(2)			6.7	
			57600	19.0		BIG LIFT	BX			5.0	
	4,219 MT2	WD 614	57590	24.0	23.6 24.5	SEDALIA	X	CTC MT1		0.6	
				24.6		CP 246				3.4	
	7,653 MT1	WD 611	57585	28.0	27.2 28.7	ORSA (MT1)		CTC AAS MT2		4.5	
		WD 606	57580	32.5		CASTLE ROCK				16.5	
		WD 590	57560	49.0		SPRUCE (MT1)				2.9	
		WD 587	57555	51.9		PALMER LAKE				5.1	
	6,807	WD 582	57550	57.0	56.5 57.9	MONUMENT				8.0	
	7,057	WD 575	57540	65.0	64.6 66.1	ACADEMY				7.4	
				72.4		N. COLORADO SPRINGS				2.1	
	20,174	WD 565	41064	74.0	72.3 76.3	COLORADO SPRINGS		CTC		0.4	
				74.4		BIJOU	X(2)			1.1	
				75.5		CIMARRON				0.8	
				76.3		S. COLORADO SPRINGS				2.7	
	5,459	WD 561	57660	79.0	78.2 79.3	KELKER				5.4	
		WD 556	57654	84.4		CREWS				3.6	
		WD 552	57650	88.0		FOUNTAIN		CTC 2 MT		6.3	
				94.3		NORTH NIXON (MT2) Adj. RR: UP, MP 94.0	J			0.3	
				94.8		SOUTH NIXON (MT2) Adj. RR: UP, MP 94.4	J			0.7	
		WD 545	57640	95.3		BUTTES	X	CTC MT1		2.8	
		WD 542	57635	98.1		WIGWAM (MT2)		CTC AAS MT2		9.8	
				107.9		N. BRAGDON (MT2)				0.9	
		WD 523		108.8		TAPP (MT2) UPRR Control Point RGCP110				0.2	
	5,957	WD 524	57619	109.0	108.4 109.7	BRAGDON (MT1)	X(2)			0.7	
				109.7		SOUTH BRAGDON (MT1)		CTC 2 MT		6.9	
				116.6		N. PUEBLO (MT1)				1.8	
				118.4		CANON CITY JCT (MT1) Adj. RR: UP, MP 118.4 Adj. RR: RRRR, MP 118.4	J			0.8	
		MX 905	57200	119.2		SOUTH PUEBLO (MT1)	BCT			1.0	

SOUTHWARD	Length of Siding (Feet)	Station Nos. UPRR	Station Nos. BNSF	Mile Post	Pikes Peak Subdivision MAIN LINE STATIONS	Rule 4.3	Type of Oper	Line Seg.	Miles to Next Stn.	NORTHWARD
				120.2 MT1 118.2 MT2	PUEBLO JCT UPRR Control Point RGCP108 - MP 120.2 MT1 / MP 118.2 MT2 RGCP107 - MP 120.3 MT1 / MP 118.3 MT2	M	CTC 2 MT	477	119.3*	
	Adjoining Subs: Pueblo & Spanish Peaks Subdivision Boundary: Pikes Peak, MP 120.3 / Pueblo MP 617.5 / Spanish Peaks, MP 120.3									

*119.3 miles is measured on MT1.

Mountain Continental Time in effect on Pikes Peak Subdivision

Radio Call-in

Radio Channel 039 in service Denver Yard - 31(X)

Denver Yd – 31(X)	Rennick Yardmaster – 256

Radio Channel 066 in service 20th St to Englewood

Denver – 31(X) Rennick Yardmaster – 256	South Denver – 32(X)

Radio Channel 036 in service Englewood to Pueblo Jct

Big Lift - 29(X)	Castle Rock - 31(X)	Colorado Springs – 32(X)

Pueblo – 34(X) / Rennick Yardmaster - 256

Radio Channel TX90 / RX45 in service Big Lift for switching

Radio Channel TX 010/RX 055 in service Pueblo for switching

Rennick Yardmaster - 256

Radio Channel 030 in service Pueblo for switching

Rennick Yardmaster - 256

Emergency - Call 911

(Locations identified in italics do not have 911 functionality)

Dispatcher X=0, RFE Desk X=1, Mechanical Desk X=2, Customer Support X=3, Detector Desk X=5, PTC Desk X=9

Denver:

Radio Channel 031 in service Mechanical and MW Employees in Denver Yard, including the Locomotive Facility.

Radio Channel 039 in service for industry jobs/inbound/outbound crews when working with utility men and when train is on other than Main Track, Coal 1 or Coal 2; yardmasters 31st Street, 38th Street and Rennick; inside/outside hostlers when communicating with yardmasters.

Radio Channel 066 in service at Prospect Jct, Main Track, Coal 1 and Coal 2 and between 20th Street and Englewood.

Radio Channel TX 017/RX 076 in service Switch Yard Rennick, all industry jobs in the Denver Terminal Complex, and when industry jobs leave the Main Track to perform industrial switching.

Radio Channel 078 in service as yard information channel including all BNSF crew haulers and contract drivers.

Radio Channel TX 046/RX 079 in service Switch Yard (31st and 38th Streets) unless instructed by yardmaster.

Radio Channel 036 will be the primary channel between Englewood and Pueblo Jct. The UPRR dispatcher will request that employees working on UPRR-dispatched trackage change to channel 054 between Englewood and Bragdon or channel 092 between Bragdon and Pueblo Jct to receive information.

Employees working on UPRR dispatched trackage must change to appropriate channel when necessary to report operational conditions.

Channel 036 must be monitored on portable radios while communicating with UPRR on other radio channels.

UP DS 386 call-in *86 (channel 054)
UP DS 380 call-in *80 (channel 092)

Dispatcher Information

20th Street to Englewood—817-867-7087, Fax 817-352-7028
Englewood to Pueblo Jct—817-867-7016, Fax 817-352-7024
UPRR DS 380 (Littleton to Palmer Lake & Bragdon to Pueblo Jct)
800-726-1176, 1-531-210-4380

TOC Home

1. Speed Regulations

See Item 1 of the System Special Instructions for additional speed restrictions.

1(A). Speed—Maximum

Main Track	Frt Under 100 TOB	Frt 100 TOB & Over
MP 0.0 to MP 80.6	45	45
MP 80.6 to MP 84.4	55	45
MP 84.4 to MP 120.3, MT1	55	45
MP 84.4 to MP 118.2, MT2	50	45

UPRR Dispatched Temperature Restrictions
Level 1 Heat Restriction:

Passenger trains, lite engines and freight trains averaging less than 90 tons per car or platform	No additional restrictions *
Freight trains averaging 90 tons ore more per car or platform	50

* See Item 2-F paragraph following the type of equipment table UPRR System Special Instructions to determine the number of platforms on various series of intermodal equipment.

1(B). Speed—Permanent Restrictions

	Frt
MT1 (20th Street to Pueblo Jct)	
MP 0.0 to MP 1.5	20
MP 1.5 to MP 4.6	30
MP 21.7 to MP 24.9	35
MP 24.9 to MP 30.3	40
MP 30.3 to MP 32.6	30
MP 32.5 to MP 36.5, ribbon rail trains handling continuous welded or jointed rail, on curves	25
MP 32.6 to MP 32.8	40
MP 39.5 to MP 44.3	40
MP 45.3 to MP 48.8	35
MP 48.8 to MP 52.0	30
MP 89.2 to MP 89.5	50
MP 90.4 to MP 92.9	45
MP 118.3 to MP 120.0	20
Single Track (Palmer Lake to Crews)	
MP 52.0 to MP 55.4	30
MP 52.0 to MP 55.4, 100 TOB and over	25
MP 55.4 to MP 60.3	25
MP 60.3 to MP 68.4	30
MP 74.7 to MP 76.6	30
MP 76.0 to MP 76.2, ribbon rail trains handling continuous welded or jointed rail, on curves	25
MP 76.6 to MP 80.6	40
MT2 (Pueblo Jct to 20th Street)	
MP 118.2 to MP 112.8	45
MP 95.1 to MP 94.8	40
MP 89.6 to MP 84.7, MT2, HER over street and highway crossings	35
MP 88.3 to MP 88.1	35
MP 86.3 to MP 85.1	45
MP 50.7 to MP 50.5	40
MP 45.4 to MP 45.2	40
MP 44.7 to MP 43.3	30
MP 44.2 to MP 43.4, ribbon rail trains handling continuous welded or jointed rail, on curves	25
MP 32.6 to MP 32.4, MT2, HER over street and highway crossings	40
MP 32.4 to MP 31.7	40
MP 16.5 to MP 16.2	40
MP 4.6 to MP 1.5	30
MP 1.5 to MP 0.0	20

Key Trains

Maximum speed within the following municipal area limits unless otherwise restricted:	Frt
MP 0.0 to MP 22.0	35
MP 65.0 to MP 81.0	35

1(C). Speed—Sidings and Main Track Switches and Turnouts

Trains and engines must not exceed 10 MPH through turnouts unless otherwise indicated. Trains and engines using sidings must not exceed the siding turnout speed unless otherwise indicated.

	Frt Under 100 TOB	Frt 100 TOB & Over
MP 0.0, 20th St, siding turnouts	20	20
MP 4.5, South Denver, turnouts	30	25
MP 8.0, Englewood, turnouts	40	25
MP 12.3, Littleton, turnouts	40	25
MP 51.9, Palmer Lake, MT2, turnout	30	30
MP 57.0, Monument, siding turnouts	25	25
MP 65.0, Academy, siding turnouts	30	30
MP 72.4, North Colorado Springs, siding turnout	30	30
MP 74.4, Bijou, north crossover	30	30
MP 74.4, Bijou, south crossover	20	20
MP 74.4, between Bijou and Cimarron, siding track	20	20
MP 75.5, Cimarron, crossover	30	30
MP 76.3, South Colorado Springs, siding turnout	30	30
MP 79.0, Kelker, siding turnouts	30	30
MP 84.4, Crews, MT1, turnout	40	40
MP 94.3, North Nixon, MT2, turnout	15	15
MP 94.6, South Nixon, MT2, turnout	15	15
MP 108.8, Tapp, crossover	30	30
MP 109.0, Bragdon, north crossover	40	40
MP 109.0, Bragdon, south crossover	30	30

1(D). Speed—Other

Trains and engines must not exceed 10 MPH through turnouts unless otherwise indicated. Trains and engines must not exceed 10 MPH on other than main track (GCOR 6.28) unless otherwise indicated.

2. Bridge and Equipment Weight Restrictions

Maximum Gross Weight of Car

20th Street to Pueblo Yard ..... 143 tons, Restriction A
Kountry Line, 8th Ave to end of track ... 143 tons, Restriction E

TOC Home

Location	Track Name	Track No.
Six-axle locomotives are restricted on the following tracks:		
	Old Main Track	9994
Castillo		
Colorado Springs		

3. Type of Operation

Main Track

MP 0.0 to MP 4.5	CTC, 2 MT
MP 4.5 to MP 12.2	CTC, 3 MT
MP 12.2 to MP 52.0	MT1 - CTC MT2 - TWC ABS, DT - NWD
MP 52.0 to MP 84.4	CTC
MP 84.4 to MP 94.4	CTC, 2 MT
MP 94.4 to MP 107.9	CTC - MT1 TWC ABS - MT2, NWD
MP 107.9 to MP 118.2	CTC, 2 MT
MP 118.2 to MP 120.3	CTC—MT1

Interlockings
The operating rules, timetables and special instructions of the railroad dispatching the track govern unless otherwise instructed (GCOR/MWOR 1.14).

Milepost	Type	Notes
120.3 (MT1)	Manual	Controlling RR: UP
118.2 (MT2)	Manual	Controlling RR: UP

4. Subdivision Specific Rules Information

Safety Overlay Systems in Effect:

- Positive Train Control (PTC)
  - MP 0.0 to MP 12.2 (CP Littleton), All Main Tracks
  - MP 12.2 (CP Littleton) to MP 52.0 (CP Palmer Lake), MT1
  - MP 52.0 (CP Palmer Lake) to MP 91.2, All Main Tracks
  - MP 91.2 to MP 119.2 (CP South Pueblo), MT1
- Hi-Rail Limits Compliance System (HLCS)

Energy Management Systems in Effect

- Trip Optimizer (TO)

GCOR/MWOR 1.14, Employee Jurisdiction—20th Street to Pueblo Jct, BNSF and UP trains and engines will use joint trackage and are governed by BNSF Timetable and System Special Instructions.

GCOR 5.8.2, Sounding Whistle—When operating on Union Pacific tracks, all whistle posts marked with an **X** require sounding the whistle signal regardless of the type of crossing the train is approaching.

GCOR 5.8.4, Whistle Quiet Zone—Whistle signal 5.8.2(7) is not required at the following crossing locations. All other whistle requirements remain in effect.

Location	Milepost	Crossing Name
Denver, CO	1.38	Walnut Street
Castle Pines, CO	24.57 (MT2)	Highway 67/Manhardt St
	UP 25.80 (MT2)	Private Crossing
	UP 26.58 (MT2)	Private Crossing
	UP 27.20 (MT2)	Private Crossing
	UP 27.75 (MT2)	Private Crossing
	UP 28.02 (MT2)	Private Crossing
	UP 29.33** (MT2)	Atrium Drive
Monument, CO	55.82	2nd Street
Security, CO	82.78	Main Street
	84.02	Fountaine Blvd
Fountain, CO	86.20 (MT1)	Duckwood Road
	86.21 (MT2)	Duckwood Road
	87.12 (MT2)	Comanche Village Drive
	87.14 (MT1)	Comanche Village Drive
	88.23 (MT2)	Ohio Avenue
	89.61 (MT2)	Link Road

** Wayside Horn System (WHS) - WHS includes a wayside horn, activated by the approaching train, which sounds a warning in conjunction with the automatic crossing devices. When the crossing signals are activated, the WHS will automatically sound a horn at the crossing.

To confirm WHS is functioning, an indicator flashes at the crossing. After indicator is observed to be flashing, whistle signal Rule 5.8.2(7) is no longer required.

The train horn must be sounded if the wayside horn indicator is not visible approaching the crossing or if the wayside horn indicator, or an equivalent system, indicates that the system is not operating as intended.

GCOR 6.2, Initiating Movement—All crews need to obtain both BNSF and UPRR GTBs.

GCOR/MWOR 6.19, Flag Protection—When flagging is required the distance will be 2.0 miles.

GCOR/MWOR 10.3, Track and Time—A sign reading "Track and Time Point One" has been placed at the clearance point of MT2 at South Denver. Track and Time will be issued as follows:

Track and Time between Northbound Controlled Signal South Denver, Switch Yes and Track and Time Point One South Denver.

A sign reading "Track and Time Point One" has been placed at the clearance point of MT2 at Littleton. Track and Time will be issued as follows:

Track and Time between Southbound Controlled Signal Littleton, Switch Yes and Track and Time Point One Littleton.

ABTH Rule 100.13, Running Air Brake Test—Upon departing Denver, southward trains must make a running air brake test before arriving Big Lift to determine holding force of train brakes. If brakes do not operate properly, stop the train, correct the problem and perform another running air brake test.

Helping Stalled DP Trains—Stalled distributed power trains that must add helpers to the head end of the train under the direction of the specific subdivision Operating Officer are to operate as outlined below.

ABTH Rules 102.11, 102.11.3, and 102.11.4 are amended only for this move to read: