NATIONAL TRANSPORTATION SAFETY BOARD

Office of Railroad, Pipeline and Hazardous Materials Investigations
Washington, DC

Operations and System Safety Factual Report

RRD18FR010

Dallas, Garland and Northeastern (DGNO) Railroad Conductor Fatality

Dallas, TX
August 13, 2018

Accident

NTSB Accident Number:	RRD18FR010
Keys Number:	98047
Accident Type:	Conductor Fatality
Date of Accident:	August 13, 2018
Time of Accident:	12:37 a.m. (CDT)
Railroad Owner:	Union Pacific Railroad
Railroad Operator:	Dallas, Garland and Northeastern Railroad (DGNO)
Freight Train Crew Members:	1 Engineer, 1 Conductor
Location of Accident:	Dallas, Texas; Cadiz Yard

Investigative Team

Tomas Torres

Investigator-in-Charge

National Transportation Safety Board

Michael Hoepf

System Safety Investigator

National Transportation Safety Board

Bret Strickland

Operating Practices Inspector – Investigator in Charge –

Federal Railroad Administration

Michael Lundell

Vice President, Compliance and Safety

Genesee & Wyoming Railroad Services, Inc.

John Dunn

Safety Team, Vice General Chairman

SMART Transportation Division

Synopsis

On August 13, 2018, at about 12:23 a.m. central daylight time, a Dallas, Garland and Northeastern Railroad, Inc. (DGNO) railroad conductor was fatally injured during a shoving in Dallas, TX. DGNO is a subsidiary of the Genesee and Wyoming Inc. (G&W) a holding company that owns short line railroads throughout the US. DGNO has a joint use agreement with Union Pacific (UP). The agreement allows the DGNO the use of Cadiz Yard which consists of three-yard tracks that are located in the downtown area of Dallas, TX.

Weather Report

An Automated Surface Observing System (ASOS) was located at Dallas Love Field Airport (DAL)2 in Dallas, Texas, and was located about 6 miles north-northwest of the accident location at an elevation of about 485 feet. Human-augmented reports from DAL during the times surrounding the accident time are presented here. Observations throughout the period identified southeast surface winds of 9 to 10 knots (~10 to 12 miles per hour), unlimited visibility, air temperature of 24° Celsius (~75° Fahrenheit), and a dew point depression of 1° Celsius.

Events Prior to the Accident

The yard crew of Yard Job R713 went on duty at Mockingbird Yard on 08/12/2018 at 6:00 p.m. CDT. The yard crew of yard job R713 included a Locomotive Engineer and a Conductor. 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 60 hours rest. The Conductor received 60 hours 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.[1]

Upon going on duty, the crew received a job briefing from the Trainmaster on which customers to service and transported the crew via company auto to Cadiz Yard. When the crew arrived at Cadiz yard, they had a job briefing on the switching operations that needed to be performed.

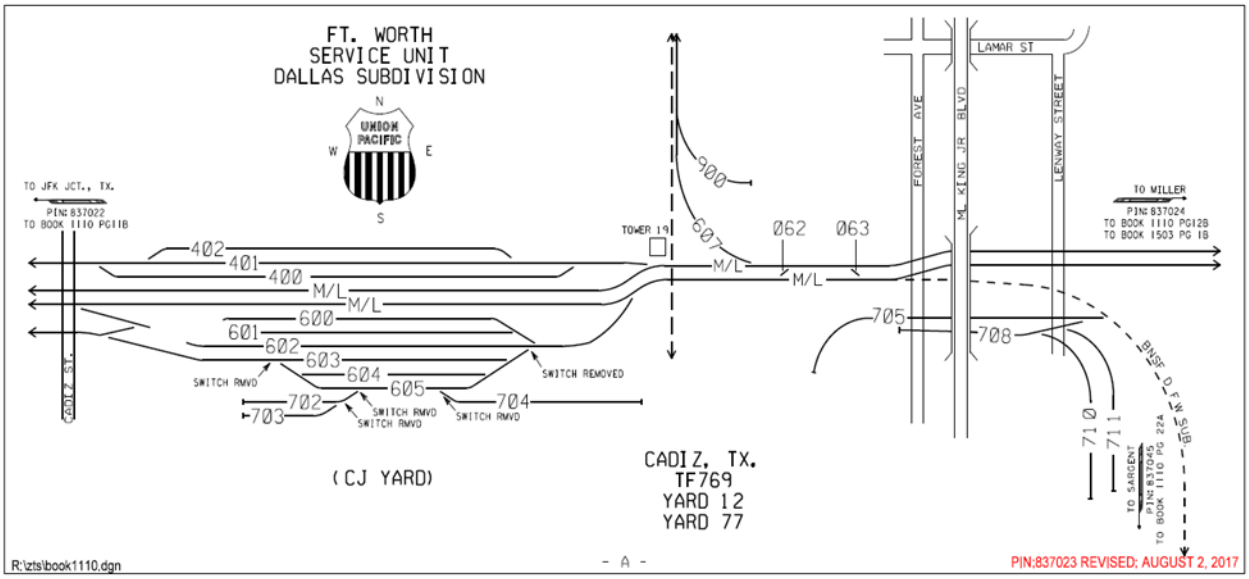

Figure 1 Cadiz Yard runs east to west and includes tracks 400 through 402, the tracks are adjacent to the Union Pacific Railroad Double Main Tracks.

The train crew then lined the derail in track No. 400 to the non-derailing position, started up the locomotive, performed a standing locomotive brake test, removed the handbrakes, pulled cars out of Track No. 400 and set 18 of them into track No.401.[2] Then shoved into track No. 400

[1] For Additional information on Hours of Service of Railroad employees refer to title 49 CFR Part 228.

[2] **101.6 Standing Locomotive Air Brake Test**
A. Location of Test
Conduct a Standing Locomotive air brake test when:
• Taking charge of an unattended locomotive(s)

leaving room for 1 car to be placed in this track later. The crew then moved the locomotive to track No. 401 and coupled to the cars they were taking East to American Iron. The Yard Job pulled out over the East end of Cadiz Yard after they received permission, and a signal to proceed onto the UP Main Track. Once the train movement cleared the UP Main Track switch the crew stopped, installed the end of train device (EOT), restored the UP main track switch to normal position (straight track) and proceeded East to the industry tracks. [3]

The Accident

After the crew delivered the railroad cars to American Iron, the engineer and conductor had a job briefing regrading which track they would be returning to at Cadiz Yard. The engineer and conductor agreed that since they departed out of track 401 the switch would be lined for that track, therefore shove the cars that they had a hold of into track 401. The crew departed American Iron with the locomotive and 9 gondolas loaded with scrap iron. The engineer said they pulled out past Dallas Area Rapid Transit (DART) and stopped at the signal authorizing movement onto the UP-Main Track. Once their movement was authorized by a signal indication to proceed , they pulled East through the interlocking which they needed to do to get a signal to travel back West.[4]

Note: When taking charge of an unattended locomotive(s) and information is received in writing on the Train Information Sheet (TIS-01) that the standing locomotive brake test has been performed, another standing locomotive brake test is not required. Comply with rule 101.13 Running Locomotive Brake Test.
• After assembling a multiple unit locomotive consist.
• Adding locomotive to a consist
• Other than rear locomotive(s) is removed from consist
• Locomotive consist is rearranged
or
• Changing operating ends (except as provided for in Rule 101.6.1)

[3] **End of Train Telemetry System**
A system of components that determines the rear car brake pipe pressure and transmits that information to the display on the controlling unit.

[4] Interlocking-At a point where one or more routes meet or cross, an arrangement of signals and signal appliances so interconnected that their movements must succeed each other in proper sequence, train movements over all routes being controlled by signal indication.

After talking with the UP-Train Dispatcher and receiving a signal indication they proceeded to shove West to Cadiz Yard.

Cadiz yard. The Engineer said "The last time we had discussed anything about the plan was at American Iron when he was switching out the KCS cars.[5] "He was deciding if we needed them on the head-end or if we needed them on the bottom when we come out. And I told him, I said, you need to have them on the head end because you're -- because we came out of 401, and that was the track that we would be putting the KCSes in" (page 17). The crew had planned to shove the 9 loaded gondolas into track No. 401 when they returned from American iron to Cadiz yard since the they had left the switch lined for that track. [6]

When they arrived at the Main Track switch to enter Cadiz Yard, the conductor stopped the movement via radio and lined the switch from the Main Track into Cadiz Yard tracks. The Conductor then instructed the Engineer to come ahead about 3 cars lengths (continuing West as a shoving movement).[7] After moving ahead about 1-1/2 car lengths, the conductor told the engineer via radio, he was lined up to come ahead (continue shoving West) about 30 car lengths.[8] The Engineer shoved a few car lengths and the movement came to an abrupt stop and felt that a hard coupling as the movement came against the cars in track 400. The Engineer stated that he never saw any kind of light or other signs from the Conductor to indicate his position relative to the movement he was directing by radio.

[5] KCS refers to Kanas City Southern Railroad cars.
[6] *Switch providing access* means a switch which if traversed by rolling equipment could permit that rolling equipment to couple to the equipment being protected.
[7] Refer to Appendix Union Pacific Operating Rule 6.5 shoving movements and FRA regulation 218.99 for additional information.
[8] Cars lengths is in reference to a standard railroad car length of 50 feet.

Figure 2 This is the switch that governs movements into track 400 or for a diverging route into tracks 401 or 402. Photo shows switch target (red) is perpendicular to track 400 indicating that the switch is lined for diverging route for tracks 401 or 402.

The Engineer called the Conductor via radio without any response. He then called the Union Pacific Train Dispatcher and told him that he had lost contact with the Conductor. He told the Union Pacific Train Dispatcher that he was going to secure the locomotive and go look for him. The Engineer secured the locomotive and stated that he took out his cell phone and started walking west looking for the Conductor, using his cell phone for a light. After he reached the end of the cars they were handling that had come against the cars standing in track No. 400, he found the Conductor (partially) underneath the rear car of the cut of cars they were shoving. He immediately called for 911 help and tried to see if he could help the Conductor. Emergency

services and a DNGO Manager arrived on the scene and began to investigate.

In direction of travel (west), the Engineer was seated at the controls on the righthand side of the locomotive. There were nine gondola railroad cars attached ahead of the locomotive.

Figure 3 This is the actual accident train. View is from the righthand side of the locomotive from the engineer controls looking west. There were 9 gondolas cars loaded with scrap iron coupled ahead of the locomotive.

The DGNO General Manager was dispatched to the accident and found the conductor's switch keys and cap near the derail in track 400. The derail was found locked and lined for the

derailing position.[9]

Figure 4 NTSB Photo, on the left is the yellow derail in track 400. The blue arrow points to white paint on the ground, the location where the conductor switch keys were found.

This job had been continuing for about one week under a new schedule due to an increase in business levels. The conductor had been on this job duty for about 3-4 months. The Engineer

[9] *Effective locking device* when used in relation to a manually operated switch or a derail means one which is:

(1) Vandal resistant;

(2) Tamper resistant; and

(3) Capable of being locked and unlocked only by the class, craft or group of employees for whom the protection is being provided.

was assigned to this job the previous Friday. The Engineer stated that he had worked with the Conductor a few times before, not sure how long ago, but started working with him last week. The Engineer stated that the conductor seemed "good-to-go", he saw nothing that would indicate otherwise. The crew had more work to do after this move, it was not the last move of the day.

The Engineer stated that the locomotive's gen set No. 2 was down, they had to leave some of the doors on the locomotive open to keep it from overheating. When they returned from switching, they were to shove into track No 401, leave 3 cars, go to track No. 402, leave 6 cars, go to track No. 400 with the locomotive, pull out cars and go East again to switch the industries.

The Engineer was asked if he sees employees walking with their back to equipment. He stated that he did occasionally. During the interview the Engineer was asked about safety briefings, he said they do talk about SOFA as needed, briefings as needed when something came up.[10]

GDNO operational testing records for the Conductor show that he was tested for shoving movements on June 14, 2018 and July 23, 2018. Operational testing records for the Engineer did not show any tests for shoving movements.

Method of Operation

1. To work on Cadiz Yard, no need to notify the UP dispatcher of what the crew is doing or will do.
2. Only need to notify the dispatcher when the crew is going to use the UP mainline.
3. UP Cadiz Yard is leased to DGNO under the terms of a joint use agreement.
4. At Cadiz Yard DGNO crew follows the DGNO safety rules and follows whatever UP safety bulletin that they have for that yard.

[10] Switching Operations Fatality Analysis

5. UP is responsible for the track maintenance.

6. Field or Ops testing for DGNO includes “coach and counsel” and managers mark that as a

Event Recorder

The event recorder showed that from the time the shoving movement was initiated at 00:22:06 hours until impacting the cars in track 400 at 00:23:18 hours, the movement covered 633.5 feet and spanned one minute and twelve seconds. When the movement first initiated it travelled about 75 feet at 4 mph. As the speed increased to eight miles per hour, the engineer stepped the throttle down to idle then back to position one, maintaining a speed of 9 MPH until the movement suddenly stopped at 00:23:18.

Outward Facing Camera

Review of the outward facing camera on the locomotive did not capture the Conductor actions as the crew shoved into Cadiz Yard and leading up to the accident. The camera was facing the cars they were handling which blocks the view, and the darkness prevented any useful information.

Operating Documents

The *General Code of Operating Rules* (GCOR), the *Union Pacific Special Instructions*, the *Dallas, Garland & Northeastern Railroad, Inc. Timetable No.8*, and Genesee & Wyoming specific rules governed the crews.

The Dallas, Garland & Northeastern Railroad, Inc. operating rules and supplements were as follows:

- *General Code of Operating Rules,* Sixth Edition, effective April 1, 2015
- *Union Pacific System Special Instructions*, effective June 01, 2018
- *Dallas, Garland & Northeastern Railroad, Inc. Timetable No.8,* effective October 15, 2016

- *Genesee & Wyoming Safety Rules*, effective December 31, 2006
- *Genesee & Wyoming Airbrake and Train Handling Rules*, effective January 01. 2016

FRA Toxicological Testing Results

Toxicological test for both the Engineer and Conductor had negative test results.

Engineer Certification Information

Hire Date	12/09/09
Engineer Certification Date	09/30/16
Engineer Certification Expiration Date	09/30/19
Hearing Exam	07/29/15
Vision Exam	07/29/15
Territory Qualification	
Knowledge Rules Exam	11/19/17
Performance Skill Evaluation	09/16/16
Last Operations Test	02/05/18

Conductor Certification Information

Hire Date	08/10/17
Conductor Certification Date	12/19/17
Conductor Certification Expiration Date	12/19/20
Hearing Exam	12/18/17
Vision Exam	12/18/17
Territory Certification Rules	12/14/17
Knowledge Rules Exam	08/31/17
Performance Skill Evaluation	
Last Operations Test	07/29/18

Engineer 10 Day Work History

On Duty- Date/Time	Off Duty- Date/Time	Total Time on Duty
08/05/18- 6:00 p.m..	08/06/18- 5:30 a.m.	11 hours, 30 minutes
08/06/18- 6:00 p.m.	08/07/18- 6:00 a.m.	12 hours
08/07/18- 6:00 p.m.	08/08/18- 5:30 a.m.	11 hours, 30 minutes
08/08/18- 6:00 p.m.	08/09/18- 12:00 a.m.	6 hours
08/09/18- 6:00 p.m.	08/10/18- 6:00 a.m.	12 hours
08/12/18- 6:00 p.m.	08/13/18- 12:23 a.m., time of accident	

Conductor 10 Day Work History

On Duty- Date/Time	Off Duty- Date/Time	Total Time on Duty
08/05/18- 6:00 p.m..	08/06/18- 5:30 a.m.	11 hours, 30 minutes
08/06/18- 6:00 p.m.	08/07/18- 6:00 a.m.	12 hours
08/07/18- 6:00 p.m.	08/08/18- 5:30 a.m.	11 hours, 30 minutes
08/08/18- 6:00 p.m.	08/09/18- 12:00 a.m.	6 hours
08/09/18- 6:00 p.m.	08/10/18- 6:00 a.m.	12 hours
08/12/18- 6:00 p.m.	08/13/18- 12:23 a.m., time of accident	

Appendix

Union Pacific Operating Rule

6.5 - Shoving Movements

Change entire rule to read:

A. Providing Protection Prior to Initiating Shoving Movement

Equipment must not be shoved until the engineer and the employee protecting the movement have completed a job briefing concerning how protection will be provided. Equipment must not be shoved until it is visually determined that:

- Direct communication with a crew member of the train.
- or
- Receiving information about the train from the train dispatcher or control operator.
- Rule 9.14.2 Controlled Block System (CBS).
- Portion of track to be used is clear of equipment or conflicting movements.

The track will remain clear to the location where movement will be stopped.

Employees may be relieved from providing visual protection when:

- Superintendent Bulletin specifies tracks that will be protected with shove lights or monitored cameras.
- Picking up a crew member in accordance with Rule 6.6 (Back Up Movements).

B. Providing Protection During Shoving Movement

When making a shoving movement, the employee protecting the movement must see the route is clear and:

- Be in a position to continuously observe the leading end of the equipment until it is stopped.
- or
- Walk adjacent to or ride the leading end of the equipment.

Employee must be in position, provide visual protection of the equipment being shoved and participating crewmembers must
not engage in unrelated tasks while making a shoving movement. The employee protecting the shove must not turn their back
on the movement or walk backwards ahead of the movement.

Radio communications for shoving movements must specify the direction and distance and must be acknowledged when
distance specified is more than four cars.

MOVEMENT MUST STOP WITHIN HALF THE DISTANCE SPECIFIED UNLESS ADDITIONAL INSTRUCTIONS ARE RECEIVED.

Shoving movements over road crossings must be made in accordance with Rule 6.32.1 (Providing Warning Over Road
Crossings).

C. Speeds When Shoving

When cars are shoved on a main track or controlled siding in the direction authorized, movement must not exceed:

- 20 MPH for freight trains.

- 30 MPH for passenger trains.
- Maximum timetable speed for snow service unless the employee in charge authorizes a higher speed.

D. Job Briefing:
When making a shoving movement while riding cars, a radio job briefing must be conducted and include the following:

- Potential hazards.
- Type of car being ridden.
- Number of cars and slack action.
- Speed the shove will be made.

When not using hand signals, a radio job briefing must be conducted and include the following:

- Who will protect the shove.
- Which track is being shoved.
- How the shove will be protected.
- Distance and direction to be shoved.
- Position of switches and derails, if applicable.

FRA Regulation

§218.99 Shoving or pushing movements.

(a)(1) Each railroad shall adopt and comply with an operating rule which complies with the requirements of this section. When any person including, but not limited to, each railroad, railroad officer, supervisor, and employee violates any requirement of an operating rule which complies with the requirements of this section, that person shall be considered to have violated the requirements of this section.

(2) The following requirements for shoving or pushing movements do not apply to rolling equipment intentionally shoved or pushed to permit the rolling equipment to roll without power attached, i.e., free rolling equipment, during switching activities known as kicking, humping, or dropping cars.

(b) *General movement requirements*—(1) *Job briefing.* Rolling equipment shall not be shoved or pushed until the locomotive engineer participating in the move has been briefed by the employee who will direct the move. The job briefing shall include the means of communication to be used between the locomotive engineer and the employee directing the move and how point protection will be provided.

(2) *No unrelated tasks.* During the shoving or pushing movement, the employee directing the movement shall not engage in any task unrelated to the oversight of the shoving or pushing movement.

(3) *Point protection.* When rolling equipment or a lite locomotive consist is shoved or pushed, point protection shall be provided by a crewmember or other qualified employee by:

(i) Visually determining that the track is clear. The determination that the track is clear may be made with the aid of monitored cameras or other technological means, provided that it and the procedures for use provide an equivalent level of protection to that of a direct visual determination by a crewmember or other qualified employee properly positioned to make the observation as prescribed in this section and appendix D to this part; and

(ii) Giving signals or instructions necessary to control the movement.

Signature Page

I have read and approve the report

Tomas Torres- Investigator-in-Charge

National Transportation Safety Board

//s// Date: 03/29/19

Michael Hoepf - System Safety Investigator

National Transportation Safety Board

//s// Date: 03/29/19

Bret Strickland - Operating Practices Inspector – Investigator in Charge –

Federal Railroad Administration

//s// No Reply Date: _____

Michael Lundell- Vice President, Compliance and Safety

Genesee & Wyoming Railroad Services, Inc.

//s// No Reply Date: _____

John Dunn- Smart- Safety Team, Vice General Chairman

SMART Transportation Division

//s// No Reply Date: _____