Rail Operations Factual Report

Midland, Texas

HWY-13-MH-003

(8 pages)

NATIONAL TRANSPORTATION SAFETY BOARD
OFFICE OF HIGHWAY SAFETY
WASHINGTON, D.C.

RAIL OPERATIONS FACTORS GROUP CHAIRMAN'S FACTUAL REPORT

A. ACCIDENT

Location:	At the intersection of South Garfield Street and the Union Pacific Railroad (UPRR), Mile Post 554.65, DOT grade crossing inventory #796-331L, Midland, Midland County, Texas
Vehicle #1:	2006 Peterbilt truck-tractor in combination with a 2005 Transcraft Eagle Drop Flatbed Semitrailer
Operator #1:	Smith Industries of Midland, Texas
Vehicle #2:	Union Pacific Freight Train ZLCAI-14, consisting of 4 locomotives and 84 loaded cars
Operator #2:	Union Pacific Railroad (UPRR)
Vehicle #3:	2008 Ford Crown Victoria Police Interceptor
Operator #3:	Midland County Sheriff's Office
Date:	November 15, 2012
Time:	Approximately 4:35 p.m. CST
NTSB #:	**HWY-13-MH-003**

B. OPERATIONS GROUP

David Bucher
Railroad Accident Investigator
National Transportation Safety Board

Kelly Seachord
General Director Regional Operations
Southern Region South
Union Pacific Railroad

Jerry Bullard
Safety Task Force
Brotherhood of Locomotive Engineers and Trainmen

John Dunn
Local Chairman, Vice Legislative Representative, Delegate – Local 756
United Transportation Union

Bill Smith
Railroad safety Inspector – Operating Practices
U.S. Department of Transportation
Federal Railroad Administration

C. ACCIDENT SUMMARY

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

D. TRACK

The track arrangement at the location of the accident is tangent with a slight downward grade from west to east. At the accident site the track crosses the two lane highway at 90 degrees. Rail at this location is 136 pound continuously welded rail attached to wooden crossties with steel tie plates, secured by steel spikes and track clips. The four lane highway has a concrete pad between the two rails, level with the top of the rails.

E. TERRITORY & OPERATING AUTHORITY

The Union Pacific Railroad, TOYAH Subdivision runs in a timetable east / west direction and is part of UP's Sunset Area (Sunset Area Timetable #3). The TOYAH Subdivision runs between Sweetwater, TX (milepost 447.8) and Sierra Blanca, TX (milepost 768.7)[1]. The maximum timetable speed approaching the S. Garfield Street crossing is 70 mph.

The accident occurred at the S. Garfield Street highway-rail grade crossing, in Midland TX (Milepost 554.65).

The method of operation in the area of the accident is Centralized Traffic Control, controlled by UP Train Dispatcher, Number 26, located in Omaha, Nebraska.

F. TRAIN CREW

The Union Pacific train crew was called at Pecos, TX at 1:40 pm on November 15, 2012. The locomotive engineer had 19 hours and 19 minutes rest from his last assignment. The conductor had 19 hours and 17 minutes rest from his last assignment. The train crew was instructed to operate their train from Pecos, TX to Sweetwater, TX, where it would be handed over to another UP train crew for further movement eastbound.

[1] The TOYAH Subdivision, and Sunset Area, are part of the UP's Fort Worth Service Unit

G. EQUIPMENT

Union Pacific Train No. ZLCAI- 14 originates in Los Angeles, CA. The train's destination on the Union Pacific is Shreveport, LA. However, the train does not terminate at Shreveport. At Shreveport, the Union Pacific transfers the train to the Kansas City Southern Railroad, which takes the train from Shreveport, LA to Meridian, MS. There, the KCS transfers the train to the Norfolk Southern Railroad. The Norfolk Southern Railroad then takes the train from Meridian, MS to Atlanta, GA, where the train finally terminates.

On the day of the accident, the ZLCAI-14 consisted of the following:
Locomotives:

UP 7877 – the lead locomotive
UP 8497 – the second locomotive
NS 8934 – the third locomotive (this locomotive was not operating)
UP 7653 – this was the Distributed Power Locomotive

Cars: 84 loaded container cars in the train

Length of train:	7247 feet
Weight of train:	5556 Gross tons

A detailed mechanical inspection was conducted of the locomotives and cars. (Reference NTSB Mechanical Group field report for HWY-13-MH-003)

H. OPERATING RULES IN EFFECT

Train Operations on this portion of the Union Pacific Railroad are governed and authorized by signal indications of a traffic control system under the control of a train dispatcher located in Omaha, Nebraska (dispatcher position No. 26). The train dispatcher set routes at each control point that establish the priorities for, and control, of train movements. Intermediate signals are positioned between control points that govern the use of designated blocks.
The train crew was governed by the General Code of Operating Rules (GCOR), Sixth Edition, Effective April 7, 2010. The territory was designated as the Union Pacific Railroad TOYAH Subdivision, Sunset Area, Southern Region. At the time of the accident, the current timetable was the Sunset Area, Timetable No. 3, effective 0900 Monday, November 22, 2010. Maximum authorized speed at the location of the accident was 70 miles per hour.

1. Highway-Rail Grade Crossing Regulations and Operating Rules

There are specific Federal regulations and railroad operating rules that govern railroad operations over highway-rail grade crossings. These Federal regulations are described in Title 49 CFR Part 222 – Use of Locomotive Horns at Public Highway-Rail Grade crossings (Attachment A), Title 49 CFR Part 229.125 – Headlight and auxiliary lights (Attachment B), Title 49 CFR Part 229.129 – Locomotive horns (Attachment C), and Title 49 CFR Part 222.33- Quiet Zones

(Attachment D). Railroad operating rules within the General Code of Operating Rules; also govern operations over Highway-Rail Grade Crossings.

The following GCOR rules applied:

2. Bell and Whistle Signals

5.8.1 Ringing Engine Bell

Ring the engine bell under any of the following conditions:

- Before moving, except when making momentary stop and start switching movements.
- As a warning signal anytime it is necessary.
- When approaching men or equipment on or near the track.
- Approaching public crossings at grade with the engine in front at the crossing sign. If no sign, or if movement begins between sign and crossing, start signal soon enough before crossing to provide warning continue ringing bell until the crossing is occupied.

5.8.2 Sounding Whistle[2]

The whistle may be used at any time as a warning regardless of any whistle prohibitions.

When other employees are working in the immediate area, sound the required whistle signal before moving.

Other forms of communications may be used in place of whistle signals, except signals (1), (7), and (8). See following chart.

The required whist1le signals are illustrated by "o" for short sounds and "-" for longer sounds:

The required whistle signals are illustrated by "o" for short sounds and "—" for longer sounds:

[2] Whistle: refers to locomotive horn

Sound	Indication
(1) Succession of short sounds	Use when persons or livestock are on the track at other than road crossings at grade. In addition, use to warn railroad employees when emergency exists, such as a derailment. When crews on other trains hear this signal, they must stop until it is safe to proceed.
(2) **_**	When stopped: air brakes are applied, pressure equalized.
(3) **_ _**	Release brakes. Proceed.
(4) **o o**	Acknowledgement of any signal not otherwise proved for.
(5) **o o o**	When stopped: back up. Acknowledgement of hand signal to back up.
(6) **o o o o**	Request for signal to be given or repeated if not understood.
(7) **_ _ o_**	When approaching public crossings at grade with the engine in front, sound all signals as follows: A. At speeds in excess of 45 MPH, start signal at or about the crossing sign but not more than ¼ mile before the crossing B. At speeds of 45 MPH or less, start signal at least 15 second, but not more than 20 seconds, before entering the crossing. C. If no crossing sign start signal at least 15 seconds, but not more than 20 seconds before entering crossing but not more than1/4 mile before the crossing D. If movement starts less then 1/4/ mile from a crossing, signal may be sounded less then 15 seconds before the crossing when it is clearly seen traffic is not approaching the crossing, traffic is not stopped at the crossing or when crossing gates are fully lowered.
(8) **_ o**	Prolong or repeat signal until the engine completely occupies the crossing(s). Approaching men or equipment on or near track, regardless of any whistle prohibitions. After this initial warning, sound whistle signal (4) intermittently until the head end of train has passed the men or equipment.

3. Whistle Quiet Zone

When designated whistle quest zones, whistle signal (7) must not be sounded approaching public crossings at grade except when:

- Necessary to provide warning in an emergency
- Notified automatic warning devices are malfunctioning
- Notified automatic warning devices are out of service
- The whistle quest zone is not in effect during specified hours

GCOR Operating Rules that specifically address train speed and operation over public crossing are contained in (Attachment E).

I. UP MANAGEMENT CREW OVERSIGHT

1. Efficiency Testing

The Code of Federal Regulations contains specific requirements[3] for the testing and observing of operating employees while they perform their duties. The UP maintained an operational testing program to monitor the performance and rules compliance of the employees operating trains on the UP system.

Federal regulations require that these test be unannounced and be conducted randomly at all times of the day and night.

On the day of the accident UP managers specifically conducted a "stop signal" test on the ZLCAI-14 train crew prior to the accident. This test occurred when the train was approaching Metz, TX. The train crew of ZLCAI-14 complied with all of the requirements involved with properly stopping their train. After the train came to a stop, UP mangers boarded the lead locomotive and discussed the successful test with the train crew. After the discussion with the crew UP managers departed the locomotive, and the ZLCAI-14 was allowed to depart.

[3] 49 CFR Part 217.9 Program of operational tests and inspections; recordkeeping. ….Each railroad to which this part applies shall periodically conduct operational tests and inspections to determine the extent of compliance with its code of operating rules, timetable, and timetable special instructions,…

The UP also provided additional efficiency testing data for both the engineer and the conductor of the ZLCAI-14. Records indicate that supervisors had performed various other successful operational tests involving these employees.

J. EMPLOYEE INTERVIEWS

1. Locomotive Engineer

On November 17, 2012 at 2:00 PM an interview was conducted with the locomotive engineer on the UP train involved in the Midland, TX accident. The engineer was hired by the Union Pacific Railroad on 9-3-03. He has 9 years of service on the railroad. He was promoted to locomotive engineer on 12-17-04. The engineer stated in brief the following: He said the trip was a "regular run". He said that he had received 19 hours rest since his last trip and that he felt fully alert. He said the train handled as required, with throttle and brakes functioning as designed. He said approximately 45 miles after leaving Pecos, TX (where the crew had received the train), the crew was efficiency tested by Union Pacific managers. No exceptions were taken during the test. Following the test, the crew was de-briefed by the manager in the locomotive cab. After test the crew proceeded east with the train. The locomotive engineer said he first noticed a truck on the crossing at a great distance. As the train got closer to the crossing, he noticed people on the trailer of the truck. He said shortly after the first truck, he noticed a second truck. He said he immediately put the train into an "emergency" air brake application. He said the second truck continued slowly across the crossing. He said that the locomotive struck the right rear of the trailer.

2. Conductor

On November 17, 2012 at 3:30 PM an interview was conducted with the conductor on the UP train involved in the Midland, TX accident. The conductor was hired by the Union Pacific Railroad on 6-6-11. He has 18 months of service on the railroad. The conductor said that he also had 19 hours of rest before his assignment on the day of the accident. All of the conductor's statements were very similar to that of locomotive engineer. All details given by the conductor matched those of the locomotive engineer.