



***Federal Railroad Administration  
Office of Safety  
Headquarters Assigned  
Accident Investigation Report  
HQ-2005-78***

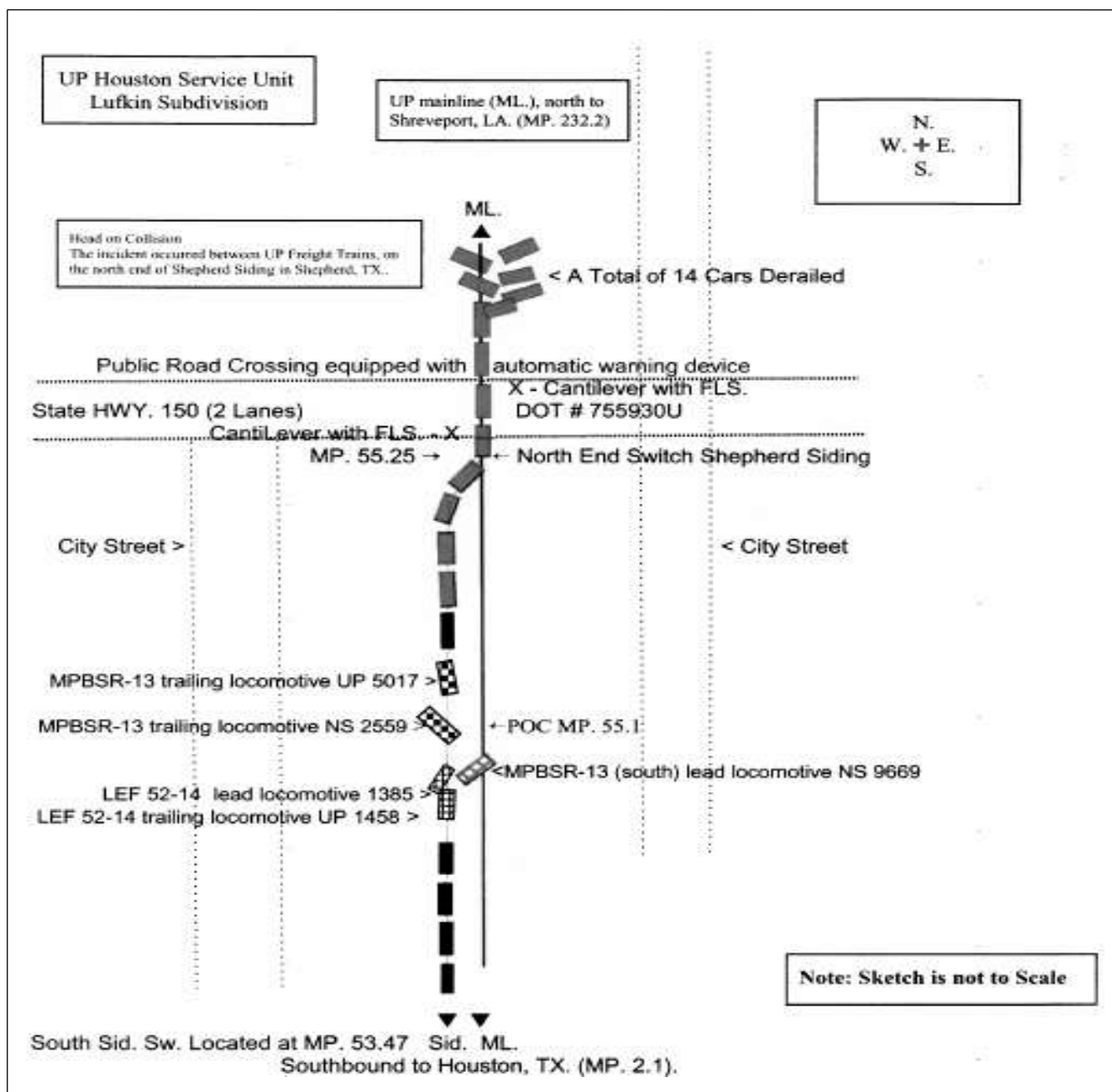
***Union Pacific (UP)  
Shepherd, Texas  
September 15, 2005***

***Note that 49 U.S.C. §20903 provides that no part of an accident or incident report made by the Secretary of Transportation/Federal Railroad Administration under 49 U.S.C. §20902 may be used in a civil action for damages resulting from a matter mentioned in the report.***

| DEPARTMENT OF TRANSPORTATION<br>FEDERAL RAILROAD ADMINISTRATION                         |  | FRA FACTUAL RAILROAD ACCIDENT REPORT  |  |   |   | FRA File # <u>HQ-2005-78</u>  |   |  |
|---|--|---|--|---|---|---|---|--|
| 1. Name of Railroad Operating Train #1<br>Union Pacific RR Co. [UP ]                    |  |   | 1a. Alphabetic Code<br>UP  |   | 1b. Railroad Accident/Incident No.<br>0905HO023   |   |   |  |
| 2. Name of Railroad Operating Train #2<br>Union Pacific RR Co. [UP ]                    |  |   | 2a. Alphabetic Code<br>UP  |   | 2b. Railroad Accident/Incident<br>0905HO023   |   |   |  |
| 3. Name of Railroad Responsible for Track Maintenance:<br>Union Pacific RR Co. [UP ]    |  |   | 3a. Alphabetic Code<br>UP  |   | 3b. Railroad Accident/Incident No.<br>0905HO023   |   |   |  |
| 4. U.S. DOT_AAR Grade Crossing Identification Number                                    |  |   | 5. Date of Accident/Incident<br>Month    Day    Year<br>09    15    2005 |   | 6. Time of Accident/Incident<br>12:07: <input checked="" type="checkbox"/> AM <input type="checkbox"/> PM |   |   |  |
| 7. Type of Accident/Incident (single entry in code box)                                 |  |   |  |   |   |   |   |  |
| 1. Derailment   |  | 4. Side collision   |  | 7. Hwy-rail crossing  |   | 10. Explosion-detonation  |   |  |
| 2. Head on collision  |  | 5. Raking collision   |  | 8. RR grade crossing  |   | 11. Fire/violent rupture  |   |  |
| 3. Rear end collision   |  | 6. Broken Train collision   |  | 9. Obstruction  |   | 12. Other impacts   |   |  |
|   |  |   |  |   |   | 13. Other (describe in narrative) 02  |   |  |
| 8. Cars Carrying HAZMAT 61  |  | 9. HAZMAT Cars Damaged/Derailed 11  |  | 10. Cars Releasing HAZMAT 1   |   | 11. People Evacuated 500  |   |  |
| 13. Nearest City/Town<br>Shepherd   |  |   | 14. Milepost (to nearest tenth) 55.1                                     |   | 15. State Abbr Code<br>N/A TX   |   | 16. County<br>SAN JACINTO                           |  |
| 17. Temperature (F) (specify if minus) 78 F   |  | 18. Visibility (single entry) Code<br>1. Dawn 3. Dusk 2. Day 4. Dark 4  |  | 19. Weather (single entry) Code<br>1. Clear 3. Rain 5. Sleet 2. Cloudy 4. Fog 6. Snow 1 |   | 20. Type of Track Code<br>1. Main 3. Siding 2. Yard 4. Industry 3   |   |  |
| 21. Track Name/Number<br>Shepherd Siding  |  |   | 22. FRA Track Code Class (1-9, X) 1                                      |   | 23. Annual Track Density (gross tons in millions) 0   |   | 24. Time Table Direction Code<br>1. North 3. East 2 |  |
| OPERATING TRAIN #1  |  |   |  |   |   |   |   |  |
| 25. Type of Equipment Consist (single entry)  |  | 1. Freight train 4. Work train 7. Yard/switching  |  | A. Spec. MoW Equip. Code 1  |   | 26. Was Equipment Attended? Code<br>1. Yes 2. No 1  |   |  |
| 2. Passenger train 5. Single car 8. Light loco(s).                                      |  | 3. Commuter train 6. Cut of cars 9. Maint./inspect.car  |  |   |   | 27. Train Number/Symbol<br>MPBSR-13   |   |  |
| 28. Speed (recorded speed, if available) Code<br>R - Recorded 38 MPH R<br>E - Estimated |  | 30. Method(s) of Operation (enter code(s) that apply)<br>a. ATCS g. Automatic block m. Special instructions<br>b. Auto train control h. Current of traffic n. Other than main track<br>c. Auto train stop i. Time table/train orders o. Positive train control<br>d. Cab j. Track warrant control p. Other (Specify in narrative) Code(s)<br>e. Traffic k. Direct traffic control<br>f. Interlocking l. Yard limits j n N/A N/A N/A |  |   |   | 30a. Remotely Controlled Locomotive?<br>0 = Not a remotely controlled<br>1 = Remote control portable<br>2 = Remote control tower<br>3 = Remote control transmitter - more than one remote control transmitter 0 |   |  |
| 29. Trailing Tons (gross tonnage, excluding power units) 6118                           |  |   |  |   |   |   |   |  |
| 31. Principal Car/Unit  |  | a. Initial and Number   |  | b. Position in Train  |   | c. Loaded (yes/no)  |   |  |
| (1) First involved (derailed, struck, etc)  |  | N/A   |  | 1   |   | N/A   |   |  |
| (2) Causing (if mechanical cause reported)  |  | 0   |  | 0   |   | N/A   |   |  |
|   |  |   |  |   |   | 32. If railroad employee(s) tested for drug/alcohol use, enter the number that were positive in the appropriate box.<br>Alcohol 0 Drugs 0   |   |  |
|   |  |   |  |   |   | 33. Was this consist transporting passengers? (Y/N) N   |   |  |
| 34. Locomotive Units  |  | a. Head End   |  | Mid Train   |   | Rear End  |   |  |
|   |  | b. Manual   |  | c. Remote   |   | d. Manual c. Remote   |   |  |
| (1) Total in Train 3  |  | 0   |  | 0   |   | 0   |   |  |
| (2) Total Derailed 3  |  | 0   |  | 0   |   | 0   |   |  |
| 35. Cars  |  | a. Freight  |  | b. Pass.  |   | c. Freight d. Pass. e. Caboose  |   |  |
| (1) Total in Equipment Consist 22   |  | 0   |  | 89  |   | 0 0   |   |  |
| (2) Total Derailed 0  |  | 0   |  | 16  |   | 0 0   |   |  |
| 36. Equipment Damage This Consist 1046620   |  | 37. Track, Signal, Way, & Structure Damage 76075  |  | 38. Primary Cause Code H702   |   | 39. Contributing Cause Code N/A   |   |  |
| Number of Crew Members  |  |   |  | Length of Time on Duty  |   |   |   |  |
| 40. Engineer/Operators N/A  |  | 41. Firemen 0   |  | 42. Conductors 1  |   | 43. Brakemen 0  |   |  |
| 44. Engineer/Operator Hrs 9 Mi 57   |  | 45. Conductor Hrs 9 Mi 57   |  |   |   |   |   |  |
| Casualties to:  |  | 46. Railroad Employees  |  | 47. Train Passengers  |   | 48. Other   |   |  |
| Fatal 0   |  | 0   |  | 0   |   |   |   |  |
| Nonfatal N/A  |  | 0   |  | 0   |   |   |   |  |
|   |  |   |  |   |   | 49. EOT Device? 1. Yes 2. No 1  |   |  |
|   |  |   |  |   |   | 50. Was EOT Device Properly Armed? 1. Yes 2. No 1   |   |  |
|   |  |   |  |   |   | 51. Caboose Occupied by Crew? 1. Yes 2. No N/A  |   |  |
| OPERATING TRAIN #2  |  |   |  |   |   |   |   |  |
| 52. Type of Equipment Consist (single entry)  |  | 1. Freight train 4. Work train 7. Yard/switching  |  | A. Spec. MoW Equip. Code 1  |   | 53. Was Equipment Attended? Code<br>1. Yes 2. No 1  |   |  |
| 2. Passenger train 5. Single car 8. Light loco(s).                                      |  | 3. Commuter train 6. Cut of cars 9. Maint./inspect.car  |  |   |   | 54. Train Number/Symbol<br>LEF-52-14  |   |  |
| 55. Speed (recorded speed, if available) Code<br>R - Recorded 0 MPH R<br>E - Estimated  |  | 57. Method(s) of Operation (enter code(s) that apply)<br>a. ATCS g. Automatic block m. Special instructions<br>b. Auto train control h. Current of traffic n. Other than main track   |  |   |   | 57a. Remotely Controlled Locomotive?<br>0 = Not a remotely controlled<br>1 = Remote control portable  |   |  |



108. DRAW A SKETCH OF ACCIDENT AREA INCLUDING ALL TRACKS, SIGNALS, SWITCHES, STRUCTURES, OBJECTS, ETC., INVOLVED.  
78.bmp



## 109. SYNOPSIS OF THE ACCIDENT

On September 15, 2005, at 12:07 a.m. CST, a southbound UP train MPBSR-13 operating in Track warrant Control non-signalized territory on the Houston Service Unit, Lufkin Sub Division, collided head-on at 38 mph with a standing UP train LEF 52-14, located on the north end of Shepherd siding in Shepherd, TX, Mile Post 55.1. The probable cause of the accident is the failure of the original crew of train LEF 52-14 restore the switch at the north end of Shepherd siding for main track movement prior to releasing track warrant No. 8744. After securing their train, the train crew boarded a limo and headed north toward Lufkin, TX. The conductor's switch keys were found in the lock, with the lock unlocked, hanging through the hasp at the north siding Shepherd switch. The original crew of LEF 52-14 consisted of an engineer and conductor.

The relief crew for train LEF 52-14 arrived at Shepherd approximately 40 minutes after the original train crew departed. The relief crew consisted of an engineer, conductor and engineer pilot. The engineer and conductor were on the lead locomotive when they noticed a headlight approaching from the north. The conductor (still in the cab at this point), and pilot was getting in position to conduct a roll-by inspection of the southbound train in accordance with railroad operating rules when the engineer noticed that the north switch was not lined properly. The conductor exited from the front door of the lead locomotive and jumped off the locomotive in a westward direction. The pilot was already on the ground, standing on the west side, just clear of the main track. The engineer attempted to escape through the rear door of the locomotive, but wasn't able to do so prior to impact. The engineer was killed instantly at the time of the collision. The conductor was not injured. The pilot did not report any injuries at the time of the collision but later reported emotional trauma.

Train LEF 52-14 consisted of two locomotives UP 1385, UP 1458 and 22 cars, 8 loads, 14 empties, 1478 GTONS, and 1435 feet long. The lead locomotive UP 1385 was destroyed. The locomotive UP 1458, and five cars were derailed.

Train MPBSR-13 consisted of three locomotives NS 9669, NS 2559, UP 5017 and 111 cars, 22 loads, 89 empties, 6118 GTONS, and 6248 feet long. The lead locomotive NS 9669 landed on it's side, east of the main track. The remaining two locomotives derailed, but remained upright. Severe slack action from the collision caused 16 cars to derail, 15 cars from the head-end of the train. Of the 16 derailed cars, 12 contained hazardous material residue.

The engineer and conductor of MPBSR-13, rode out the collision in the cab of the lead locomotive. Both crew members were transported to a hospital in Cleveland, TX. Both were treated and released for non-life threatening injuries, multiple bruises, cuts and lacerations.

At the time of the accident it was cloudy, dark, with a temperature of 78&#9675; Fahrenheit.

A precautionary evacuation was ordered by the City of Shepherd fire department due to damage sustained to the safety relief valve and releasing 10 gallons of Methyl Isobutyl Ketone on tank car SCM 4334, containing hazardous material residue. The evacuation started at 0030 hours on September 15, 2005, was lifted at 06:30 hours on September 15, 2005, affecting approximately 500 Shepherd residents.

Estimated damages are as follows:

- Track, signal was estimated at \$76,075.00.
- Damage to train LEF-52-14 \$391,289.00
- Damage to train MPBSR-13 was \$1,046,620.

Total damage estimates are \$1,513,984.00.

## 110. NARRATIVE

Circumstances prior to the accident:

The original crew of the train LEF-52-14, consisting of an Engineer and conductor went on duty at Englewood Yard, Houston, Texas at 12:00 p.m. CST on September 14, 2005. This crew had received 10 hours and 20 minutes off duty prior to going on duty. All crew members received more than the statutory off duty time, before reporting for duty. Their train consisted of two locomotives UP 1385, UP 1458 8 loads, 14 empties, 1435 feet long and 1478 gross trailing tons (GTONS) and an end of train device, UPRQ 27478. The initial terminal air brake test was completed on September 14, 2005, at 3:35 p.m. by mechanical personnel located at Englewood Yard and the end of train device was working properly.

Train LEF 52 -14 was traveling timetable direction north, after receiving their initial track warrant no. 7887 at Englewood Yard MP2.1 (Tower 210 as indicated in timetable). They proceeded to Humble, TX. and cleared the mainline for their first train meet with the UP 4385 South. At 8:22 p.m. September 14, 2005, the crew received track warrant no. 8196 to proceed from Humble to Shepherd on the Lufkin Subdivision and was instructed to hold main track at last named point. After the arrival of locomotive UP 4385 South at Humble, train LEF 52-14 continued north on the main track to Shepherd. Train LEF 52-14 arrived at Shepherd and stopped short of the Shepherd north siding switch on the main track at Shepherd at the end of their authority. Train MPBPT -14 South arrived at the north siding switch at Shepherd and used the siding to clear the main track and proceeded south around train LEF 52-14. Train LEF 52-14 received track warrant no. 8744 at 11:02 p.m., with instructions to proceed from the south siding switch at Shepherd to MP 56, on the main track on the Lufkin Subdivision. The conductor of the train LEF 52-14 lined the north siding switch for the main track movement after the train MPBPT-14 had cleared the north siding switch. The train LEF 52 -14 proceeded north until the rear of the train cleared the north siding switch. The conductor then lined the switch for the siding, and rode the point of the shove and shoved their train into the north end siding at Shepherd to clear of the main track.

The train LEF-52-14, stopped in the siding at 11:14 p.m. and 39 seconds. After the train was stopped in the siding the conductor proceeded toward the head end. The taxi driver picked up the conductor approximately ten cars from the rear end of the train and brought him by taxi to the rear end of the locomotive consist. The engineer released track warrant no. 8196 at 11:19 p.m., without conducting a job briefing with the conductor to verify that the siding switch had been restored to the normal position. The engineer shut down the lead locomotive at 11:22 p.m. and 57 seconds. The conductor then secured the cars and proceeded to secure the rear locomotive when he encountered the locomotive engineer. He informed the engineer that he would secure the locomotives. The engineer told the conductor that she still had to shut down the locomotives. After the conductor secured the locomotives he started walking on the ground towards the lead locomotive. The conductor stated he walked up to the north siding switch and lined the switch for main track movement. The conductor informed G. Stovall, Manager of Operating Practice, Union Pacific Railroad when he lined the main track for main track movement he leaves his key in the lock as part of his process and removes his key after everything else is done. He also stated he forgot to remove his keys from the lock at the north siding switch. He then proceeded back to the lead locomotive. The engineer finished shutting down the locomotive consist and proceeded back to the cab of the lead locomotive where she encountered the conductor. The engineer then unloaded her luggage from the lead locomotive and with the assistance of the taxi driver she loaded them into the taxi. Shortly after her luggage was loaded into the taxi, the conductor arrived at the taxi with his luggage.

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The crew then departed Shepherd, Texas by taxi at approximately 11:23 p.m. going to Leggett, TX. After traveling just north of Livingston, approximately 21.5 miles from Shepherd, the conductor informed the engineer that he had left his key in the lock at the switch at Shepherd. The engineer instructed the taxi driver to turn around and go back to Shepherd and to turn the railroad radio volume up. At the time of the collision, the original crew of the train LEF-52-14 was en route back to Shepherd siding riding in the taxi.

Relief crew of train LEF-52-14, consisting of an Engineer, Engineer pilot and a Conductor went on duty at Englewood Yard at 9:45 p.m. CST on September 14, 2005. After receiving the statutory time off: Pilot engineer 12 hours and 45 minutes, Engineer and conductor 13 hours and 35 minutes, all crew members received more than the statutory off duty, prior to reporting for duty. Crew was deadheaded to Shepherd Siding located at Mile Post 55.1. Upon arriving at Shepherd Siding MP 55.1, the assigned locomotive engineer started to perform the inspections of the locomotives. The conductor put his luggage on the lead locomotive and started to review their paper work. The pilot engineer saw an approaching headlight from the north and dismounted lead locomotive to perform a roll by inspection on the west side of tracks. The locomotive engineer opened the door behind the control stand and told the conductor that the mainline switch looked liked it was lined for the siding. The conductor then opened the front door of the lead locomotive and yelled that the mainline switch was lined for the siding and jumped from the platform of the lead locomotive on the west side. At the time of the collision the engineer pilot and conductor was on the west side of the tracks and the location of the engineer was presumed in the lead locomotive or exiting through the back door of the lead locomotive.

Crew of train MPBSR-13, consisting of a locomotive engineer and conductor went on duty at the River Front Yard located in Shreveport, LA., on September 14, 2005, at 2:10 p.m. CST. The engineer received 10 hours and 30 minutes and the conductor received 10 hours and 40 minutes off duty prior to going on duty. All crew members received more than the statutory off duty time, prior to reporting for duty. The train MPBSR-13, was located on Long Street Siding, consisting of three locomotives, 22 loads, 89 empties, 6,248 feet long, and 6118 GTONS and the end of train device no. UPRQ 19793. The initial terminal air test was performed at Pine Bluff Arkansas on September 13, 2005, at 11:45 a.m. by mechanical personnel and EOT device was armed and working.

The previous crew of train MPBSR-13 had cut the road crossings on their train at Long Street Siding. When the relief crew arrived at Long Street Siding the crew put their train together and performed the required air test. Crew received their track warrant from Long Street on the Lufkin Subdivision to MP 182 after the arrival of locomotive GECX 2874 North at Long Street Siding. While in route crew received track warrant no. 7803 to proceed from MP 185 to MP 150 on main track, track warrant no. 8149 from MP 167 to MP 140 on main track, track warrant no. 8205 from MP 157 to MP 120.5 on main track, track warrant no. 8507 from MP 120.5 to MP 80 on main track, track warrant no. 8604 from MP 117 to Leggett on main track with instructions to hold main track at last named point, track warrant no. 8787 to proceed from Leggett to MP 60 on main track, and track warrant no. 8916 from MP 63 to MP 37 on the Lufkin subdivision and on the main track was issued at 11:56 p.m. The last track warrant was received 11 minutes prior to collision.

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The accident/collision

Train MPBSR-13, was being operated timetable direction southbound at 38 mph approaching the accident area. The maximum authorized speed for this manifest freight train was 49 mph with no other speed restrictions for this segment of track. The train crew's view of the switch was obstructed due to the time of day and a 0.30 degree curve to the right. The engineer stated as they were traversing a 0.30' curve, they were blowing the horn and ringing the bell for the public road crossing that was 300 feet south of the curve. At which time the conductor stood up and started yelling that they were lined for the siding. According to the engineer he then tried to place the train into emergency and get out of the seat but could not. He then got behind the seat and place the train into emergency and dove on the floor of the locomotive where the conductor was already located. The speed at impact was 38 mph as recorded on the locomotive event recorder. The lead locomotive came to rest on its side on the east side of the lead locomotive of the train LEF-52-14. The above listed information was obtained from interviews with the crew of the train MPBSR-13, event recorder data, UP timetable #3 effective 03/30/03, track charts, notes were obtained from Union Pacific officials.

Train LEF 52-14 was positioned approximately 500 feet south of the north siding switch at Shepherd by the original crew. The maximum authorized speed for the siding at Shepherd is 10 mph. The relief crew arrived at Shepherd siding at approximately 11:52 p.m. on September 14, 2005. The crew arrived approximately 15 minutes prior to the collision. Upon arriving at Shepherd Siding MP 55.1 the assigned locomotive engineer started to perform the inspections of the locomotives. The conductor put his luggage on the lead locomotive and started to review their paper work. The pilot engineer saw an approaching headlight from the north and dismounted lead locomotive to perform a roll by inspection on the west side of tracks. The locomotive engineer opened the door behind the control stand and told the conductor that the mainline switch looked liked it was lined for the siding. The conductor then opened the front door of the lead locomotive and yelled that the mainline switch was lined for the siding and jumped from the platform of the lead locomotive on the west side with no reportable injuries. At the time of the collision the engineer pilot and conductor was on the west side of the tracks and the location of the engineer was presumed on the lead locomotive. The above listed information was obtained from interviews with the crew of the train LEF 52-14, event recorder data, UP timetable #3 effective 03/30/03, track charts, notes were obtained from Union Pacific officials.

Interviews of two non-railroad persons making observations from their residence on the west side of the tracks indicated that there might have been two unauthorized people on the west side, at or near the switch at the time of the collision. Further investigation indicated that the distance and lighting at the switch would not allow for the persons to be seen at the switch, but the same persons described as running around were the relief pilot and conductor of the LEF-52-14 at the time of the collision.

A manager returning home from working at Mc Donald's located at Cleveland, Texas, had observed a person on the eastside of the main track at Shepherd, carrying a lantern but could not remember the time the person was observed but believe it might of been between 10:30 p.m. and 11:00 p.m.. She indicated that the person was walking from North to South along the tracks across the tracks from the switch. The time frame of the observance indicated the original crew of the train LEF-52-14 making their shoving movement into the siding.

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San Jacinto County Sheriffs Department was notified at 00:05 a.m. on September 15, 2005. The Sheriff Department notified the Shepherd Volunteer Fire Department, the Department of Public Safety (DPS) and the Hazardous material teams from Polk County and Liberty County. The Sheriff arrived at the scene at 00:10 a.m. The Shepherd Fire Department arrived at 12:07 a.m., the DPS arrived at 01:06 a.m. The Livingston Fire Department was contacted at 12:45 am. and arrived at the accident scene at 01:01 a.m.

DPS Sargent Gustofson, ordered an evacuation of the surrounding area of approximately 500 people between 12:30 a.m. and 12:45 a.m.

The relief locomotive engineer assigned to the train LEF-52-14, sustained fatal injuries. The assigned conductor had no injuries. The pilot engineer later reported emotional trauma.

The Engineer and conductor assigned to the train MPBSR-13 received minor injuries consisting of multiple bruises and lacerations.

Details of hazardous materials involvement and evacuations:

Tank car, SCMX 4334, containing Methyl Isobutyl Ketone residue, leaked approximately ten gallons. There was not any fatalities or injuries associated with this unintentional release. There were approximately 500 people evacuated. Sargent Gustofson of Department of Public Safety (DPS) initiated the evacuation at 12:30 a.m. and ended it at 06:30 a.m. The evacuation affected all persons in a ½ mile radius. The local schools remained close for the entire day. The lead locomotive of train MPBSR-13, NS 9669, and the lead locomotive of train LEF 52-14, UP 1385, both leaked approximately 3,000 gallons of diesel fuel each. The locomotive NS 9669 is a General Electric (GE), C40-9 and the locomotive UP 1385 is an Electro Motive Division (EMD) GP40-2. Union Pacific had a contractor available to clean up the contaminated soil.

Details of cost of repairs

- The repair cost of tracks was \$75, 075.00 estimated

- Environmental clean up cost was \$75,000.00 estimated
- Repair cost of signal was \$1,000.00 estimated  
Total \$151,075.00
- Estimate cost of repairs to the train MPBSR-13 were
  - A. NS 9669 - \$250,000.00 estimated
  - B. NS 2559 - \$ 65,000.00 estimated
  - C. UP 5017 - \$ 115,000.00 estimated
  - D. Cars - \$ 616,620.00 actualTotal \$1,046,620.00

## Repair cost of train LEF-52-14

- UP 1385 - \$241,442.00 estimated
  - UP 1458 - \$ 31,824.00 estimated
  - Cars - \$118,023.00 actual
- Total \$391,289.00

Total \$1,588,984.00

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## Analysis

The conductor of the original crew of the train LEF-52-14, indicated during separate interviews with FRA, and the investigation of the Union Pacific Railroad that he had left the lock unlocked in the switch while shoving his train into the siding. This is a violation of the Union Pacific's GCOR rule 8.2 Position of Switches. After shoving train LEF-52-14 clear in the siding the conductor failed to comply with Union Pacific air brake and train handling rule 32.1, having the locomotive engineer apply the automatic brakes then set sufficient number of hand brakes, release the automatic to ensure the cars do not move and GCOR rule 7.6 securing equipment against undesired movement. The conductor indicated after securing his train improperly, that he walked to the switch lined and locked the main track switch for main track movement leaving his keys in the lock, which is a violation of Union Pacific operating rules 8.2, as this was part of his process. Conductor failed to comply with UP GCOR rule 8.8, Switches equipped with locks, hooks, or latches on a facing point move. The conductor failed to have a job briefing with the engineer prior to the engineer releasing their track warrant and filling out his conductor's log, this is a violation of UP System Special Instructions effective April 3, 2005, item 17, and GCOR rule 1.47, duties of crew members.

The engineer on the original crew of train LEF-52-14, after shoving their train into the siding clear of the main track, prior to allowing the conductor to secure their train failed to comply with Union Pacific air brake and train handling rule 32.1, securing equipment against undesired movement. The engineer released their track warrant without having a job briefing with the conductor in violation of the UP special instructions Item 17, job briefing and rule 14.7, reporting clear of limits, 1.47, duties of crew members, and 8.3 main track switches.

- Post accident toxicological testing on the original crew of train LEF-52-14, relief crew of train LEF-52-14 and the MPBSR-13 were negative.
- End of train device UPRQ 27478 attached to car number GATX 29508 assigned to the train LEF-52-14 was tested and working properly on September 14, 2005, at Englewood Yard by mechanical forces.
- Head end device identification number 11909 attached to the locomotive UP 1385, was tested and working properly on September 14, 2005, at Englewood Yard by mechanical forces.
- End of train device UP 19793 attached to car number DBUX 26217 assigned to train MPBSR-13 was tested and working properly on September 13, 2005, at Pine Bluff, Arkansas.

Analysis of testing performed by the assigned managers on the Lufkin Subdivision, and the Houston Service Unit for the months of March 2005 through August 2005. Testing data of the original crew of train LEF-52-14 and train ID LEF-52 for same time period. Rules applied to the Houston Service Units monthly FTX plan as indicated.

Relevant tests for the months of March 2005 through August 2005 for MOP Stovall.

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## March

- Rule 1.47 duties of assigned crew members 7 tests 3 failures.
- Rule 8.2 position of switches 3 tests 0 failures. Part of monthly testing plan.
- Rule 8.3 main track switches 0 tests. Part of monthly testing plan.
- Rule 8.8 switches equipped with locks, hooks, latches 3 tests 0 failures. Part of monthly testing plan.
- Rule 14.7 reporting clear of limits 0 tests. Part of monthly testing plan.

## April

- Rule 1.47 duties of assigned crew members 12 tests 1 failure.
- Rule 8.2 position of switches 5 tests 0 failures. Part of monthly testing plan.
- Rule 8.3 main track switches 0 tests.
- Rule 8.8 switches equipped with locks, hooks, latches 2 tests 0 failures. Part of monthly testing plan.
- Rule 14.7 reporting clear of limits 0 tests.

## May

- Rule 1.47 duties of crew members 33 tests 4 failures. Part of monthly testing plan
- Rule 8.2 position of switches 1 tests 0 failures. Part of monthly testing plan.
- Rule 8.3 main track switches 0 tests. Part of monthly testing plan
- Rule 8.8 switches equipped with locks, hooks, latches 3 tests 0 failures. Part of monthly testing plan.
- Rule 14.7 reporting clear of limits 0 tests.

## June

- Rule 1.47 duties of crew members 26 tests 5 failures. Part of monthly testing plan.
- Rule 8.2 position of switches 0 tests. Part of monthly testing plan
- Rule 8.3 main track switches 0 tests
- Rule 8.8 switches equipped with locks, hooks, latches 0 tests. Part of monthly testing plan
- Rule 14.7 reporting clear of limits 0 tests

July

- Rule 1.47 duties of crew members 14 tests 0 failures. Part of monthly testing plan
- Rule 8.2 position of switches 0 tests. Part of monthly testing plan
- Rule 8.3 main track switches 0 tests
- Rule 8.8 switches equipped with locks, hooks, latches 0 tests. Part of monthly testing plan.
- Rule 14.7 reporting clear of limits 0 tests

August

- Rule 1.47 duties of crew members 30 no failures. Part of monthly testing plan
- Rule 8.2 position of switches 1 test no failures. Part of monthly testing plan
- Rule 8.3 main track switches 0 tests.
- Rule 8.8 switches equipped with locks, hooks, latches 0 tests. Part of monthly testing plan.
- Rule 14.7 reporting clear of limits. 0 tests.

CONTINUED

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Relevant tests performed by MTO Allen for the months of March 2005 through August 2005.

March

- Rule 1.47 duties of crew members 10 tests 2 failures.
- Rule 8.2 position of switches 2 tests 0 failures
- Rule 8.3 main track switches 0 tests
- Rule 8.8 switches equipped with locks, hooks, latches 2 tests 0 failures
- Rule 14.7 reporting clear of limits 0 tests

April

- Rule 1.48 duties of crew members 19 tests 0 failures
- Rule 8.2 position of switches 3 tests 0 failures
- Rule 8.3 main track switches 0 tests
- Rule 8.8 switches equipped with locks, hooks, latches 4 tests 0 failures
- Rule 14.7 reporting clear of limits 2 tests 0 failures

May

- Rule 1.47 duties of crew members 21 tests 3 failures
- Rule 8.2 position of switches 0 tests
- Rule 8.3 main track switches 0 tests
- Rule 8.8 switches equipped with locks, hooks, latches 0 tests
- Rule 14.7 reporting clear of limits 0 tests

June

- Rule 1.47 duties of crew members 6 tests 0 failures
- Rule 8.2. position of switches 0 tests
- Rule 8.3 main track switches 1 tests 0 failures
- Rule 8.8 switches equipped with locks, hooks, latches 0 tests
- Rule 14.7 reporting clear of limits 0 tests

July

- Rule 1.47 duties of crew members 5 tests 0 failures
- Rule 8.2 position of switches 0 tests
- Rule 8.3 main track switches 9 tests 0 failures
- Rule 8.8 switches equipped with locks, hooks, latches 0 tests
- Rule 14.7 reporting clear of limits 0 tests

CONTINUED

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August

- Rule 1.47 duties of crew members 2 tests 0 failures
- Rule 8.2 position of switches 1 test 0 failures
- Rule 8.3 main track switches 0 tests
- Rule 8.8 switches equipped with locks hooks, latches
- Rule 14.7 reporting clear of limits

Tests performed on the Houston Service Unit for the months of March 2005 through August 2005

March

- Rule 1.47 duties of crew members 104 tests 18 failures
- Rule 8.2 position of switches 358 tests 7 failures
- Rule 8.3 main track switches 1 test 0 failures
- Rule 8.8 switches equipped with locks, hooks, latches 75 test 1 failure
- Rule 14.7 reporting clear of limits 0

April

- Rule 1.47 duties of crew members 164 tests 12 failures
- Rule 8.2 position of switches 392 tests 3 failures
- Rule 8.3 main track switches 0 tests
- Rule 8.8 switches equipped with locks, hooks, latches 69 tests 3 failures
- Rule 14.7 reporting clear of limits 2 tests 0 failures



May

- Rule 1.47 duties of crew members 210 tests 14 failures
- Rule 8.2 position of switches 496 tests 17 failures
- Rule 8.3 main track switches 4 tests 1 failure
- Rule 8.8 switches equipped with locks, hooks, latches 77 tests 1 failure
- Rule 14.7 reporting clear of limits 0 tests

June

- Rule 1.47 duties of crew members 141 tests 11 failures
- Rule 8.2 position of switches 475 tests 11 failures
- Rule 8.3 main track switches 1 test 0 failures
- Rule 8.8 switches equipped with locks, hooks, latches 50 tests 1 failure
- Rule 14.7 reporting clear of limits 0 tests

July

- Rule 1.47 duties of crew members 114 tests 10 failures
- Rule 8.2 position of switches 337 tests 11 failures
- Rule 8.3 main track switches 9 tests 0 failures
- Rule 8.8 switches equipped with locks, hooks, latches 39 tests 2 failures
- Rule 14.7 reporting clear of limits 0 tests

CONTINUED

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August

- Rule 1.47 duties of crew members. 138 tests with 10 failures
- Rule 8.2 position of switches. 479 tests with 9 failures
- Rule 8.3 main track switches. 6 tests with 1 failure
- Rule 8.8 switches equipped with locks, hooks, latches. 73 tests with 2 failures
- Rule 14.7 reporting clear of limits. 0 tests

Testing results on the train ID LEF-52 for the months of March through August 2005

- Rule 1.47 duties of crew members 0 tests
- Rule 8.2 position of switches 0 tests
- Rule 8.3 main track switches 0 tests
- Rule 8.8 switches equipped with locks, hooks, latches 0 tests
- Rule 14.7 reporting clear of limits 0 tests

Testing results on employees on the original crew of the LEF-52-14 for the period on March 2005 through August 2005 on the relevant rules.

- Rule 1.47 duties of crew members 0 tests
- Rule 8.2 position of switches 1 test 1 failure
- Rule 8.3 main track switches 0 tests
- Rule 8.8 switches equipped with locks, hooks, latches 0 tests
- Rule 14.7 reporting clear of limits 0 tests

There were a total of 38 different operational tests covering other rules performed on these two employees with 1 failure during the same time frame.

Testing data on dispatchers assigned to the Lufkin Subdivision

John Reininger was contacted and asked to provide testing results by on the dispatchers on the Lufkin Subdivision. Mr Reininger indicated that there were 19 track warrant release tests since May 1, 2005 and no failures were noted.

Conclusions

The conductor of the original crew of the train LEF-52-14 keys were found in the lock, lock was not locked and the main track switch was found lined for the siding at Shepherd, Texas.

The original crew of the train LEF-52-14 failed to comply with Union Pacific air brake and train handling rule 32.1, GCOR rules 1.47 duties of crew members, rule 7.6 securing cars, rule 8.2 position of switches, rule 8.3 main track switches, rule 8.8 switches equipped with locks, hooks, or latches, rule 14.7 reporting clear of limits, system special instructions item 17 job briefing and maintaining the conductors log.

The crew of the train MPBSR-13, traveling at 38 mph and within their authority struck the train LEF-52-14 standing still in the siding at Shepherd, Texas due to the switch not being line for main track movement.