Federal Railroad Administration
Office of Safety
Headquarters Assigned
Accident Investigation Report
HQ-2005-05

Union Pacific (UP)
Bayport, Texas
January 8, 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
FEDERAL RAILROAD ADMINISTRATION

FRA FACTUAL RAILROAD ACCIDENT REPORT

FRA File # HQ-2005-5

1.Name of Railroad Operating Train #1: UNION PACIFIC RAILROAD COMPANY	1a. Alphabetic Code: UP	1b. Railroad Accident/Incident No.: 0105HO008
2.Name of Railroad Operating Train #2: N/A	2a. Alphabetic Code: N/A	2b. Railroad Accident/Incident: N/A
3.Name of Railroad Responsible for Track Maintenance: Union Pacific RR Co. [UP]	3a. Alphabetic Code: UP	3b. Railroad Accident/Incident No.: 0105HO008
4. U.S. DOT_AAR Grade Crossing Identification Number	5. Date of Accident/Incident: Month 01 / Day 08 / Year 2005	6. Time of Accident/Incident: 03:30: ☐ AM ☑ PM

7. Type of Accident/Indicent (single entry in code box): 1. Derailment; 2. Head on collision; 3. Rear end collision; 4. Side collision; 5. Raking collision; 6. Broken Train collision; 7. Hwy-rail crossing; 8. RR grade crossing; 9. Obstruction; 10. Explosion-detonation; 11. Fire/violent rupture; 12. Other impacts; 13. Other (describe in narrative): 01

8. Cars Carrying HAZMAT	9. HAZMAT Cars Damaged/Derailed	10. Cars Releasing HAZMAT	11. People Evacuated	12. Division
13	3	2	0	Houston

13. Nearest City/Town	14. Milepost (to nearest tenth)	15. State Abbr	15. State Code	16. County
Seabrook	6.7	N/A	TX	HARRIS

17. Temperature (F) (specify if minus)	18. Visibility (single entry) 1. Dawn 2. Day 3.Dusk 4.Dark	Code	19. Weather (single entry) 1. Clear 2. Cloudy 3. Rain 4. Fog 5.Sleet 6.Snow	Code	20. Type of Track 1. Main 2. Yard 3. Siding 4. Industry	Code
72 F		2		1		4

21. Track Name/Number	22. FRA Track Class (1-9, X)	Code	23. Annual Track Density (gross tons in millions)	24. Time Table Direction 1. North 3. East	Code
Seabr. Ind. Lead0572		1	0		2

OPERATING TRAIN #1

25. Type of Equipment Consist (single entry) 1. Freight train 2. Passenger train 3. Commuter train 4. Work train 5. Single car 6. Cut of cars 7. Yard/switching 8. Light loco(s). 9. Maint./inspect.car	A. Spec. MoW Equip. Code	26. Was Equipment Attended? 1. Yes 2. No	Code	27. Train Number/Symbol
	A	1		LHU26-08

28. Speed (recorded speed, if available) R - Recorded E - Estimated			Code
	5	MPH	E

29. Trailing Tons (gross tonnage, excluding power units): 3810

30. Method(s) of Operation (enter code(s) that apply): a. ATCS; b. Auto train control; c. Auto train stop; d. Cab; e. Traffic; f. Interlocking; g. Automatic block; h. Current of traffic; i. Time table/train orders; j.Track warrant control; k. Direct traffic control; l.Yard limits; m.Special instructions; n. Other than main track; o. Positive train control; p. Other (Specify in narrative) Code(s): n N/A N/A N/A N/A

30a. Remotely Controlled Locomotive? 0 = Not a remotely controlled; 1 = Remote control portable; 2 = Remote control tower; 3 = Remote control transmitter - more than one remote control transmitter; 2 = South; 4 = West: 0

31. Principal Car/Unit	a. Initial and Number	b. Position in Train	c. Loaded (yes/no)
(1) First involved (derailed, struck, etc)	N/A	2	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.

Alcohol	Drugs
0	0

33. Was this consist transporting passengers? (Y/N): N

34. Locomotive Units	a. Head End	Mid Train b. Manual	Mid Train c. Remote	Rear End d. Manual	Rear End c. Remote
(1) Total in Train	2	0	0	0	0
(2) Total Derailed	1	0	0	0	0

35. Cars	Loade a. Freight	Loade b. Pass.	Empty c. Freight	Empty d. Pass.	e. Caboose
(1) Total in Equipment Consist	24	0	26	0	0
(2) Total Derailed	3	0	0	0	0

36. Equipment Damage This Consist	37. Track, Signal, Way, & Structure Damage	38. Primary Cause Code	39. Contributing Cause Code
85428	41952	T212	N/A

Number of Crew Members

40. Engineer/ Operators	41. Firemen	42. Conductors	43. Brakemen
N/A	0	2	0

Length of Time on Duty

44. Engineer/Operator	45. Conductor
Hrs 2 Mi 30	Hrs 2 Mi 30

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: 2

50. Was EOT Device Properly Armed? 1. Yes 2. No: 2

51. Caboose Occupied by Crew? 1. Yes 2. No: 2

OPERATING TRAIN #2

52. Type of Equipment Consist (single entry) 1. Freight train 2. Passenger train 3. Commuter train 4. Work train 5. Single car 6. Cut of cars 7. Yard/switching 8. Light loco(s). 9. Maint./inspect.car	A. Spec. MoW Equip. Code	53. Was Equipment Attended? 1. Yes 2. No	Code	54. Train Number/Symbol
	N/A	N/A		N/A

55. Speed (recorded speed, if available) R - Recorded E - Estimated			Code
	0	MPH	N/A

57. Method(s) of Operation (enter code(s) that apply): a. ATCS; b. Auto train control; g. Automatic block; h. Current of traffic; m.Special instructions; n. Other than main track

57a. Remotely Controlled Locomotive? 0 = Not a remotely controlled; 1 = Remote control portable

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56. Trailing Tons (gross tonnage, excluding power units): 0

c. Auto train stop; d. Cab; e. Traffic; f. Interlocking; i. Time table/train orders; j.Track warrant control; k. Direct traffic control; l.Yard limits; o. Positive train control; p. Other (Specify in narrative)

Code(s): N/A | N/A | N/A | N/A | N/A

2 = Remote control tower
3 = Remote control transmitter - more than one remote control transmitter: N/A

58. Principal Car/Unit	a. Initial and Number	b. Position in Train	c. Loaded (yes/no)
(1) First involved (derailed, struck, etc)	0	0	N/A
(2) Causing (if mechanical cause reported)	0	0	N/A

59. If railroad employee(s) tested for drug/alcohol use, enter the number that were positive in the appropriate box.

Alcohol	Drugs
N/A	N/A

60. Was this consist transporting passengers? (Y/N): N/A

61. Locomotive Units	a. Head End	Mid Train b. Manual	Mid Train c. Remote	Rear End d. Manual	Rear End c. Remote
(1) Total in Train	0	0	0	0	0
(2) Total Derailed	0	0	0	0	0

62. Cars	Loade a. Freight	Loade b. Pass.	Empty c. Freight	Empty d. Pass.	e. Caboose
(1) Total in Equipment Consist	0	0	0	0	0
(2) Total Derailed	0	0	0	0	0

63. Equipment Damage This Consist: 0

64. Track, Signal, Way, & Structure Damage: 0

65. Primary Cause Code: N/A

66. Contributing Cause Code: N/A

Number of Crew Members

67. Engineer/ Operators	68. Firemen	69. Conductors	70. Brakemen
0	0	0	0

Length of Time on Duty

71. Engineer/Operator: Hrs 0 Mi 0

72. Conductor: Hrs 0 Mi 0

Casualties to:	73. Railroad Employees	74. Train Passengers	75. Other
Fatal	0	0	0
Nonfatal	0	0	0

76. EOT Device? 1. Yes 2. No: N/A

77. Was EOT Device Properly Armed? 1. Yes 2. No: N/A

78. Caboose Occupied by Crew? 1. Yes 2. No: N/A

Highway User Involved

79. Type: A. Auto; B. Truck; C. Truck-Trailer.; D. Pick-Up Truck; E. Van; F. Bus; G. School Bus; H. Motorcycle; J. Other Motor Vehicle; K. Pedestrian; M. Other (spec. in narrative). Code: N/A

80. Vehicle Speed (est. MPH at impact): 0

81. Direction geographical) 1.North 2.South 3.East 4.West. Code: N/A

82. Position: 1.Stalled on Crossing 2.Stopped on Crossing 3.Moving Over Crossing 4. Trapped. Code: N/A

86a. Was the highway user and/or rail equipment involved in the impact transporting hazardous materials? 1. Highway User 2. Rail Equipment 3. Both 4. Neither. Code: N/A

Rail Equipment Involved

83. Equipment: 1.Train(units pulling); 2.Train(units pushing); 3.Train (standing); 4.Car(s) (moving); 5.Car(s) (standing); 6.Light Loco(s) (moving); 7.Light(s) (standing); 8.Other (specify in narrative). Code: N/A

84. Position of Car Unit in Train: 0

85. Circumstance: 1. Rail Equipment Struck Highway User; 2. Rail Equipment Struck by Highway User. Code: N/A

86b. Was there a hazardous materials release by 1. Highway User 2. Rail Equipment 3. Both 4. Neither. Code: N/A

86c. State here the name and quantity of the hazardous materials released, if any.
N/A

87. Type of Crossing Warning: 1.Gates; 2.Cantilever FLS; 3.Standard FLS; 4.Wig Wags; 5.Hwy. traffic signals; 6.Audible; 7.Crossbucks; 8.Stop signs; 9.Watchman; 10.Flagged by crew; 11.Other (spec. in narr.); 12.None

Code(s)							
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

88. Signaled Crossing Warning (See instructions for codes) Code:

89. Whistle Ban 1. Yes 2. No 3. Unknown. Code: N/A

90. Location of Warning 1. Both Sides 2. Side of Vehicle Approach 3. Opposite Side of Vehicle Approach. Code: N/A

91. Crossing Warning Interconnected with Highway Signals 1. Yes 2. No 3. Unknown. Code: N/A

92. Crossing Illuminated by Street Lights or Special Lights 1. Yes 2. No 3. Unknown. Code: N/A

93. Driver's Age: 0

94. Driver's Gender 1. Male 2. Female. Code: N/A

95. Driver Drove Behind or in Front of Train and Struck or was Struck by Second Train 1. Yes 2. No 3. Unknown. Code: N/A

96. Driver 1. Drove around or thru the Gate 2. Stopped and then Proceeded 3. Did not Stop 4. Stopped on Crossing 5. Other (specify in narrative). Code: N/A

97. Driver Passed Standing Highway Vehicle 1. Yes 2. No 3. Unknown. Code: N/A

98. View of Track Obscured by (primary obstruction) 1. Permanent Structure 2. Standing Railroad Equipment 3. Passing Train 4. Topography 5. Vegetation 6. Highway Vehicle 7. Other (specify in narrative) 8. Not obstructed. Code: N/A

101. Casulties to Highway-Rail Crossing Users	Killed	Injured
	0	0

99. Driver Was 1. Killed 2.Injured 3. Uninjured. Code: N/A

100. Was Driver in the Vehicle? 1. Yes 2. No. Code: N/A

102. Highway Vehicle Property Damage (est. dollar damage): 0

103. Total Number of Highway-Rail Crossing Users (include driver): 0

104. Locomotive Auxiliary Lights? 1. Yes 2. No. Code: N/A

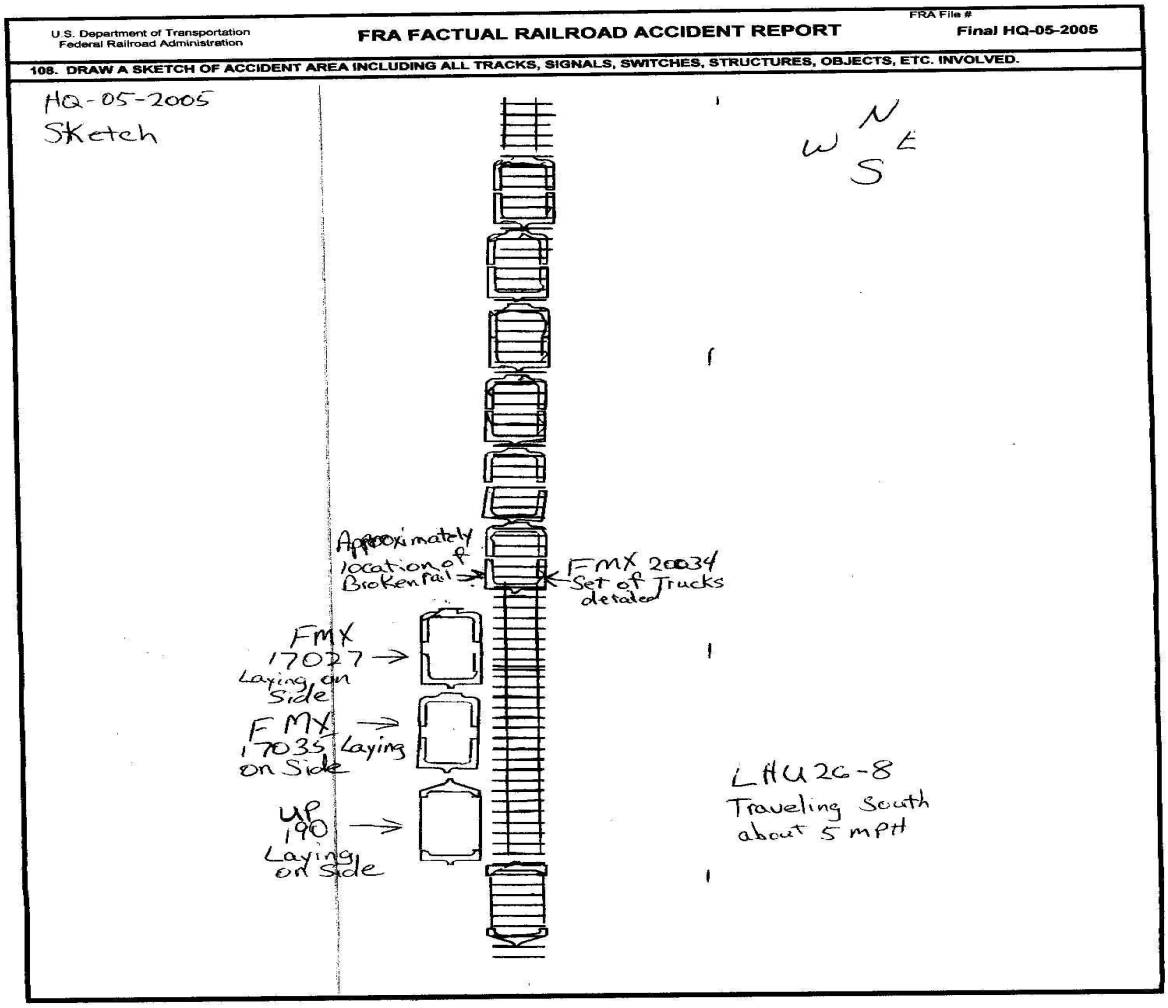
105. Locomotive Auxiliary Lights Operational? 1. Yes 2. No. Code: N/A

106. Locomotive Headlight Illuminated? 1. Yes 2. No. Code: N/A

107. Locomotive Audible Warning Sounded? 1. Yes 2. No. Code: N/A

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

HQ-05-2005.jpg



109. SYNOPSIS OF THE ACCIDENT

On January 8, 2005, at 3:30 P.M. Central Daylight Time (CDT) a Southbound Union Pacific Railroad (UP) Local Switching Job LHU26-08 with 50 cars derailed one (1) locomotive and three (3) cars at Milepost 6.7 on UP's Houston Service Unit Seabrook Industrial Lead, near Seabrook, Texas. All three of the derailed tank cars were loaded with Hydrogen Peroxide. Two of the derailed cars were turned over and each spilled approximately 50 gallons of product. The released product was on fire but was extinguished by the Pasadena Volunteer Fire Department upon their arrival. The Fire Department initiated a "shelter in place" alert for nearby residents. The "shelter in place" order was lifted at 5:33 p.m.. In addition, Texas State Highway 146 which parallels the tracks was shut down until 11:38 p.m.. There were no injuries to the train crew or area residents.

The second locomotive sustained damages totaling $25,000 and the rail cars sustained damages totaling $60,428. Track damage totaled $41,952.

At the time of the accident it was daylight and clear. The temperature was 72 degrees F.

The accident was caused by a twelve (12) inch horizontal split head in the rail.

110. NARRATIVE

Circumstances Prior to the Accident
The crew of local UP LHU26-08 included a locomotive engineer, a conductor, a student conductor, and a brakeman. They first went on duty at 1 p.m. CDT, January 8, 2005, at the UP Strang Yard in La Porte, Texas. This was the home terminal for all crew members, and all received more than the statutory off duty period, prior to reporting for duty.

The tour of duty began when they pulled two locomotives off of the FMC Lead, and gathered up a number of cars that were scheduled for distribution in and around various local Industries. At one point, while comming south from the Navigation Lead with 50 cars, the crew was in the process of stopping as they approached the derailment area. The conductor and another crew member were riding the end of the 50 car cut and the locomotive engineer was seated at the controls of the leading locomotive and intending to stop to let the crew member off the engine.

In this area of the railroad there are no curves. There are three hand throw switches in the area of the accident. The grade is practically level with an elevation of 23.6 feet above sea level. Texas Highway 146 runs parallel to the tracks in area.

The railroad timetable direction of the train was south. The geographic direction was southeast. Timetable directions are used throughout this report.

The Accident
Train UP LHU26-08
The local switching job was being operated at an estimated speed of five (5) mph approaching the accident area. According to the engineer he was slowing the train to a stop so the LHU26-8's conductor, student conductor and brake man riding the cut of cars could get off to begin switching operations after they pulled the rear of their train clear of the Navigation Industrial Lead switch. The engineer looking out his window noticed the second unit falling to his left. The train then experienced an undesired emergency train air brake application. When the train came to a complete stop, the crew saw that they had one locomotive and two loaded tank cars derailed and lying on their sides. The conductor notified UP's Manager of Yard Operations about the derailment at 3:30 p.m. The maximum authorized speed for this train was 10 mph, as designated in the current UP Timetable No. 3 dated March 30, 2003.

The second unit, UP 190, struck the broken rail derailing it and landing on its side. The first two tank cars from the second locomotive (FMLX 17035, FMLX 17027) derailed and landed on their sides. The third car (FMLX 20034) had a set of trucks derailed but remained upright on the tracks. All three cars derailed were loaded Hydro Peroxide tank cars. According to UP's Regional Manager of Chemical Transportation and Safety, the two tank cars that were resting on their sides leaked 50 gallons of product and the released product was on fire which the Pasadena Volunteer Fire Department extinguished. The source of the released product was from the "stone" vents located on the tops of the tank cars. The locomotive spilled 1,200 gallons of diesel fuel from its fuel cap. The fuel from the locomotive was removed from the ditches with vacuum trucks and was completed on January 17, 2005.

An off-duty Pasadena Volunteer Firefighter heard the accident and notified his station. At 3:56 p.m. the Pasadena Volunteer Fire Department dispatched a response team who applied a "shelter in place" protection for residence around the surrounding area. It was lifted at 5:33 p.m. after the spill was isolated and all derailed equipment was placed upright. Texas Highway 146 was also closed to all vehicular traffic until 11:38 p.m.

The conductor reported the accident to UP's Manager of Yard Operations on duty at 3:30 p.m.

Analysis and Conclusions
Analysis

The railroad conducted a rail test for internal defects on the Seabrook Industrial Lead on March 29, 2004 which is not required by Federal Standards for class 1 track. The test discovered two defects between mile post 0.2 and 1.7. The railroad relayed the rail that year with Continuous welded rail from mile post 0.0 to mile post 3.2. The location of the service failed rail was not in the relay. The defect was a twelve inch horizontal split head in a 90 lb. section of rail that was rolled in Ohio during 1920.

Conclusions
The railroad was in compliance with their own, and applicable Federal standards. The train crew members were the only witnesses to the accident.

Probable Cause
The FRA determined that the probable cause of the derailment was a horizontal spit head measuring 12 inches that broke from the parent rail as the lead locomotive unit traversed across the rail. The service failed rail then caused the second locomotive unit and the first and second tank cars to derail and fall onto their sides. The third car from the second locomotive unit had it's leading set of trucks derailed but remained upright.