Federal Railroad Administration
Office of Safety
Headquarters Assigned
Accident Investigation Report
HQ-2007-37

Union Pacific (UP)
Baytown, Texas
June 14, 2007

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-2007-37

1.Name of Railroad Operating Train #1: Union Pacific RR Co. [UP]	1a. Alphabetic Code: UP	1b. Railroad Accident/Incident No.: 0607HO031
2.Name of Railroad Operating Train #2: N/A	2a. Alphabetic Code: N/A	2b. Railroad Accident/Incident No.: N/A
3.Name of Railroad Operating Train #3: N/A	3a. Alphabetic Code: N/A	3b. Railroad Accident/Incident No.: N/A
4.Name of Railroad Responsible for Track Maintenance: Union Pacific RR Co. [UP]	4a. Alphabetic Code: UP	4b. Railroad Accident/Incident No.: 0607HO031
5. U.S. DOT_AAR Grade Crossing Identification Number: 762818A	6. Date of Accident/Incident: Month 05 Day 14 Year 2007	7. Time of Accident/Incident: 04:00: ☑ AM ☐ PM

8. 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) — Code: 07

9. Cars Carrying HAZMAT	10. HAZMAT Cars Damaged/Derailed	11. Cars Releasing HAZMAT	12. People Evacuated	13. Division
1	1	N/A	0	Houston

14. Nearest City/Town	15. Milepost (to nearest tenth)	16. State Abbr	16. State Code	17. County
Baytown	30.95	N/A	TX	HARRIS

18. Temperature (F) (specify if minus)	19. Visibility (single entry) 1. Dawn 2. Day 3.Dusk 4.Dark — Code	20. Weather (single entry) 1. Clear 2. Cloudy 3. Rain 4. Fog 5.Sleet 6.Snow — Code	21. Type of Track 1. Main 2. Yard 3. Siding 4. Industry — Code
75 F	4	2	1

22. Track Name/Number	23. FRA Track Class (1-9, X) — Code	24. Annual Track Density (gross tons in millions)	25. Time Table Direction 1. North 2. South 3. East 4. — Code
Single Main	2	15.58	3

OPERATING TRAIN #1

26. 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	27. Was Equipment Attended? 1. Yes 2. No — Code	28. Train Number/Symbol
	1	2	LHH88-13

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

30. Trailing Tons (gross tonnage, excluding power units): 11610

31. 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)				
1	N/A	N/A	N/A	N/A

31a. 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: 0

32. Principal Car/Unit	a. Initial and Number	b. Position in Train	c. Loaded (yes/no)
(1) First involved (derailed, struck, etc)	PROX098849	91	yes
(2) Causing (if mechanical cause reported)	0	0	N/A

33. 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

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

35. 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	3	0	0	0	0
(2) Total Derailed	0	0	0	0	0

36. Cars	Loaded a. Freight	Loaded b. Pass.	Empty c. Freight	Empty d. Pass.	e. Caboose
(1) Total in Equipment Consist	79	0	47	0	0
(2) Total Derailed	0	0	0	0	0

37. Equipment Damage This Consist: 100

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

39. Primary Cause Code: M399

40. Contributing Cause Code: N/A

Number of Crew Members

41. Engineer/ Operators	42. Firemen	43. Conductors	44. Brakemen
1	0	1	0

Length of Time on Duty

45. Engineer/Operator	46. Conductor
Hrs 6 Mi 30	Hrs 6 Mi 30

Casualties to:	47. Railroad Employees	48. Train Passengers	49. Other
Fatal	0	0	4
Nonfatal	0	0	2

50. EOT Device? 1. Yes 2. No — 1

51. Was EOT Device Properly Armed? 1. Yes 2. No — 1

52. Caboose Occupied by Crew? 1. Yes 2. No — N/A

OPERATING TRAIN #2

53. 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	54. Was Equipment Attended? 1. Yes 2. No — Code	55. Train Number/Symbol
	N/A	N/A	N/A

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

58. 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

58a. Remotely Controlled Locomotive? 0 = Not a remotely controlled; 1 = Remote control portable

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION

FRA FACTUAL RAILROAD ACCIDENT REPORT

FRA File # HQ-2007-37

57. Trailing Tons (gross tonnage, excluding power units): N/A

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

59. 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

60. 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

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

62. 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

63. Cars	Loaded a. Freight	Loaded 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

64. Equipment Damage This Consist: 0

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

66. Primary Cause Code: N/A

67. Contributing Cause Code: N/A

Number of Crew Members

68. Engineer/ Operators	69. Firemen	70. Conductors	71. Brakemen
0	0	0	0

Length of Time on Duty

72. Engineer/Operator: Hrs 0 Mi 0

73. Conductor: Hrs 0 Mi 0

Casualties to:	74. Railroad Employees	75. Train Passengers	76. Other
Fatal	0	0	0
Nonfatal	0	0	0

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

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

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

OPERATING TRAIN #3

80. 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: N/A

81. Was Equipment Attended? 1. Yes 2. No Code: N/A

82. Train Number/Symbol: N/A

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

84. Trailing Tons (gross tonnage, excluding power units): N/A

85. 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/A N/A N/A N/A N/A

85a. 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: N/A

86. 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

87. 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

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

89. 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

90. Cars	Loaded a. Freight	Loaded 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

91. Equipment Damage This Consist: 0

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

93. Primary Cause Code: N/A

94. Contributing Cause Code: N/A

Number of Crew Members

95. Engineer/ Operators	96. Firemen	97. Conductors	98. Brakemen
0	0	0	0

Length of Time on Duty

99. Engineer/Operator: Hrs 0 Mi 0

100. Conductor: Hrs 0 Mi 0

Casualties to:	101. Railroad Employees	102. Train	103. Other
Fatal	0	0	0
Nonfatal	0	0	0

104. EOT 1. Yes 2. No: N/A

105. Was EOT Device Properly 1. Yes 2. No: N/A

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

Highway User Involved

107. 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: J

108. Vehicle Speed (est. MPH at impact): N/A

109. geographical) 1.North 2.South 3.East 4.West Code: 3

Rail Equipment Involved

111. 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: 1

112. Position of Car Unit in: 91

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION

FRA FACTUAL RAILROAD ACCIDENT REPORT

FRA File # HQ-2007-37

110. Position	Code	113. Circumstance	Code
1.Stalled on Crossing 2.Stopped on Crossing 3.Moving Over Crossing 4. Trapped	3	1. Rail Equipment Struck Highway User 2. Rail Equipment Struck by Highway User	2
114a. 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	2	114b. Was there a hazardous materials release 1. Highway User 2. Rail Equipment 3. Both 4. Neither	4

114c. State here the name and quantity of the hazardous materials released, if any.
N/A

115. Type 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)	07	N/A	N/A	N/A	N/A	N/A	N/A					

116. Signaled Crossing (See instructions for codes)	Code	117. Whistle 1. Yes 2. No 3. Unknown	Code
	N/A		2

118. Location of Warning 1. Both Sides 2. Side of Vehicle Approach 3. Opposite Side of Vehicle Approach	Code	119. Crossing Warning with Highway Signals 1. Yes 2. No 3. Unknown	Code	120. Crossing Illuminated by Street Lights or Special Lights 1. Yes 2. No 3. Unknown	Code
	1		N/A		2

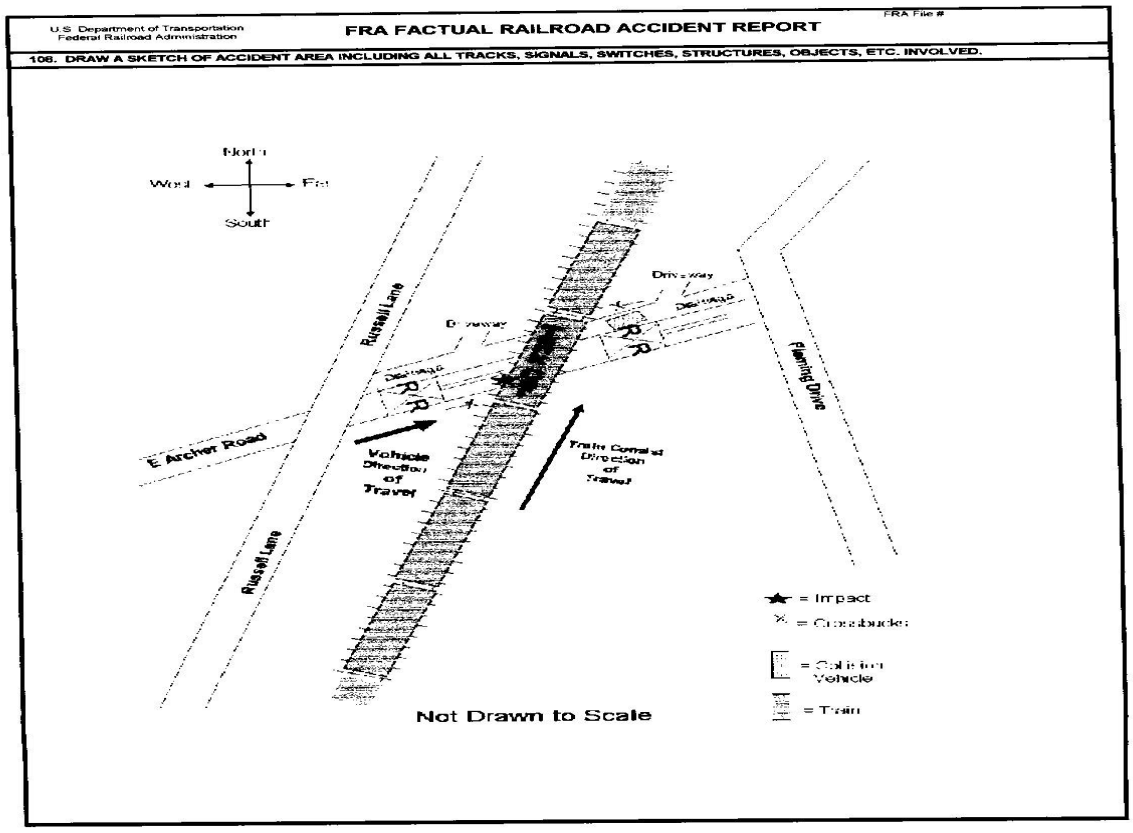
121. Age	122. Driver's Gender 1. Male 2. Female	Code	123. Driver Drove Behind or in Front of and Struck or was Struck by Second Train 1. Yes 2. No 3. Unknown	Code	124. Driver 1. Drove around or thru the Gate 2. Stopped and then Proceeded 3. Did not Stop 4. Stopped on Crossing 5. Other (specify in narrative)	Code
15		1		2		3

125. Driver Passed Highway Vehicle 1. Yes 2. No 3. Unknown	Code	126. 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
	2		8

Casualties to:	Killed	Injured	127. Driver 1. Killed 2.Injured 3. Uninjured	Code	128. Was Driver in the Vehicle? 1. Yes 2. No	Code
				2		1
129. Highway-Rail Crossing Users	4	2	130. Highway Vehicle Property Damage (est. dollar damage)	15000	131. Total Number of Highway-Rail Crossing Users (include driver)	6

132. Locomotive Auxiliary Lights? 1. Yes 2. No	Code	133. Locomotive Auxiliary Lights Operational? 1. Yes 2. No	Code
	1		1
134. Locomotive Headlight Illuminated? 1. Yes 2. No	Code	135. Locomotive Audible Warning Sounded? 1. Yes 2. No	Code
	1		2

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



137. SYNOPSIS OF THE ACCIDENT

Synopsis of the Accident
A northbound (Timetable - East bound) Union Pacific train was struck by an automobile at a rail highway grade crossing on June 14, 2007, at approximately 4:00 AM. The accident occurred near Baytown, TX at a grade crossing identified as Archer road with a DOT crossing inventory number of 762818A.

Four passengers in the motor vehicle were killed in the collision. The vehicle driver and another passenger were injured. The vehicle was completely destroyed. There were no injuries to the train crew. The crew of the struck train was unaware of the collision and the train crew of a second train reported seeing a vehicle in the ditch as they passed the collision location.

At the time of the accident it was dark and cloudy. The temperature was 75 ° F.

The accident was caused by failure of the motor vehicle driver to stop prior to striking the standing train.

138. NARRATIVE

Circumstances Prior to the Accident
The crew of UP train LHH88-13 included a locomotive engineer and a conductor. They first went on duty at 9:30 PM, June 13, 2007, at Coady Yard in Baytown, TX. This was a regular job and the home terminal for the crew members and each received more than the statutory off duty period, prior to reporting for duty.

Their assigned freight train consisted of three locomotives, 79 loaded, and 47 empty cars of several varieties. It was 8,196 feet long, and weighed 11,610 tons. The tank car struck by the motor vehicle was loaded with Liquid Propane Gas (LPG). The train, operating on Houston Division, Baytown Sub-Division track, was scheduled to get a set of cars at Coady yard and travel east with cars added and removed at Durham Yard and Eldon locations. The train received an air brake test and a EOT armed and working check at 11:20 P.M. and departed Coady yard at 11:30 P.M. The operations were conducted in yard limits.

The eastbound train stopped around MP 32, disconnected the locomotives from the freight car consist in order to turn one or two of the locomotives around at the railroad wye. Between 3:25 a.m. and 4:05 a.m., the freight car consist was stationary and occupied the Archer road crossing for approximately 33 minutes.

In this area of the railroad, the track is a single main line FRA Class 2 track. There is zero degrees curvature and zero grade elevation. In this area Archer road is straight and the grade is substantially level. The railroad timetable direction for the train was east. The geographic direction was northeast. Archer road runs east and west and crosses the railroad at a slight angle. Archer road is a two lane asphalt road with an average daily traffic count of 860 according to the FRA inventory.

The Accident
Train UP LHH88-13
At the time of the accident the cars in the train were stationary. The crew connected to the freight cars after turning around the locomotive consist and began proceeding east at approximately 4:05 a.m. Operations were routine and the train's crew was unaware of the motor vehicle impacting the train. The crew of a trailing train contacted UP LHH88-13 by radio and asked if they had hit anything because there was debris on the right of way at the Archer road crossing. The crew then spoke to the Manager of Yard Operations (MYO) who told them to stop. UP dispatch noted an incident report at 5: 23 a.m. and a follow up call from the MYO at 5:37 a.m. The MYO arrived at the train and took the crew to the accident site to meet with the Harris County Sheriff's Office deputy who investigated the accident. Upon later inspection the 91st car in the consist was found to have had slight damage to the left side of the car.

Highway Vehicle
The motor vehicle was traveling from west to east on Archer Road. According to a interim report, filed by the deputy sheriff, the vehicle failed to stop before impacting the train on the crossing. The report indicated that the vehicle was speeding over the limit. Skid mark measurements were taken and the Sheriff's office conducted reinactment tests at the crossing; however the specific information as to speed estimates are not available at this time. The posted speed limit is 30 mph.

The motor vehicle struck the 91st car in the consist, PROX 098849, slightly behind the mid point of the left side of the rail car. Based upon the damage to the rail car being on the left or west (geographic) side of the rail car and the motor vehicle coming to rest on the right or east (geographic) side of the rail car, the motor vehicle passed under the rail car after the impact.

A Harris County deputy sheriff was dispatched to the scene at 4:36 a.m. and arrived on the scene at 5:17 a.m. on June 14, 2007. Lifeflight # 3 was notified at 4:42 a.m. and Lifeflight # 2 was notified at 4:43 a.m. Lifeflight # 3 arrived at 5:03 a.m. and Lifeflight # 2 arrived at 5:12 a.m. Two vehicle occupants were transported via the Lifeflights to Memorial - Hermann Hospital. Four other occupants were dead at the scene and transported via body car (Ambulance 9033) from the accident scene at 7:17 a.m. The deputy sheriff's report reflected the time of death for all four occupants as 4:56 a.m.

Analysis and Conclusions

Analysis

The driver of the motor vehicle was a 15 year old male. There was another 15 year old male front seat passenger and four other passengers in the back seat. Two were 14 year old females and one was a 13 year old female. The fourth back seat passenger was a 14 year old male. Toxicology tests (blood) were performed on the motor vehicle driver but the results are not available as of this date. The motor vehicle involved, a 1993 Jeep Cherokee, was reported stolen by its owner prior to the incident and criminal charges are currently pending against the driver. Because of the criminal charges pending in this collision, some information on the activities of the vehicle occupants prior to the collision is unavailable.

The train crew completed a FRA Fatigue Analysis Questionaire. The questionaire and the on duty records reflect the crew was adequately rested during the work hours when the collision occurred. Since the crew was wyeing the locomotives and not coupled to the standing car consist at the time the motor vehicle struck railcar PROX 098849, crew fatigue was no factor in the collision.

The highway-rail crossing at grade is equipped with crossbuck signs on each side of the track. There are no active warning devices at the crossing. Advance warning signs were posted at the crossing and there were warning pavement markings preceding the crossing from both directions. There was no street lighting at the location. The Archer road crossing had received a diagnostic inspection on June 28, 2006, to determine whether active warning devices, gates and lights, should be installed. The Texas Department of Transportation (TxDOT), UP Railroad, and local officials determined that the equipment should be installed and gave the railroad approval to proceed with a cost estimate for the installation. The diagnostic team recommended that yield signs be placed at the crossing until the active warning device installation was completed. Yield signs were not present at the crossing at the time of the accident. The estimate was received by TxDOT on July 12, 2007 and an Exhibit B authorizing the construction of the warning devices was sent to the railroad on July 25, 2007.

Railcar PROX098849 is a black tank car without reflective stripping.

Conclusions

At the time of the accident, the railroad was in compliance with their own and all applicable federal rules. There were no witnesses to the accident other than the occupants of the motor vehicle. There were no indications to the train crew that a collision had occurred while the rail car consist had been standing at the crossing and consequently they had no information that could be used to determine why the motor vehicle failed to stop at the crossing. The driver of the motor vehicle was not a licensed driver. As noted earlier, criminal charges are pending in the case and no information from the two surviving motor vehicle occupants is available at this time. Based on the evidence available, the investigating Sheriff's deputy determined the driver failed to stop for the train prior to the collision. Further, the officer determined that speeding over the limit was a contributing factor to the collision.

Probable Cause and Contributing Factors

The FRA determined that the accident occurred because the driver of the motor vehicle failed to stop at the highway-rail crossing at grade as required by the Texas Transportation Code, Chapter 545 (Operation and Movement of Vehicles); §545.251.