Federal Railroad Administration
Office of Safety
Headquarters Assigned
Accident Investigation Report
HQ-2006-87

Union Pacific
Kismet, KS
November 8, 2006

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-2006-87

1.Name of Railroad Operating Train #1: Union Pacific RR Co. [UP]	1a. Alphabetic Code: UP	1b. Railroad Accident/Incident No.: 1106KC006
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.: 1106KC006
4. U.S. DOT_AAR Grade Crossing Identification Number: 605539A	5. Date of Accident/Incident: Month 11 / Day 08 / Year 2006	6. Time of Accident/Incident: 02:04: ☐ 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): 07

8. Cars Carrying HAZMAT	9. HAZMAT Cars Damaged/Derailed	10. Cars Releasing HAZMAT	11. People Evacuated	12. Division
0	0	0	0	Kansas City

13. Nearest City/Town	14. Milepost (to nearest tenth)	15. State Abbr	15. State Code	16. County
Kismit	422.22	N/A	KS	SEWARD

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
88 F		2		1		1

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
Single Main		4	33		4

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
	8	1		IDUAL-7

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

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

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)				
e	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: 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	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.

Alcohol	Drugs
N/A	N/A

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

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	1	0	0	0	0
(2) Total Derailed	0	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	0	0	0	0	0
(2) Total Derailed	0	0	0	0	0

36. Equipment Damage This Consist	37. Track, Signal, Way, & Structure Damage	38. Primary Cause Code	39. Contributing Cause Code
300	0	M302	N/A

Number of Crew Members / Length of Time on Duty

40. Engineer/ Operators	41. Firemen	42. Conductors	43. Brakemen	44. Engineer/Operator	45. Conductor
N/A	0	1	1	Hrs 5 Mi 7	Hrs 5 Mi 7

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: N/A

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

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	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

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION

FRA FACTUAL RAILROAD ACCIDENT REPORT

FRA File # HQ-2006-87

56. Trailing Tons (gross tonnage, excluding power units)	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)	2 = Remote control tower 3 = Remote control transmitter - more than one remote control transmitter
0			N/A N/A N/A N/A N/A	N/A

58. Principal Car/Unit	a. Initial and Number	b. Position in Train	c. Loaded (yes/no)	59. If railroad employee(s) tested for drug/alcohol use, enter the number that were positive in the appropriate box.	Alcohol	Drugs
(1) First involved (derailed, struck, etc)	0	0	N/A		N/A	N/A
(2) Causing (if mechanical cause reported)	0	0	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	62. Cars	Loade a. Freight	Loade b. Pass.	Empty c. Freight	Empty d. Pass.	e. Caboose
(1) Total in Train	0	0	0	0	0	(1) Total in Equipment Consist	0	0	0	0	0
(2) Total Derailed	0	0	0	0	0	(2) Total Derailed	0	0	0	0	0

63. Equipment Damage This Consist	64. Track, Signal, Way, & Structure Damage	65. Primary Cause Code	66. Contributing Cause Code
0	0	N/A	N/A

Number of Crew Members				Length of Time on Duty	
67. Engineer/ Operators	68. Firemen	69. Conductors	70. Brakemen	71. Engineer/Operator	72. Conductor
0	0	0	0	Hrs 0 Mi 0	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?	77. Was EOT Device Properly Armed?	78. Caboose Occupied by Crew?
1. Yes 2. No N/A	1. Yes 2. No N/A	1. Yes 2. No N/A

Highway User Involved

79. Type	Code
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)	A

80. Vehicle Speed (est. MPH at impact)	81. Direction geographical) 1.North 2.South 3.East 4.West	Code
15		2

82. Position	Code
1.Stalled on Crossing 2.Stopped on Crossing 3.Moving Over Crossing 4. Trapped	3

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

Rail Equipment Involved

83. Equipment	Code
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)	6

84. Position of Car Unit in Train
1

85. Circumstance	Code
1. Rail Equipment Struck Highway User 2. Rail Equipment Struck by Highway User	1

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

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)	07	08	N/A	N/A	N/A	N/A	N/A					

88. Signaled Crossing Warning (See instructions for codes)	Code
N/A	

89. Whistle Ban	Code
1. Yes 2. No 3. Unknown	2

90. Location of Warning	Code
1. Both Sides 2. Side of Vehicle Approach 3. Opposite Side of Vehicle Approach	1

91. Crossing Warning Interconnected with Highway Signals	Code
1. Yes 2. No 3. Unknown	2

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

93. Driver's Age	94. Driver's Gender 1. Male 2. Female	Code
37		2

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

96. Driver	Code
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)	3

97. Driver Passed Standing Highway Vehicle	Code
1. Yes 2. No 3. Unknown	2

98. View of Track Obscured by (primary obstruction)	Code
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	8

101. Casulties to Highway-Rail Crossing Users	Killed	Injured
	3	0

99. Driver Was	Code
1. Killed 2.Injured 3. Uninjured	1

100. Was Driver in the Vehicle?	Code
1. Yes 2. No	1

102. Highway Vehicle Property Damage (est. dollar damage)
6000

103. Total Number of Highway-Rail Crossing Users (include driver)
3

104. Locomotive Auxiliary Lights?	Code
1. Yes 2. No	1

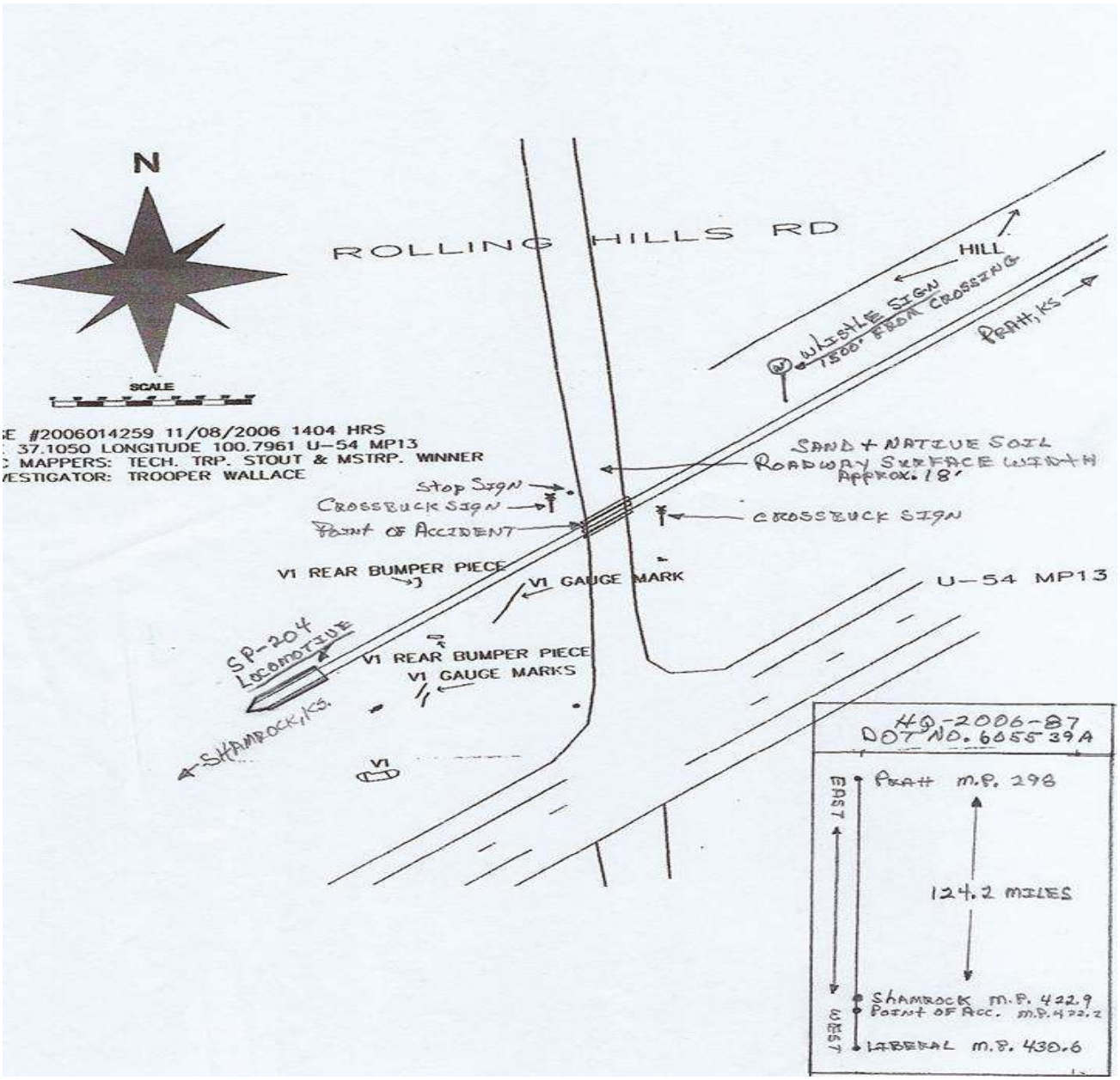
105. Locomotive Auxiliary Lights Operational?	Code
1. Yes 2. No	1

106. Locomotive Headlight Illuminated?	Code
1. Yes 2. No	1

107. Locomotive Audible Warning Sounded?	Code
1. Yes 2. No	1

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

HQ-2006-87 Sketch.jpg



109. SYNOPSIS OF THE ACCIDENT

On November 8, 2006, at approximately 2:04 p.m., westbound Union Pacific Railroad Company (UP) freight Train Symbol IDUAL-7, consisting of a single locomotive operating at a recorded speed of 68 mph, collided with a southbound 2002 Dodge Intrepid motor vehicle. The motor vehicle was operating at an estimated speed of 15 mph. The collision occurred at a passive highway-rail grade crossing (HGC) intersection, equipped with crossbucks for both directions of motor vehicle traffic and a stop sign for southbound motor vehicle traffic. The collision occurred approximately 124.22 miles west of Pratt, Kansas, near railroad location, Kismet, Kansas, at UP Milepost (MP) 422.22 on the Kansas City Service Unit, Pratt Subdivision.

The motor vehicle contained three occupants. The driver and passengers were fatally injured. The motor vehicle damages were estimated to be $6,000.

The train crew of Train Symbol IDUAL-7 was not injured and the locomotive did not derail. The estimated monetary damages to the locomotive was $300.

The weather at the time of the collision was daylight, clear, with a temperature of 88 degrees Fahrenheit and 14 mph winds.

The collision was caused by the failure of the motor vehicle operator to stop at the stop sign located at the HGC intersection and failure to yield the right-of-way to a train in the hazardous proximity of the HGC intersection.

110. NARRATIVE

The following information was obtained from an investigation that was conducted by the Federal Railroad Administration.

Circumstances Prior to the Accident

UP Train Symbol IDUAL-7 West included a locomotive engineer, conductor, and brakeman. They went on duty at 9 a.m. central standard time (c.d.t.), November 8, 2006, at their home terminal in Pratt, Kansas. All crew members received more than their required statutory off-duty period prior to reporting for duty.

The train consisted of one locomotive only and is considered the West Local by local UP personnel. The locomotive was destined for Liberal, Kansas, the train crew's away-from-home terminal. The train departed Pratt, Kansas, at 10:30 a.m., after the train crew conducted required equipment tests. There was no work conducted en route.

The locomotive engineer was seated in the engineer's seat (the north side of the cab) and operated Train Symbol IDUAL-7 from Pratt, without incident prior to the point of the collision, utilizing the locomotive's dynamic braking as needed throughout the trip. The conductor was seated left of the engineer (the south side of the cab), with the brakeman seated directly behind the conductor.

The 2002 Dodge Intrepid had three occupants, the 37-year-old female driver, a 54-year-old female in the right front seat, and a 4-year-old female in the back seat. The motor vehicle was traveling southbound on County Road "P", also identified as Rolling Hills Road, approaching the highway-rail grade crossing (HGC) intersection at approximately 15 mph. Information on the driver's alertness and activities prior to the collision are not available.

The railroad through this area is a single main track tangent in both directions from the subject HGC intersection for at least 5 miles, with a .26-percent westward ascending grade. Timetable directions are east and west through the subject area. These directions are used throughout this report.

The railroad timetable direction is east to west, with the geographical direction northeast to southwest. The geographical direction of County Road "P"/ Rolling Hills Road is north to south.

County Road "P"/Rolling Hills Road, roadway prior to and at the HGC intersection, is a 2-lane, sand and native soil surface, tangent from the north to the south. Traveling north to south on this county road, the grade is practically level. The dirt/sand road intersects the single main track at approximately 80-degree angle. The crossing is 24-foot full timber constructed surface. The surrounding terrain north of the HGC intersection is predominantly level, non-tilled agriculture property.

The Accident

Train IDUAL-7 West
The train was operating at a recorded speed of 70 mph while approaching the subject HGC intersection. The train crew's sight quadrants of the intersection were not obstructed, with the exception of the slightly raised agriculture and vegetational ridge area in the northeast quadrant of the HGC intersection.

Just prior to the collision, the brakeman observed a dark colored motor vehicle traveling southbound on County Road "P"/Rolling Hills Road. The brakeman alerted the locomotive engineer and conductor. The engineer utilized the locomotive's air horn and bell prior to the whistle board that was installed 1,600 feet prior to the intersection and did not apply the train's air brakes. The engineer thought the motor vehicle would stop at the stop sign located at the HGC intersection. The motor vehicle disappeared from the sight of the train crew due to the slightly raised dirt and vegetational ridge area in the northeast quadrant of the HGC intersection.

Approximately 15 to 20 feet from the HGC intersection, the train crew observed the motor vehicle emerge from behind the slightly raised dirt and vegetational ridge area. The motor vehicle did not stop at the stop sign north of the HGC intersection, so the engineer placed the train's air brakes into a service application. The train had slowed to 68 mph when the locomotive collided with the motor vehicle. The engineer placed the train's air brakes into an emergency application and waited for the locomotive to stop. The train crew was not injured.

Witnesses traveling westbound on U.S. Highway 54, which parallels the UP trackage through the subject area, indicated they observed the southbound motor vehicle on County Road "P"/Rolling Hills Road enter the HGC intersection without stopping at the stop sign, and then observed the resultant car/train collision. The Kansas Highway Patrol estimated the motor vehicle was traveling at approximately 10 to 15 mph at the time of the impact. There is no posted speed limit sign on the roadway in the area of the HGC intersection.

The locomotive struck the left side of the motor vehicle in the area of the driver's door, ejecting the right front occupant. The right front seat belt for the ejected occupant was still buckled in place and had stretch and blood evidence on the belt indicating the belt was applied during the collision. The other occupants remained in the motor vehicle. The motor vehicle was thrown into the southwest quadrant of the HGC intersection, resting on its top approximately 100 feet from the point of impact. There was no evidence of the motor vehicle braking prior to the collision.

The locomotive stopped 3,426 feet west of the point of impact. The conductor utilized the onboard radio communications to contact the train dispatcher and corridor manager, indicating the car/train collision. The conductor and brakeman detrained and walked back to the point of impact. Emergency response was at the scene when they arrived at the HGC intersection.

Emergency responders assessed the collision area and found one motor vehicle occupant ejected and two occupants seat belted into the motor vehicle, all fatally injured. The Kansas District 26 Coroner pronounced the three motor vehicle occupants deceased.

The locomotive sustained approximately $300.00 monetary damages. The motor vehicle sustained approximately $6,000.00 damages. There was no damage to the track structure or passive warning devices.

Analysis and Conclusions

Analysis:
The HGC intersection north of the UP main track was equipped with two individual signs on two separate posts, a stop sign, and a crossbuck sign. The south portion of the HGC intersection approaching the UP main track is equipped with a crossbuck sign only. The northeast quadrant of the HGC intersection has a raised sand/dirt area with dead and dormant vegetation paralleling the UP main track to the east.

The locomotive was equipped with two headlights, two ditch lights, and audible warning device required by Federal regulations. The locomotive engineer post incident tested these devices at the accident site in the presence of the Kansas Highway Patrol and UP Manager of Operating Practices. The devices functioned as intended.

The locomotive was also equipped with a speed indicator and an event recorder. The relevant event recorder data was downloaded by a UP official. Analysis disclosed the locomotive engineer was in compliance with all applicable railroad operating and train handling requirements. The Federal Railroad Administration (FRA) reviewed the analysis and concurred with the conclusions.

Conclusion:
The railroad was in full compliance with their own standards and all applicable Federal Regulatory Standards. The train crew and eye witnesses indicated that the southbound motor vehicle did not stop at the stop sign when a train was in the hazardous proximity of the HGC intersection and was struck by the westbound locomotive.

Probable Cause and Contributing Factors:

The FRA determined that the probable cause of the collision was the motor vehicle driver's failure to stop at the stop sign located at the HGC intersection, as