Federal Railroad Administration
Office of Safety
Headquarters Assigned
Accident Investigation Report
HQ-2008-76

Norfolk Southern (NS)
McIntosh, AL
September 30, 2008

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-2008-76

1.Name of Railroad Operating Train #1: Norfolk Southern Corp. [NS]	1a. Alphabetic Code: NS	1b. Railroad Accident/Incident No.: 034399
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: Norfolk Southern Corp. [NS]	4a. Alphabetic Code: NS	4b. Railroad Accident/Incident No.: 034399

5. U.S. DOT_AAR Grade Crossing Identification Number: 727760C	6. Date of Accident/Incident: Month 09 Day 30 Year 2008	7. Time of Accident/Incident: 03:30: ☐ 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
0	0	0	0	Alabama

14. Nearest City/Town	15. Milepost *(to nearest tenth)*	16. State Abbr / Code	17. County
McIntosh	112.5	N/A / AL	WASHINGTON

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
88 F	2	1	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. West — Code
single main	4	3.8	1

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	1	182A430

29. Speed *(recorded speed, if available)* R - Recorded E - Estimated — Code	31. Method(s) of Operation *(enter code(s) that apply)*	31a. Remotely Controlled Locomotive?
30 MPH — R	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)*	0 = Not a remotely controlled; 1 = Remote control portable; 2 = Remote control tower; 3 = Remote control transmitter - more than one remote control transmitter
30. Trailing Tons *(gross tonnage, excluding power units)*: 3481	Code(s): j N/A N/A N/A N/A	0

32. Principal Car/Unit	a. Initial and Number	b. Position in Train	c. Loaded *(yes/no)*
(1) First involved *(derailed, struck, etc)*	NS6557	1	N/A
(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: N/A; Drugs: 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	19	0	34	0	0
(2) Total Derailed	0	0	0	0	0

37. Equipment Damage This Consist	38. Track, Signal, Way, & Structure Damage	39. Primary Cause Code	40. Contributing Cause Code
$0.00	$0.00	M303	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 3 Mi 6	Hrs 3 Mi 6

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

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	58. Method(s) of Operation *(enter code(s) that apply)*	58a. Remotely Controlled Locomotive?
N/A MPH — N/A	a. ATCS; b. Auto train control; g. Automatic block; h. Current of traffic; m.Special instructions; n. Other than main track	0 = Not a remotely controlled; 1 = Remote control portable

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION

FRA FACTUAL RAILROAD ACCIDENT REPORT

FRA File # HQ-2008-76

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)*	N/A	N/A	N/A
(2) Causing *(if mechanical cause reported)*	N/A	N/A	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	N/A	N/A	N/A	N/A	N/A
(2) Total Derailed	N/A	N/A	N/A	N/A	N/A

63. Cars	Loaded a. Freight	Loaded b. Pass.	Empty c. Freight	Empty d. Pass.	e. Caboose
(1) Total in Equipment Consist	N/A	N/A	N/A	N/A	N/A
(2) Total Derailed	N/A	N/A	N/A	N/A	N/A

64. Equipment Damage This Consist N/A

65. Track, Signal, Way, & Structure Damage N/A

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
N/A	N/A	N/A	N/A

Length of Time on Duty

72. Engineer/Operator Hrs N/A Mi N/A

73. Conductor Hrs N/A Mi N/A

Casualties to:	74. Railroad Employees	75. Train Passengers	76. Other
Fatal	N/A	N/A	N/A
Nonfatal	N/A	N/A	N/A

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 N/A

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)*	N/A	N/A	N/A
(2) Causing *(if mechanical cause reported)*	N/A	N/A	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	N/A	N/A	N/A	N/A	N/A
(2) Total Derailed	N/A	N/A	N/A	N/A	N/A

90. Cars	Loaded a. Freight	Loaded b. Pass.	Empty c. Freight	Empty d. Pass.	e. Caboose
(1) Total in Equipment Consist	N/A	N/A	N/A	N/A	N/A
(2) Total Derailed	N/A	N/A	N/A	N/A	N/A

91. Equipment Damage This Consist N/A

92. Track, Signal, Way, & Structure Damage N/A

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
N/A	N/A	N/A	N/A

Length of Time on Duty

99. Engineer/Operator Hrs N/A Mi N/A

100. Conductor Hrs N/A Mi N/A

Casualties to:	101. Railroad Employees	102. Train	103. Other
Fatal	N/A	N/A	N/A
Nonfatal	N/A	N/A	N/A

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 A

108. Vehicle Speed *(est. MPH at impact)* 0

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

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 1

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FRA File # HQ-2008-76

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	1
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	4	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	116. Signaled Crossing *(See instructions for codes)*	Code	117. Whistle Ban 1. Yes 2. No 3. Unknown	Code
Code(s)	07	08	N/A	N/A	N/A	N/A	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		2		2

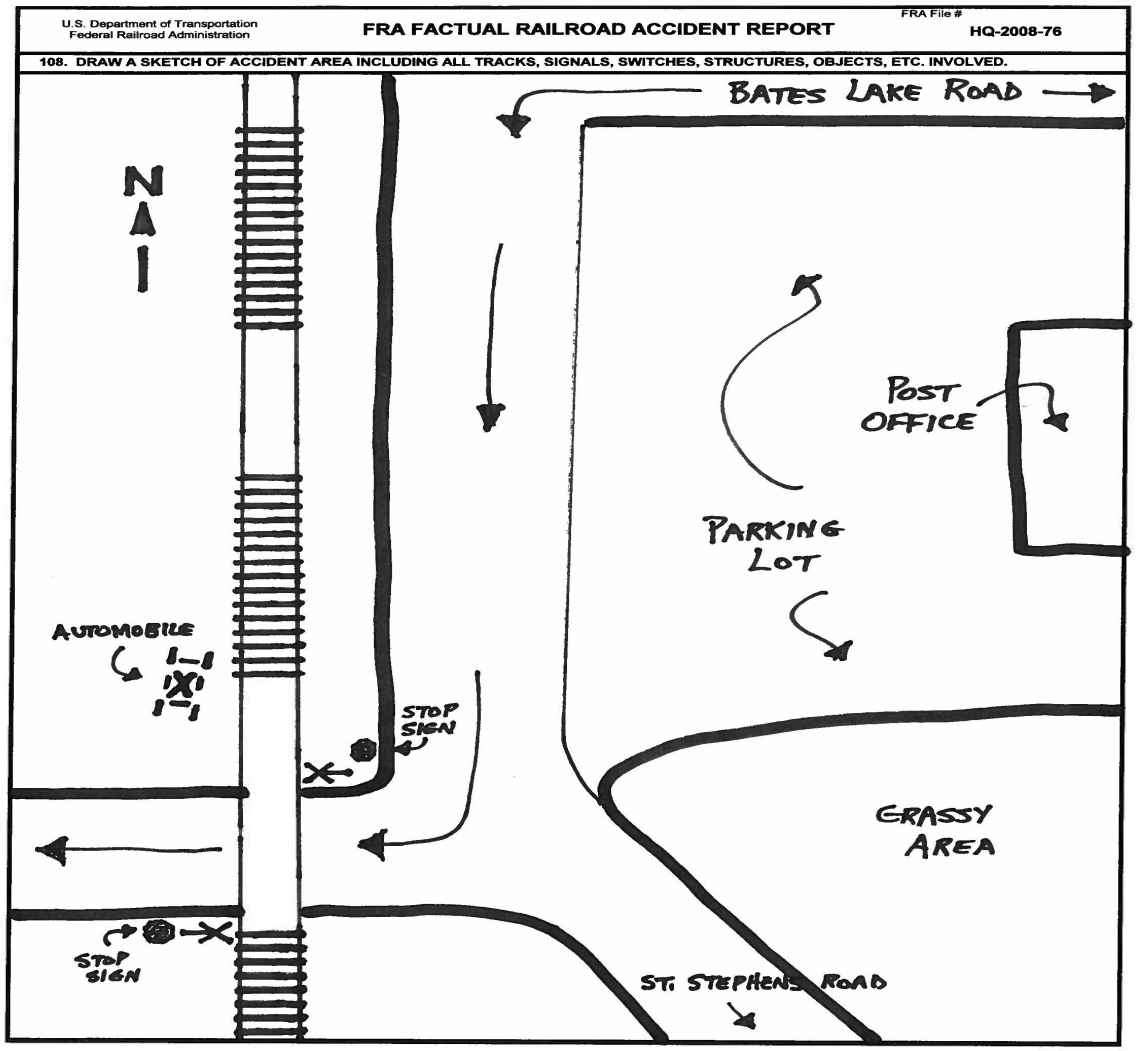
121. Age	122. Driver's Gender 1. Male 2. Female	Code	123. Driver Drove Behind or in Front of and Struck or was Struck by Second Train 1. Yes 2. No 3. Unknown	Code	124. Driver 1. Drove around or thru the Gate 2. Stopped and then Proceeded 3. Did not Stop 4. Stopped on Crossing 5. Other *(specify in narrative)*	Code
54		2		2		2

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
				1		1
129. Highway-Rail Crossing Users	2	1	130. Highway Vehicle Property Damage *(est. dollar damage)*	5000	131. Total Number of Highway-Rail Crossing Users *(include driver)*	3

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		1

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



137. SYNOPSIS OF THE ACCIDENT

A northbound Norfolk Southern (NS) freight train collided with an automobile at a highway-rail grade crossing on September 30, 2008, at 3.30 p.m. central standard time (CST). The accident occurred at Malcolm, Alabama (AL), at NS Milepost (MP) 112.5 with the nearest station at McIntosh, AL, NS MP 106.0, on the 3-B South District of the Alabama Division.

The motor vehicle driver and one passenger were fatally injured, and another passenger seriously injured. The automobile was completely destroyed. There were no injuries to the train crew, no damage to the locomotives, no derailment, and no release of hazardous materials. This is not an Amtrak route.

At the time of the accident, it was daylight, sunny and clear with a temperature of 88 °F.

The accident occurred because the driver of the automobile failed to stop at the highway-rail grade crossing, as required by the Code of Alabama, Section 32-5A-150, which states in part, "(a) Whenever any person driving a vehicle approaches a railroad grade crossing ..., the driver of such vehicle shall stop within 50 feet but not less than 15 feet from the nearest rail of such railroad, and shall not proceed until safe to do so."

138. NARRATIVE

CIRCUMSTANCES PRIOR TO THE ACCIDENT

The crew of NS Train 182A4-30 included a locomotive engineer and a conductor. They went on duty at 12:30 p.m. CST, September 30, 2008, at the NS train yard in Mobile, AL. This is the away terminal and both received the statutory off duty period prior to reporting for duty.

The NS assigned freight train consisted of three locomotives, 19 loaded and 34 empty rail cars of several varieties. It was 3,400 feet long and weighted 3,481 tons. The train was scheduled to travel to Birmingham, AL, with a crew change at Selma, AL. The train received a Class I train air brake test and departed Mobile, AL, at 1:14 p.m.

After the northbound train departed Mobile, the trip was uneventful. As the train approached the accident area, the locomotive engineer was seated at the operating control stand on the left (west) side of the leading locomotive and the conductor was seated on the right (east) side. In this area of the railroad, the track is tangent for a considerable distance from the south before entering into a 1 degree curve to the right for about 800 feet. It is followed by a tangent of 400 feet to the point of the accident and for some distance beyond. The grade is practically level throughout. There is a whistle board 1,285 feet before the crossing where the track enters into the 1 degree right hand curve. The train crew stated the horn was being sounded when the train neared the board and this was verified by witnesses.

The railroad timetable direction of the train is north and the geographic direction is the same. Timetable directions are used throughout this report.

THE ACCIDENT

NORTHWARD NS TRAIN # 182A4-30

The train was operated at 30 miles per hour (mph) approaching the accident area. The train crew's view of

the crossing was unobstructed for 400 plus feet, with the conductor having the best view of the entire crossing. The locomotive engineer's view of the crossing was partially blocked by the control stand and hood of the locomotive. The conductor saw the motor vehicle approach and stop on the crossing just seconds prior to impact. He shouted to the locomotive engineer to "put it into emergency, there's a car on the crossing". The locomotive engineer initiated an emergency train air brake application at the same time the collision occurred. The train's speed at the time of collision was 30 mph as recorded by the event recorder on the leading locomotive. The maximum authorized speed for this train was 49 mph, as designated in the current Norfolk Southern Alabama Division Timetable 1, dated August 4, 2008.

HIGHWAY VEHICLE

The automobile, a Kia Sephia, was traveling east to west on Bates Lake Road. According to the conductor, the vehicle, a four door sedan, was driven onto the crossing and stopped with the front of the vehicle on the tracks. Then at the last moment, the driver attempted to pull across when the locomotive struck the left side about midpoint of the automobile. The vehicle was thrown to the west side of the tracks and rolled several times, landing 70 feet from the crossing. The train came to a stop 629 feet after the emergency application of the train air brakes occurred, as recorded on the lead locomotive's event recorder.

After the train stopped, the locomotive engineer stayed on the locomotive to establish radio communication with the train dispatcher. The conductor walked back to the automobile to await arrival of emergency response personnel. A 911 call was made by a witness at the scene to the Washington County 911 Center, which received the call at 3:37:15 p.m. The 911 Center advised the McIntosh Fire Department at 3:38:22 p.m., the Washington County Sheriff Department at 3:38:37 p.m., and the McIntosh Police Department at 3:39:39 p.m. First on the scene was the McIntosh Police Department, which arrived at 3:44:25 p.m., the McIntosh Rescue team arrived at 3:45:32 p.m., and the Fairford Fire Department at 3:51:07 p.m.

A Washington County Deputy Sheriff interviewed the NS train crew and witnesses at the scene and ascertained that the driver of the automobile failed to stop short of the crossing and then stopped on the crossing when she became aware that the train was approaching. She then attempted to continue across, directly in the path of the oncoming NS train.

There were three persons in the automobile; the driver, a passenger in the front seat, and another passenger in the rear seat. The driver and passenger in the front seat were both ejected from the vehicle after the collision, the passenger in the rear seat remained inside. Apparently, the driver and passenger in the front seat were not wearing seat belts, but the passenger in the rear seat was buckled in. The driver and front passenger were pronounced dead at the scene and the rear passenger was transported by life-flight helicopter to a hospital in Mobile, AL, in serious condition.

ANALYSIS AND CONCLUSION

ANALYSIS-HIGHWAY/RAIL GRADE CROSSING

Highway-rail grade crossing DOT No. 727 760 C is equipped with railroad crossing signs (cross-bucks) and stop signs. There are no active warning devices or advance railroad crossing pavement markings. From the east, Bates Lake Road approaches the railroad right-of-way straight on, then makes a left 90 degree turn to the south paralleling the tracks for 120 feet, then makes a right 90 degree turn to the west over the crossing and straight on for approximately 1/4 mile to Highway 43. The cross-bucks and stop sign, on the east side of the crossing, are positioned with the cross-bucks parallel with the tracks and 25 feet from the center of the crossing. The stop sign faces northward towards the traffic flow coming from the east on Bates Lake Road and is positioned next to the cross-bucks.

Adjacent to the railroad right-of-way, on the east side, is the U.S. Post Office for Malcolm, AL. The building sits back approximately 100 feet (facing west) with its parking lot in front spanning 120 feet across and parallel with the tracks. When exiting the post office parking lot to the west to cross the tracks, the stop sign for the crossing is not facing directly at the vehicles, but faces northward as explained above. The cross-bucks are facing the oncoming traffic straight on. The cross-bucks and stop sign, on the west side of the right -of-way, do face the oncoming traffic.

The lead locomotives, NS 6557, EMD SD 60, were equipped with headlights, auxiliary lights, and audible

warning devices required by Federal Regulations. These devices were tested at Birmingham, AL, on October 1, 2008, with no exceptions taken by railroad personnel, as verified by records inspection performed by a Federal Railroad Administration (FRA) Motive Power and Equipment (MP&E) inspector.

Lead locomotive NS 6557 is equipped with a bi-directional control stand which is situated on the left side of the locomotive cab. This configuration put the locomotive engineer on the left side of the locomotive instead of the conventional right side and the control stand and hood would partially block the view of the right side. Also, it is equipped with a speed indicator and an event recorder as required. The relevant event recorder data was downloaded by the trainmaster at the accident site and analyzed at the NS yard office at Mobile, AL. The data analysis disclosed the locomotive engineer was in compliance with all applicable railroad operating rules and train handling requirements. FRA reviewed the results of this analysis and concurred with the results.

ANALYSIS - TOCICOLOGICAL TESTS

No toxicological tests were performed on the train crew as the collision between the train and motor vehicle is not an event for which testing is required.

ANALYSIS- FATIGUE

FRA uses an overall effectiveness rate of 77.5 percent as the baseline for fatigue analysis, which is equivalent to blood alcohol content (BAC) of 0.05. Software sleep settings vary according to information obtained from each employee. If an employee does not provide sleep information, FRA uses the default software settings.

CONCLUSION

FRA obtained fatigue related information, including a 10-day work history, for the employees involved in this accident.

Conclusion

The railroad was in full compliance with their rules as well as all applicable Federal Standards. The train crew or witnesses had no information that could be used to determine why the automobile failed to stop at the crossing.

PROBABLE CAUSE

The accident occurred because the driver of the automobile failed to stop at the highway-rail grade crossing, as required by the Code of Alabama, Section 32-5A-150, which states in part, “(a) Whenever any person driving a vehicle approaches a railroad grade crossing ..., the driver of such vehicle shall stop within 50 feet but not less than 15 feet from the nearest rail of such railroad, and shall not proceed until safe to do so.”