Federal Railroad Administration
Office of Safety
Headquarters Assigned
Accident Investigation Report
HQ-2008-72

Norfolk Southern Corporation (NS)
Princeton, NC
August 29, 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-2008-72

1.Name of Railroad Operating Train #1	1a. Alphabetic Code	1b. Railroad Accident/Incident No.
Norfolk Southern Corp. [NS]	NS	034034
2.Name of Railroad Operating Train #2	2a. Alphabetic Code	2b. Railroad Accident/Incident No.
N/A	N/A	N/A
3.Name of Railroad Operating Train #3	3a. Alphabetic Code	3b. Railroad Accident/Incident No.
N/A	N/A	N/A
4.Name of Railroad Responsible for Track Maintenance:	4a. Alphabetic Code	4b. Railroad Accident/Incident No.
Norfolk Southern Corp. [NS]	NS	034034
5. U.S. DOT_AAR Grade Crossing Identification Number	6. Date of Accident/Incident: Month 08 | Day 29 | Year 2008	7. Time of Accident/Incident: 10:35: ☑ 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	N/A	N/A	0	East Carolina bus

14. Nearest City/Town	15. Milepost *(to nearest tenth)*	16. State Abbr / Code	17. County
Princeton	H115.2	N/A / NC	JOHNSTON

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
84 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
main	3	2.3	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	1	844P727

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?
39 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)* Code(s): j | N/A | N/A | N/A | N/A	0 = Not a remotely controlled; 1 = Remote control portable; 2 = Remote control tower; 3 = Remote control transmitter - more than one remote control transmitter: 0

30. Trailing Tons *(gross tonnage, excluding power units)*: 14044

32. Principal Car/Unit	a. Initial and Number	b. Position in Train	c. Loaded *(yes/no)*
(1) First involved *(derailed, struck, etc)*	NS9056	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	Drugs
N/A	N/A

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

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	4	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	100	0	0	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
$911.00	$0.00	M302	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 7 Mi 30	Hrs 7 Mi 30

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

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

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

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. Code A
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)*

108. Vehicle Speed *(est. MPH at impact)* 5

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

Rail Equipment Involved

111. Equipment Code 1
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)*

112. Position of Car Unit in 1

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION

FRA FACTUAL RAILROAD ACCIDENT REPORT

FRA File # HQ-2008-72

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
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		2		2

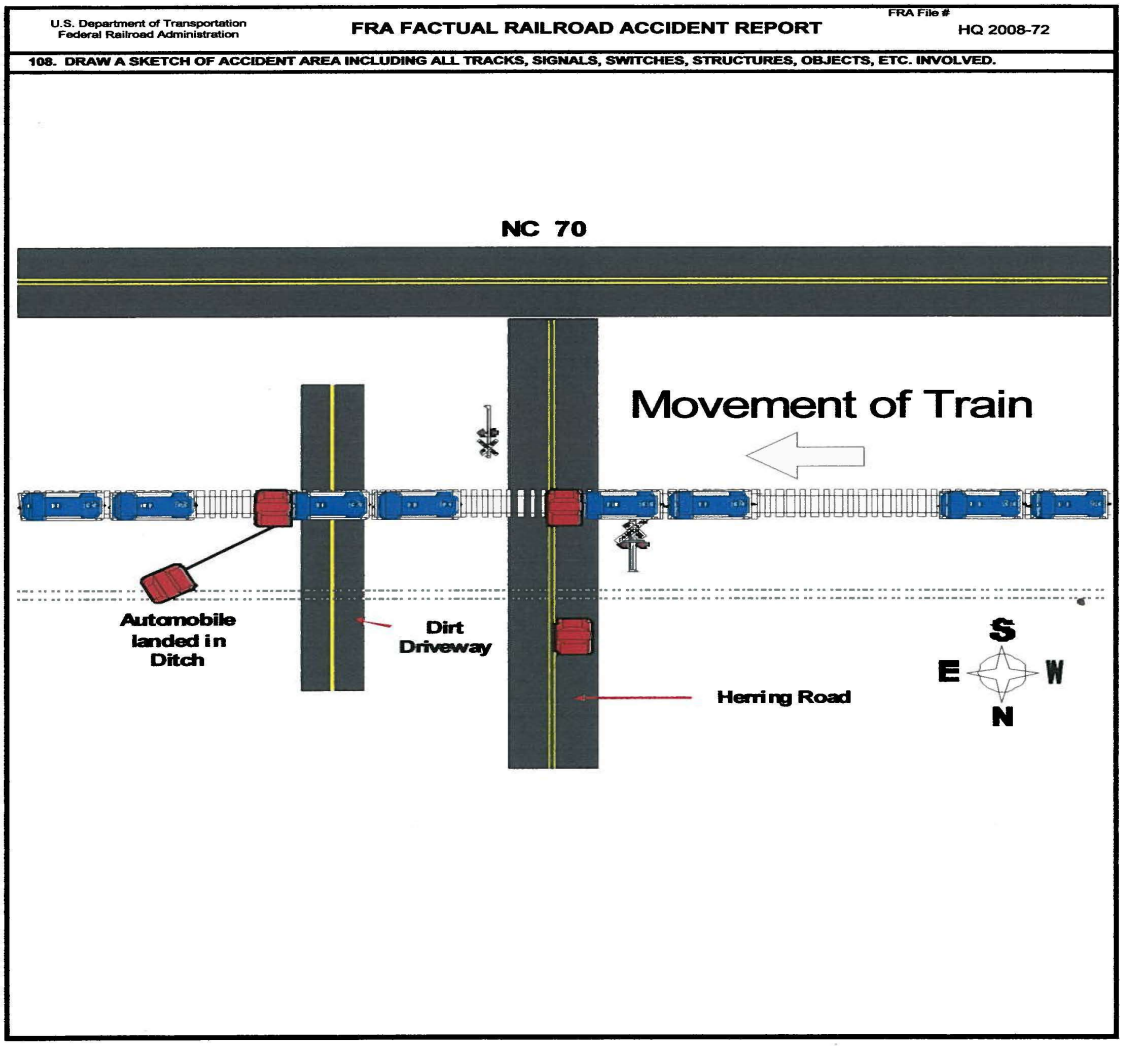
121. Age	122. Driver's Gender 1. Male 2. Female	Code	123. Driver Drove Behind or in Front of and Struck or was Struck by Second Train 1. Yes 2. No 3. Unknown	Code	124. Driver 1. Drove around or thru the Gate 2. Stopped and then Proceeded 3. Did not Stop 4. Stopped on Crossing 5. Other *(specify in narrative)*	Code
25		1		1		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
				1		1
129. Highway-Rail Crossing Users	3	0	130. Highway Vehicle Property Damage *(est. dollar damage)*	6000	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

On August 29, 2008, at 10:35 a.m. eastern daylight time (EDT), an eastbound Norfolk Southern Corporation (NS) Coal Train, 844P7-27, traveling at a recorded speed of 39 miles per hour (mph) collided with a motor vehicle in Princeton, North Carolina (NC) at milepost (MP) H115.21. The highway-rail grade crossing accident occurred on the East Carolina Business Unit on the Piedmont Division.

The method of operation is by Track Warrant Control (TWC)with the maximum authorized timetable speed of 40 mph.

The highway-rail grade crossing where the collision occurred was at Herring Road, DOT No. 722 927 U. The crossing is equipped with crossbucks only. The motor vehicle was traveling in a southward direction.

The motor vehicle driver and two auto passengers were fatally injured. The coroner reported that the driver was wearing a seat belt. The female passenger in the left rear passenger seat of the vehicle was not wearing a seat belt. Both were fatally injured. A six day old infant was in a car seat located in the right rear passenger seat and ejected upon impact. The infant was transported to the hospital and died the next day of injuries suffered in the accident. The motor vehicle was a 2003 4-door Cadillac. NS employees on the train did not sustain any injuries. Damage to the locomotive is estimated at $911 and there was no derailment involving the train.

At the time of the accident, it was daylight and clear skies. The temperature was 84 °F.

The probable cause of the highway-rail grade crossing accident was the highway user's inattentiveness.

North Carolina General Statue Motor Vehicle Chapter 20-142.1 Obedience to railroad signal.

138. NARRATIVE

CIRCUMSTANCES PRIOR TO THE ACCIDENT

On August 29, 2008, NS Train 844P7-27 consisted of four locomotives and 100 loaded coal hopper cars. The train crew consisted of a locomotive engineer and a conductor. The locomotive engineer and conductor went on duty on August 29, 2008, at 3:00 a.m. EDT at Spencer Yard, Linwood, NC, and were transported to Greensboro, NC, where they boarded their train. They departed Greensboro at 5:15 a.m. Both crewmembers received the proper rest required under the Federal Hours of Service Law.

A set and release brake test was performed prior to departure from Greensboro, NC, Pomona Yard. The Initial Terminal Brake test was performed at Roanoke, Virginia (VA). The trip was uneventful as the train proceeded towards Goldsboro, NC. As the eastbound train approached MP H115.12, Herring Road, the locomotive engineer was seated at the controls on the south side of the locomotive. The locomotive was positioned with the short hood forward. The conductor was seated on the north side of the locomotive. There is a 0.48% descending grade and the track is tangent.

The motor vehicle carrying three occupants was traveling north to south on Herring Road. The motor vehicle operator would have observed a railroad advance warning sign located 630 feet from the crossing. Pavement markings were clearly marked, warning the driver of an approaching highway-rail grade crossing. The road was straight and level. The driver view of the oncoming train on his right side was partially obstructed by a hill on private property. At the crossing there were no obstructions of the track 90 feet from the crossing.

The railroad timetable direction and geographic direction are east in this accident area.

THE ACCIDENT

The NS coal train was operating at a recorded speed of 39 mph approaching Herring Road. The conductor stated that the locomotive bell was on and the engineer was sounding the locomotive horn. The engineer and conductor said they had a clear view of the crossing. The conductor first noticed the car approaching the

crossing, which appeared to be slowing and proceeded over the crossing without stopping directly in front of the train. The engineer made an emergency application of the brakes upon impact with the vehicle. The train struck the right passenger door side of the vehicle, pushing it down the track for 1,365 feet, where it struck a private dirt crossing and landed upright in a ditch on the south side of the track. The train traveled another 2,442 feet after the impact. The maximum authorized speed is 40 mph, as designated in the current NS Piedmont Division, Eastern Region Timetable Supplement 1-S.

The engineer stayed on the train and called the dispatcher to notify him of the accident. The conductor went back to check on the occupants of the vehicle. Emergency personnel were already on the scene when the conductor arrived at the vehicle.

Johnston County 911 was notified by a witness at 10:37 a.m. and dispatched the County Emergency Medical Services (EMS) and the Fire Department to the scene at 10:39 a.m. Emergency personnel arrived at the scene at 10:44 a.m. The North Carolina State Police were notified at 10:47 a.m. and arrived on the scene at 10:57 a.m. The county coroner was notified at 11:00 a.m. The two adult occupants of the vehicle were pronounced dead at the scene by the local EMS personnel, and the infant was transported at 10:58 a.m. to the hospital. The infant died the next day at the hospital.

ANALYSIS AND CONCLUSION

ANALYSIS:

The driver of the motor vehicle was a 25 year old male; the other two occupants were a 22 year old female and their six day old son. The motor vehicle was traveling north to south on Herring Road. The train crew said they observed the motor vehicle slowing down approaching the crossing, preparing to stop on the other side of the crossing for a stop sign to US Route 70. On the railroad approach to Herring Road there were no obstructions to the crossing. According to the report filed by the North Carolina Highway Patrol, the vehicle failed to yield to the train. The posted speed limit on the Herring Road is 45 mph.

The conductor stated that the locomotive bell was on and the engineer was sounding the locomotive horn for the crossing. Witnesses stated that the train headlight was on and auxiliary ditch lights were flashing. An inspection at the scene of the locomotive tested the headlight, bell, horn, and auxiliary lights and no exceptions were noted.

Herring Road crossing is a two traffic lane asphalt and flange crossing surface. Traffic control devices consisted of an advance warning sign, 630 feet from the crossing. The driver had a view of the approaching train 435 feet before the crossing. Cross bucks signs were located at the crossing and a white painted stop line on the pavement. All traffic control signage were found to be in good condition.

The North Carolina Highway Patrol collision report shows the primary cause of the accident as “Failed to yield the right of way to train”.

North Carolina General Statue Motor Vehicle Chapter 20-142.1 states:

§ 20-142.1. Obedience to railroad signal

(a) Whenever any person driving a vehicle approaches a railroad grade crossing under any of the circumstances stated in this section, the driver of the vehicle shall stop within 50 feet, but not less than 15 feet from the nearest rail of the railroad and shall not proceed until he can do so safely. These requirements apply when:
(1) A clearly visible electrical or mechanical signal device gives warning of the immediate approach of a railroad train;
(2) A crossing gate is lowered or when a human flagman gives or continues to give a signal of the approach or passage of a railroad train;
(3) A railroad train approaching within approximately 1500 feet of the highway crossing emits a signal audible from that distance, and the railroad train is an immediate hazard because of its speed or nearness to the crossing; or
(4) An approaching railroad train is plainly visible and is in hazardous proximity to the crossing.
(b) No person shall drive any vehicle through, around, or under any crossing gate or barrier at a railroad

crossing while the gate or barrier is closed or is being opened or closed, nor shall any pedestrian pass through, around, over, or under any crossing gate or barrier at a railroad crossing while the gate or barrier is closed or is being opened or closed.
(c) When stopping as required at a railroad crossing, the driver shall keep as far to the right of the highway as possible and shall not form two lanes of traffic unless the roadway is marked for four or more lanes of traffic.
(d) Any person who violates any provisions of this section shall be guilty of an infraction and punished in accordance with G.S. 20-176. Violation of this section shall not constitute negligence per se.
(e) An employer who knowingly allows, requires, permits, or otherwise authorizes a driver of a commercial motor vehicle to violate this section shall be guilty of an infraction. Such employer will also be subject to a civil penalty under G.S. 20-37.21. (1991, c. 368, s. 1; 2005-349, s. 12.)

ANALYSIS - TOXICOLOGICAL TESTING:

A toxicological analysis was performed on the motor vehicle driver. The results were negative.

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. At or above this baseline, we do not consider fatigue as probable for any employee. 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.

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

CONCLUSION:

The train crew was in full compliance with their operating rules. No mechanical exceptions were taken to the train and all applicable federal operating safety standards were in compliance. Crew fatigue was not a factor contributing to this accident.

PROBABLE CAUSE AND CONTRIBUTING FACTORS:

The probable cause of the highway-rail grade crossing accident was the highway user's inattentiveness.