Federal Railroad Administration
Office of Safety
Headquarters Assigned
Accident Investigation Report
HQ-2008-13

Amtrak (ATK)
Longwood, FL
January 25, 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-2008-13

1.Name of Railroad Operating Train #1: Amtrak [ATK]	1a. Alphabetic Code: ATK	1b. Railroad Accident/Incident No.: 106840
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: CSX Transportation [CSX]	4a. Alphabetic Code: CSX	4b. Railroad Accident/Incident No.: 00042666
5. U.S. DOT_AAR Grade Crossing Identification Number: 622067A	6. Date of Accident/Incident: Month 01 Day 25 Year 2008	7. Time of Accident/Incident: 12:15: ☐ 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	Jacksonville

14. Nearest City/Town	15. Milepost *(to nearest tenth)*	16. State Abbr	Code	17. County
Longwood	A776.1	N/A	FL	SEMINOLE

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
65 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		4	18.2		2

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
	2	1. Yes	1	PO97-24

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?
79 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)*: N/A

Code(s): e | N/A | N/A | N/A | N/A — 31a: 0

32. Principal Car/Unit	a. Initial and Number	b. Position in Train	c. Loaded *(yes/no)*
(1) First involved *(derailed, struck, etc)*	ATK133	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/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	2	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	0	8	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
$100,000.00	$40,000.00	M303	N/A

Number of Crew Members

41. Engineer/ Operators	42. Firemen	43. Conductors	44. Brakemen
2	0	2	0

Length of Time on Duty

45. Engineer/Operator	46. Conductor
Hrs 3 Mi 22	Hrs 3 Mi 22

Casualties to:	47. Railroad Employees	48. Train Passengers	49. Other
Fatal	0	0	1
Nonfatal	0	0	1

50. EOT Device? 1. Yes 2. No: 1

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

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	1. Yes	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

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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 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: B
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: 4
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

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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	N/A

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 Code *(See instructions for codes)*	117. Whistle Ban Code 1. Yes 2. No 3. Unknown
Code(s)	01 / 02 / 05	06	07	N/A / N/A	01	2

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

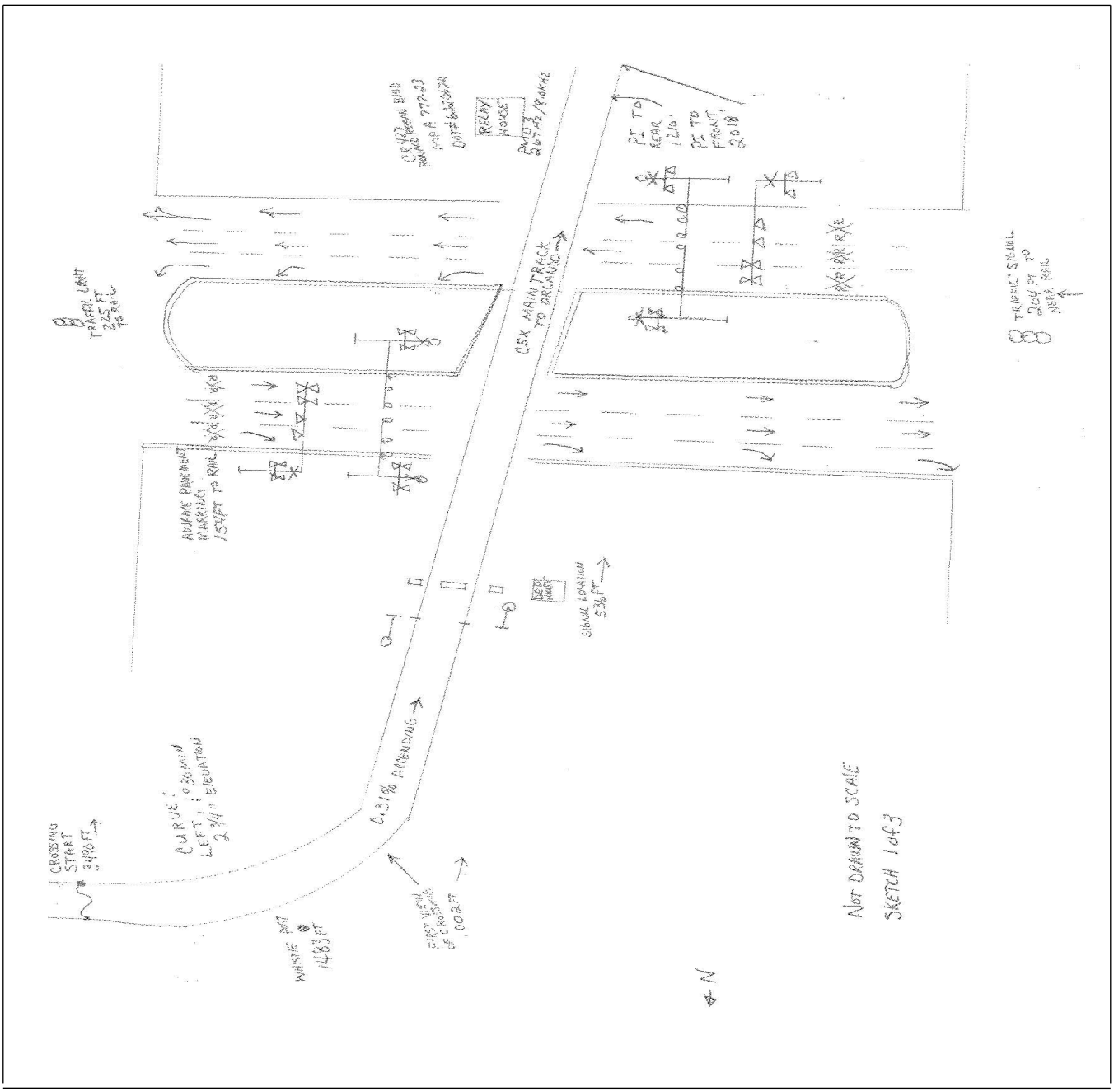
121. Age	122. Driver's Gender Code 1. Male 2. Female	123. Driver Drove Behind or in Front of and Struck or was Struck by Second Train Code 1. Yes 2. No 3. Unknown	124. Driver Code 1. Drove around or thru the Gate 2. Stopped and then Proceeded 3. Did not Stop 4. Stopped on Crossing 5. Other *(specify in narrative)*
42	1	2	2

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

Casualties to:	Killed	Injured	127. Driver Code 1. Killed 2.Injured 3. Uninjured	128. Was Driver in the Vehicle? Code 1. Yes 2. No
			2	1
129. Highway-Rail Crossing Users	1	1	130. Highway Vehicle Property Damage *(est. dollar damage)* 50000	131. Total Number of Highway-Rail Crossing Users *(include driver)* 2

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

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



137. SYNOPSIS OF THE ACCIDENT

On January 25, 2008, at 12:15 p.m., EDT, southbound Amtrak Train PO97-24 struck a westbound truck at County Road (CR) 427/Ronald Regan Boulevard highway-rail grade crossing. The accident occurred in Longwood, Florida (FL) at CSX milepost (MP) A776.1 on the Jacksonville Division, Sanford Subdivision. The method of operation for the single main track is by signal indication of a traffic control system (TCS). The maximum authorized speed is 79 miles per hour (mph).

The truck driver (male) was injured and a passenger (male) died from injuries sustained in the accident on January 29, 2008. There were no injuries to the train crew or passengers. Amtrak reported damage to the lead locomotive (ATK133) as $100,000 and CSX Transportation (CSX) reported damage to signal equipment and track structure as $40,000. There was no derailment as a result of this crossing accident.

At the time of the accident, it was daylight and clear. The temperature was 65 °F.

The probable cause of the accident was highway user misjudgment under normal weather and traffic conditions.

138. NARRATIVE

CIRCUMSTANCES PRIOR TO THE ACCIDENT

On January 25, 2008, Amtrak Train PO97-24 departed Jacksonville, FL, a crew change point and station stop, bound for Miami, FL, at 8:53 a.m. The new Amtrak crew, which boarded Train PO97-24 at Jacksonville, consisted of a locomotive engineer, a relief engineer, a conductor, and an assistant conductor. Their home terminal is Jacksonville. All the Amtrak crew members had received the required statutory rest period as prescribed by Federal law. The train consisted of two locomotives (leading Locomotive ATK133 and ATK8 trailing) one baggage car, two viewliners, one diner car, one lounge car, and three passenger coach cars.

ATK Passenger Train PO97-24 was operating the train at a speed of 79 mph as it approached CR 427/Ronald Regan Boulevard highway-rail grade crossing on the single main track. The relief engineer was at the controls of the lead locomotive and the engineer was seated in the fireman's seat of the lead locomotive. The conductor was in the lounge car and the assistant conductor was in the sleeper car (Viewliner 62043) performing their normal duties.

At a distance of 4,000 feet north of the grade crossing there is a left hand curve of 1 degree and 30 minutes that becomes tangent at 1,002 feet from the grade crossing. The track is an ascending grade of 0.31%. The single main track and CR 427/Ronald Regan Boulevard intersects at a 60 to 90 degree angle. The latest (2001) Florida Department of Transportation (FDOT) survey indicates that this highway-rail grade crossing has 21,145 highway users and 204 school buses daily.

The CSX timetable and the geographic direction for the train was south. Timetable directions are used in this report.

THE ACCIDENT

The relief engineer stated that he was at the controls of ATK Passenger Train PO97-24 traveling southbound on the CSX main track approaching CR 427/Ronald Regan Boulevard at about 12:14 pm. The train was

operating at 79 mph as recorded by the onboard event recorder of lead locomotive (ATK 133). The maximum authorized speed for this line segment of track is 79 mph, as designated in the current CSX Jacksonville Division Time Table No. 4. He stated that as he came out of the curve, he observed that the crossing warning system was activated, and the gate arm on the north side (westbound for the highway user) had descended upon the rear of a large truck. Almost simultaneously, he observed the truck moving forward (west), crossing the track immediately in the path of the train. The relief engineer stated that he applied the train's emergency train air brakes. The lead locomotive (ATK 133) struck the vehicle in the rear 30 inches of a large waste container that was being transported by the truck. The force of the impact caused the truck to rotate clockwise 360 degrees and come to a final rest, upright in the median approximately 159 feet from the point of impact, destroying the median crossing gate and flashing light assembly for the eastbound highway traffic lane. The empty waste container was separated from the truck and came to rest in the eastbound lane of the highway at a distance of 278 feet from point of impact. The lead locomotive stopped 2,018 feet south of the point of impact.

After the train stopped, the relief engineer made an emergency radio transmission and notified the CSX dispatcher of the accident. The conductor walked back to the crossing and encountered police and emergency service personnel already present. The assistant conductor remained aboard the train and attended to passenger needs. According to Florida Highway Patrol, the two occupants of the truck were ejected. Seminole County Fire and Rescue responded and rendered emergency aid to the two victims. The vehicle passenger was transported to a nearby medical facility by air, and the driver was transported by ground ambulance. The passenger expired from his injuries on January 29, 2008. Amtrak Train PO97-24 was delayed 1 hour and thirty minutes.

ANALYSIS AND CONCLUSIONS

The truck involved was a 2005 Mack CV 713 configured with a hydraulic roll on/off apparatus in order to transport large industrial waste containers. The container was empty at the time of the accident. A male, age 42, was operating the truck, and a male passenger, age 53, were the only occupants.

No toxicological tests were performed on either highway users or on the train crew.

ANALYSIS:

FRA obtained fatigue related information, for the 10-day period preceding this incident including the 10-day work history (on duty/off duty cycles) for all of the employees involved.

CONCLUSION:

Upon analysis of that information FRA concluded fatigue was not probable for any of the employees.

After the accident, Amtrak mechanical personnel responded from the nearby Amtrak Shop Facility at Sanford, FL. Some emergency repair was performed to allow ATK Passenger Train PO97-24 to proceed to Miami.

CR 427/Ronald Regan Boulevard is a six lane asphalt surface that runs east and west, with a teardrop shaped median that ranges from 14 ft to 40 ft wide. East bound there are two lanes for straight movement, and the outside or right lane is to accomodate right turns only. West bound there are two lanes for straight movement, and the right or outside lane is for right turns only. Approaching the highway-rail grade crossing in both directions are numerous passive warning devices. These devices consist of advance warning signs, pavement markings, and signs warning not to stop on the track. The highway-rail grade crossing is equipped with active warning devices, which consist of cantilever mounted flashing lights, gates, and audible warning devices. The warning devices are controlled by a Harmon Industries Phase Motion Detector (PMD) III and operared as expected. There is no recorder at this site. The grade crossing warning approach is 3,490 feet in each direction. The whistle post is located 1,483 feet north of the crossing. The main PMD III frequency is 267 Hz. The highway-rail grade crossing warning system is connected to the highway traffic signals located on both sides of the crossing. When the grade crossing warning system is activated, the highway traffic signal functions as follows: if the highway signal is red it will remain red for 2-5 seconds, then turn green to allow traffic to proceed away from the highway-rail grade crossing.

A witness at the scene stated that the crossing gate arm on the north side of the crossing (westbound highway traffic) descended on the rear of the truck. The driver attempted to back up and then pulled forward attempting to cross the track. The witness stated he observed the locomotive strike the truck in the rear and then the train blocked his view.

A Federal Railroad Administration (FRA) inspection of the grade crossing warning devices did not reveal any contributing factors to the accident.

The lead locomotive was equipped with a headlight, auxiliary lights, and an audible warning device as required by Federal Regulations. These devices were tested and found to be functioning properly at Jacksonville prior to departure. The lead locomotive was equipped with a speed indicator and an event recorder as required. The event recorder was downloaded in Miami by Amtrak mechanical personnel. The analysis disclosed that the engineer was in compliance with all railroad operating and train handling requirements.

Probable Cause

The probable cause of the accident was highway user misjudgment under normal weather and traffic conditions.

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