Federal Railroad Administration
Office of Safety
Headquarters Assigned
Accident Investigation Report
HQ-2007-43

Amtrak (ATK)
Plant City, Florida
July 16, 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-2007-43

1.Name of Railroad Operating Train #1: Amtrak [ATK]	1a. Alphabetic Code: ATK	1b. Railroad Accident/Incident No.: 104975
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.: 000034065
5. U.S. DOT_AAR Grade Crossing Identification Number: 624310U	6. Date of Accident/Incident: Month 07 Day 17 Year 2007	7. Time of Accident/Incident: 03:15: ☐ 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	16. State Code	17. County
Plant City	A859.7	N/A	FL	HILLSBOROUGH

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
95 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. — Code
single main	4	25	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	PO92

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?
67 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	0

32. Principal Car/Unit	a. Initial and Number	b. Position in Train	c. Loaded (yes/no)
(1) First involved (derailed, struck, etc)	AMT 191	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	2	0	0	0	0
(2) Total Derailed	2	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	9	0	0	0
(2) Total Derailed	0	9	0	0	0

37. Equipment Damage This Consist	38. Track, Signal, Way, & Structure Damage	39. Primary Cause Code	40. Contributing Cause Code
875000	75000	M308	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 10	Hrs 7 Mi 10

Casualties to:	47. Railroad Employees	48. Train Passengers	49. Other
Fatal	0	0	0
Nonfatal	6	16	0

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

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

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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 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 B

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

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

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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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

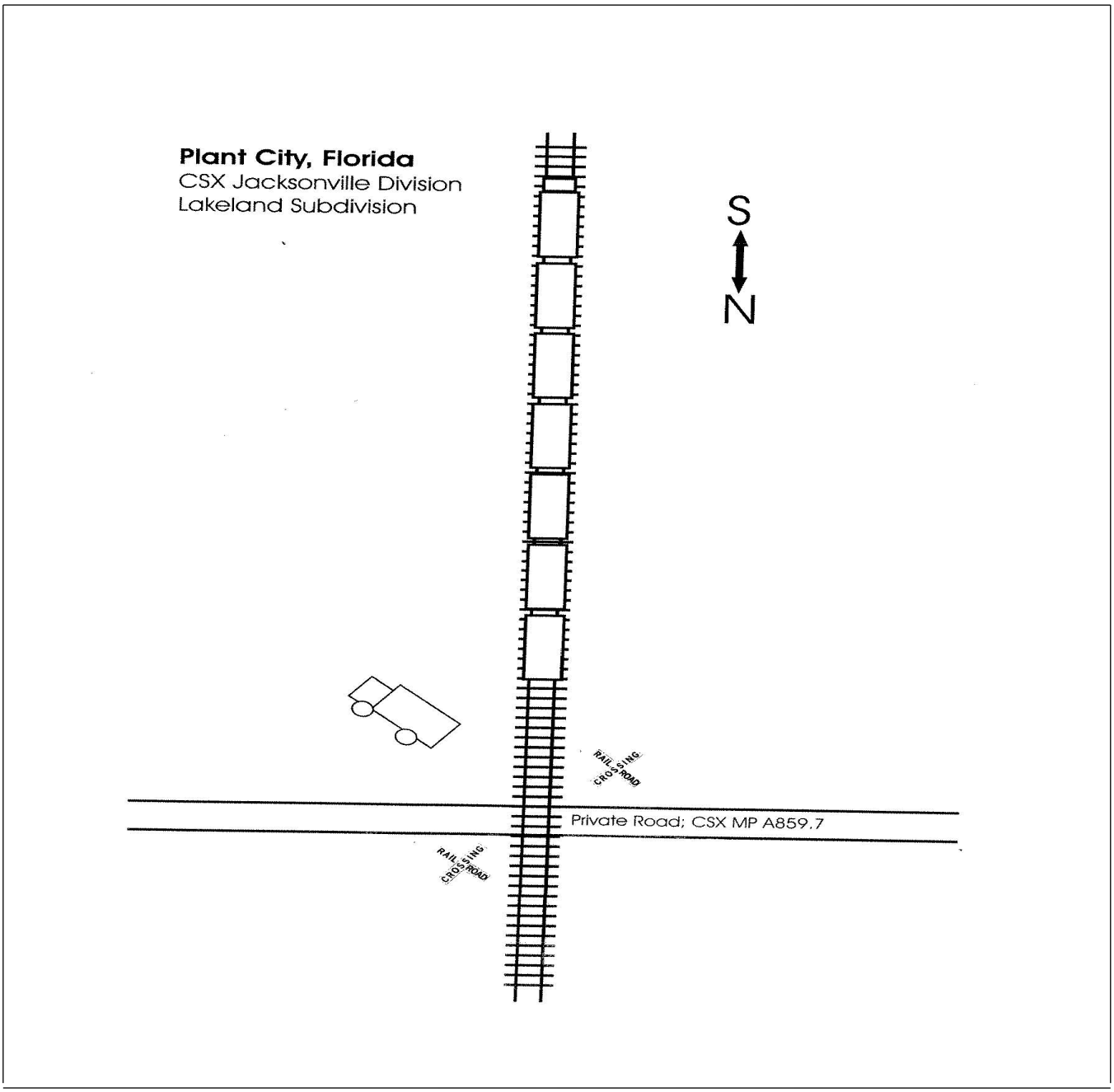
121. Age	122. Driver's Gender 1. Male 2. Female	Code	123. Driver Drove Behind or in Front of and Struck or was Struck by Second Train 1. Yes 2. No 3. Unknown	Code	124. Driver 1. Drove around or thru the Gate 2. Stopped and then Proceeded 3. Did not Stop 4. Stopped on Crossing 5. Other (specify in narrative)	Code
34		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
				1		1
129. Highway-Rail Crossing Users	1	0	130. Highway Vehicle Property Damage (est. dollar damage)	20000	131. Total Number of Highway-Rail Crossing Users (include driver)	1

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 July 17, 2007, at 3:15 p.m. Eastern Standard Time (EST), a southbound Amtrak Train PO92 collided with a flat bed truck at a highway-rail grade crossing in Plant City, Florida (FL). The accident occurred at CSX Transportation (CSX) milepost (MP) A859.7 on the CSX Jacksonville Division, Lakeland Subdivision.

The flat bed truck was completely destroyed and the truck driver was fatally injured. The train's two locomotives and nine passenger cars derailed, but remained upright. The locomotive engineer and the assistant conductor sustained non-life threatening injuries and were transported to a local hospital for treatment. Four on board service attendants and 16 passengers also sustained non-life threatening injuries. They were taken to local hospitals where they were treated and released.

Total damages reported are $875,000 for equipment and $75,000 for track. At the time of the accident, it was daylight, the weather was clear, dry, and a temperature of 95 °F.

Probable Cause

The accident was caused because the truck driver disregarded the crossing warning devices.

138. NARRATIVE

Circumstances Prior to the Accident

The crew of Train PO92 included a locomotive engineer, conductor, and an assistant conductor. They went on duty at 8:05 a.m. on July 17, at the Amtrak Hialeah Passenger Station in Miami, FL, which is their home terminal. All crew members received more then their statutory off-duty time prior to reporting for duty. Train PO92 consisted of two locomotives and nine passenger cars (a baggage car, two sleeper cars, a diner and lounge car, and four coach cars). The Hialeah Yard Mechanical Department performed a Class 1 air brake test at 6:30 a.m. that morning.

The crew of Train PO92 held a job briefing, performed a set and release train air brake test, and departed the Hialeah station at 8:50 a.m. bound for Tampa, FL. An Amtrak trainmaster was also on board the train observing the crew members for compliance with railroad operating and safety rules. The southbound train approached the accident area at 69 miles per hour (mph). The engineer was seated at the controls on the north side of the leading locomotive (AMT 191). The conductor and assistant conductor were located in passenger cars performing their normal on board duties, and the trainmaster was in the lounge car. The last passenger station stop prior to the accident was Lakeland, located at MP A850.7, on the CSX Lakeland Subdivision. Approaching the accident area, the track is tangent with a 0.12-degree descending grade from MP A859 to the private road crossing at MP A859.7 in Plant City.

The CSX timetable direction of the train at the accident area is south. The geographic direction is west. Timetable directions are used throughout this report.

The Accident

The train was traveling southward at 69 mph as it approached the private highway grade in Plant City. The engineer's view of the road crossing was unobstructed. The engineer said she was sounding the locomotive horn, ringing the bell, and the ditch lights and head lights were functioning. She noticed a truck approaching the crossing from the east side of the track and realized the impending collision as Train PO92 entered the crossing. The vehicle was a flat bed truck with two rear axles and hauling a removable 22 foot long industrial open top waste bin. The waste bin was loaded with light weight scrap metal. The engineer initiated an emergency air brake application and braced for the collision. At impact, the train was operating at 67 mph. Both speeds were verified by the event recorder on the lead locomotive. According to the locomotive engineer, the driver did not attempt to stop at the rail crossing. The maximum authorized speed for passenger trains at this location is 79 mph, as designated in the current CSX Timetable No. 4.

A report filed by the Florida Highway Patrol (FHP) estimated the driver was operating the truck at 5 mph when the collision occurred. Train PO92 struck the right side of the truck cab, causing the trash bin to dislodge from the truck bed, striking the left side of the lead locomotive. It came to rest about 45 feet from the road crossing. The truck frame was carried south along the track and stopped about 145 feet from the crossing. The truck cab was torn from the truck frame and stopped about 190 feet from the crossing and 100 feet east of the main track. The driver was ejected from the cab. After the trash bin struck the locomotive, it became wedged against the lead wheels on the right side of the locomotive and the gage side

of the welded rail. This additional lateral force caused the rail to roll outward on its side and making the train derail. Train PO92 continued traveling southward about 1,100 feet and the rail continued to roll under the train. The two locomotives and nine passenger cars derailed, but remained upright. After the train stopped, the engineer was able to establish radio communications with the train dispatcher and request assistance.

The collision ruptured the fuel tank on the lead locomotive, spilling about 800 gallons of diesel fuel. The fuel tank on the flat bed was also ruptured, spilling an estimated 80 gallons of diesel fuel. Sparks from the moving train ignited the diesel fuel causing a fire along both sides of the railroad right of way. Smoke and fumes from the fire began to enter into the passenger car compartments.

The conductor and assistant conductor, with the help of the on board service attendants and trainmaster, immediately assisted the passengers off the train. The assistant conductor and trainmaster went to check on the engineer and helped her off the locomotive. They returned to the passenger cars and continued assisting people off the train. All passengers were able to walk to a nearby bowling alley that volunteered to let the railroad use their facility as a holding area for the injured people. At the bowling alley the conductor took a head count. There were three train crew members, one trainmaster, nine service attendants, and 133 passengers on board the train and everyone was accounted for.

Medical and law enforcement personnel were at the scene within a few minutes of the accident. The agencies that responded to the accident were the Plant City Police, Plant City Fire and Rescue, Hillsborough County Sheriff Department, Hillsborough Fire and Rescue, and the FHP. The fire department quickly extinguished the fire, while the paramedics started treating the injured passengers and crew members and transporting them to local hospitals. There were a number of non-life threatening injuries caused by the accident. The locomotive engineer sustained a bruise to her forehead and a small laceration and bruise to her upper right arm. The laceration did not require stitches. The assistant conductor sustained bruising to both shoulders and also upper back and neck pain. Four on board service attendants and 16 passengers sustained minor injuries ranging from bumps and bruises to small lacerations, as well as neck and back pain. The injured were transported to local hospitals where they were treated and released.

Buses arrived and transported the remaining passengers and on board attendants to their destinations. The engineer and trainmaster were transported back to Miami after the engineer was released from the hospital. The conductor, assistant conductor, and the four on board service attendants were transported to a motel in Tampa. The locomotives and passenger cars were removed from the accident area and the track was repaired and placed back in service the following day at 5:35 p.m.

Analysis and Conclusion

Analysis

The driver of the flat bed truck was a 34 yr. old male. There were no other passengers in the truck. The driver was ejected from the truck and landed about 230 feet south of the road crossing and east of the main track. He was pronounced dead at the scene of the accident by the Hillsborough Medical Examiner. Prior to the accident, the driver had delivered an empty industrial waste bin to an industry located across the railroad crossing. He picked up a loaded waste bin of scrap metal for delivery to a recycle plant located in Plant City.

The private highway-rail grade crossing is equipped with cross bucks. There are no advance warning signs or pavement markings at the crossing. The road crossing is 15 feet wide and paved with asphalt and is in good condition. The cross buck on the east side of the track is located five feet to the right of the pavement and 11 feet from the rail. The height above ground to the center of the cross buck is 11 feet. The cross buck on the west side of the track is located seven feet to the right of the pavement and 10 feet from the rail. The height above ground to the center of the cross buck is nine feet.

The track and warning signs are maintained by CSX. The crossing is used by two industries within a fenced in area east of the crossing. An agreement is in place between the property owner and CSX for the road crossing maintenance and use.

The primary use of this crossing is industrial and there are no other access routes to the facility. An estimated 50 to 60 highway users, including the employees of the two industries inside the facility and truck drivers, use this crossing Mondays through Fridays. The gate to the facility is closed and locked on Saturdays and Sundays. Propane and acetone are transported by truck over the crossing into the industries on a regular basis.

Lead Locomotive No. AMT 191 was equipped with a headlight, auxiliary lights, and audible warning devices required by the Federal Railroad Administration (FRA). The locomotive was also equipped with a speed indicator and an event recorder as required. The relevant event recorder data was downloaded by ATK personnel and analyzed. The analysis of the data disclosed the locomotive engineer was in compliance with all applicable railroad operating and train handling requirements. The FRA reviewed the results of this analysis and concurred with the conclusions.

Conclusion

The ATK train crew was in full compliance with their own rules, CSX operating rules, and all applicable Federal standards. The engineer, only witness to the accident, had no information helpful to the accident investigators in determining why the truck driver failed to stop at the crossing as required by Florida State Law.

Fatigue Analysis

FRA obtained fatigue related information, including a 10-day work history, for three Amtrak employees involved in this high-way rail grade crossing accident, including the engineer, conductor of Train PO92. If the employee did not provide sleep information, the default setting of Excellent was used. FRA concluded fatigue was not probable for the employees of Train PO92.

Probable Cause

Through a FRA investigation, it was determined, that the accident was caused by the truck driver's disregard for the crossing warning devices.