Federal Railroad Administration
Office of Safety
Headquarters Assigned
Accident Investigation Report
HQ-2008-15

Amtrak (ATK)
Brookfield, WI
January 27, 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-2008-15

1.Name of Railroad Operating Train #1: Amtrak [ATK]	1a. Alphabetic Code: ATK	1b. Railroad Accident/Incident No.: 106842
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: Canadian Pacific Rwy Co. [CP]	4a. Alphabetic Code: CP	4b. Railroad Accident/Incident No.: 1043953
5. U.S. DOT_AAR Grade Crossing Identification Number: 390516T	6. Date of Accident/Incident: Month 01 Day 26 Year 2008	7. Time of Accident/Incident: 02:46:00 ☐ 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	CHICAGO SERVICE AREA

14. Nearest City/Town	15. Milepost *(to nearest tenth)*	16. State Abbr	16. State Code	17. County
BROOKFIELD	97.00	N/A	WI	WAUKESHA

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
18 F	2	2	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 TRACK TWO	4	255	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
2	1	ATK # 8

29. Speed *(recorded speed, if available)* — Code: R
R - Recorded
E - Estimated 63 MPH

30. Trailing Tons *(gross tonnage, excluding power units)*: N/A

31. 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

31a. 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

32. Principal Car/Unit	a. Initial and Number	b. Position in Train	c. Loaded *(yes/no)*
(1) First involved *(derailed, struck, etc)*	ATK 192	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
00	00

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

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	10	0	1	0
(2) Total Derailed	0	0	0	0	0

37. Equipment Damage — This Consist: $0.00

38. Track, Signal, Way, & Structure Damage: $0.00

39. Primary Cause Code: M399

40. Contributing Cause Code: M599

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: Hrs 5 Mi 5

46. Conductor: Hrs 5 Mi 5

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 — 2

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

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)* — Code: N/A
R - Recorded
E - Estimated N/A MPH

58. 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

58a. Remotely Controlled Locomotive?
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)* 0

109. *geographical)* Code 3
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

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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	116. Signaled Crossing *(See instructions for codes)*	Code	117. Whistle Ban 1. Yes 2. No 3. Unknown	Code
Code(s)	01	03	06	07	N/A	N/A	N/A	07		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		1		1

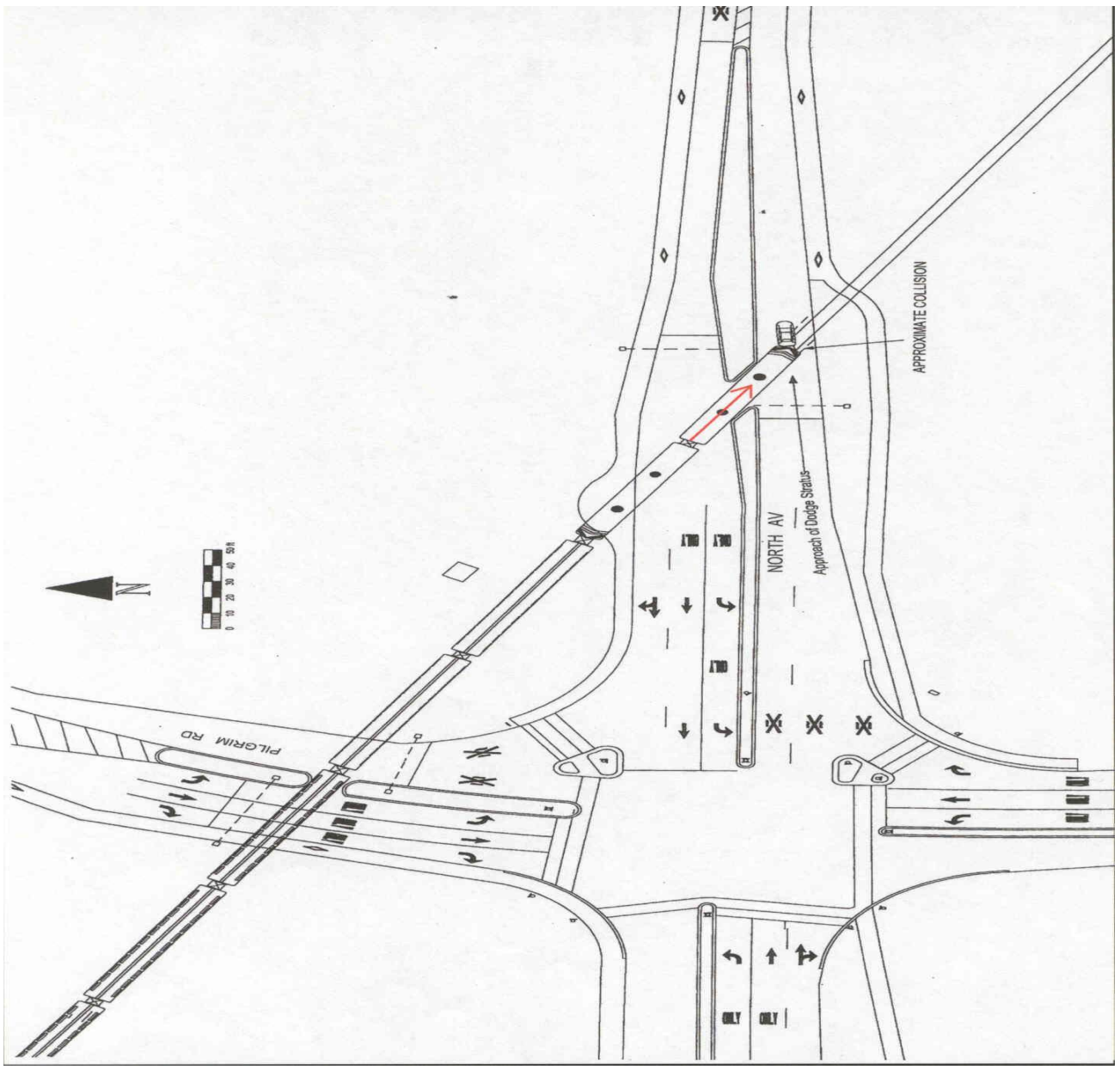
121. Age	122. Driver's Gender 1. Male 2. Female	Code	123. Driver Drove Behind or in Front of and Struck or was Struck by Second Train 1. Yes 2. No 3. Unknown	Code	124. Driver 1. Drove around or thru the Gate 2. Stopped and then Proceeded 3. Did not Stop 4. Stopped on Crossing 5. Other *(specify in narrative)*	Code
23		2		2		5

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		7

Casualties to:	Killed	Injured	127. Driver 1. Killed 2.Injured 3. Uninjured	Code	128. Was Driver in the Vehicle? 1. Yes 2. No	Code
				2		1
129. Highway-Rail Crossing Users	0	1	130. Highway Vehicle Property Damage *(est. dollar damage)*	0	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

Amtrak Train # 8, operating eastbound on Main Track Two collided with a highway vehicle at a highway-rail grade crossing on January 26, 2008, at 2:46 pm. CST. The accident occurred in Brookfield, Wisconsin at Canadian Pacific Railway (CP) Milepost 79.04 on the Watertown Subdivision.

ATK Train # 8 struck the rear of the highway vehicle and the driver was injured. There were no injuries reported to the train crew members or the passengers of ATK # 8. The lead locomotive sustained no damage.

The cause of the accident was the release of the stop & flag order for North Avenue prior to the signal maintainer returning North Avenue highway-rail grade crossing warning devices back in service. The signal maintainer failed to properly communicate his intentions to remove the perceived stop & flag order from Pilgrim Road and leave the stop & flag order for North Avenue in place.

Contributing to the accident was the way the initial report by the Waukesha Sheriff's Department was handled by the CP Communications Control Center (CCC). The CCC told the signal maintainer the malfunction was reported at North Avenue and Pilgrim Road. The CCC then told the train dispatcher that the malfunction was at North Avenue Crossing. The signal maintainer contacted the train dispatcher and asked if a stop & flag order had been placed at North Avenue and Pilgrim Road. The train dispatcher said it was. This set the stage for the miss communication between the signal maintainer and the train dispatcher.

138. NARRATIVE

CIRCUMSTANCES PRIOR TO THE ACCIDENT

The crew of ATK Passenger Train # 8 included a locomotive engineer, a relief engineer, a conductor, an assistant conductor, and several on train service personnel. The locomotive engineer first went on duty at 9:41 a.m., January 26, 2008, at Winona, Minnesota which is an ATK crew change point. The home terminal for the locomotive engineer and the conductor is Milwaukee, Wisconsin. The locomotive engineer and the conductor had received the required statutory off duty rest period of over eight hours prior to reporting for duty on January 26, 2008.

ATK Passenger Train # 8 consisted of two locomotives, ten passenger coach cars, and one baggage car. The train was scheduled to travel from Seattle, Washington to Chicago, Illinois, with various stops along the way. The train received an initial terminal train air brake test in Seattle on January 24, 2008 at 3:52 p.m. PST, and then departed for Chicago at 4:45 p.m. PST. As eastbound ATK Passenger Train # 8 approached the accident area the locomotive engineer was seated at the controls on the south side of the leading locomotive. The second engineer was seated in the fireman's seat on the north side of the lead locomotive. The conductor, assistant conductor, and service personnel were stationed at various locations throughout the passenger cars.

On January 26, 2008 at 12:26 p.m. the Waukesha County Sheriff Department notified the CCC that the gates at North Avenue and Pilgrim Road were pumping (malfunctioning). At 12:35 p.m. a Canadian Pacific (CP) signal maintainer was dispatched to North Avenue and Pilgrim Road to investigate the reported malfunction. At 12:36 p.m. the train dispatcher was notified by the CCC that the highway-rail grade crossing warning devices at North Avenue were malfunctioning. A stop & flag order was placed on the North Avenue Crossing by the train dispatcher. At 12:56 p.m. as the signal maintainer was en route, he verified with the train dispatcher both North Avenue and Pilgrim Road highway-rail grade crossings had been protected by a stop & flag order. Once the signal maintainer investigated the reported malfunctions, he determined the malfunctioning highway-rail grade crossing was North Avenue. He then placed jumpers from the B12 battery buss to the controls of the North Avenue crossing control relay (NOX). This falsely energized the North

Avenue NOX relay, effectively making the North Avenue highway-rail grade crossing warning devices inoperative. He then contacted the train dispatcher at 2:13 p.m. and asked him to place Pilgrim Road Crossing back in service. The train dispatcher removed the stop & flag order at the North Avenue Crossing. The signal maintainer then left the area to refuel his company vehicle. At 2:47 p.m. ATK Passenger Train # 8 struck a highway vehicle at North Avenue highway-rail grade crossing.

In this area Main Track Two runs in a straight line in the approach to North Avenue. Main Track Two intersects with North Avenue at approximately a 26 degree angle. Starting at milepost 98, Main Track Two descends towards North Avenue at 0.62 percent descent then decreases to a 0.5 percent descent at milepost 97.2 for 500 feet and continues at a 0.33 percent descent east of North Avenue. In this area of North Avenue the highway is straight with a slight incline west of the highway-rail grade crossing. The angle of the tracks crossing North Avenue (26 percent diagonal skew) makes the preview of approaching trains from the west (left) extremely difficult.

The railroad timetable direction of the train was east. The geographical direction was southeast. Timetable direction will be used throughout this report.

THE ACCIDENT:

AMTRAK PASSENGER TRAIN # 8:

The train was being operated at a recorded speed of 63 mph approaching the accident area. The view from the locomotive of the engineer's perspective of the crossing was unobstructed. On approach to the crossing he noticed the gates and lights were inoperative. The locomotive engineer said he had a minimum application (6 lbs) on the train air brake system and then applied the train air brakes harder. At the same time the locomotive engineer used some additional sounding of the audible warning device to provide additional warning of their approach to the crossing. The locomotive engineer noticed an eastbound highway vehicle hesitate and then drive into the path of the train. The locomotive struck the rear of the highway vehicle and the locomotive engineer immediately made a full service application of the train's air brake system. Maximum authorized timetable speed for this train was 65 mph as designated in CP Timetable # 6.

HIGHWAY VEHICLE:

The vehicle was a 1998 Dodge Stratus Sedan traveling west to east on North Avenue. According to the locomotive engineer the highway vehicle driver hesitated then drove across the tracks in front of the train. The Brookfield Police Department's Wisconsin Motor Vehicle Accident Report for North Avenue did not indicate the speed of the highway vehicle at the time of the accident.

The train struck the rear of the highway vehicle. The highway vehicle came to rest approximately 400 feet east of the highway-rail grade crossing on North Avenue. After the train stopped, the conductor walked back to the highway vehicle to await arrival of the emergency response personnel and offer any assistance possible.

The first City of Brookfield police officer arrived on the scene at 2:51 p.m. Emergency response vehicles started to arrive at 2:50 p.m. The highway vehicle driver was taken to Froedtert Hospital in Milwaukee at 3:07 p.m.

A CP signal supervisor was dispatched to the scene from Colgate, Wisconsin and arrived about 3:30 p.m. He immediately initiated an investigation into the accident. The investigation verified the highway-rail grade crossing warning devices were inoperative at the time of the accident.

ANALYSIS AND CONCLUSIONS:

HIGHWAY-RAIL GRADE CROSSING ANALYSIS:

There is an advanced warning sign posted about 125 feet west of the crossing. All pavement markings are clearly visible. The angle of the tracks to North Avenue inhibit preview of an approaching eastbound train. The area of the accident is maintained by the City of Brookfield. The railroad has a whistle post in place 1,350 feet west of the crossing.

CONCLUSION:

The crossing is in relatively good condition. The preview of a train approaching from the west is restricted due to the angle the railroad crosses North Avenue.

ACTIVATION WARNING DEVICES ANALYSIS:

The highway-rail grade crossing is equipped with warning lights, gates and a bell. The highway-rail grade crossing warning devices failed to operate due to the NOX relay being falsely energized by jumper wires.

At 8:16 p.m. on January 26, 2008 the highway-rail grade crossing warning devices were tested and returned to service after CP signal personnel corrected the malfunction that was originally reported at 12:36 p.m. on January 26, 2008. The highway-rail grade crossing detection circuits had to be shortened and the track speed lowered due to an excess of salt between the rails at the highway-rail crossing. The highway warning devices when tested by CP and FRA were found to be working as intended.

The railroad was in violation of Federal Regulation §234.209, Interference with normal functioning of the system. The crew of ATK Passenger Train # 8 was not notified that the highway-rail grade crossing warning devices at North Avenue were in-operative and would not function for train movement. Evidence indicates the Radio Bulletin, Item 1 (stop & flag order) was removed from North Avenue Crossing prior to the arrival of the passenger train.

CONCLUSION:

The highway-rail grade crossing warning devices were fully functional at the time of the accident, but failed to operate due to the placement of the jumper wires falsely energizing the NOX relay rendering the system inoperative.

SIGNAL MAINTAINER ANALYSIS:

The signal maintainer was in compliance with Federal regulations when he removed North Avenue from service. However, CP charged him with failure to comply with Section 12 of CP Engineering Services Signals and Communications Requirements. This requires the employee to engage in a job brief with the dispatcher prior to removing a highway-rail grade crossing from service.

CONCLUSION:

The signal maintainer waived an investigation on failure to comply with Section 12 of CP Engineering Services Signals and Communications Requirements. No action was taken against the dispatcher. The signal maintainer failed to ascertain whether the stop & flag order was removed from Pilgrim Road and left in place at North Avenue.

TRAIN DISPATCHER ANALYSIS:

The train dispatcher removed the Item 1 (stop & flag order) from North Avenue crossing prior to the arrival of ATK Passenger Train # 8 following unclear and inadequate communication with the signal maintainer. The train dispatcher did not have a job briefing with the signal maintainer prior to the signal maintainer removing North Avenue crossing protecting from service. The train dispatcher was not aware, nor had he been trained on the requirements of Section 12 of CP Engineering Services Signals and Communications Requirements.

CONCLUSION:

The train dispatcher did not share a job brief with the maintainer prior to the maintainer removing North Avenue Crossing protection from service. He also failed to clarify with the maintainer that North Avenue crossing protection was returned to service when the signal maintainer attempted to place Pilgrim Road back in-service.

CCC EMPLOYEE ANALYSIS:

The CCC employee notified the signal maintainer and train dispatcher that North Avenue and Pilgrim Road crossing protection were malfunctioning.
CONCLUSION:

The failure of the CCC employee to inform the signal maintainer and the train dispatcher the same information contributed in the unclear and inadequate communication between them.

LOCOMOTIVE SAFETY DEVICES ANALYSIS:

The lead locomotive was equipped with a headlight, the auxiliary lights, and the audible warning device required by Federal regulations; however, Amtrak Passenger Train # 8 was not equipped with an end of train device. The locomotive engineer said he began sounding the train horn as the train neared the crossing. This was later validated by analysis of the locomotive event recorder data.

CONCLUSION:

The locomotive safety devices were functional and in full compliance with Federal requirements.

LOCOMOTIVE ENGINEER OPERATING PERFORMANCE ANALYSIS:

The locomotive was equipped with a speed indicator and an event recorder as required. The relevant event recorder data was downloaded by Amtrak Milwaukee Road Foreman at 7:00 p.m. on January 26, 2008 at Glenview, Wisconsin. The analysis disclosed the locomotive engineer was in compliance with all applicable railroad operating and train handling requirements. FRA reviewed the results of the analysis and concurred with the conclusion.

CONCLUSION:

The locomotive engineer was in compliance with all applicable railroad operating and train handling requirements.

VEHICLE ANALYSIS:

The driver of the highway vehicle was a 23 year old female who sustained minor injuries. The vehicle traversed the crossing with the warning system in-operative. Her vehicle was struck in the rear as she crossed the railroad tracks. The vehicle came to a rest 400 feet east of the crossing.

CONCLUSION:

The vehicle driver was in compliance with state and local laws.

TOXICOLOGICAL TESTING ANALYSIS:

CP performed toxicological testing on the signal maintainer. There was no toxicological testing performed on the train crew or the vehicle driver.

CONCLUSION:

All test revealed negative results. Intoxication or impairment was not a factor.

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 factor for any of the employees.

PROBABLE CAUSE & CONTRIBUTING FACTORS:

The cause of the accident was the release of the stop & flag order for North Avenue prior to the signal maintainer returning North Avenue highway-rail grade crossing warning devices to service. The signal maintainer failed to properly communicate his intentions to remove the perceived stop & flag order from Pilgrim Road and leave the stop & flag order for North Avenue in place.

Contributing to this accident was the way the initial report by the Waukesha Sheriff's Department was handled by the CCC. The CCC told the signal maintainer the malfunction was reported at North Avenue and Pilgrim Road. The CCC then told the train dispatcher the malfunction was at North Avenue. The signal maintainer contacted the train dispatcher and asked if a stop & flag order had been placed at North Avenue and Pilgrim Road. The train dispatcher said it was. This set the stage for the unclear and inadequate communication between the signal maintainer and the train dispatcher.