Federal Railroad Administration
Office of Safety
Headquarters Assigned
Accident Investigation Report
HQ-2008-16

MARC (MARC)
Washington, DC
February 07, 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-2008-16

1.Name of Railroad Operating Train #1: Amtrak [ATK]	1a. Alphabetic Code: ATK	1b. Railroad Accident/Incident No.: 861748
2.Name of Railroad Operating Train #2: MARC Train Service [MACZ]	2a. Alphabetic Code: MACZ	2b. Railroad Accident/Incident No.: 861748
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: Amtrak [ATK]	4a. Alphabetic Code: ATK	4b. Railroad Accident/Incident No.: 861748
5. U.S. DOT_AAR Grade Crossing Identification Number:	6. Date of Accident/Incident: Month 02 | Day 07 | Year 2008	7. Time of Accident/Incident: 10:03:00 ☑ 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: 03

9. Cars Carrying HAZMAT	10. HAZMAT Cars Damaged/Derailed	11. Cars Releasing HAZMAT	12. People Evacuated	13. Division
0	N/A	N/A	0	MID-ATLANTIC

14. Nearest City/Town	15. Milepost (to nearest tenth)	16. State Abbr / Code	17. County
WASHINGTON, DC	135.7	N/A / DC	WASHINGTON, DC

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
52 F	2	1	2

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
13	1	N/A	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
8	1	711A

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?
12 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: 0

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

Code(s): f | N/A | N/A | N/A | N/A

32. Principal Car/Unit	a. Initial and Number	b. Position in Train	c. Loaded (yes/no)
(1) First involved (derailed, struck, etc)	MARC 4912	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
0	0

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

35. Locomotive Units	a. Head End	Mid Train b. Manual	Mid Train c. Remote	Rear End d. Manual	Rear End c. Remote
(1) Total in Train	1	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	0	0	0	0
(2) Total Derailed	0	0	0	0	0

37. Equipment Damage — This Consist: $165,000.00

38. Track, Signal, Way, & Structure Damage: $5,350.00

39. Primary Cause Code: H607

40. Contributing Cause Code: H211

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: Hrs 2 Mi 4

46. Conductor: Hrs 2 Mi 4

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: 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
3	1	419/MARC

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?
0 MPH | R	a. ATCS; b. Auto train control; g. Automatic block; h. Current of traffic; m.Special instructions; n. Other than main track	0 = Not a remotely controlled; 1 = Remote control portable

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION

FRA FACTUAL RAILROAD ACCIDENT REPORT

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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): f | N/A | N/A | N/A | N/A

2 = Remote control tower
3 = Remote control transmitter - more than one remote control transmitter: 0

59. Principal Car/Unit	a. Initial and Number	b. Position in Train	c. Loaded (yes/no)
(1) First involved (derailed, struck, etc)	MARC 4903	7	no
(2) Causing (if mechanical cause reported)	0	0	N/A

60. If railroad employee(s) tested for drug/alcohol use, enter the number that were positive in the appropriate box.

Alcohol	Drugs
0	0

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

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

63. Cars	Loaded a. Freight	Loaded b. Pass.	Empty c. Freight	Empty d. Pass.	e. Caboose
(1) Total in Equipment Consist	0	4	0	2	0
(2) Total Derailed	0	0	0	1	0

64. Equipment Damage This Consist: $165,000.00

65. Track, Signal, Way, & Structure Damage: $5,350.00

66. Primary Cause Code: H607

67. Contributing Cause Code: H211

Number of Crew Members

68. Engineer/ Operators	69. Firemen	70. Conductors	71. Brakemen
1	0	1	1

Length of Time on Duty

72. Engineer/Operator: Hrs 5 Mi 38

73. Conductor: Hrs 5 Mi 38

Casualties to:	74. Railroad Employees	75. Train Passengers	76. Other
Fatal	0	0	0
Nonfatal	0	3	0

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

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: N/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): N/A

109. geographical) Code: N/A
1.North 2.South 3.East 4.West

Rail Equipment Involved

111. Equipment Code: N/A
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: N/A

110. Position	Code
1.Stalled on Crossing 2.Stopped on Crossing 3.Moving Over Crossing 4. Trapped	N/A

113. Circumstance	Code
1. Rail Equipment Struck Highway User 2. Rail Equipment Struck by Highway User	N/A

114a. Was the highway user and/or rail equipment involved in the impact transporting hazardous materials?	Code
1. Highway User 2. Rail Equipment 3. Both 4. Neither	N/A

114b. Was there a hazardous materials release	Code
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	4.Wig Wags	7.Crossbucks	10.Flagged by crew
	2.Cantilever FLS	5.Hwy. traffic signals	8.Stop signs	11.Other (spec. in narr.)
	3.Standard FLS	6.Audible	9.Watchman	12.None

Code(s)							
	N/A	N/A	N/A	N/A	N/A	N/A	N/A

116. Signaled Crossing (See instructions for codes)	Code
	N/A

117. Whistle Ban	Code
1. Yes 2. No 3. Unknown	N/A

118. Location of Warning	Code
1. Both Sides 2. Side of Vehicle Approach 3. Opposite Side of Vehicle Approach	N/A

119. Crossing Warning with Highway Signals	Code
1. Yes 2. No 3. Unknown	N/A

120. Crossing Illuminated by Street Lights or Special Lights	Code
1. Yes 2. No 3. Unknown	N/A

121. Age	122. Driver's Gender	Code
N/A	1. Male 2. Female	N/A

123. Driver Drove Behind or in Front of and Struck or was Struck by Second Train	Code
1. Yes 2. No 3. Unknown	N/A

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)	N/A

125. Driver Passed Highway Vehicle	Code
1. Yes 2. No 3. Unknown	N/A

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	N/A

Casualties to:	Killed	Injured
129. Highway-Rail Crossing Users	N/A	N/A

127. Driver	Code
1. Killed 2.Injured 3. Uninjured	N/A

128. Was Driver in the Vehicle?	Code
1. Yes 2. No	N/A

130. Highway Vehicle Property Damage (est. dollar damage)
N/A

131. Total Number of Highway-Rail Crossing Users (include driver)
N/A

132. Locomotive Auxiliary Lights?	Code
1. Yes 2. No	N/A

133. Locomotive Auxiliary Lights Operational?	Code
1. Yes 2. No	N/A

134. Locomotive Headlight Illuminated?	Code
1. Yes 2. No	N/A

135. Locomotive Audible Warning Sounded?	Code
1. Yes 2. No	N/A

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

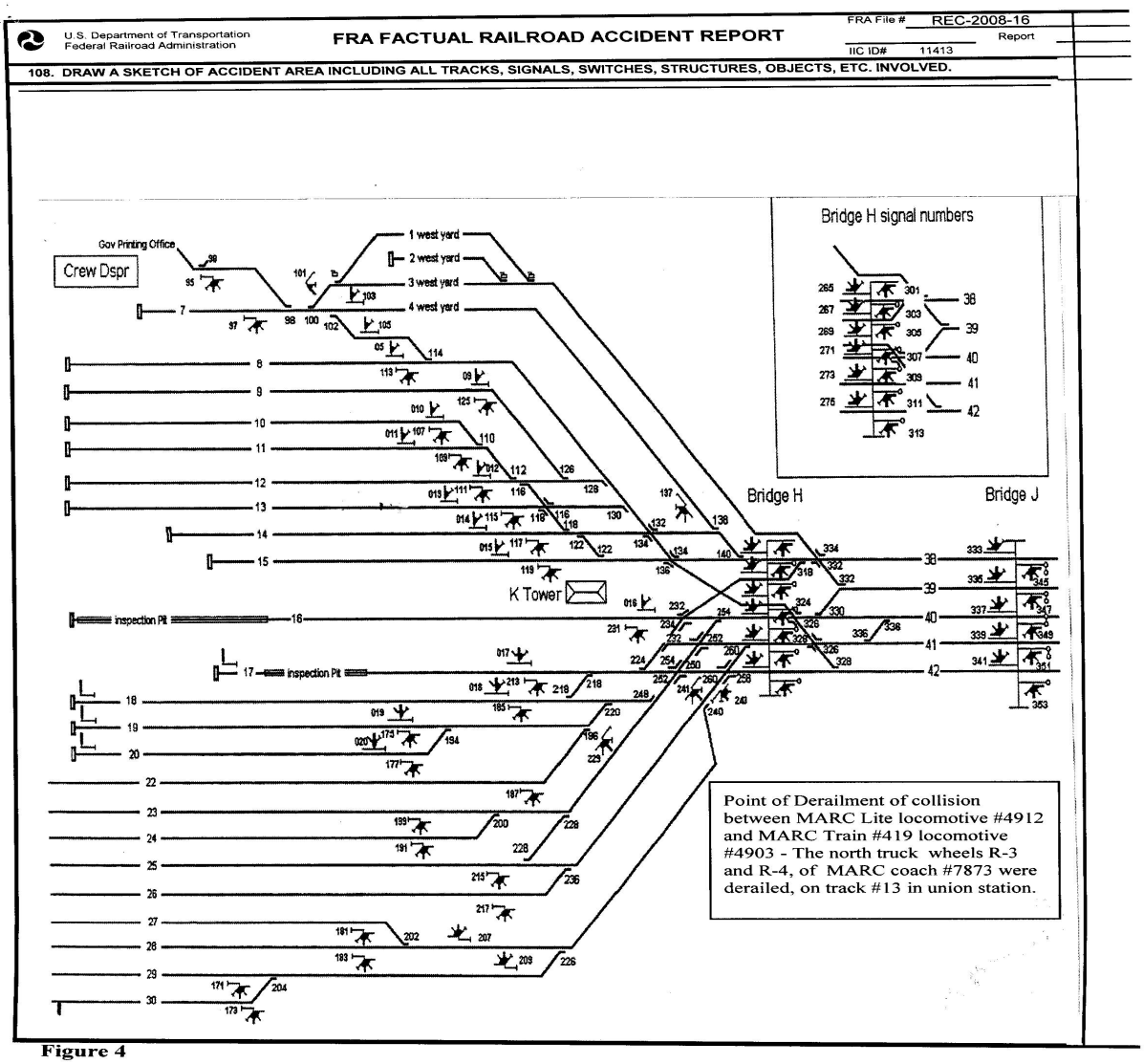

Figure 4

137. SYNOPSIS OF THE ACCIDENT

On Thursday, February 7,2008, at approximately 10:03 AM, a southbound MARC locomotive No.4912 collided with MARC passenger train No. 419. The collision occurred in Washington, DC at milepost 135.7, on track No. 13, in Union Station.

There were 14 passengers and 1 employee slightly injured. Locomotive No. 4912 sustained damage of about $165,000. Locomotive No. 4903 sustained damage of about $3,000. Neither one derailed. However, there was 1 car derailed in the 5th position MARC train No. 419 with estimated damages of $10,000.

At the time of the collision, it was daytime with clear weather. The temperature was about 52 degrees F.

The accident was caused by failure to comply with restricted speed. A contributing factor is the Conductor failed to give proper distances to the Engineer when backing up and also changed the method of communication, Radio communication to hand signals, without notifying the Engineer.

CIRCUMSTANCES PRIOR TO THE ACCIDENT:

The crew SP-711A, south included a locomotive Engineer, and a Conductor. They first went on duty at 7:59 a.m. EST, February 7, 2008, at Washington terminal in Washington, DC. This is their home terminal and they received more than the statutory off duty period, prior to reporting for duty.

MARC Train No.417, arrived on 13 track at Washington Union Station at 9:02 a.m. with the following consist south to north:

Cab Car- 7854, 7802, 7813, 7816, 7815, 7876, 7798, Motor - 4912.

MARC Train 419 arrived in 13 track, stopping just short of MARC 417 at 9:55a.m. and began detraining passengers from the following consist:

Cab Car- 7852, 7825, 7800, 7808, 7873, 7895, Motor - 4903.

At 10:03 AM on February 7, 2008, MARC commuter train No. 419 was positioned on No. 13 track in Union Station, Washington, DC and was struck from behind by a light locomotive. Immediately before the incident, the commuter train had entered Union Station in the push mode and passengers were debarking from the commuter train. Fourteen of the passengers who were onboard the commuter train as the collision occurred were slightly injured. All injures are minor with four claiming back injuries. All were transported to local hospitals as a precautionary measure.

In addition to the 14 passenger injuries, the engineer on the revenue passenger train (MARC Train No. 419) is reporting a slight head injury. That engineer was located in the operating compartment of cab control car, which was on the south (lead) end of the train located on No. 13 track. At the time of the impact, he was applying a hand brake.

The conductor was positioned at the controls on the south end of MARC locomotive No. 4912. The engineer was positioned on the north end of MARC locomotive No. 4912. The railroad timetable direction of the train was south.

138. NARRATIVE

THE ACCIDENT:

Marc locomotive No. 4912

The download of the event recorder shows that the speed at the time of collision was 12 miles per hour. The maximum speed on this track is 15 mph.

At 9:02 a.m. Marc train No. 417 arrived in Washington Union Station on Track 13. The train consisted of seven (7) cars 7798,7876,7875,7816,7813,7802,7854, and one (1) locomotive No. 4912.

At approximately 9:40am, Washington Terminal Yard Crew SP711A, received instructions from KTower to walk to 13 track and remove MARC Motor 4912 from the rear of MARC 417, proceed north and follow the next train in. At approximately 9:50am, yard crew SP711A, proceeded North out of 13 track, routed to 38 track, and stopped just North of H-Bridge.

At 9:56 a.m., yard crew SP711A received a restricting signal at H-Bridge to proceed South. The Conductor on the point of the movement, via radio communication called the restricting signal to Engineer and told him to comeback 15 cars. MARC 4912 then proceeded South from H-Bridge to 13 track traversing the following switches: 140 switch, 136/134 slip switch, 122 crossover, 118 switch and the 1181116 slip switch into 13 track. MARC Motor 4912 traveled a distance of approximately 783 feet from where it stopped North ofH-Bridge until it collided with MARC 419 in 13 track at approximately
9:57am.

At 10:00am, MARC Conductor of job SP711A, called the Washington Commuter Services Control Center and requested medical assistance. In addition, a radio call was made to K-Tower requesting medical assistance on Track 13. K- Tower responded by calling the Division Control Center and also the Washington Commuter Services Control Center. Calls were made to DC Fire and Rescue and the Fire Department sent out the first units at 10:08am.

Amtrak Mid-Atlantic Division management were called to the scene. In addition, personnel from the mechanical department were also called. Information from the collision, such as event recorder downloads, measurements, and inspections were started at this time.

The impact caused extensive damage to MARC motor 4912, MARC locomotive No. 4903 and caused the derailment of the north truck, wheels R3-4 of MARC car No. 7873. In addition to the equipment damage there was also 80 feet of rail that had rolled over.

In addition to the equipment damage, there were also fourteen (14) passenger injuries and one (1) employee injury.

ANALYSIS and CONCLUSIONS:

MARC locomotive NO. 4912 was equipped with a speed indicator and an event recorder as required. The relevant event recorder data was downloaded by the trainmaster at the accident site. The analysis disclosed that the Conductor was not in compliance with all applicable railroad operating and train handling requirements. FRA reviewed the results of this analysis, and concurred with the conclusions. The Conductor operating MARC locomotive No. 4912 did not comply with restricted speed. A contributing factor is the Conductor failed to give proper distances to the Engineer when backing up and also changed the method of communication, Radio communication to hand signals, without
notifying the Engineer.

The following are the results ofthe Signal and Train Control investigation for the MARC collision that occurred on February 7, 2008 in Washington, DC on the Mid Atlantic Division, Washington Tenninal Sub, Milepost (MP) 135.

The Amtrak signal forces were notified at approximately 1010 hrs. and were dispatched to K-Tower and the H Signal Bridge. At this location trains are operated by signal indication of an interlocking system with NORAC Operating Rules in effect. An operational test to recreate the scenario was conducted, and a 24 hour signal watch was implemented and no exceptions were noted.

On February 8, 2008 a FRA signal inspection was conducted at this location. The inspection consisted of interviewing the Assistant Division Engineer, Signal Supervisor, and signal maintainers. All pertinent downloads and test documentation were reviewed. The conditions that existed at the time of the accident were recreated and the signal system was found to be working as intended. An inspection report number 14 with no exceptions taken is included as an attachment.

This rear end collision was due to human factor. The Conductor on the leading end of this shove move was not in compliance with NORAC Operating Rules, and NEC system special instructions. This employee was given a 90 day suspension from work, because of not complying with railroad operating rules. These issues have been discussed with Amtrak supervision, and will be further reviewed during an upcoming focused inspection at Union Station.

PROBABLE CAUSE & CONTRIBUTING FACTORS:

The probable cause of this collision is non compliance with restricted speed. A contributing factor is the Conductor failed to give proper distances to the Engineer when backing up and also changed the method of communication, Radio communication to hand signals, without notifying the Engineer.

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION

FRA FACTUAL RAILROAD ACCIDENT REPORT

FRA File # HQ-2008-16

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2.Name of Railroad Operating Train #2: MARC Train Service [MACZ]	2a. Alphabetic Code: MACZ	2b. Railroad Accident/Incident No.: 861748
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: Amtrak [ATK]	4a. Alphabetic Code: ATK	4b. Railroad Accident/Incident No.: 861748
5. U.S. DOT_AAR Grade Crossing Identification Number:	6. Date of Accident/Incident: Month 02 | Day 07 | Year 2008	7. Time of Accident/Incident: 10:03:00 ☑ 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: 03

9. Cars Carrying HAZMAT	10. HAZMAT Cars Damaged/Derailed	11. Cars Releasing HAZMAT	12. People Evacuated	13. Division
0	N/A	N/A	0	MID-ATLANTIC

14. Nearest City/Town	15. Milepost *(to nearest tenth)*	16. State Abbr / Code	17. County
WASHINGTON, DC	135.7	N/A / DC	WASHINGTON, DC

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
52 F	2	1	2

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
13	1	N/A	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
8	1	711A

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?
12 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): f | 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)*: N/A

32. Principal Car/Unit	a. Initial and Number	b. Position in Train	c. Loaded *(yes/no)*
(1) First involved *(derailed, struck, etc)*	MARC 4912	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
0	0

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

35. Locomotive Units	a. Head End	Mid Train b. Manual	Mid Train c. Remote	Rear End d. Manual	Rear End c. Remote
(1) Total in Train	1	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	0	0	0	0
(2) Total Derailed	0	0	0	0	0

37. Equipment Damage — This Consist: $165,000.00

38. Track, Signal, Way, & Structure Damage: $5,350.00

39. Primary Cause Code: H607

40. Contributing Cause Code: H211

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 2 Mi 4	Hrs 2 Mi 4

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: 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
3	1	419/MARC

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?
0 MPH | R	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): f | N/A | N/A | N/A | N/A

2 = Remote control tower
3 = Remote control transmitter - more than one remote control transmitter: 0

59. Principal Car/Unit	a. Initial and Number	b. Position in Train	c. Loaded *(yes/no)*
(1) First involved *(derailed, struck, etc)*	MARC 4903	7	no
(2) Causing *(if mechanical cause reported)*	0	0	N/A

60. If railroad employee(s) tested for drug/alcohol use, enter the number that were positive in the appropriate box.

Alcohol	Drugs
0	0

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

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

63. Cars	Loaded a. Freight	Loaded b. Pass.	Empty c. Freight	Empty d. Pass.	e. Caboose
(1) Total in Equipment Consist	0	4	0	2	0
(2) Total Derailed	0	0	0	1	0

64. Equipment Damage This Consist: $165,000.00

65. Track, Signal, Way, & Structure Damage: $5,350.00

66. Primary Cause Code: H607

67. Contributing Cause Code: H211

Number of Crew Members

68. Engineer/ Operators	69. Firemen	70. Conductors	71. Brakemen
1	0	1	1

Length of Time on Duty

72. Engineer/Operator: Hrs 5 Mi 38

73. Conductor: Hrs 5 Mi 38

Casualties to:	74. Railroad Employees	75. Train Passengers	76. Other
Fatal	0	0	0
Nonfatal	0	3	0

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

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: N/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)*: N/A

109. *geographical)* Code: N/A
1.North 2.South 3.East 4.West

Rail Equipment Involved

111. Equipment Code: N/A
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: N/A

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110. Position	Code	113. Circumstance	Code
1.Stalled on Crossing 2.Stopped on Crossing 3.Moving Over Crossing 4. Trapped	N/A	1. Rail Equipment Struck Highway User 2. Rail Equipment Struck by Highway User	N/A
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	N/A	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
Code(s)	N/A	N/A	N/A	N/A	N/A	N/A	N/A					

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

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
	N/A		N/A		N/A

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

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
	N/A		N/A

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

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

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

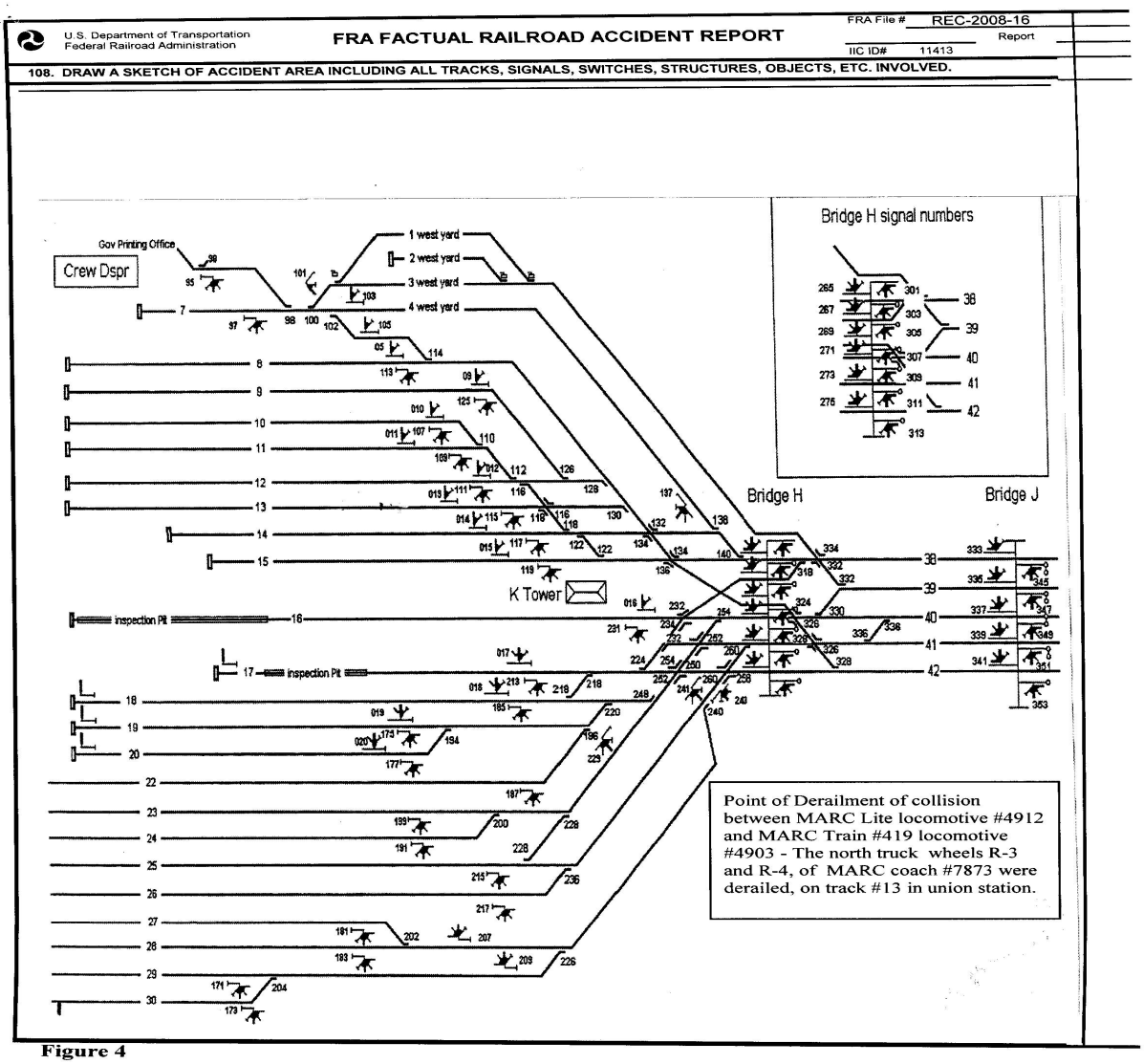

Figure 4

137. SYNOPSIS OF THE ACCIDENT

On Thursday, February 7,2008, at approximately 10:03 AM, a southbound MARC locomotive No.4912 collided with MARC passenger train No. 419. The collision occurred in Washington, DC at milepost 135.7, on track No. 13, in Union Station.

There were 14 passengers and 1 employee slightly injured. Locomotive No. 4912 sustained damage of about $165,000. Locomotive No. 4903 sustained damage of about $3,000. Neither one derailed. However, there was 1 car derailed in the 5th position MARC train No. 419 with estimated damages of $10,000.

At the time of the collision, it was daytime with clear weather. The temperature was about 52 degrees F.

The accident was caused by failure to comply with restricted speed. A contributing factor is the Conductor failed to give proper distances to the Engineer when backing up and also changed the method of communication, Radio communication to hand signals, without notifying the Engineer.

CIRCUMSTANCES PRIOR TO THE ACCIDENT:

The crew SP-711A, south included a locomotive Engineer, and a Conductor. They first went on duty at 7:59 a.m. EST, February 7, 2008, at Washington terminal in Washington, DC. This is their home terminal and they received more than the statutory off duty period, prior to reporting for duty.

MARC Train No.417, arrived on 13 track at Washington Union Station at 9:02 a.m. with the following consist south to north:

Cab Car- 7854, 7802, 7813, 7816, 7815, 7876, 7798, Motor - 4912.

MARC Train 419 arrived in 13 track, stopping just short of MARC 417 at 9:55a.m. and began detraining passengers from the following consist:

Cab Car- 7852, 7825, 7800, 7808, 7873, 7895, Motor - 4903.

At 10:03 AM on February 7, 2008, MARC commuter train No. 419 was positioned on No. 13 track in Union Station, Washington, DC and was struck from behind by a light locomotive. Immediately before the incident, the commuter train had entered Union Station in the push mode and passengers were debarking from the commuter train. Fourteen of the passengers who were onboard the commuter train as the collision occurred were slightly injured. All injures are minor with four claiming back injuries. All were transported to local hospitals as a precautionary measure.

In addition to the 14 passenger injuries, the engineer on the revenue passenger train (MARC Train No. 419) is reporting a slight head injury. That engineer was located in the operating compartment of cab control car, which was on the south (lead) end of the train located on No. 13 track. At the time of the impact, he was applying a hand brake.

The conductor was positioned at the controls on the south end of MARC locomotive No. 4912. The engineer was positioned on the north end of MARC locomotive No. 4912. The railroad timetable direction of the train was south.

138. NARRATIVE

THE ACCIDENT:

Marc locomotive No. 4912

The download of the event recorder shows that the speed at the time of collision was 12 miles per hour. The maximum speed on this track is 15 mph.

At 9:02 a.m. Marc train No. 417 arrived in Washington Union Station on Track 13. The train consisted of seven (7) cars 7798,7876,7875,7816,7813,7802,7854, and one (1) locomotive No. 4912.

At approximately 9:40am, Washington Terminal Yard Crew SP711A, received instructions from KTower to walk to 13 track and remove MARC Motor 4912 from the rear of MARC 417, proceed north and follow the next train in. At approximately 9:50am, yard crew SP711A, proceeded North out of 13 track, routed to 38 track, and stopped just North of H-Bridge.

At 9:56 a.m., yard crew SP711A received a restricting signal at H-Bridge to proceed South. The Conductor on the point of the movement, via radio communication called the restricting signal to Engineer and told him to comeback 15 cars. MARC 4912 then proceeded South from H-Bridge to 13 track traversing the following switches: 140 switch, 136/134 slip switch, 122 crossover, 118 switch and the 1181116 slip switch into 13 track. MARC Motor 4912 traveled a distance of approximately 783 feet from where it stopped North ofH-Bridge until it collided with MARC 419 in 13 track at approximately
9:57am.

At 10:00am, MARC Conductor of job SP711A, called the Washington Commuter Services Control Center and requested medical assistance. In addition, a radio call was made to K-Tower requesting medical assistance on Track 13. K- Tower responded by calling the Division Control Center and also the Washington Commuter Services Control Center. Calls were made to DC Fire and Rescue and the Fire Department sent out the first units at 10:08am.

Amtrak Mid-Atlantic Division management were called to the scene. In addition, personnel from the mechanical department were also called. Information from the collision, such as event recorder downloads, measurements, and inspections were started at this time.

The impact caused extensive damage to MARC motor 4912, MARC locomotive No. 4903 and caused the derailment of the north truck, wheels R3-4 of MARC car No. 7873. In addition to the equipment damage there was also 80 feet of rail that had rolled over.

In addition to the equipment damage, there were also fourteen (14) passenger injuries and one (1) employee injury.

ANALYSIS and CONCLUSIONS:

MARC locomotive NO. 4912 was equipped with a speed indicator and an event recorder as required. The relevant event recorder data was downloaded by the trainmaster at the accident site. The analysis disclosed that the Conductor was not in compliance with all applicable railroad operating and train handling requirements. FRA reviewed the results of this analysis, and concurred with the conclusions. The Conductor operating MARC locomotive No. 4912 did not comply with restricted speed. A contributing factor is the Conductor failed to give proper distances to the Engineer when backing up and also changed the method of communication, Radio communication to hand signals, without
notifying the Engineer.

The following are the results ofthe Signal and Train Control investigation for the MARC collision that occurred on February 7, 2008 in Washington, DC on the Mid Atlantic Division, Washington Tenninal Sub, Milepost (MP) 135.

The Amtrak signal forces were notified at approximately 1010 hrs. and were dispatched to K-Tower and the H Signal Bridge. At this location trains are operated by signal indication of an interlocking system with NORAC Operating Rules in effect. An operational test to recreate the scenario was conducted, and a 24 hour signal watch was implemented and no exceptions were noted.

On February 8, 2008 a FRA signal inspection was conducted at this location. The inspection consisted of interviewing the Assistant Division Engineer, Signal Supervisor, and signal maintainers. All pertinent downloads and test documentation were reviewed. The conditions that existed at the time of the accident were recreated and the signal system was found to be working as intended. An inspection report number 14 with no exceptions taken is included as an attachment.

This rear end collision was due to human factor. The Conductor on the leading end of this shove move was not in compliance with NORAC Operating Rules, and NEC system special instructions. This employee was given a 90 day suspension from work, because of not complying with railroad operating rules. These issues have been discussed with Amtrak supervision, and will be further reviewed during an upcoming focused inspection at Union Station.

PROBABLE CAUSE & CONTRIBUTING FACTORS:

The probable cause of this collision is non compliance with restricted speed. A contributing factor is the Conductor failed to give proper distances to the Engineer when backing up and also changed the method of communication, Radio communication to hand signals, without notifying the Engineer.