Federal Railroad Administration
Office of Safety
Headquarters Assigned
Accident Investigation Report
HQ-2007-31

CSX Transportation (CSX)
Belvedere, New Jersey
May 24, 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-2007-31

1.Name of Railroad Operating Train #1: CSX Transportation [CSX]	1a. Alphabetic Code: CSX	1b. Railroad Accident/Incident No.: 31787
2.Name of Railroad Operating Train #2: CSX Transportation [CSX]	2a. Alphabetic Code: CSX	2b. Railroad Accident/Incident No.: 31787
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.: 31787
5. U.S. DOT_AAR Grade Crossing Identification Number:	6. Date of Accident/Incident: Month 05 | Day 24 | Year 2007	7. Time of Accident/Incident: 02:30:00 ☑ 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	Baltimore

14. Nearest City/Town	15. Milepost (to nearest tenth)	16. State Abbr	16. State Code	17. County
Belvedere	52.9	N/A	MD	CECIL

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
57 F	4	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
Main	4	26.4	4

OPERATING TRAIN #1

26. Type of Equipment Consist (single entry) 1. Freight train 2. Passenger train 3. Commuter train 4. Work train 5. Single car 6. Cut of cars 7. Yard/switching 8. Light loco(s). 9. Maint./inspect.car	A. Spec. MoW Equip. Code	27. Was Equipment Attended? 1. Yes 2. No — Code	28. Train Number/Symbol
	1	1	Q21724

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?
17 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): 2339

Code(s): e | 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)	CSXT 7494	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

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	4	0	38	0	0
(2) Total Derailed	0	0	0	0	0

37. Equipment Damage This Consist	38. Track, Signal, Way, & Structure Damage	39. Primary Cause Code	40. Contributing Cause Code
500	500	H222	H605

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 3 Mi 30	Hrs 3 Mi 30

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

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

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

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
	1	1	Q37323

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): 8423

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): a | 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)	CSXT173208	99	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
N/A	N/A

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

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	2	0	0	0	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	58	0	41	0	0
(2) Total Derailed	0	0	3	0	0

64. Equipment Damage This Consist: 76552

65. Track, Signal, Way, & Structure Damage: 0

66. Primary Cause Code: H222

67. Contributing Cause Code: H605

Number of Crew Members

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

Length of Time on Duty

72. Engineer/Operator: Hrs 9 Mi 45

73. Conductor: Hrs 9 Mi 45

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

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

78. Was EOT Device Properly Armed? 1. Yes 2. No: 1

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. 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: N/A

108. Vehicle Speed (est. MPH at impact): N/A

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

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: N/A

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	4.Wig Wags	7.Crossbucks	10.Flagged by crew	116. Signaled Crossing (See instructions for codes)	Code	117. Whistle 1. Yes 2. No 3. Unknown	Code
	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	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

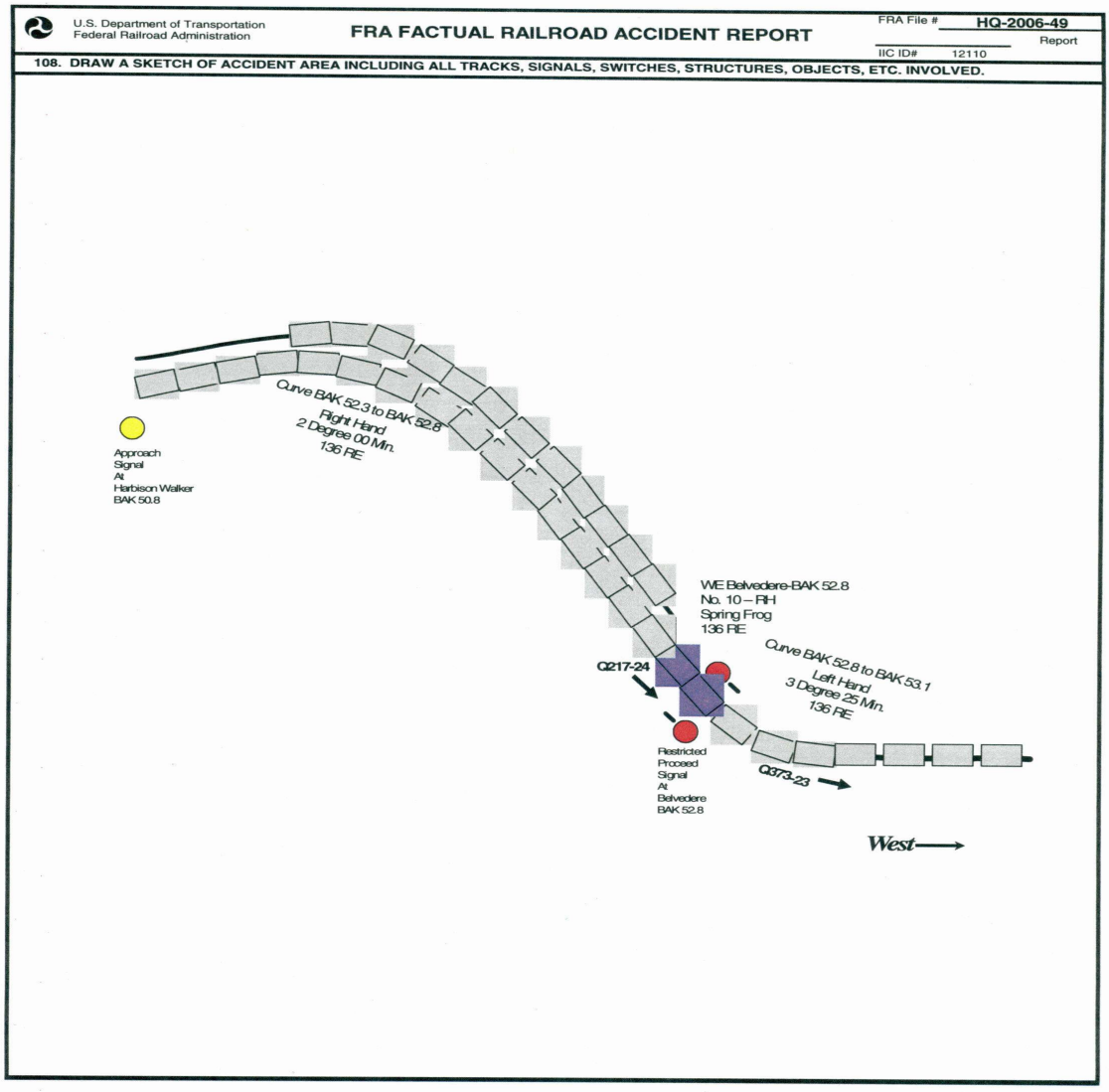
121. Age	122. Driver's Gender 1. Male 2. Female	Code	123. Driver Drove Behind or in Front of and Struck or was Struck by Second Train 1. Yes 2. No 3. Unknown	Code	124. Driver 1. Drove around or thru the Gate 2. Stopped and then Proceeded 3. Did not Stop 4. Stopped on Crossing 5. Other (specify in narrative)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



137. SYNOPSIS OF THE ACCIDENT

A westbound CSX freight train, Q217, collided with a standing CSX freight train, Q373, at Belvedere, Maryland on May 24, 2007 at 2:30 AM EST. The accident occurred near Belvedere (Perryville), Maryland at CSX milepost BAK 52.9 on the Philadelphia Subdivision.

There were no injuries. The lead locomotive of the westbound train, Q217, sustained minor damage of about $500 damage. The rear car of train Q373 sustained damage of about $24863. Neither one derailed. However, there were 3 cars derailed in the 95th, 96th and 99th position of the standing Q373 train with estimated damages of $51,689.

At the time of the accident, it was dark with clear weather. The temperature was about 57 degrees F.

The accident was caused by the crew of train Q217 improperly responding to the automatic signals.

A contributing cause was failure of the crew to comply with restricted speed in connection with the restrictive indication of a block or interlocking signal.

138. NARRATIVE

The crew of train CSX Q217 West included a locomotive engineer and a conductor. They first went on duty at 11 PM EST, May 23, 2007, at the CSX RG Tower in Philadelphia, Pennsylvania. This is their home terminal and they received more than the statutory off duty period, prior to reporting for duty.

Their assigned freight train consisted of two locomotives, with 4 loaded, and 38 empty automobile cars. It was 4,092 feet long and weighed 2,339 trailing tons. The train was scheduled to travel to Cumberland, Maryland. The train received an initial terminal air brake test and departed Philadelphia at 12:01 AM.

As the westbound train approached the accident area, the crew observed the following automatic signals and their aspect:

- **West Singerly (milepost 43.7) CLEAR**
- **Eder (milepost 45.9) CLEAR**
- **Leslie (milepost 48.1) CLEAR**
- **Harbison Walker (milepost 50.5) APPROACH**
- **Belvedere (milepost 52.9) RESTRICTED PROCEED**

The collision occurred at milepost 52.9. In this area, there is a 2 degree right hand curve about 900 feet site distance from the Belvedere signal. This is the direction westbound train Q217 was traveling.

The crew on train CSX Q373 West included a locomotive engineer and a conductor. They first went on duty at 4:45 PM EST, May 23, 2007, at CSX RG Tower in Philadelphia, Pennsylvania. This is their home terminal and they received more than the statutory off duty period, prior to reporting for duty.

Their assigned freight train consisted of two locomotives, with 58 loaded, and 41 empty cars of several varieties. It was 5,858 feet long and weighed 8,423 trailing tons. There were 17 hazardous material cars in this train, however, none of them were involved in this incident. The train was scheduled to travel to Baltimore, Maryland.

Q373 just finished picking up cars on the siding at Belvedere. They went into the siding with their entire train and picked up 29 empty cars. They pulled west out on to the main track and cleared the Belvedere signal, milepost 52.9. After installing the end of train device on the rear car, CSXT 173208, the conductor began walking west, to the locomotives.

The railroad timetable direction of the train was west. The geographic direction was southwest. Timetable directions are used throughout this report.

THE ACCIDENT:

Train Q217 West

The train was being operated at about 45 mph when they observed an APPROACH signal at Harbison Walker, milepost 50.5. The engineer immediately reduced train speed to 30 mph as required by rule. Their next signal is 2.4 miles away at Belvedere, milepost 52.9.

While traveling west towards Belvedere, this crew monitored radio conversations from an eastbound train approaching towards them at AKINS, about 4 miles away. This train, Q410, was announcing that they were entering the siding at AKINS.

Train Q217 thought they received the APPROACH Signal at Harbison Walker in order to slow them up in preparation for passing Q410 at AKINS. If this were the case, the signal at Belvedere should be APPROACH or better.

Still traveling west at about 30 mph around a right hand 2 degree curve, train Q217 first observed the Belvedere signal about 900 feet away. It was RESTRICTED PROCEED. They also saw the rear car of a train, Q373, standing just a few feet west of the Belvedere signal.

The engineer immediately placed the trains' brakes into emergency. The speed reduced to 17 mph in about 721 feet. Impact to the rear car of train Q373 was 17 mph.

ANALYSIS and CONCLUSIONS:

Train Q217 did not fully comply with the APPROACH signal at Harbison Walker.

APPROACH is defined as;
· Proceed, prepared to stop at the next signal. Trains exceeding Medium Speed, (a speed not exceeding 30 mph), must immediately begin reduction to Medium Speed as soon as the engine passes the APPROACH Signal.

Train 217 also did not comply with the RESTRICTED PROCEED Signal at Belvedere.

RESTRICTED PROCEED is defined as;
· Proceed at restricted speed. (a speed that will permit stopping within one half range of vision. It will also permit stopping short of a train, a car, an obstruction, a stop signal, a derail or improperly lined switch. It must permit looking out for broken rail. It will not exceed 15 mph).

The crew of train Q217 did not know train Q373 was ahead of them. They only heard train Q410 taking the siding at AKINS and assumed that was the only other train out there.

PROBABLE CAUSE & CONTRIBUTING FACTORS:

A contributing cause was failure of the crew to comply with restricted speed in connection with the restrictive indication of a block or interlocking signal.

The FRA found that the accident occurred because train Q217 did not comply with the APPROACH Signal at Harbison Walker.