Federal Railroad Administration
Office of Safety
Headquarters Assigned
Accident Investigation Report
HQ-2006-12

Amtrak (ATK)/CSX Transportation (CSX)
Boca Raton, Florida
February 22, 2006

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-2006-14

1.Name of Railroad Operating Train #1: CSX Transportation [CSX]	1a. Alphabetic Code: CSX	1b. Railroad Accident/Incident No.: 000021190
2.Name of Railroad Operating Train #2: N/A	2a. Alphabetic Code: N/A	2b. Railroad Accident/Incident: N/A
3.Name of Railroad Responsible for Track Maintenance: CSX Transportation [CSX]	3a. Alphabetic Code: CSX	3b. Railroad Accident/Incident No.: N/A
4. U.S. DOT_AAR Grade Crossing Identification Number:	5. Date of Accident/Incident: Month 03 / Day 17 / Year 2006	6. Time of Accident/Incident: 02:35: ☐ AM ☑ PM

7. 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): 09

8. Cars Carrying HAZMAT	9. HAZMAT Cars Damaged/Derailed	10. Cars Releasing HAZMAT	11. People Evacuated	12. Division
0	0	0	0	Florence

13. Nearest City/Town	14. Milepost (to nearest tenth)	15. State Abbr	15. State Code	16. County
Laurens	AK554.9	N/A	SC	LAURENS

17. Temperature (F) (specify if minus)	18. Visibility (single entry) 1. Dawn 2. Day 3.Dusk 4.Dark	Code	19. Weather (single entry) 1. Clear 2. Cloudy 3. Rain 4. Fog 5.Sleet 6.Snow	Code	20. Type of Track 1. Main 2. Yard 3. Siding 4. Industry	Code
62 F		2		1		1

21. Track Name/Number	22. FRA Track Class (1-9, X)	Code	23. Annual Track Density (gross tons in millions)	24. Time Table Direction 1. North 3. East	Code
single main		3	34		2

OPERATING TRAIN #1

25. Type of Equipment Consist (single entry)	A. Spec. MoW Equip.	Code	26. Was Equipment Attended? 1. Yes 2. No	Code	27. Train Number/Symbol
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		8		1	F224-17

28. Speed (recorded speed, if available) R - Recorded E - Estimated: 20 MPH — Code: R

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

30. 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): k, N/A, N/A, N/A, N/A

30a. 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

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

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

Alcohol	Drugs
0	N/A

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

34. 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

35. 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

36. Equipment Damage This Consist	37. Track, Signal, Way, & Structure Damage	38. Primary Cause Code	39. Contributing Cause Code
500	0	H405	N/A

Number of Crew Members / Length of Time on Duty

40. Engineer/ Operators	41. Firemen	42. Conductors	43. Brakemen	44. Engineer/Operator	45. Conductor
N/A	N/A	1	N/A	Hrs 8 Mi 35	Hrs 8 Mi 35

Casualties to:	46. Railroad Employees	47. Train Passengers	48. Other
Fatal	0	0	0
Nonfatal	N/A	0	0

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

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

51. Caboose Occupied by Crew? 1. Yes 2. No: 2

OPERATING TRAIN #2

52. Type of Equipment Consist (single entry)	A. Spec. MoW Equip.	Code	53. Was Equipment Attended? 1. Yes 2. No	Code	54. Train Number/Symbol
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		9		2	N/A

55. Speed (recorded speed, if available) R - Recorded E - Estimated: 0 MPH — Code: R

57. 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

57a. Remotely Controlled Locomotive? 0 = Not a remotely controlled; 1 = Remote control portable

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56. Trailing Tons (gross tonnage, excluding power units)	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)	2 = Remote control tower 3 = Remote control transmitter - more than one remote control transmitter
N/A			k N/A N/A N/A N/A	0

58. Principal Car/Unit	a. Initial and Number	b. Position in Train	c. Loaded (yes/no)	59. If railroad employee(s) tested for drug/alcohol use, enter the number that were positive in the appropriate box.	Alcohol	Drugs
(1) First involved (derailed, struck, etc)	OTE75281	1	no		N/A	N/A
(2) Causing (if mechanical cause reported)	0	0	N/A	60. Was this consist transporting passengers? (Y/N)		N/A

61. Locomotive Units	a. Head End	Mid Train b. Manual	Mid Train c. Remote	Rear End d. Manual	Rear End c. Remote	62. Cars	Loaded a. Freight	Loaded b. Pass.	Empty c. Freight	Empty d. Pass.	e. Caboose
(1) Total in Train	0	0	0	0	0	(1) Total in Equipment Consist	0	0	0	0	0
(2) Total Derailed	0	0	0	0	0	(2) Total Derailed	0	0	0	0	0

63. Equipment Damage This Consist	64. Track, Signal, Way, & Structure Damage	65. Primary Cause Code	66. Contributing Cause Code
0	0	N/A	N/A

Number of Crew Members				Length of Time on Duty	
67. Engineer/ Operators	68. Firemen	69. Conductors	70. Brakemen	71. Engineer/Operator	72. Conductor
0	0	0	0	Hrs 0 Mi 0	Hrs 0 Mi 0

Casualties to:	73. Railroad Employees	74. Train Passengers	75. Other
Fatal	0	0	0
Nonfatal	0	0	0

76. EOT Device?	77. Was EOT Device Properly Armed?	78. Caboose Occupied by Crew?
1. Yes 2. No N/A	1. Yes 2. No N/A	1. Yes 2. No N/A

Highway User Involved

79. Type — Code: N/A
C. Truck-Trailer. F. Bus J. Other Motor Vehicle
A. Auto D. Pick-Up Truck G. School Bus K. Pedestrian
B. Truck E. Van H. Motorcycle M. Other (spec. in narrative)

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

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

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

86a. Was the highway user and/or rail equipment involved in the impact transporting hazardous materials? — Code: N/A
1. Highway User 2. Rail Equipment 3. Both 4. Neither

Rail Equipment Involved

83. 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)

84. Position of Car Unit in Train: N/A

85. Circumstance — Code: N/A
1. Rail Equipment Struck Highway User
2. Rail Equipment Struck by Highway User

86b. Was there a hazardous materials release by — Code: N/A
1. Highway User 2. Rail Equipment 3. Both 4. Neither

86c. State here the name and quantity of the hazardous materials released, if any.
N/A

87. Type of Crossing Warning — Code(s): N/A N/A N/A N/A N/A N/A N/A
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

88. Signaled Crossing Warning (See instructions for codes) — Code: N/A

89. Whistle Ban — Code: N/A
1. Yes
2. No
3. Unknown

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

91. Crossing Warning Interconnected with Highway Signals — Code: N/A
1. Yes
2. No
3. Unknown

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

93. Driver's Age: N/A

94. Driver's Gender — Code: N/A
1. Male
2. Female

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

96. Driver — Code: N/A
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)

97. Driver Passed Standing Highway Vehicle — Code: N/A
1. Yes 2. No 3. Unknown

98. View of Track Obscured by (primary obstruction) — Code: N/A
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

101. Casulties to Highway-Rail Crossing Users	Killed	Injured
	N/A	N/A

99. Driver Was — Code: N/A
1. Killed 2.Injured 3. Uninjured

100. Was Driver in the Vehicle? — Code: N/A
1. Yes 2. No

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

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

104. Locomotive Auxiliary Lights? — Code: N/A
1. Yes 2. No

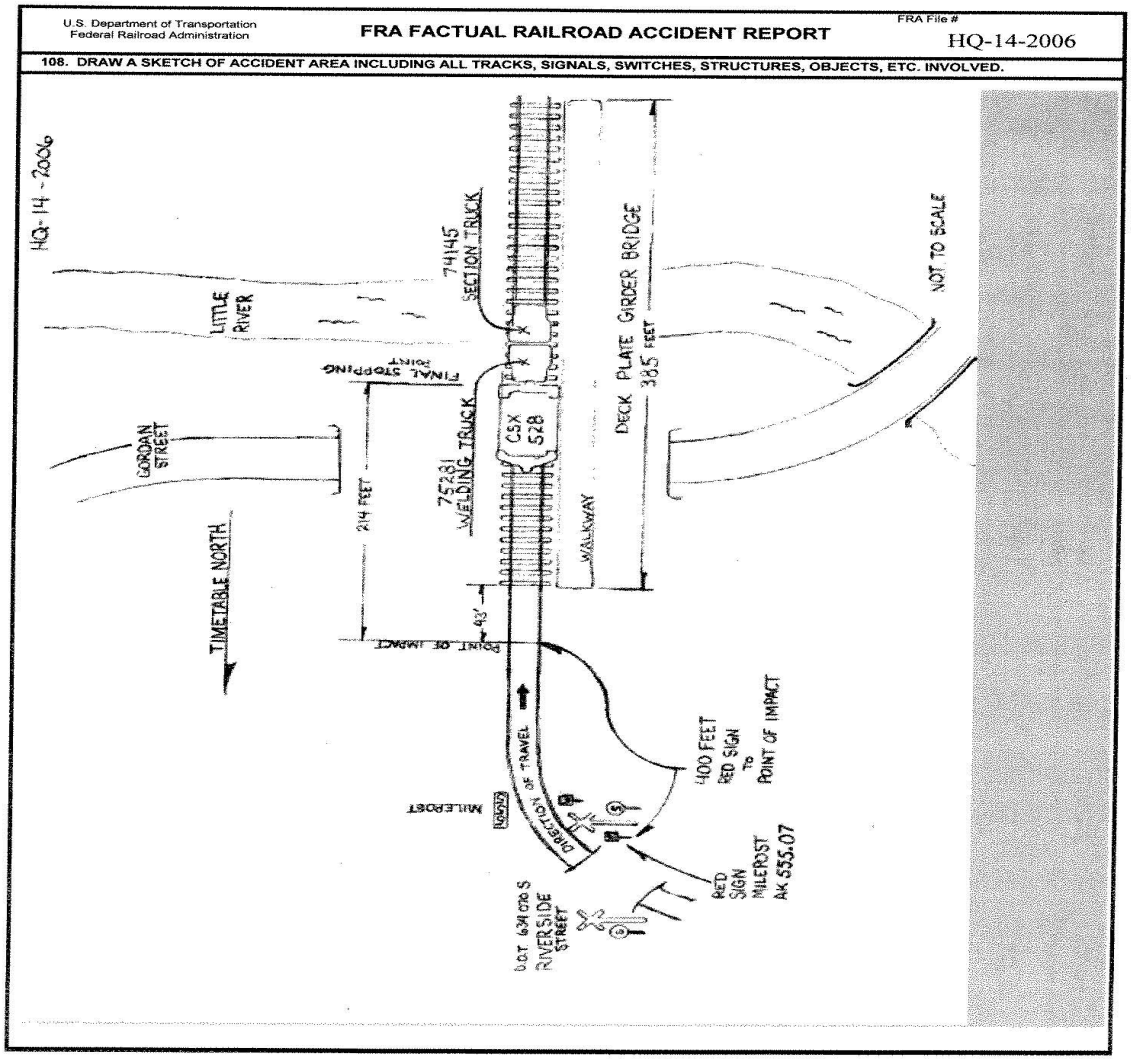
105. Locomotive Auxiliary Lights Operational? — Code: N/A
1. Yes 2. No

106. Locomotive Headlight Illuminated? — Code: N/A
1. Yes 2. No

107. Locomotive Audible Warning Sounded? — Code: N/A
1. Yes 2. No

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

HQ-14-
2006
sketch.jpg



109. SYNOPSIS OF THE ACCIDENT

On March 17, 2006, at 2:35 p.m. Eastern standard Time (EST), CSX Train No. F224-17, operatig as a light locomotive in a southward direction on the CSX Spartanburg Subdivision, struck a CSX maintenance-of-way (M/W) hi-rail vehicle and pushed it into a second M/W vehicle at milepost (MP) AK554.9. The accident occured in Laurens, South Carolina (SC) on a single main track on the approach of a deck plate girder bridge. The accident included one locomotive and two M/W vehicles. None of the equipment derailed. One M/W vehicle was completely destroyed, and the second sustained moderate damage. The locomotive sustained minor damage.

There were no injuries and no evacuation ordered. Equipment damages totaled $100,500. The weather at the time of the accident was daylight, clear and 62°F.

The cause of this accident is the failure of the engineer and conductor of Train F224-17 to stop at the Irby Block Sign. In addition, the train crew failed to stop at the Form W conditional stop sign placed at MP AK555.07 by the CSX M/W foreman.

110. NARRATIVE

Train F224-17

The crew of CSX F224-17 included a locomotive engineer and a conductor. They went on duty at 6 a.m. March 17, 2006, at the CSX Spartanburg Yard in Spartanburg, SC. This is the home terminal for both crew members who had received more than the required statutory off duty time. They were assigned to operate CSX Locomotive 528, which would be used as helper power for trains operating between Spartanburg and Hunter Junction. Following a job briefing and locomotive inspection, Locomotive528 coupled to the rear of Train N130-14, a loaded coal train. Train N130-14 completed a terminal train air teest and received authority from the train dispatcher to occupy the Arkwright and Roebuck Blocks, and departed Spartanburg Yard at 8:45 a.m.

The train stopped at the south Roebuck Block Sign, six miles south of Spartanburg for opposing traffic. At 11:52 a.m., they received the Tyger Block and procedded southward toward Hunter Junction. At 12:50 p.m., Train N130-14 stopped at Hunter Junction to allow Locomotive 528 to uncouple and receive authority to operate as Train F224-17 in the Hunter Block, joint with Train N130-14. Train N130-14 continued southward on the Spartanburg Subdivision to the CN&L Subdivision. At 2:18 p.m., F224-17 received an authority for the Hunter and Laurens Blocks to proceed south to MP AK552.2, where the Irby Block begins. This was the last conversation between the dispatcher and Train F224-17 prior to the collision.

As Train F224-17 traveled south, the locomotive engineer was seated at the controls on the east side of the locomotive and the conductor was seated on the west side. The locomotive was being operated with the long end facing southward.

Approaching the accident sire from MP AK555.4 there is tangent track for 1,000 ft., leading into a 6-degree, 22-minute left hand curve. This is followed by 240 ft. of tangent track at the north end of a deck plate girder bridge and continues over the bridge. The grade between MP AK555.4 and AK554.9 is a 1.65-percent descending grade. the Irby Block Sign is located at MP AK555.2 on the east side of the track, 105 ft. south of the Flemming Street public road crossing. The sight distance around the curve is obscured by large trees and vegetation growing on both sides of the track. A secondpublic road crossing, Riverside Street, crosses the track at MP AK555.07 and is in the curve.

Maintenance of Way Crews

The M/W crew at Laurens included a foreman, a machine operator, and two trackmen. The welding crew consisted of a welder and a welder helper. They went on duty at 7 a.m., March 17, 2006, at the M/W headquarters in Laurens. The planned work for both crews was to repair internal rail defects identified by the Sperry Rail Service Test Truck No. 952 found on the previous day.

At 7:42 a.m. the foreman of the section crew verified with the dispatcher that their on-track protection, CSX Rule 707, Form W-Conditional Stop was in effect. Their Form W limits were within the Irby Block, between MP AK547.6 and AK555.0. Following a job briefing, the two crews went to MP AK 549.8 to begin repair of the first rail. At 11:47 a.m., the M/W foreman gave permission to CSX Locomotive 420, TrainN337-09, to enter the south limits of his Form W, with the understanding that they would not move beyond the north switchof Irby Yard at MP AK 553.9.