Federal Railroad Administration
Office of Safety
Headquarters Assigned
Accident Investigation Report
HQ-2008-55

CSX Transportation (CSX)
Selkirk, NY
June 13, 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-2008-55

1.Name of Railroad Operating Train #1: CSX Transportation [CSX]	1a. Alphabetic Code: CSX	1b. Railroad Accident/Incident No.: 48103
2.Name of Railroad Operating Train #2: CSX Transportation [CSX]	2a. Alphabetic Code: CSX	2b. Railroad Accident/Incident No.: 48103
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.: 48103
5. U.S. DOT_AAR Grade Crossing Identification Number:	6. Date of Accident/Incident: Month 06 | Day 13 | Year 2008	7. Time of Accident/Incident: 02:00:00 ☑ 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: 04

9. Cars Carrying HAZMAT	10. HAZMAT Cars Damaged/Derailed	11. Cars Releasing HAZMAT	12. People Evacuated	13. Division
4	1	0	0	Albany

14. Nearest City/Town	15. Milepost *(to nearest tenth)*	16. State Abbr	16. State Code	17. County
Selkirk	15	N/A	NY	ALBANY

18. Temperature (F) *(specify if minus)*	19. Visibility *(single entry)* 1. Dawn 3.Dusk 2. Day 4.Dark	Code	20. Weather (single entry) 1. Clear 3. Rain 5.Sleet 2. Cloudy 4. Fog 6.Snow	Code	21. Type of Track 1. Main 3. Siding 2. Yard 4. Industry	Code
54 F		4		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 3. East 2. South 4. West	Code
North Departure		2	N/A		3

OPERATING TRAIN #1

26. Type of Equipment Consist *(single entry)* 1. Freight train 4. Work train 7. Yard/switching 2. Passenger train 5. Single car 8. Light loco(s). 3. Commuter train 6. Cut of cars 9. Maint./inspect.car	A. Spec. MoW Equip. Code	27. Was Equipment Attended? 1. Yes 2. No	Code	28. Train Number/Symbol
	A	1. Yes	1	Y399-12

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?
7 MPH	R	a. ATCS; b. Auto train control; c. Auto train stop; d. Cab; e. Traffic; f. Interlocking; g. Automatic block; h. Current of traffic; i. Time table/train orders; j.Track warrant control; k. Direct traffic control; l.Yard limits; m.Special instructions; n. Other than main track; o. Positive train control; p. Other *(Specify in narrative)*	0 = Not a remotely controlled 1 = Remote control portable 2 = Remote control tower 3 = Remote control transmitter - more than one remote control transmitter

30. Trailing Tons *(gross tonnage, excluding power units)*	Code(s)				
3345	n	N/A	N/A	N/A	N/A

31a. Remotely Controlled Locomotive?	
	1

32. Principal Car/Unit	a. Initial and Number	b. Position in Train	c. Loaded *(yes/no)*
(1) First involved *(derailed, struck, etc)*	CSXT8473	1	no
(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	1	0	0	0	0
(2) Total Derailed	1	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	26	0	8	0	0
(2) Total Derailed	0	0	1	0	0

37. Equipment Damage This Consist	38. Track, Signal, Way, & Structure Damage	39. Primary Cause Code	40. Contributing Cause Code
$100,208.00	$110,000.00	S011	N/A

Number of Crew Members				Length of Time on Duty	
41. Engineer/ Operators	42. Firemen	43. Conductors	44. Brakemen	45. Engineer/Operator	46. Conductor
1	0	0	0	Hrs 1 Mi 56	Hrs 0 Mi 0

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

50. EOT Device?	51. Was EOT Device Properly Armed?
1. Yes 2. No: 2	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 4. Work train 7. Yard/switching 2. Passenger train 5. Single car 8. Light loco(s). 3. Commuter train 6. Cut of cars 9. Maint./inspect.car	A. Spec. MoW Equip. Code	54. Was Equipment Attended? 1. Yes 2. No	Code	55. Train Number/Symbol
	7	1. Yes	1	Y397-12

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?
4 MPH	E	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)*: 7355

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 | N/A | N/A | N/A | N/A

2 = Remote control tower
3 = Remote control transmitter - more than one remote control transmitter: 1

59. Principal Car/Unit	a. Initial and Number	b. Position in Train	c. Loaded *(yes/no)*
(1) First involved *(derailed, struck, etc)*	AWXX20561	8	yes
(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	1	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	52	0	26	0	0
(2) Total Derailed	3	0	0	0	0

64. Equipment Damage This Consist: $179,787.00

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

66. Primary Cause Code: S011

67. Contributing Cause Code: N/A

Number of Crew Members

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

Length of Time on Duty

72. Engineer/Operator: Hrs 3 Mi 0

73. Conductor: Hrs 0 Mi 0

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: 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: 1

81. Was Equipment Attended? 1. Yes 2. No: 1

82. Train Number/Symbol: L163-12

83. Speed *(recorded speed, if available)* Code: R - Recorded; E - Estimated: E MPH: 7

84. Trailing Tons *(gross tonnage, excluding power units)*: 5474

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 | 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: 0

86. Principal Car/Unit	a. Initial and Number	b. Position in Train	c. Loaded *(yes/no)*
(1) First involved *(derailed, struck, etc)*	BNSF240314	24	yes
(2) Causing *(if mechanical cause reported)*	0	0	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

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	3	0	0	0	0
(2) Total Derailed	0	0	0	0	0

90. Cars	Loaded a. Freight	Loaded b. Pass.	Empty c. Freight	Empty d. Pass.	e. Caboose
(1) Total in Equipment Consist	33	0	0	0	0
(2) Total Derailed	3	0	0	0	0

91. Equipment Damage This Consist: $13,651.00

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

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
1	0	1	0

Length of Time on Duty

99. Engineer/Operator: Hrs 7 Mi 15

100. Conductor: Hrs 7 Mi 15

Casualties to:	101. Railroad Employees	102. Train	103. Other
Fatal	0	0	0
Nonfatal	0	0	0

104. EOT 1. Yes 2. No: 1

105. Was EOT Device Properly 1. Yes 2. No: 1

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

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

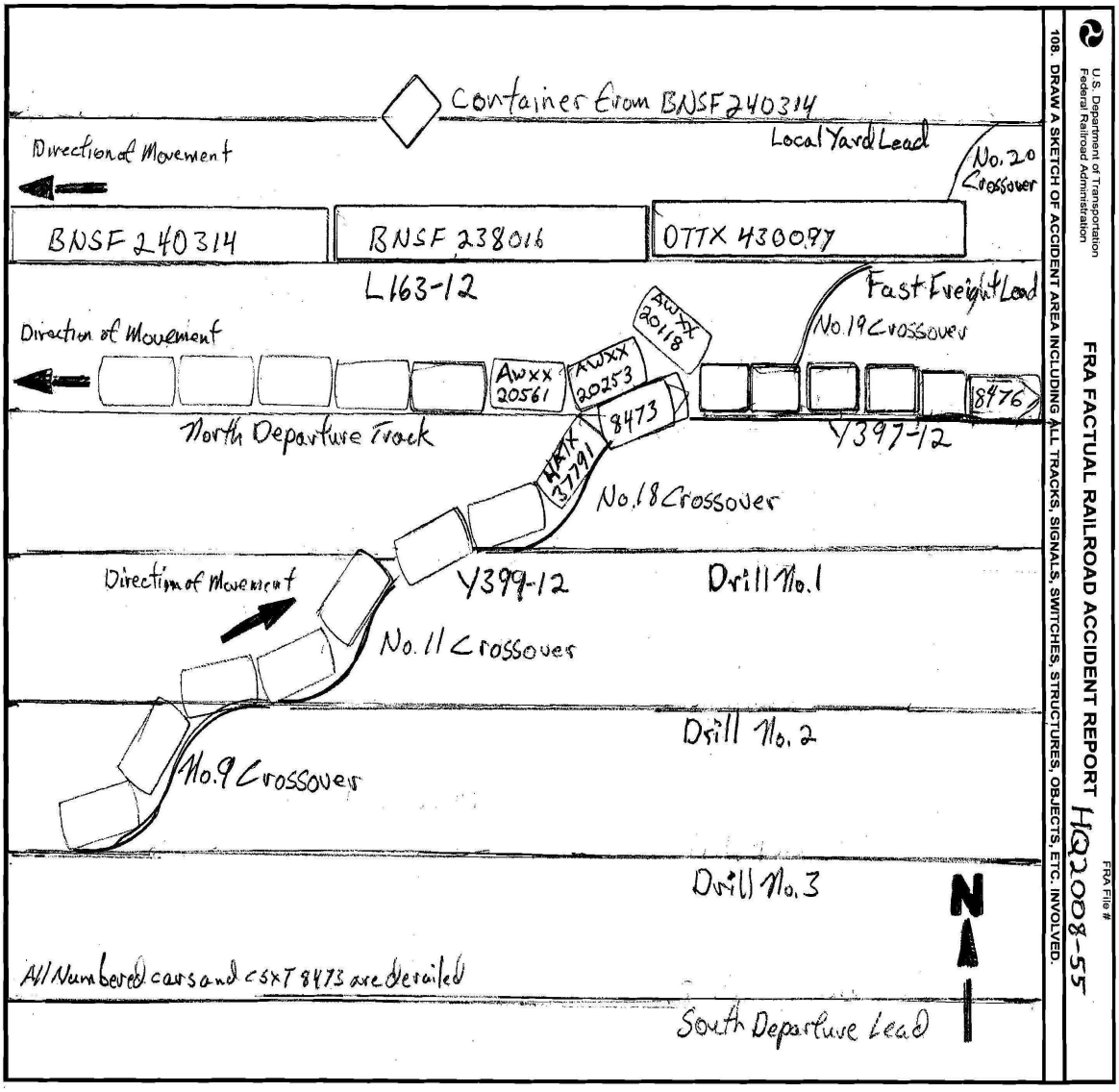
132. Locomotive Auxiliary Lights?	Code
1. Yes 2. No	N/A

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.



137. SYNOPSIS OF THE ACCIDENT

Eastward Remotely Controlled yard switching freight train Locomotive (RCL) collided with and derailed three cars in a westward RCL yard switching freight train, which subsequently impacted cars on a westbound freight train on an adjacent track, causing them to derail. This occurred on June 13, 2008 at 2:00 a.m. in Selkirk, NY near CSX milepost QG15.0, on the CSX Selkirk Subdivision. There were no injuries to any of the train crew members or yard crew members. The RCL of the eastbound train derailed and sustained extensive damage.

At the time of the accident it was dark and clear. The temperature was 54 degrees F.

The derailment was caused by the lead wheels of the eastbound locomotive picking the partially open normal switch point of a remote control switch. The switch falsely indicated that the points were closed in the normal position. The locomotive was remotely controlled and the Remote Control Operator (RCO) was unable to observe the failure of the locomotive to follow the intended route.

138. NARRATIVE

CIRCUMSTANCES PRIOR TO THE ACCIDENT

The crew of CSX Yard Train Y399-12 consisted of a Remote Control Operator Foreman (RCO). She went on duty at 11:59 p.m. at the East End of Selkirk Yard in Selkirk, NY. The RCO of CSX Train Y397-13 went on duty at 10:55 p.m. The Utility Foreman assigned to CSX Y397-12 went on duty at 10:59 p.m. The Panel Conductor and Yardmaster went on duty at 10:59 p.m. All crew members reported for duty at the East End of Selkirk Yard in Selkirk, NY. The crew of CSX Freight train L163-12 went on duty at 6:45 p.m. in Port Newark, NJ. Their home terminal is Selkirk, NY.

All crew members and yard employees received the required statutory off-duty rest period to reporting for duty.

CSX Train Y399-12 consisted of one RCL (CSXT 8473), 26 loaded freight rail cars, and eight empty cars. The train was 1,940 feet in length, and weighed 3,345 tons. The locomotive received an inspection and operational RCL test prior to use.

CSX Train Y397-12 had one locomotive (CSXT 8476), and consisted of 52 loaded rail cars, and 26 empty cars. The train was 5,466 feet in length, and weighed 7,355 tons at the time of the incident. The locomotive received an inspection and RCL test prior to use.

CSX Train L163-12 was en route to Syracuse, NY from Port Newark, NJ. The train received an initial terminal train air brake test, and the crew took no exceptions to the operation of the train prior to entering Selkirk Yard at the East End. The train was 8,118 feet long and weighed 5,474 tons.

Northbound CSX Freight Train L163-12 arrived at Control Point SK from the River Line at approximately 1:37 a.m. and the crew received permission to enter the yard and was routed west onto the FAST Freight Lead. As the train approached the accident area the engineer was seated at the controls on the north side of the locomotive and the conductor was seated on the south side in the cab of the lead locomotive. The train was

moving at about five miles per hour.

CSX Train Y397-12 had been directed to pull east onto the North Departure Track, and had completed that move and was then directed to shove back to the clear in a west direction into Track No. 11. The RCL Foreman was standing on the ground near the Track no. 11 switch, and the Utility Foreman was seated in the south side of the Locomotive cab CSXT 8476 monitoring the move as point protection. The train was moving at approximately four miles per hour.

CSX Freight Train Y399-12 with RCL Locomotive CSXT 8473 had completed a move west into Yard Track No.53 in the Central Classification Yard and the crew had inspected the connections on the new cars while walking west to the rear of the train. She called the Panel Conductor on the radio and let him know she was ready, and was then directed to pull east onto Drill Track No. 1.

The Panel Conductor selected the route on his control pack and all switches in the intended route then showed lined correctly and the green route lights illuminated on the Panel. At switch No.18 A on the west end of the No.18 crossover switch, the switch was commanded to travel to a normal position, but track conditions impeded the completion of the normal point to the normal stock rail. The ties were badly skewed and against the switch and track rods and the slides were covered with dirt and sand.

The Alston (GRS) Model Six Switch Machine depended on a certain amount of momentum to complete the 0.6 second stroke from the reverse stock rail and avoid bouncing back away from the stock rail. The motor contacts open at the appropriate time and the point detector contacts close to indicate the point has reached the stock rail and is properly lined. There are no locking features on this machine. The point detector contact block was not screwed down securely, permitting the contacts to close prematurely while the point remained open and unsafe, but indicated closed and in the normal position.

CSX Train Y399-12 operated over Drill Tracks Three and Two on its way to Drill Track No.1, passing over two crossovers without incident. The RCL Foreman was riding the last of 34 cars while controlling the move from the Operator's Control Unit (OCU) belted around her waist. The recorded speed was seven miles per hour.

In this area of the rail yard there are seven parallel tangent tracks connected by crossovers operated by remotely controlled electric switches operated by the Panel Conductor in the East End Tower. The grade is level and Timetable directions are east/west. From the north, the tracks are designated as: Local Yard Lead, Fast Freight Lead, North Departure Track, Drill Track No.1, Drill Track No.2, Drill Track No.3, and the South Departure Track.

The three Drill Tracks are equipped with transducers known as "pucks". They limit the speed of the RCL equipped locomotives to nine miles per hour, and will stop an RCL from passing a predetermined point. This feature precludes the need for point protection normally provided by a Utility Foreman.

THE ACCIDENT

CSX TRAIN L163-12

CSX Train L163-12 was operating in a westward direction on the Fast Freight Lead at about five miles per hour and had traveled about a mile west of the East End Tower. The engineer reported he felt the train slowing and was about to accelerate when it stopped completely but did not sustain an emergency brake application. The Engineer called the Yardmaster in the tower on the radio and asked if he could see anything wrong with his train. The Yard master responded that he couldn't see anything and then instructed the Engineer to not move his train.

CSX TRAIN Y397-12

CSX Train Y397-12 was shoving west on the North Departure Track at about four miles per hour and about eight cars east of the No. 18 B crossover switch. The Utility Foreman riding in the locomotive cab felt the locomotive suddenly start shaking and bumping, and he then observed clouds of dust several cars west of his position. He called to the RCL Foreman to stop the move. The RCL Foreman answered the radio and the Utility Foreman told him something was wrong and to stop. The Utility Foreman called the Panel Conductor and informed him that he had observed clouds of dust west of his location and that he would walk back to

investigate.

CSX TRAIN Y399-12

CSX Train Y399-12 continued pulling the 34 cars with the RCL operator riding on the rear car. The locomotive passed over the reversed No. 11 east end crossover switch, and within two seconds, the northern lead wheel flange passed between the normal stock rail and facing point of the No. 18 A switch on the west end of the No.18 crossover. The GRS Model Six switch machine snapped over and permitted the southernmost lead wheel to the follow the reverse switch point and continue diverting from Drill No. 1 to the North Departure Track. Locomotive CSXT 8473 then impacted the eighth rail car in CSX Train Y397-12 (AWXX 20253) and continued east shoving into the seventh and sixth cars of CSX Train Y397-12 as it continued westward resulting in the derailment of car NATX 37791 located directly behind Locomotive CSXT 8473.

Three trash containers on Flat Car AWXX 20253 shifted northward and into rail car BNSF 240314, the 24th car in CSX Train L163-12 moving westward on the Fast Freight Lead. Rail car BNSF 240314 consisted of double stack containers, five of which sustained damage, and one which was knocked off of the bottom container and came to rest on the Local Yard Lead. The container was breached and spilled part of its contents.
The rails on the fast Freight Lead Track rolled laterally and the 25th and 26th cars derailed before the train stopped about 500 feet west of the initial impact point.

CSX Yard Train Y399-12 stopped suddenly and the RCL Foreman saw a “No Air” message on the OCU. She noted that the speed also dropped from seven miles per hour to zero. Upon hearing the radio traffic the RCL Foreman called the Panel Conductor and Yardmaster to inform them her train had stopped and that she was not injured. The Panel Conductor queried the other yard employees to verify their health and safety.

The Utility Foreman discovered fuel leaking from the ruptured fuel tank of locomotive CSXT 8473. He shut off the fuel supply and then entered the cab of the locomotive and pulled the battery knife switch. He then called the Yardmaster and Panel Conductor in the tower and gave them an assessment of the collision and derailment damage.

The conductor from CSX Train L163-12 was directed to disconnect the derailed cars from the rest of the train and install a rear end marker and perform a brake test. He applied hand brakes on 10 percent of the cars and locomotives. The crew was then transported to the General Yard Office where they went off duty.

R. C. Corman Construction Company arrived and began re-railing equipment at about 3:40 a.m. The Miller Environmental Company was called in to clean up the estimated 1800 gallons of spilled diesel fuel and trans-load the remaining contents of locomotive CSXT 8473. They arrived about 4:30 a.m.

ANALYSIS AND CONCLUSIONS

ANALYSIS-LLOCOMOTIVE SAFETY DEVICES

Locomotive CSXT-8473 was inspected and tested with no exceptions noted less the two hours prior to the collision. The air system was severely damaged by the collision and all fuel was drained. An FRA Motive Power and Equipment Inspector inspected the locomotive after the collision and determined that the wheels were within specifications for use in a yard.

CONCLUSION:

Although there was a lip on the lead wheel flange that may have facilitated picking the open point of the No. 18 A switch, it was not a causal factor in this accident. The locomotive passed over two facing point switches without incident just prior to the accident.

ANALYSIS-REMOPTE CONTROL LOCOMOTIVE FOREMAN PERFORMANCE

The RCL was equipped with a separate event recorder and data was down loaded on June 13, 2008. The

Foreman had maintained proper communication and coordinated all moves with the Panel Conductor.

CONCLUSION:

The data down loaded from the RCL event recorder confirmed that the operation of the locomotive by the RCL Foreman was in compliance with applicable railroad operating and train handling requirements.

ANALYSIS-FATIGUE

FRA uses an overall effectiveness rate of 77.5 percent as the baseline for fatigue analysis, which is equivalent to blood alcohol content (BAC) of 0.05. At or above this baseline, we do not consider fatigue as probable for any employee. Software sleep settings vary according to information obtained from each employee. If an employee does not provide sleep information, FRA uses the default software settings."

FRA obtained fatigue related information including a 10-day work history for the RCL Foreman, Panel Conductor, and Yardmaster.

CONCLUSION:

Fatigue was not evident for any of the employees.

ANALYSIS-TRACK/SWITCH CONDITIONS:

The Division Engineer of Signals reported that he observed that the ties were skewed and against the operating track rods and that there was dirt and sand on the slides, and rail braces were not secure. Tests directed by him proved that the switch machine would indicate closed when still open (obstructed) between 3.8 and 1/2 inch. He attributed the movement of the normal stock rail braces to the lateral force caused by the lead wheels of the locomotive diverting from Drill track No. 2 over the reversed track No. 11 crossover onto the Drill No. 1 Track.

The FRA was not notified of the derailment until several hours later, and by the time an FRA Track Inspector arrived. CSX Track Department employees had re-spaced all of the ties and surfaced the switch. The No.2 track rod was replaced because of wear and not derailment related damage. He noted no exceptions to the track and switch layout.

CONCLUSION:

FRA concluded that the deteriorated condition of the switch components contributed to the derailment.

OVERALL CONCLUSIONS:

The switch point did not match properly to the stock rail when mechanically aligned causing the rail car wheel to split the switch points and derail.

CSX RCL locomotive CSX 8473 was unoccupied and the RCL Foreman was 34 cars away on the rear of the train. It is possible that a person in the control cab may have detected that the locomotive was diverting from the intended route and applied the train brakes which may have avoided the collision.