Federal Railroad Administration
Office of Safety
Headquarters Assigned
Accident Investigation Report
HQ-2005-35

CSX Transportation (CSX)
Waycross, Georgia
April 21, 2005

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-2005-35

1.Name of Railroad Operating Train #1	1a. Alphabetic Code	1b. Railroad Accident/Incident No.
CSX TRANSPORTATION	CSX	R000011867
2.Name of Railroad Operating Train #2	2a. Alphabetic Code	2b. Railroad Accident/Incident
CSX TRANSPORTATION	CSX	R000011867
3.Name of Railroad Responsible for Track Maintenance:	3a. Alphabetic Code	3b. Railroad Accident/Incident No.
CSX Transportation [CSX]	CSX	R000011867
4. U.S. DOT_AAR Grade Crossing Identification Number	5. Date of Accident/Incident: Month 04 / Day 21 / Year 2005	6. Time of Accident/Incident: 04:49: ☑ 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) — **04**

8. Cars Carrying HAZMAT	9. HAZMAT Cars Damaged/Derailed	10. Cars Releasing HAZMAT	11. People Evacuated	12. Division
37	1	0	0	Jacksonville

13. Nearest City/Town	14. Milepost (to nearest tenth)	15. State Abbr	15. State Code	16. County
Waycross	AN 587.0	N/A	GA	WARE

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
55 F		4		1		2

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
Receiving Track R-01		1	110		2

OPERATING TRAIN #1

25. 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	26. Was Equipment Attended? 1. Yes 2. No	Code	27. Train Number/Symbol
	7	1. Yes	1	Y35020

28. Speed (recorded speed, if available) R - Recorded E - Estimated	Code	29. Trailing Tons (gross tonnage, excluding power units)
6 MPH	R	6852

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)				
n	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; 4 = West — **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	N/A
(2) Causing (if mechanical cause reported)	0	0	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	0

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

35. Cars	Loade a. Freight	Loade b. Pass.	Empty c. Freight	Empty d. Pass.	e. Caboose
(1) Total in Equipment Consist	21	0	128	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
10100	42000	H607	H104

Number of Crew Members

40. Engineer/ Operators	41. Firemen	42. Conductors	43. Brakemen
N/A	0	1	0

Length of Time on Duty

44. Engineer/Operator	45. Conductor
Hrs 4 Mi 50	Hrs 4 Mi 50

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 — N/A

OPERATING TRAIN #2

52. 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	53. Was Equipment Attended? 1. Yes 2. No	Code	54. Train Number/Symbol
	1	1. Yes	1	Q64718

55. Speed (recorded speed, if available) R - Recorded E - Estimated	Code
6 MPH	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
8980			n 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)	WLO52 8315	51	no		N/A	N/A
(2) Causing (if mechanical cause reported)	0	0	N/A	60. Was this consist transporting passengers? (Y/N)	N	

61. Locomotive Units	a. Head End	Mid Train b. Manual	Mid Train c. Remote	Rear End d. Manual	Rear End c. Remote	62. Cars	Loade a. Freight	Loade b. Pass.	Empty c. Freight	Empty d. Pass.	e. Caboose
(1) Total in Train	2	0	0	0	0	(1) Total in Equipment Consist	62	0	38	0	0
(2) Total Derailed	0	0	0	0	0	(2) Total Derailed	6	0	7	0	0

63. Equipment Damage This Consist	64. Track, Signal, Way, & Structure Damage	65. Primary Cause Code	66. Contributing Cause Code
116123	0	H607	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
1	0	1	0	Hrs 6 Mi 19	Hrs 6 Mi 19

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

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

Highway User Involved

79. Type	Code
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)	N/A

80. Vehicle Speed (est. MPH at impact)	81. Direction geographical) 1.North 2.South 3.East 4.West	Code
0		N/A

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

86a. 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)	Code
	N/A

Rail Equipment Involved

83. Equipment	Code
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)	N/A

84. Position of Car Unit in Train
0

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

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

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

87. Type of 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					

88. Signaled Crossing Warning (See instructions for codes)	Code

89. Whistle Ban (1. Yes 2. No 3. Unknown)	Code
	N/A

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

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

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

93. Driver's Age	94. Driver's Gender (1. Male 2. Female)	Code
0		N/A

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

96. 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

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

98. 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

101. Casulties to Highway-Rail Crossing Users	Killed	Injured
	0	0

99. Driver Was (1. Killed 2.Injured 3. Uninjured)	Code
	N/A

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

102. Highway Vehicle Property Damage (est. dollar damage)	103. Total Number of Highway-Rail Crossing Users (include driver)
0	0

104. Locomotive Auxiliary Lights? (1. Yes 2. No)	Code
	N/A

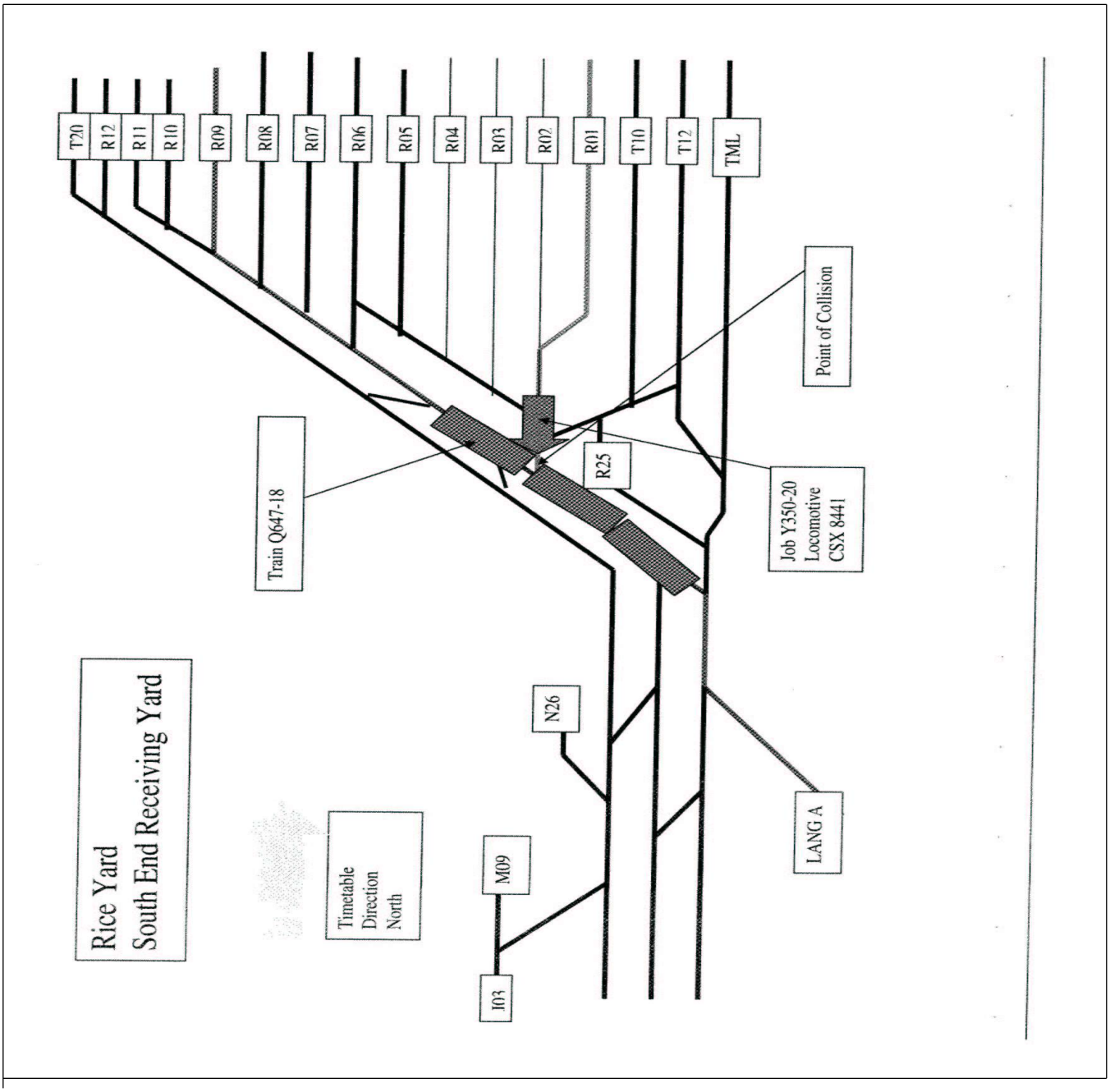
105. Locomotive Auxiliary Lights Operational? (1. Yes 2. No)	Code
	N/A

106. Locomotive Headlight Illuminated? (1. Yes 2. No)	Code
	N/A

107. Locomotive Audible Warning Sounded? (1. Yes 2. No)	Code
	N/A

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

HQ-35-
2005
sketch.JPG



109. SYNOPSIS OF THE ACCIDENT

On April 21, 2005, about 4:49 a.m. Eastern Standard Time (EST), southbound CSX Transportation, Inc. (CSX) Yard Switcher Y350-20 struck the side of CSX Freight Train Q647-18 at Waycross Terminal/Rice Yard in Waycross, Georgia (GA).

In the accident area, there are sixteen tracks that are numbered geographic north to south, Thomasville Subdivision, Track T-12, Track T-10, Receiving Yard Tracks R-01 through R-12 and, the Mechanical Lead (Track T-20). Receiving Yard Tracks R-01 through R-06 are accessed on the east end off of the short ladder, while Receiving Yard Tracks R-07 through R-12 are accessed off of the long ladder.

The accident occurred while Train Q647-18 with two locomotives, UP 4813 (EMD SD70-M), CSXT 7350 (GE CW-42) 62 loads (16 loads and seven empty Hazmat) was pulling south of the Fitzgerald Subdivision through the B&W Freight Lead north into the south end of receiving yard track R-09. Yard Switcher Y350-20 with two locomotives CSXT 8441 (EMD SD40-2), CSXT 5502 (GE B30-7) 21 loads and 128 empties was pulling south off the receiving yard track R-01, when the southeast corner of lead locomotive struck the northwest corner of the 51st head car WLO 528315 of Train Q647-18. The impact resulted in the derailment of nine cars, the 45th through 53rd head cars of Train Q647-18 and the lead locomotive of Train Y350-20.

Following the initial derailment, a cut was made north of the derailed cars in order to pull the head end of Train Q647-18 in the clear on track R-09. While the crew of Train Q647-18 was pulling the head end in the clear, four additional cars derailed due to the switch at the entrance to the south end of track R-09 reversing under there movement. This was due to the loss of air to the switches at the south end of the receiving yard resulting from the initial derailment.

FRA Post Accident Toxicological Testing was performed on the locomotive engineer of Train Y350-20 and the results of the tests were negative.

At the time of the accident, the visibility was clear and the temperature was 55 °F.

The probable cause of the accident was the engineer on Train Y350-20's failure to comply with applicable CSX Operating Rules 46, 104-B, and General Rule D.

110. NARRATIVE

Yard Switcher Y350-20

CSX train crew Y350-20 consisted of a conductor and engineer. The crew went on duty at 11:59 p.m., on April 20, 2005, at the Hump Shack located in front of A Tower Yard Office. The train crew was properly rested under the Hours of Service Law, as required by the Federal Railroad Administration (FRA). The conductor held a job briefing over the telephone with the A Tower yardmaster regarding what their first assignment was going to be and what track to get their locomotives. The conductor then explained the job briefing to the engineer prior to the engineer going over to the locomotives to perform an inspection check.

The two locomotives assigned to Train Y350-20 that night were CSXT 8441 and CSXT 5502, both road locomotives not normally used for hump operations and not equipped with shove boxes to regulate the train's speed while humping cars. After they finished humping the first track, they were instructed by the A Tower yardmaster to go into the bowl and reposition some cars that failed to clear when the cars were first humped. After rolling the cars in the clear, they were instructed by the A Tower yardmaster to pull to the top of the track, where they remained for about thirty minutes assisting the other humper, Y540-20. Y350-20's crew was instructed to go down track T-10, where A Tower would line them into the south end of track R-01 and stopped. The conductor dismounted the rear locomotive and told his engineer that he was in the clear and to backup one car to a couple and to stretch the cars ahead. The engineer stopped with the head end still in the clear on the south end of track R-01. The conductor then got in the messengers vehicle for a ride to the Hump Shack. On the way the conductor stopped to throw the hand switch on the north end of track R-01 and checked to see that the derail was off.

When the conductor arrived at the Hump Shack he waited about 45 five minutes for the Y540-20 crew to finish humping cars. When they finished, the A Tower yardmaster instructed the Y540-20 crew to take their locomotives to the north lead for track T-10. Y350-20's conductor told the engineer, the switch was lined, derail was off, and begin shoving back 25 cars. The conductor could not see the rear car of his train from where he was positioned because there were cars on the north end of tracks R-02 and R-03 that were blocking his view.

The engineer of Train Y350-20 was unclear whether his conductor told him to stretch them again or come back, but went forward on the throttle pulling south of track R-01 with CSXT 8441, CSXT 5502, 21 loads, 128 empties. The engineer was located in the engineer's seat on the right side of the lead locomotive with the short hood forward, looking south in the direction of movement, and traveling at a recorded speed of six miles per hour (mph), as indicted on the event recorder. According to Rice Yard's event log summary for the geographic east end of the receiving yard, Train Y350-20 departed the south end of track R-01, then occupied switch 11, entered track R-02, occupied switches five and seven, and entered the short ladder at 4:45:17 a.m. According to the event log summary, "Switch 5 is indicating Out of Correspondence" at 4:46:14 a.m.

Road Freight Train Q647-18

CSX train crew Q647-18 consisted of a conductor and engineer. They went on duty at Fitzgerald, GA
(MP ANB 659) at 10:30 p.m., on April 20, 2005. The train crew was properly rested under the hours of service law, as required by the FRA. The crew held a job briefing, which included going over their orders before departing Fitzgerald for Rice Yard in Waycross, GA.

While in route to Waycross, Train Q647-18 went in the siding at the north end of Bolen (MP ANB 603.4) to meet trains and wait for Rice Yard to take them in. While in the siding at Bolen the conductor inspected part of their train, observed the trains going by, and departed Bolen Siding at 4:09 a.m. According to the signal event log, Train Q647-18 entered Lang Interlocking (MP ANB587.9) at 4:32:02 a.m., heading northbound onto the B&W Freight Lead. While going by Lang Interlocking,

the conductor contacted A Tower for instructions. They were notified to go down receiving yard track R-09.

According to Rice Yards event log summary for the geographic east end of the receiving yard, Train Q647-18 came off the B&W Freight Lead at the south end of Rice Yard heading north, entered the Thomasville Subdivision, occupied switches B-1 and B-2, and entered the long ladder at 4:42:10 a.m. Train Q647-18 then occupied switch one at 4:42:52 a.m, continued north on the ladder track and entered the south end of track R-09 at 4:44:01 a.m.

While pulling into the south end of track R-09 at a recorded speed of six mph, as indicated on the event recorder of the lead locomotive UP 4813, the conductor was located on the left side and the engineer was located in the engineer's seat on the right side. The engineer looked to his right and saw Train Y350-20 locomotives in the clear on track R-01, inching ahead with the head light on dim. Train Q647-18 had traveled about 900 feet on track R-09 when the engineer felt his locomotives shutter and told his conductor to hold on.

CSX timetable direction is south/north, geographic direction is east/west. Unless specified differently, timetable directions are used in this report.

The Accident

Based on information obtained from the locomotive event recorders, about 4:49 a.m., the southeast corner of the lead locomotive of Y350-20 CSXT 8441 struck the northwest corner of the 51st head car WLO 528315 of Train Q647-18. The impact resulted in the derailment of nine cars, the 45th through 53rd head cars of Train Q647-18 and the lead locomotive CSXT 8441 of Train Y350-20. The impact also resulted in the spilling of 2,000 gallons of diesel fuel from CSXT 8441 when its fuel tank ruptured.

45th head car ITLX 40676, empty covered hopper derailed R, L 1 & 2 leaning
46th head car NRLX 58278, empty covered hopper derailed R, L 1,2,3 & 4 on side
47th head car UTCX 46720, empty covered hopper derailed R, L 1,2,3 & 4 on side
48th head car UTCX 47890, empty covered hopper derailed R, L 1,2,3 & 4 on side
49th head car CEFX 12401, loaded covered hopper derailed R, L 1,2,3 & 4 on side
50th head car HS 9201, empty box car derailed R, L 1,2,3 & 4 on side
51st head car WLO 528315, empty box car derailed R, L 1,2,3 & 4 upright crossways
52nd head car GATX 88758, empty tank car derailed R, L 1,2,3 & 4 leaning crossways
53rd head car MWCX 550035, loaded box car derailed R, L 1,2,3 & 4 upright inline

Following the initial derailment, a cut was made north of the derailed cars in order to pull the head end of Train Q647-18 in the clear on track R-09. While the crew of Train Q647-18 was pulling the head end in the clear, the 33rd through 36th cars derailed due to the switch at the entrance to the south end of track R-09. The switch reversed under their movement on account of the loss of air to the switches at the east end of the receiving yard due to the initial derailment.

33rd head car BCOL 730317, loaded flat car (lumber) derailed R, L 3 & 4 upright inline
34th head car WC 37216, loaded flat car (lumber) derailed R, L 1 & 2 upright inline
35th head car NCIX 2082, loaded covered hopper derailed R, L 1,2,3 & 4 upright inline
36th head car ITDX 5013, loaded tank car (Haz/Mat Molten Sulfur) derailed R, L 1 & 2 upright inline

FRA Post Accident Toxicological Testing was performed on the locomotive engineer of Train Y350-20 and the results of the tests were negative.

Analysis and Conclusion

Analysis

As indicated by the event recorder on Train Y350-20's lead locomotive, the engineer started his southbound movement off track R-01 at about 4:47:03 a.m. and the movement came to a stop at about 4:49:55 a.m., traveling a distance of about 789 feet.

It should be noted that the times shown in this report come from information obtained from the locomotive event recorders on Trains Y350-20 and Q647-18, the Network Operations Centers (NOC) Signal Event Log, and from Rice Yard's Signal Event Log Summary. When comparing the information from the locomotive event recorders and Rice Yard's Signal Event Log Summary, it was determined that Rice Yard's Signal Event Log Summary has about three minutes and 19 seconds deviation in the time shown on the locomotive event recorders.

In a statement given to FRA by the CSX trainmaster who escorted Train Y350-20's engineer to the medical clinic for his Post Accident Toxicological Testing, the engineer told him he thought he may have fallen asleep.

After reviewing the engineer of Train Y350-20's work schedule for the 10 days prior to the accident, it was determined that he had a total of seven starts, working a total of 61 hours and 49 minutes, and was off duty 31 hours and nine minutes since he last worked.

After reviewing the conductor of Train Y350-20's work schedule for the 10 days prior to the accident, it was determined that he had a total of four starts, working a total of 29 hours and 27 minutes, and was off duty for 64 hours and 44 minutes since he last worked on April 18, 2005.

The engineer assigned to TrainY350-20 had his last rules exam on 3/3/04, and was efficiency tested 22 times in the past 24 months with zero failures. His most current engineer's certification card was issued on March 10, 2004. The conductor assigned to Train Y350-20 had his last rules exam on 3/22/05, and was efficiency tested 15 times in the past 11 months with two failures, which are shown below.

- April 18, 2005, Operating Rule 103-D - Rule related to securing equipment.
- September 23, 2004, Operating Rule 585 - General regulations related to trainmen (other than conductors).

CSX contracted both Tapley out of Waycross, GA and SWS out of Jacksonville, Florida to clean up the 2,000 gallons of diesel fuel that leaked from the fuel tank of CSXT 8441 and remove any contaminated soil.

Conclusion

The engineer assigned to Yard Switcher Y350-20 failed to comply with CSX Operating Rules 46, 104-B, and General Rule D, which state in part:

Speed Rules "Rule 46. Trains using other then main or signaled tracks must move at a speed that will permit stopping within one-half the range of vision, short of a train, a car, an obstruction, a derail or an improperly lined switch, on-track equipment or a stop signal....."

Handling Switches "Rule 104-B. A train must not foul a track until the switches and derails connected with the movement are properly lined and the normal route is seen to be clear....."

General Rules "D. Sleeping while on duty - Employees must not sleep while on duty, except as outlined under General Rule D-1. An employee lying down or in a reclining position with eyes closed, covered, or concealed will be considered to be sleeping." The FRA concurs with these findings.

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