Federal Railroad Administration
Office of Safety
Headquarters Assigned
Accident Investigation Report
HQ-2005-97

CSX Transportation (CSX)
Mauk, Georgia
October 31, 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-2005-97

1.Name of Railroad Operating Train #1 CSX Transportation [CSX]	1a. Alphabetic Code CSX	1b. Railroad Accident/Incident No. 000016111
2.Name of Railroad Operating Train #2 CSX Transportation [CSX]	2a. Alphabetic Code CSX	2b. Railroad Accident/Incident 000016111
3.Name of Railroad Responsible for Track Maintenance: CSX Transportation Intermodal [CSXT]	3a. Alphabetic Code CSXT	3b. Railroad Accident/Incident No. 000016111
4. U.S. DOT_AAR Grade Crossing Identification Number	5. Date of Accident/Incident Month 10 / Day 31 / Year 2005	6. Time of Accident/Incident 04:35: ☑ 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) — **03**

8. Cars Carrying HAZMAT	9. HAZMAT Cars Damaged/Derailed	10. Cars Releasing HAZMAT	11. People Evacuated	12. Division
6	0	0	0	Jacksonville

13. Nearest City/Town	14. Milepost (to nearest tenth)	15. State Abbr	15. State Code	16. County
Mauk	ANB752.4	N/A	GA	TAYLOR

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
58 F		4		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
2 Main		4	67.1		1

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: 1

26. Was Equipment Attended? 1. Yes 2. No — Code: 1

27. Train Number/Symbol: N10231

28. Speed (recorded speed, if available) — R - Recorded; E - Estimated: 35 MPH — Code: R

29. Trailing Tons (gross tonnage, excluding power units): 2240

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)				
e	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	yes
(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

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	2	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	90	0	0
(2) Total Derailed	0	0	3	0	0

36. Equipment Damage This Consist	37. Track, Signal, Way, & Structure Damage	38. Primary Cause Code	39. Contributing Cause Code
319800	30000	H605	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	0	1	0	Hrs 4 Mi 20	Hrs 4 Mi 20

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 — 1

50. Was EOT Device Properly Armed? 1. Yes 2. No — 1

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: 1

53. Was Equipment Attended? 1. Yes 2. No — Code: 1

54. Train Number/Symbol: Q68030

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

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
5207			e 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)	BLE32009	106	no		N/A	N/A
(2) Causing (if mechanical cause reported)	0	0	no	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	2	0	0	0	0	(1) Total in Equipment Consist	9	0	9	0	0
(2) Total Derailed	0	0	0	0	0	(2) Total Derailed	0	0	5	0	0

63. Equipment Damage This Consist	64. Track, Signal, Way, & Structure Damage	65. Primary Cause Code	66. Contributing Cause Code
9800	0	H605	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 8 Mi 50	Hrs 8 Mi 50

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
N/A		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
N/A

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)	88. Signaled Crossing Warning (See instructions for codes) Code	89. Whistle Ban (1. Yes 2. No 3. Unknown) Code
Code(s) N/A N/A N/A N/A N/A N/A N/A	N/A	N/A

90. Location of Warning (1. Both Sides 2. Side of Vehicle Approach 3. Opposite Side of Vehicle Approach) Code	91. Crossing Warning Interconnected with Highway Signals (1. Yes 2. No 3. Unknown) Code	92. Crossing Illuminated by Street Lights or Special Lights (1. Yes 2. No 3. Unknown) Code
N/A	N/A	N/A

93. Driver's Age	94. Driver's Gender (1. Male 2. Female) Code	95. Driver Drove Behind or in Front of Train and Struck or was Struck by Second Train (1. Yes 2. No 3. Unknown) Code	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	N/A	N/A	N/A

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

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

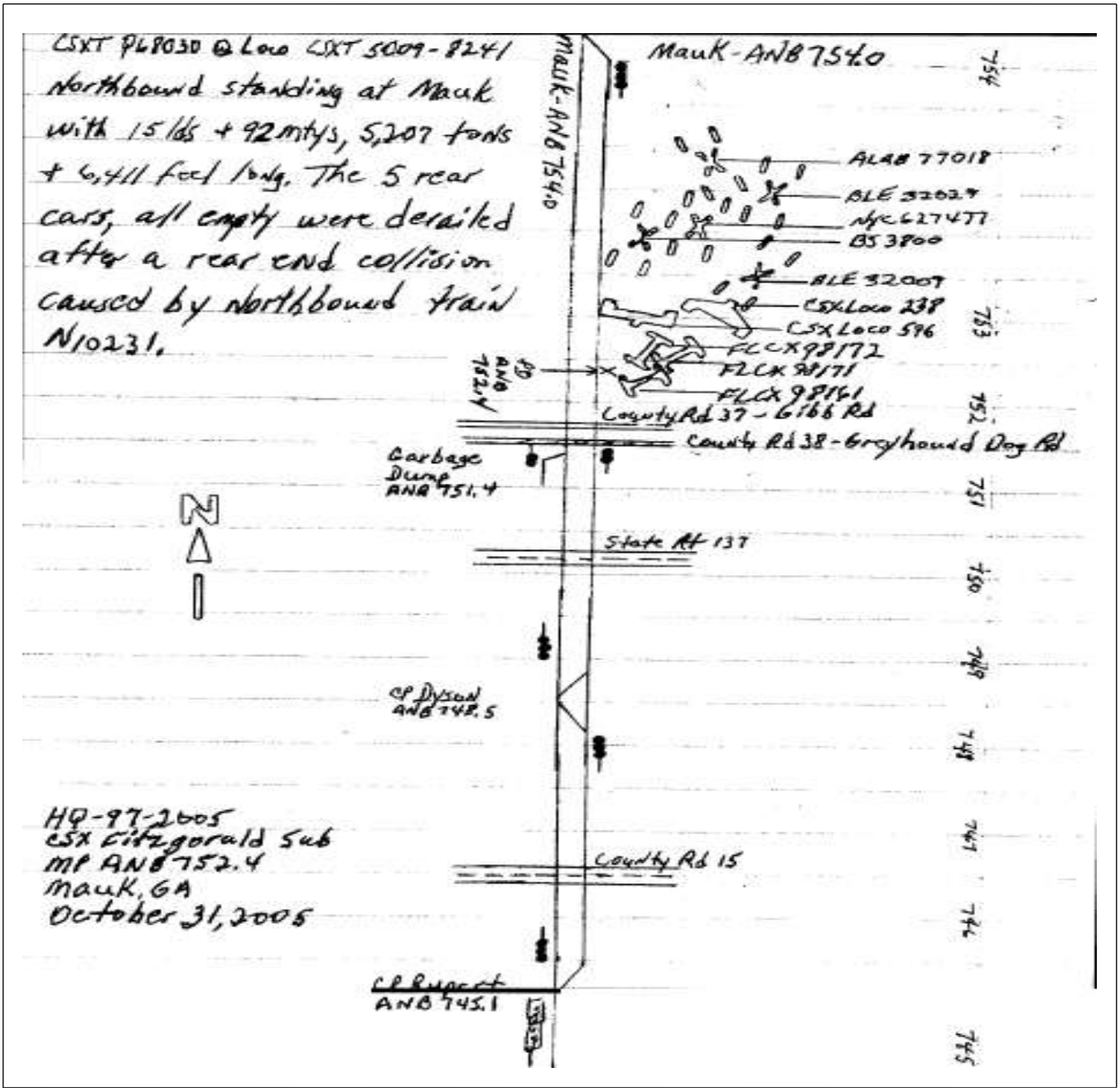
99. Driver Was (1. Killed 2.Injured 3. Uninjured) Code	100. Was Driver in the Vehicle? (1. Yes 2. No) Code
N/A	N/A

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

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

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

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



109. SYNOPSIS OF THE ACCIDENT

On October 31, 2005, at 4:30 a.m. Eastern Standard Time (EST), CSX freight Train N10231 collided with the rear end of CSX freight Train Q68030. The accident occurred at Mauk, Georgia (GA), milepost (MP) ANB 752.4, on the Jacksonville Division, Fitzgerald Subdivision.

The crews of both trains had a conductor and engineer. Train N10231 consisted of two locomotives and 90 empty coal cars. The trailing tons were 2,240 and it was 4,918 in length. Train Q68030 consisted of two locomotives, 15 loads and 92 empty cars. Trailing tons were 5,207 and 6,556 feet in length. Train Q68030 was carrying one load and five empty hazardous material cars.

Train N10231 collided into the rear end of Train Q68030 at a recorded 35 miles per hour (mph). Train N10231 operated beyond a red intermediate signal, which allowed the train to continue operating in a northward direction at restricted speed, not exceeding 15 mph, looking out for broken rail, obstruction, misaligned switch or train ahead.

Track damage was estimated at $30,000 and equipment damage was estimated at $319,800.

The accident resulted in minor injuries and bruises to the crew of Train N10231. Both employees were taken to the hospital for observation and released. There were no hazardous released because of the accident.

The probable cause of the accident was failure to comply with restricted speed.

110. NARRATIVE

The following information was obtained from an investigation that was performed by the Federal Railroad Administration.

Circumstances Prior To The Accident

Train N10231

The crew of Train N10231 reported for duty at 12:15 a.m. on October 31, 2005, in Fitzgerald, GA. Fitzgerald is the home terminal for both crew members, and they received more than the statutory off duty period prior to reporting for duty. Train N10231 consisted of two locomotives, 90 empty coal hoppers, and no loads. It was 4,198 feet long and weighed 2,240 tons.

The crew was transported to Train N10231 via taxi, which was secured on the passing siding at the north end of Fitzgerald, MP ANB 660.5. The crew conducted a job briefing and reviewed slow orders that would effect the movement of their train. The dispatcher was unable to get the switch from the siding to the main track to line and lock properly and instructed the conductor to manually line the switch. The conductor complied and Train N10231 departed at 1:09 a.m.

The crew said they operated on clear signals until the south end of Hatley, MP ANB 682.8, where they received a medium approach into the siding. They operated their train to the north end of Hatley and waited for one train. They received a medium clear at the north end of Hatley and an advance approach at the south end of Cordele, MP ANB 692.2, and a clear signal indication at the north end of Cordele. At the south end of Control Point Ross the signal indication was a medium approach and there was a 10 mph temporary speed restriction over the switch. Train N10231 operated on clear signals from the north end of Ross to Rupert, MP ANB 745.1. At Rupert ,Train N10231 was lined to operate on main track No. 2 and there was a train standing on main track No. 1. The engineer said he remembered inspecting that train for defects and relayed his observation (no defects) to the train via radio.

The next signal was located at the south end of Dyson, MP ANB 748.5. The engineer said he remembered seeing and calling an approach from a distance at Dyson, but does not remember passing the signal. The next signal is the intermediate at MP ANB 751.4, which is located at the Garbage Dump. The engineer said the indication was a restricted proceed. There is road crossing near this location and the engineer said he remembered sounding the horn at this crossing. However, he does not remember passing the signal. The next road crossing is located near the point of impact with the rear end of Train Q68030 at MP ANB 752.4. The engineer said he did not remember sounding the horn at this road crossing. The engineer was asked if he communicated with the conductor to determine if he was awake and alert. His answer was that he did not.

Train Q68030

The crew of Train Q68030 consisted of a conductor and engineer. On October 30, they reported for duty at 7:45 p.m., in Waycross, GA. Manchester, GA is the home terminal for both crew members, and both received more than the statutory off duty period, prior to reporting for duty. Train Q68030 consisted of two locomotives, 15 loads and 91 empty cars of mixed freight. Trailing tonnage for Train Q68030 was 5,207, 6,558 feet long. Train Q68030 was carrying six hazardous material cars, one loaded and five empty residue cars. The load was eight cars from the head end and the empty residue cars were 26-29 and 34 from the head end. These cars were not effected by the rear end collision caused by Train N10231. Train Q6830 departed Waycross at 9:08 pm with a final destination of Manchester. Train Q68030's trip was uneventful until it reached Mauk, MP ANB 754.0, on No. 2 track about 3:30 am. They were being held by the dispatcher for three southbound trains. Train Q68030 was operating in a northward movement and the only train ahead of Train N10231.

The timetable direction for CSX movement is north and south, which is the same as the geographical direction.

The Accident

The rear car of Train Q68030 was sitting at MP ANB 752.4. The maximum authorized speed on this subdivision is 60 mph. In this area of the railroad, from south to north beginning at MP ANB 751.4, the track is tangent with a one inch ascending grade for one-half mile, tangent on a 0.81-inch descending grade for two-tenths mile, tangent on a 0.41-inch ascending grade for two-tenths mile, and zero inch grade for a tenth mile to the point of impact.

Train N10231 passed the intermediate signal at MP ANB 751.4 with an indication of Restricted Proceed. At about 4:30 a.m., Train N10231 collided with the rear end of Train Q68030, derailing both locomotives and the three head cars, all empties. The collision also resulted in the derailment of the five rear cars on Train Q68030, all empties. The method of operation on this subdivision is Traffic Control System.

At the time of the collision, the engineer of Train N10231 was located behind the controls on the right side of the locomotive cab. The conductor was sitting in the conductor's seat on the left side of the locomotive cab. Both crew members explained the next thing they recalled was the awful crunching sound of metal against metal as they collided with the rear end of Train Q68030. Both employees were thrown to floor and the conductor's leg was temporarily trapped behind his seat.

The impact disrupted the electrical system in the locomotive, which shut the lights off in the locomotive cab. The crew was unable to open the front door because of metal and debris, but made their way out of the rear door located behind the engineer's seat. One crew member found a lantern and in their attempt to dismount, they observed a ruptured fuel tank and a pool of diesel fuel collecting under the locomotive. The crew made their way to a clearing several yards from the derailment site, and a resident who lived nearby called for an Emergency Response Unit. Prior to dismounting the locomotive, the engineer delivered an emergency call via radio to the train dispatcher. Both employees were transported to a hospital in Columbus, GA, about 30 miles west of the derailment site, where they were treated for minor scratches and bruises and released.

Nothing was disturbed on Train Q68030 except the five empty cars that were derailed. The crew of Train Q68030 did not feel the impact and were unaware of the collision until notified by the train dispatcher.

Analysis

The engineer said he did not remember seeing the intermediate signal located at MP ANB 751.4, about one mile before impacting the rear end of CSX Train Q68030. The engineer said he remembered seeing an approach signal from a distance at Dyson, MP ANB 748.5, but did not remember passing the signal. The engineer said he was sure he called the signal at Control Point Rupert, MP ANB 745.1, and the intermediate between Rupert and Dyson. The engineer did not remember the conductor repeating either of these signals. However, he did remember the conductor calling signals prior to Rupert.

There are two dirt road crossings between Dyson and Mauk, MP ANB 754.0. One is located near the Garbage Dump, MP ANB 751.4, which the engineer explains he definitely recalls sounding the horn. The next crossing is located near the point of impact with the rear end of Train Q68030 at MP ANB 752.4. The engineer does not remember sounding the horn at this road crossing. About one mile prior to the point of impact is the intermediate signal at MP ANB 751.4. The engineer failed to acknowledge the Restricted Proceed indication displayed and does not recall observing this signal. This failure resulted in the rear end collision with Train Q68030.

The conductor said he remembers nothing after passing the absolute signal at Rupert, MP ANB 745.1

The total damages to railroad property exceeded the threshold for Post Accident Toxicological Testing. The test results were negative for both employees.

The signal indications explained by the engineer were confirmed by CSXT Signal Department employees.

Conclusion

The final results reveal that Train N10231 was not operated in compliance with Federal Regulation 49 CFR Part 240, Locomotive Engineer Certification, railroad signal rules, and railroad operating rules. The investigation disclosed that Train N10231 was operating in excess of 10 mph above the maximum authorized speed for the train on the Fitzgerald Subdivision at MP ANB 752.4.

The FRA determined that the probable cause of the accident was failure to comply with restricted speed.

Applicable Rules:

CSX officials concluded their investigation and charged the engineer and conductor with the following:

Signal Aspects and Indications Rules:

- Rule 1285 Approach - Proceed, prepared to stop at the next signal. Trains exceeding Medium Speed must immediately begin reduction to Medium Speed as soon as the engine passes the Approach Signal.

- Rule 1291 Restricted Speed - Proceed at Restricted Speed.

Railroad Operating Rules:

- Rule 225 Movements Requiring Restricted Speed - A signal indication requiring Restricted Speed applies until the leading end of the train reaches the next governing signal. When a signal aspect requiring Restricted Speed is displayed by a signal governing movements into non-signaled territory, it will apply:

    1. To the movement of the entire train through turnouts and crossovers, and,
    2. End of signaled territory if the movement is to enter non-signal territory.

- Rule 40 Speed Rules - Train speeds must be maintained to the extent feasible, consistent with safety. They must not be exceeded. Train speeds may be authorized by the rules, special instructions, signal indications, dispatcher messages or other means. When there is a difference in the speeds, the lowest speed will govern.

- Restricted Speed - Prepared to stop within one-half the range of vision - short of a train, obstruction, or switch improperly lined. Be on the lookout for broken rail. Speed must not exceed 15 mph. This speed applies to the entire movement.

- Rule 50 Control of Train Speed -

- 1. If the engineer fails to control the train in accordance with a signal indication or restriction imposed upon his train, other members of the crew must:

    a. caution the engineer and, if necessary;
    b. take action to ensure the safety of the train, (including stopping the movement).

- 2. A train must be stopped using an emergency application of the air brakes on descending grades of one percent (1%) or more, as designated in special instructions, if:

    a. The automatic braking system fails to respond normally, or
    b. The train's speed reaches 5 mph more than the maximum speed permitted for that train.

- 3. After stopping the following actions must be taken:

    a. Apply handbrakes to secure the train,
    b. Recharge the air brakes and make a minimum reduction,
    c. Visually inspect each car to determine that the brake shoes are against each wheel,
    d. Contact the train dispatcher

- The train may proceed only after authorization from the Superintendent, or his/her designated representative.