Federal Railroad Administration
Office of Safety
Headquarters Assigned
Accident Investigation Report
HQ-2005-12

CSX Transportation (CSX)
Fonda, New York
February 11, 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-2005-12

1.Name of Railroad Operating Train #1: CSX Transportation Intermodal [CSXT]	1a. Alphabetic Code: CSXT	1b. Railroad Accident/Incident No.: 000010406
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 Intermodal [CSXT]	3a. Alphabetic Code: CSXT	3b. Railroad Accident/Incident No.: N/A
4. U.S. DOT_AAR Grade Crossing Identification Number: 508735R	5. Date of Accident/Incident: Month 02 / Day 11 / Year 2005	6. Time of Accident/Incident: 08:42: ☑ 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): 07

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

13. Nearest City/Town	14. Milepost (to nearest tenth)	15. State Abbr	15. State Code	16. County
Fonda	186.4	N/A	NY	MONTGOMERY

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
28 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
Main Track 1		4	93.5		4

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: Q285-11

28. Speed (recorded speed, if available) — Code
R - Recorded
E - Estimated 31 MPH — Code: R

29. Trailing Tons (gross tonnage, excluding power units): 3313

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, l, m, 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	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
N/A	N/A

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	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	58	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
100	3000	H999	M307

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 57	Hrs 4 Mi 57

Casualties to:	46. Railroad Employees	47. Train Passengers	48. Other
Fatal	0	0	1
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: N/A

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

54. Train Number/Symbol: N/A

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

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): N/A

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

2 = Remote control tower
3 = Remote control transmitter - more than one remote control transmitter: N/A

58. 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

59. 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

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
(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

62. 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

63. Equipment Damage This Consist: N/A

64. Track, Signal, Way, & Structure Damage: N/A

65. Primary Cause Code: N/A

66. Contributing Cause Code: N/A

Number of Crew Members

67. Engineer/ Operators	68. Firemen	69. Conductors	70. Brakemen
N/A	N/A	N/A	N/A

Length of Time on Duty

71. Engineer/Operator: Hrs N/A Mi N/A

72. Conductor: Hrs N/A Mi N/A

Casualties to:	73. Railroad Employees	74. Train Passengers	75. Other
Fatal	N/A	N/A	N/A
Nonfatal	N/A	N/A	N/A

76. EOT Device? 1. Yes 2. No: N/A

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

78. Caboose Occupied by Crew? 1. Yes 2. No: N/A

Highway User Involved

79. Type — 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: A

80. Vehicle Speed (est. MPH at impact): 10

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

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

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: 4

Rail Equipment Involved

83. 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: 4

84. Position of Car Unit in Train: 1

85. Circumstance — 1. Rail Equipment Struck Highway User; 2. Rail Equipment Struck by Highway User — Code: 1

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

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)	01	03	06	07	11	N/A	N/A

88. Signaled Crossing Warning (See instructions for codes) — Code: 06

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

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

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

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

93. Driver's Age: 38

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

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

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: 3

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

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: 8

101. Casulties to Highway-Rail Crossing Users	Killed	Injured
	1	0

99. Driver Was — 1. Killed 2.Injured 3. Uninjured: 1

100. Was Driver in the Vehicle? 1. Yes 2. No: 1

102. Highway Vehicle Property Damage (est. dollar damage): 7500

103. Total Number of Highway-Rail Crossing Users (include driver): 1

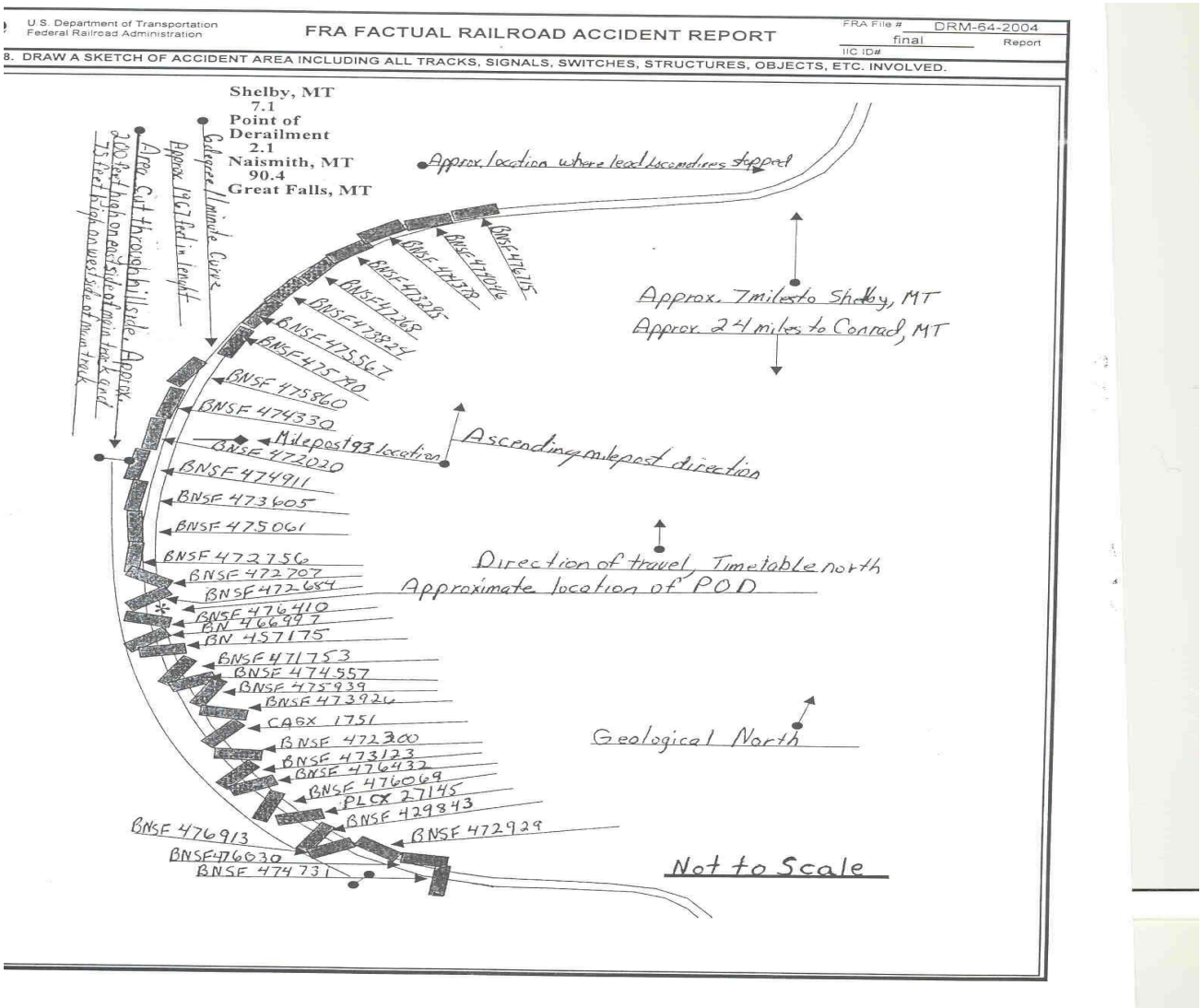
104. Locomotive Auxiliary Lights? 1. Yes 2. No — Code: 1

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

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

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

108. DRAW A SKETCH OF ACCIDENT AREA INCLUDING ALL TRACKS, SIGNALS, SWITCHES, STRUCTURES, OBJECTS, ETC., INVOLVED.
scan0001.
jpg



109. SYNOPSIS OF THE ACCIDENT

A westbound CSX intermodal freight train collided with an automobile at a highway-rail grade crossing on February 11, 2005, at 8:42 a.m. The accident occurred at Broadway Street in the Village of Fonda, New York at CSX Milepost 186.4, on the CSX Albany Division, Mohawk Sub-Division, between Selkirk and Buffalo, N.Y.

The 38 year-old female vehicle driver sustained fatal injuries. The automobile was completely destroyed. There were no injuries to the train crew. No equipment derailed and there was only minor damage to the lead locomotive. The highway-rail grade crossing warning system devices on the south side of the crossing were struck by the vehicle and destroyed.

At the time of the accident, it was daylight and clear. The temperature was 28 F.
The primary cause of the accident was an activation failure due to interference, which is a violation of 49 CFR 234.209(a), caused by improper operation of the manual cut-out device by a conductor of an eastbound train that was stopped west of the crossing on an adjacent track.

There were also two major contributing causes to the accident: the industry standard design of the manual cut-out device which did not prevent the interference and the railroad's failure to provide the conductor with training on the proper operation of the manual cut-out.

110. NARRATIVE

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

Circumstances Prior to The Accident

The railroad timetable direction is east and west. Geographic direction is similarly east and west. All directions referenced throughout this report are timetable and geographic.

Train CSX Q285-11 was operating westbound on Main Track No.2. It consisted of two locomotives and 58 empty auto-racks. It was 5,452 feet long and weighed 3,313 tons.

The crew of Q285-11 consisted of a conductor and a locomotive engineer. They reported for duty at Selkirk Yard, Selkirk, New York, at 3 :45 a.m., est, on Thursday, February 11, 2005. Their assigned trip was to terminate in Buffalo, New York. Selkirk is the home terminal for both crew members and each received an off-duty period in excess of that required by statute. The engineer received a rest period of 35 hours and 30 minutes prior to reporting for duty and the conductor had been off duty for 40 hours.
As westbound train Q285-11 approached the accident area on Track No.2, the engineer was seated at the controls on the north side of the cab of the lead locomotive. The conductor was seated on the south side of the locomotive.

At the time of the accident, an eastbound train (CSX Q390-09) was occupying the adjacent track, Main Track No.1, just west of the Broadway Street highway-rail grade crossing. It consisted of three locomotives, 105 loads, and 19 empties. It was 7,819 feet long and weighed 12,657 tons.
The crew of Q390-09 consisted of a conductor and a locomotive engineer. They reported for duty in Buffalo, New York, at 12:55 a.m. est, on Thursday, February 11, 2005. Their assigned trip was to terminate at Selkirk, New York. Buffalo is the home terminal for both crew members and each received an off-duty period in excess of that required by statute. The engineer received a rest period of 12 hours and 25 minutes prior to reporting for duty and the conductor had been off for 24 hours and 35 minutes.
The engineer of CSX Q390-09 has been employed with CSX for more than 36 years and the conductor has been employed for more than 39 years. The majority of the conductor's service has been spent on districts west of Buffalo, New York and/or in yard service. He had only qualified on the physical characteristics of the railroad on the Mohawk Subdivision, where the accident occurred, in November 2004. At the time of the accident, the engineer was seated at the controls of the lead locomotive and the conductor was outside on the ground.

In this area of the railroad, there are three tracks, identified from north to south as the Controlled Siding, Main Track No.1 and Main Track No.2. Train movements are governed by the signal indications of a Traffic Control System. Maximum authorized speed is 50 mph for freight, 60 mph for intermodal, and 75 mph for passenger trains. Daily traffic density averages 65 freight trains and eight passenger trains.
The accident area is located approximately mid-way between two control points. The eastward control point is designated as CP 184 and the westward control point is designated as CP 188.

The westward approach circuit for Center Street and Broadway Street highway-rail grade crossings begins at Milepost 185.2. Westbound trains entering the approach from the east are 5,583 feet from the highway-rail grade crossing at Broadway Street.

Continuing in a westward direction, the track passes under a highway overpass for New York State Route 30A, located at MP 185.93. Located immediately west of the Route 30A overpass is a bridge for an eastward automatic signal indicated at Milepost 186. The distance from the eastward signal to the Broadway Street

highway-rail grade crossing is 1,856 feet. A similar bridge for the westward automatic signal is located at Milepost 186.19. The crossing for Center Street is 65 feet beyond the signal.
Mid-way between Milepost 185 and 186, traveling from east to west, the track begins a I-degree 2¬minute curve to the left. Passing under the Route 30A overpass, the track becomes tangent to Center Street, where it begins another I-degree 2-minute curve to the left, before it shallows to a O-degree 32¬minute curve west of Broadway Street.

At a location just east of the Route 30A overpass, the track begins a .25-percent ascending grade. immediately west of the overpass, it shallows to a .09-percent ascending grade to Broadway Street. At Broadway Street, the track begins a .25-percent descending grade, shallowing to a .06-percent descending grade west of the crossing.

Broadway Street is located 701 feet west of Center Street at Milepost 186.4. It lies on a north/south axis perpendicular to the rail line, and is on a level grade with the railroad right-of-way.
Waming devices at both Center and Broadway Streets consist of crossbucks, a bell, flashing light signals, highway gates, pedestrian gates, and associated track circuits to activate the warning devices. A manual cut-out device was installed at each crossing in 1962 in order for train crews to raise and lower the gates when necessary to allow roadway traffic congestion to clear. With the exception of certain non-substantive modifications, these devices have remained virtually unchanged since they were installed.
The manual cut-out device at Broadway Street is located in a box attached to the signal case in the northeast quadrant of the crossing and locked with a switch lock. Within the box is a black metal face plate. Near the top of the face plate is a piece of red label tape with the legend "Siding" embossed in white. Beneath it are two black buttons. The button on the left is marked "RAISE" in black typeset letters on a shiny metal badge. The button on the right is identically marked "LOWER". Following beneath is a piece of red label tape with the legend "TRACK 1 " embossed in white, and 2 identical buttons. Finally, following beneath is a piece of red label tape with the legend "TRACK 2" embossed in white and 2 identical buttons. On the inside cover of the box are typeset instructions.
The instructions mounted inside the cover of the control box specify that the buttons corresponding to the track occupied by a train are to be pushed in order to raise or lower the crossing gates. They do not, however, emphasize that only one button is to be pushed, nor do they contain any kind of prohibition and/or warning against pushing more than one button.

In addition, the instructions mounted in the control box appear to be vague in nature. Although they specify that the buttons corresponding to the track occupied by a train are to be pushed in order to raise or lower the gates, they do not emphasize that only one button is to be pushed. There is no prohibition and/or warning against pushing more than one button.

An analysis of data from the dispatchers logs and the event recorder from the locomotive, as well as time and distance calculations, confirm that westbound Train No. Q285-11 was well into the approach circuit on Track No.2 east of Center Street by the time the conductor of the eastbound Q390-09, standing on Track No.1, was able to dismount his locomotive, walk to the controls for the Broadway Street warning gates, unlock the box, and begin the procedure to raise the gates in order to allow roadway traffic to proceed over the crossing. With trains now occupying the approach circuits for the highway-rail grade crossings on both Track No.1 and 2, the buttons for either track would not have deactivated the gates causing them to raise to the vertical or "up" position if only one or the other alone had been pushed. However, as confirmed by tests conducted after the accident, ifboth buttons had been pushed, the gates would, indeed, have been deactivated causing them to raise.

Considering these facts, our investigation concluded that the Q390-09 conductor engaged in one of the following scenarios:

1.
The "RAISE" button for Track No.1 was pushed, but the gates didn't go up. The conductor may have thought that it was because the wrong button was pushed or that the button was defective, and, not realizing another train was already on the approach circuit on Track No.2, the conductor began pushing other buttons. When the "RAISE" button was pushed for Track No.2 immediately after the button for Track No.1, the gates went up, with Train Q285-11 approaching at near track speed.

2.
The Q390-09 confused the buttons on the control box and inadvertently pushed the button designated for Track No.2 first. Then, realizing the wrong button had been selected, pushed the button for Track No.1.
The conductor of CSX Train No. Q390-09 stated during an interview that this was the first time he had ever operated the highway control arrangement at this location. In fact, he indicated that this was his first trip east and; therefore, the first time he had ever stopped at Broadway. Most of his 34 years had been spent on yard jobs on the western territory. He had only qualified on the physical characteristics between Buffalo and Selkirk on November 15,2004. He further indicated that he only had previous experience with similar control boxes once or twice during his career and that he had received no training on how to operate this type of device.

At the time of the accident, CSX's Book of Operating Rules and Albany Division Timetable was silent with regard to highway-rail grade crossing warning systems equipped with devices installed for the purpose of raising and/or lowering warning gates in order to accommodate local traffic congestion. There were also no Special Instructions and/or Bulletin Orders in existence relative to their use. Further, information on the design and/or operation of such devices was not included in any formal employee training. On the Albany Division alone, there are a total of 63 such devices in service.

The carrier's timetable and book of operating rules are silent with regard to these devices. No special instructions and/or bulletin orders relative to their use exist. No formal training on the design and operation of these devices is provided by the carrier.

As they approached CP 188 and before the arrival of the Train Q285-11, Train Q390-09 was instructed by the train dispatcher to hold on Track No.1 at CP 184 for train traffic ahead to clear; however, the engineer was concerned that their train would not fit. As a result, the train stopped just west of the Broadway Street highway-rail grade crossing. They came to rest on the approach circuit immediately outside of the island circuit for Broadway Street at 8:35 a.m. From its standing location, it was 132 feet west of the crossing and 234 feet from the lock box containing the controls for the crossing warning gates.
According to the Q390-09 conductor, approximately 10-15 minutes after they stopped at Fonda, with the crossing gates down at Broadway, he noticed highway users trying to cross the crossing. As a result, he dismounted his train to activate the mechanism to raise the gates. An eye witness stopped in a pickup truck at the crossing stated that he asked the conductor, as he approached, ifhe could go across the crossing. According to the witness, the conductor then walked over to the box containing the controls for the warning gates, unlocked it, and the gates went up.

In an interview, the Q390-09 conductor stated that the control box was set up with 6 buttons marked Track No., Track No.2 and Track No.3 and he did not see any instructions in the box. He further stated that he only pushed one button in the box; the button marked No.1. Once he pushed the button, the bells stopped and the gates raised.

It was difficult to determine where the conductor positioned himself after operating the crossing gate controls, as he gave conflicting statements. In his first interview with FRA, he stated that he began walking back toward his train; however, in a second interview, he stated he was in the process of walking toward Route 5, near a grocery store.

The engineer of the Q390-09 stated that he was checking paperwork, therefore, his attention had been diverted inside the cab of his locomotive. He heard a westbound train horn blowing and when he looked up and outside, he saw the westbound train on Track No.2, just west of Center Street crossing, about 3 car lengths away, and its close approach to the Broadway Street crossing. He noted that the gate lights started flashing and the warning gates started to come down. He saw a motor vehicle go through the Broadway Street crossing and radioed a warning to the engineer of Q285-11 to sound his locomotive horn.

The Accident

Train CSX Q285-11 West

The westbound Train No. Q285-11 entered the block, approaching the accident location from the east on a green or "clear" indication. As their train approached the Route 30A overpass at MP 185.93, the conductor and engineer observed the westbound signal at MP 186.19 change from yellow or

"approach" to red or "stop and proceed". Both crew members indicated that they then observed the signal change back to yellow or "approach". The speed of the train, as recorded on the locomotive event recorder, was 52 mph. The engineer immediately initiated a full service brake application. At a location just west of the Route 30A overpass, he began sounding the locomotive horn. He continued to do so through the Center Street crossing, to a point just before reaching Broadway Street. Both actions are verified by the locomotive event recorder.

Approaching Center Street, the crew of the Q285-ll stated that they observed the crossing warning gates at that location in the full horizontal or "down" position. They indicated that an automobile drove around the gates and was very nearly struck as it crossed in front of their train.

Both crew members further indicated that, at the same time, they observed the gates ahead at Broadway Street just beginning to lower into the horizontal or "down" position. Approaching the crossing, the crew observed three automobiles proceeding from north to south, first over the Controlled Siding Track and then over Track No.1. The first and second vehicles proceeded over Track No.2, immediately in front of the train. When it became apparent that the third vehicle was not going to stop before entering the crossing over Track No.2, the engineer made an emergency application of the train brakes. Almost immediately, Train No. Q285-ll collided with the third vehicle in line. The train then came to rest approximately 519 feet west of the Broadway Street highway-rail grade crossing.

The speed of the Q285-ll at the moment of impact, as recorded on the locomotive event recorder, was 31 mph. The time of impact was 8:42:35 a.m.

Damage to the locomotive was minimal. The highway-rail grade crossing warning system devices on the south side of the crossing were struck by the vehicle and destroyed.

Highway Vehicle

The automobile involved in the accident was a 2000 Chrysler Cirrus. It was traveling over the crossing at Broadway Street from north to south at a low rate of speed in follow-the-leader fashion behind two other vehicles. It was struck directly in the driver's side door. No skid marks were found at the scene, and the driver appears to have made no attempt to stop. The engineer of Train No. 285¬11 stated that the driver never even looked up at the instant immediately prior to the impact, and did not appear to be aware that there was a train approaching. The vehicle was completely demolished and came to rest immediately west of the paved portion of the crossing.

The driver of the vehicle was a 38 year old female. She was pronounced dead at the scene by the Monroe, New York, County Coroner. There were no other occupants in the vehicle.

Responding to the scene were the Fonda and Town of Mohawk Fire Departments and GA V AC Ambulance. The Monroe County Sheriff s Department also responded and initiated an investigation, assisted by the New York State Police and the CSX Police. The vehicle was towed by Mancini Motors to an impound lot.

Our investigation determined that the manual cut-out device functioned as it was originally designed and/or intended, in that, only one button should be pushed for each separate attempt to raise or lower the gates. Further, tests confirmed that activating the crossing gate controls at Broadway Street puts the westbound signal at Milepost 186.19, immediately east of the Center Street highway-rail grade crossing, to red or "stop and proceed". Additionally, when the controls at either Broadway or Center Streets are activated, the gates at both locations will deactivate and go up.

Our investigation also determined that the dispatcher had intended to hold the Q285-11 at CP 188. It is thus reasonable to conclude that the signal at Milepost 186.19 had already changed to yellow or "approach". When the conductor ofthe Q390-09 activated the crossing gate controls at Broadway Street, the signal for the westbound Q285-11 would have changed to red or "stop and proceed". It would not have changed back to yellow or "approach", as the crew of the Q285-11 indicated, unless the "LOWER" button designated for Track No.2 had been pushed.

Several eye witnesses, highway users traveling in various directions, stated that the gates at Broadway Street were in the full vertical or "up" position just immediately prior to the moment of impact with the motor vehicle. The engineer of Q285-11 indicated that they were occupying the Broadway crossing, about 1 or 2 car lengths, when the gates started to come down. The engineer of Q390-09 indicated that the impact between Q285-11 and the motor vehicle occurred almost immediately after he observed the gates at Broadway Street just beginning to lower.

It is further reasonable to conclude that, contrary to statements made by the conductor and engineer of Q285-11 that the gates at Center Street were in the "down" position, the gates would actually have been in the vertical or "up" position. While it is possible that the gates might have been in transit and/or at an intermediate position when observed by the crew of the Q285-11, such a scenario is unlikely, as the gates at Broadway Street would have been in approximately the same position.

During our investigation, FRA completed a Crew Member Questions and Information form for three of the four crew members involved in the accident to develop information pertaining to fatigue. The Q285-11 conductor was not available to answer our questions, therefore, some information was developed from his work history report provided by CSx. The information gathered for both engineers indicated that they were well rested prior to reporting for duty on February 11. The Q285-11 engineer did indicate that he had recently taken over the counter cold medication.

Although the Q390-09 conductor received a total of 24 hours and 35 minutes rest prior to reporting for duty on February 11, he indicated, during one of his interviews with FRA, that he had gone to bed the previous evening (February 10) at 8:00 p.m. and during completion of the Crew Member Questions and Information form, he indicated that he had gone to bed at 9:00 p.m. Since he was called to report for duty in Buffalo at 12:55 a.m., this meant that, at the most, he received approximately 2 hours and 55 minutes of rest prior to getting called. He also indicated that during the off duty period, he had great difficulty sleeping, but that he did feel well rested and moderately alert when he awoke on February 11. Although, he did indicate that he couldn't stop yawning and that he felt he was getting tired. When asked ifhe had a sleep disorder, the conductor indicated that he did and his problem was related to his irregular work hours; however, he had not be screened for sleep disorders. He further indicated that he had recently taken Tylenol PM and prescription.

The Fonda accident brought to light CSX's practice of holding east and west bound trains at Broadway and Center Streets highway-rail grade crossings. The specific purpose ofthe crossing warning control devices is to provide train crews a method for raising and lowering the crossing gates in order to allow traffic beginning to back up at these locations to clear. It is therefore reasonable to assume that the local driving public is accustom to seeing trains stopped at either ofthese locations with the gates in the full vertical or "up" position, indicating it is safe to proceed across.

As a result of the accident, on February 15,2005, R.A. Durden, CSX Superintendent Line of Road for the Albany Division, issued instructions to the train dispatchers relative to holding trains at Fonda:
Attention ND Dispatcher,

Until further notice, unless absolutely necessary, do not park or hold trains at Fonda. If it becomes necessary to have to use Fonda, it must only be done after consultation with your Assistant Chief.
Attention Mohawk Assistant Chief Train Dispatcher,

If it is necessary to hold a train at Fonda let the DTO, CTD, myself, or Mr. O'Toole know as soon as possible. If you will need to store or park a train at Fonda the above must be notified prior to making the decision.

According to Mr. O'Toole, Superintend of Operations, Albany Division, these instructions are still in effect between Center and Broadway Streets and, to the best of his knowledge, only one train has been held in that territory since the accident. The train was held because the crew's time under the hours of service had expired and they needed to re-crew. However, trains are being held at CP 184 and CP 188 without prior consultation with the assistant chief dispatcher. Mr. O'Toole indicated that their primary concern is not holding trains at locations where the manual cut-out device can be utilized.

Conclusion

The railroad failed to comply with 49 CFR 234.209(a), by interfering with the normal functioning of the Broadway Street highway-rail grade crossing warning system. The interference, which was caused by improper operation of the manual cut-out device by the eastbound Q390-09 conductor, resulted in an activation failure. The regulation clearly states that the normal functioning of any system shall not be interfered with in testing or otherwise without first taking measures to provide for safety of highway traffic that depends on the normal function of such system. The railroad also failed to report the activation failure within the required time frame, which is a violation of 49 CFR 234.9.

The manual cut-out device functioned as designed; however, the fact that this industry standard design does not prevent interference, contributed to the cause of the accident. The railroad's failure to provide training on these devices also contributed to the cause of the accident.

Additionally, this accident brought to light several other factors/concerns which may have contributed to the cause:

Placement of Control Buttons

The control buttons for the manual cut-out device for each individual track are located at one single location. If each set of buttons were separately placed at a location in proximity to its corresponding track, this would minimize the likelihood that more than one button could be activated at any given time.
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Manual Cut-Out Device Instructions

The instructions mounted in the control box appear to be vague in nature. They do not emphasize that only one button is to be pushed. There is no prohibition and/or warning against pushing more than one button. This is especially important since our investigation determined that the lack of training on the operation and/or design of the manual cut-out device played a key role in the accident.
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Lack of Experience

The fact that the Q390-09 conductor indicated that this was his first experience with the manual cut-out device at Broadway and that this was his first trip east, having only qualified on the physical characteristics of the territory less than three months prior to the accident, may have contributed to the accident.
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Fatigue

Based on the statement made by the Q390-09 conductor, his fatigue may have been a contributing factor.
Holding Trains at Crossings

CSX's practice of holding trains at Center and Broadway Street crossings may create a false sense of security for highway users. If highway users have become accustomed to seeing trains stopped at these locations with the gates in the raised position, it may indicate to them that it is safe to proceed over the crossings.

Probable Cause and Contributing Factors

The primary cause of the accident was an activation failure due to interference, which is a violation of 49 CFR 234.209(a), caused by improper operation ofthe manual cut-out device by a conductor of an eastbound train that was stopped west of the crossing on an adjacent track.
There were also two major contributing causes to the accident: the industry standard design of the manual cut-out device which did not prevent the interference and the railroad's failure to provide the conductor with training on the proper operation of the manual cut-out.

Analysis and Conclusion

Analysis

FRA's examination and testing of the signal system, track circuitry, and highway-rail grade crossing warning systems revealed no indications that these systems failed to operate as originally designed and/or intended, or that a malfunction of any kind occurred.

A CSX Signal Department employee performed routine maintenance in the signal case at Broadway Street earlier on the day of the accident, however, there was no evidence that the acts or omissions of this employee contributed to the accident.

Further, interviews with the conductor and engineer of Train No. Q285-11, corroborated by analysis of data downloaded from the locomotive event recorder, revealed no abnormalities, and indicated that the train was operated in accordance with proper and accepted procedures and handling techniques.
The controls for the crossing warning gates are designed such that when a train is occupying an approach circuit, but not occupying an island circuit, and the "RAISE" button corresponding to the track number the train is occupying is pushed, the gates will raise at both Broadway and Center Streets. They will remain up until the island circuit at either Center Street or Broadway is occupied, or until the "LOWER" button is pushed. With a train occupying the approach circuit on one track and the gates in the vertical or "up" position due to the "RAISE" button corresponding to that track having been pushed, the gates will activate and descend to the horizontal or "down" position, whenever another train subsequently enters the approach circuit on an adjacent track. With trains occupying the approach circuits on adjacent tracks simultaneously, the buttons corresponding to each track will not function independently to deactivate the crossing warning system, thus allowing the gates to raise to the vertical or "up" position, when only one or the other alone are pushed. However, FRA's investigation revealed that, when both buttons are pushed, either simultaneously or sequentially in any combination, the warning gates can be raised at both Broadway and Center Streets, with trains occupying the approach circuits on the corresponding adjacent tracks.

In short, our investigation determined that the system was designed such that only the individual button contained in the control box that corresponds to the track upon which a train is occupying the approach circuit will function to deactivate the crossing gates, causing them to raise. It is further designed such that, when there are trains occupying the circuits on multiple tracks, all of the buttons are effectively disabled, if only one button is activated at a time. However, when more than one button at a time is activated, simultaneously or sequentially in any combination, tests indicated that the gates will, indeed, deactivate and raise, with trains occupying multiple tracks. There appears to have been no consideration of the need for safeguards against this eventuality.

A related consideration is the placement of the control buttons for each individual track at one single location, instead of positioning each set of buttons separately at a location in proximity to its corresponding track, thus minimizing the likelihood that more than one set of buttons could and/or would be activated at any given time.