
# *Federal Railroad Administration*
# *Office of Safety*
# *Headquarters Assigned*
# *Accident Investigation Report*
# *HQ-2006-20*

## *Long Island Railroad (LI)*
## *Queens, New York*
## *April 6, 2006*

***Note that 49 U.S.C. §20903 provides that no part of an accident or incident report made by the Secretary of Transportation/Federal Railroad Administration under 49 U.S.C. §20902 may be used in a civil action for damages resulting from a matter mentioned in the report.***

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION

# FRA FACTUAL RAILROAD ACCIDENT REPORT

FRA File # HQ-2006-20

| 1.Name of Railroad Operating Train #1 | 1a. Alphabetic Code | 1b. Railroad Accident/Incident No. |
|---|---|---|
| Long Island Rail Road [LI ] | LI | EQ20060402 |
| 2.Name of Railroad Operating Train #2 | 2a. Alphabetic Code | 2b. Railroad Accident/Incident |
| Long Island Rail Road [LI ] | LI | EQ20060402 |
| 3.Name of Railroad Responsible for Track Maintenance: | 3a. Alphabetic Code | 3b. Railroad Accident/Incident No. |
| Long Island Rail Road [LI ] | LI | EQ20060402 |
| 4. U.S. DOT_AAR Grade Crossing Identification Number | 5. Date of Accident/Incident: Month 04 / Day 06 / Year 2006 | 6. Time of Accident/Incident: 08:12:00 ☑ 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 |
|---|---|---|---|---|
| 0 | N/A | N/A | 0 | System |

| 13. Nearest City/Town | 14. Milepost (to nearest tenth) | 15. State Abbr | 15. State Code | 16. County |
|---|---|---|---|---|
| Jamaica | 9.0 | N/A | NY | QUEENS |

| 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 |
|---|---|---|---|---|---|---|
| 45 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 |
|---|---|---|---|---|---|
| Track #8 Hall | | 2 | N/A | | 3 |

## 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 |
|---|---|---|---|---|---|
| | | 2 | 1. Yes | 1 | LI22 |

| 28. Speed (recorded speed, if available) R - Recorded E - Estimated | | | Code |
|---|---|---|---|
| | 5 | MPH | E |

29. Trailing Tons (gross tonnage, excluding power units): 0

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) | | | | |
|---|---|---|---|---|
| f | 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; 2. South 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 | 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): Y

| 34. Locomotive Units | a. Head End | Mid Train b. Manual | Mid Train c. Remote | Rear End d. Manual | Rear End c. Remote |
|---|---|---|---|---|---|
| (1) Total in Train | 1 | 0 | 0 | 0 | 0 |
| (2) Total Derailed | 0 | 0 | 0 | 0 | 0 |

| 35. Cars | Loade a. Freight | Loade b. Pass. | Empty c. Freight | Empty d. Pass. | e. Caboose |
|---|---|---|---|---|---|
| (1) Total in Equipment Consist | 0 | 7 | 0 | 0 | 0 |
| (2) Total Derailed | 0 | 0 | 0 | 0 | 0 |

| 36. Equipment Damage This Consist | 37. Track, Signal, Way, & Structure Damage | 38. Primary Cause Code | 39. Contributing Cause Code |
|---|---|---|---|
| 153690 | 0 | H221 | 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 3 Mi 31 | Hrs 3 Mi 31 |

| 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 |
|---|---|---|---|---|---|
| | | 2 | 1. Yes | 1 | LI710 |

| 55. Speed (recorded speed, if available) R - Recorded E - Estimated | | | Code |
|---|---|---|---|
| | 12 | 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<br>d. Cab<br>e. Traffic<br>f. Interlocking | i. Time table/train orders<br>j.Track warrant control<br>k. Direct traffic control<br>l.Yard limits | o. Positive train control<br>p. Other (Specify in narrative)<br>Code(s) | 2 = Remote control tower<br>3 = Remote control transmitter - more than one remote control transmitter |
|---|---|---|---|---|
| 0 | | | f 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) | LI7466 | 1 | yes | | 0 | 0 |
| (2) Causing (if mechanical cause reported) | 0 | 0 | N/A | 60. Was this consist transporting passengers? (Y/N) | Y | |

| 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 | 1 | 0 | 0 | 0 | 0 | (1) Total in Equipment Consist | 0 | 7 | 0 | 0 | 0 |
| (2) Total Derailed | 0 | 0 | 0 | 0 | 0 | (2) Total Derailed | 0 | 0 | 0 | 0 | 0 |

| 63. Equipment Damage This Consist | 64. Track, Signal, Way, & Structure Damage | 65. Primary Cause Code | 66. Contributing Cause Code |
|---|---|---|---|
| 1311820 | 0 | H221 | 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 7 Mi 5 | Hrs 7 Mi 5 |

| Casualties to: | 73. Railroad Employees | 74. Train Passengers | 75. Other |
|---|---|---|---|
| Fatal | 0 | 0 | 0 |
| Nonfatal | 1 | 0 | 0 |

76. EOT Device? 1. Yes 2. No | 2

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 — Code: N/A
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)

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

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

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

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

## Rail Equipment Involved

83. Equipment — Code: N/A
1.Train(units pulling) 2.Train(units pushing) 3.Train (standing) 4.Car(s) (moving) 5.Car(s) (standing) 6.Light Loco(s) (moving) 7.Light(s) (standing) 8.Other (specify in narrative)

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

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

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

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

87. Type of Crossing Warning — 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 | N/A |

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

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

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

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

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

93. Driver's Age: N/A

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

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

96. Driver — Code: N/A
1. Drove around or thru the Gate
2. Stopped and then Proceeded
3. Did not Stop
4. Stopped on Crossing
5. Other (specify in narrative)

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

98. View of Track Obscured by (primary obstruction) — Code: N/A
1. Permanent Structure
2. Standing Railroad Equipment
3. Passing Train
4. Topography
5. Vegetation
6. Highway Vehicle
7. Other (specify in narrative)
8. Not obstructed

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

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

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

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

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

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

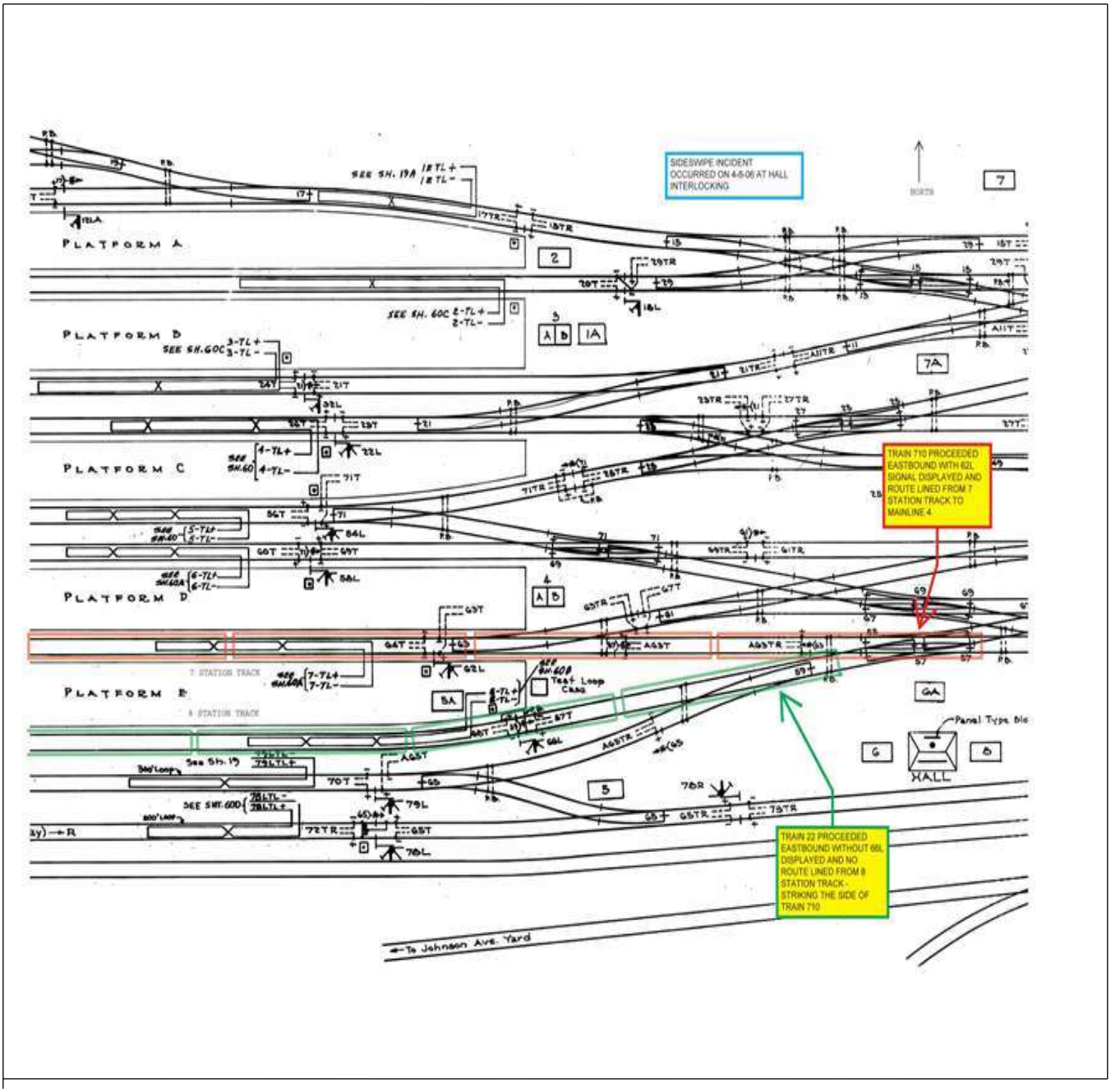
105. Locomotive Auxiliary Lights Operational? — Code: N/A
1. Yes 2. No

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

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

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

Hall Side
Swipe2.jpg



109. SYNOPSIS OF THE ACCIDENT

An eastbound LI Train collided with the side of another eastbound LI train at Jamaica Station, on April 6, 2006, at 8:12 a.m. The accident occurred in Jamaica, NY, at LI Milepost 9.0, on the LI Main Line.

Train No. 22 consisted of eight Multiple Unit (MU) passenger cars. The consist had four M3 type cars (two in the lead and two trailing) with four M1 cars in the middle. Train No. 22 departed its initial terminal, Penn Station NY, at 7:30 a.m, en route to Babylon. While waiting to depart Jamaica Station from Track No. 8 at 8:10 a.m, the engineer stated that he received a signal from his conductor to proceed. The engineer was unable to recall the signal displayed for his train on signal 66L, a dwarf signal located at the east end of the platform on Track No. 8 at Jamaica Station. The LI block operator stated that no signal was displayed for Train No. 22 on Track No. 8.

Train No. 710 consisted of eight M7 type MU passenger cars and departed Jamaica Station from Track No. 7 at the same time, en route to Hempstead. The block operator stated that signal 62L was displayed for Train No.710 to proceed.

Train No. 22 collided with the side of the first car of Train No. 710, approximately two car lengths east of the platform at Jamaica Station. Before Train No. 710 came to a stop, damage had been done to cars 7466-65, 7452-51, and 7176-75. The accident occurred within Hall Interlocking at the junction of Tracks 7 and 8 at movable point frogs 55 and 57, which were lined for Train No. 710's route.

The signal system within Jamaica Station does not include cab signals. The LI Signal Department initiated a twenty-four hour watch on signal 66L after the accident. Within Hall Interlocking relays were tested for compliance with 49 CFR 236.106, grounds were checked for compliance with 49 CFR 236.107, and cables were tested for insulation resistance for compliance with 49 CFR 236.108. The results of these tests indicated all apparatus to be in compliance with Federal regulations.

The accident was caused by failure of the locomotive engineer of Train No. 22 to comply with the stop signal displayed on signal 66L.

110. NARRATIVE

Circumstances Prior to the Accident

The crew of train 22 consisted of an engineer, conductor, assistant conductor, and two collectors. The crew was working Job 177, with a reporting time of 4:39am on April 6, 2006. The crew reported at Jamaica, located in Queens, NY, after receiving more than the statutory off duty rest period. Train 22 was the crew's third train in their daily assignment. The train was traveling eastbound to Babylon, NY.

Train 22 consisted of eight M1/M3 type multiple unit passenger cars. The consist was as follows: 9776-75, 9728-27, 9080-79, 9940-39.

The engineer was seated at the controls of car 9776. The rest of the crew was scattered throughout the train attending to the passengers.

The crew of train 710 consisted of an engineer, conductor, assistant conductor, and one collector. The crew was working Job 154, and reported at 1:07am on April 6, 2006. The crew reported at Flatbush, located in Brooklyn, NY, after receiving more than the statutory off duty rest period. Train 710 was the crew's fifth train in their daily assignment. The train was traveling eastbound to Hempstead, NY.

Train 710 consisted of eight M7 type multiple unit cars. The consist was as follows: 7466-65, 7452-51, 7176-75, 7124-23.

Train 22 and Train 710 had just completed a station stop at Jamaica Station. Train 22 utilized track 8 while Train 710 utilized track 7. Jamaica Station has high platforms and there are no vision obstructions at the accident site. The railroad timetable direction of both train 22 and 710 was east. The geographic direction was also east.

The Accident

Train 710 departed track 7 at Jamaica Station at 8:11 am, following a station stop. The train received an aspect to proceed on 62L signal from the block operator at Hall Tower. The train proceeded eastbound and the lead (7466) unit was east of track switch no. 59 when the impact occurred. Train 710 was traveling at 12 mph at the moment of impact.

Train 22 departed Jamaica Station at 8:12 am, following a station stop. The engineer passed a stop signal on 66L, located at the east end of the platform at Jamaica Station. The train proceeded east, where at approximately 160 feet past the signal, it sideswiped the south side of train 710. Train 22 was traveling at 12 mph at the moment of impact.

Train 22 suffered extensive damage to lead unit 9776. Repair cost was estimated to be $153,690. Train 710 suffered side sill, component, and structural damage to car numbers 7451, 7452, 7465, and 7466. Total damage to the cars was estimated to be $1,311,820.

The weather was clear and there were no obstructions impeding the view of the engineer of Train 22.

Analysis and Conclusions

Analysis

During an interview with the engineer of Train 22, he stated that he couldn't remember the aspect on signal 66L. He received two buzzes on the train intercom from the train crew indicating that the doors were closed following the station stop and that the engineer could proceed when the signal was received. Signal 66L was not displayed for Train 22 as Signal 62L was displayed for Train 710 on track no. 7.

A 24 hour signal watch was placed on signal 66L with all aspects recorded and determined to be correct. Additionally, testing on the signal circuits pertaining to 66L were performed. These tests included 49CFR Part 236.106 (relays), 107 (grounds), and 108 (insulation resistance). All tests proved the signal system to be functioning as intended.

Drug and alcohol testing on the train crews of both train 710 and 22 were negative.

Conclusion

The testing of the signal system proved that there was no failure of signal 66L. The engineer of Train 710 received an aspect to proceed on signal 62L. With 62L displayed, mechanical locking in the interlocking machine would prevent the block operator from physically displaying signal 66L. The testing of the signal system proved that system integrity was intact.

Probable Cause and Contributing Factors

The FRA found that the collision occurred because the engineer failed to comply with the stop indicator of signal 66L.