Federal Railroad Administration
Office of Safety
Headquarters Assigned
Accident Investigation Report
HQ-2009-06

Long Island Railroad (LIRR)
Syosset, NY
February 13, 2009

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-2009-6

1.Name of Railroad Operating Train #1: Long Island Rail Road [LI]	1a. Alphabetic Code: LI	1b. Railroad Accident/Incident No.: GR20090201
2.Name of Railroad Operating Train #2: N/A	2a. Alphabetic Code: N/A	2b. Railroad Accident/Incident No.: N/A
3.Name of Railroad Operating Train #3: N/A	3a. Alphabetic Code: N/A	3b. Railroad Accident/Incident No.: N/A
4.Name of Railroad Responsible for Track Maintenance: Long Island Rail Road [LI]	4a. Alphabetic Code: LI	4b. Railroad Accident/Incident No.: GR20090201
5. U.S. DOT_AAR Grade Crossing Identification Number: 338308F	6. Date of Accident/Incident: Month 02 Day 13 Year 2009	7. Time of Accident/Incident: 08:59:00 ☑ AM ☐ PM

8. Type of Accident/Indicent *(single entry in code box)*: 1. Derailment; 2. Head on collision; 3. Rear end collision; 4. Side collision; 5. Raking collision; 6. Broken Train collision; 7. Hwy-rail crossing; 8. RR grade crossing; 9. Obstruction; 10. Explosion-detonation; 11. Fire/violent rupture; 12. Other impacts; 13. Other *(describe in narrative)* — Code: 07

9. Cars Carrying HAZMAT	10. HAZMAT Cars Damaged/Derailed	11. Cars Releasing HAZMAT	12. People Evacuated	13. Division
0	N/A	N/A	0	SYSTEM

14. Nearest City/Town	15. Milepost *(to nearest tenth)*	16. State Abbr	16. State Code	17. County
Syosset	27.08	N/A	NY	NASSAU

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

22. Track Name/Number	23. FRA Track Class (1-9, X) — Code	24. Annual Track Density *(gross tons in millions)*	25. Time Table Direction 1. North 2. South 3. East 4. West — Code
Port Jefferson #2	4	N/A	3

OPERATING TRAIN #1

26. 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	27. Was Equipment Attended? 1. Yes 2. No — Code	28. Train Number/Symbol
2	1	1612

29. Speed *(recorded speed, if available)* — Code: R
R - Recorded
E - Estimated 69 MPH

30. Trailing Tons *(gross tonnage, excluding power units)*: N/A

31. 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): d | N/A | N/A | N/A | N/A

31a. 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

32. Principal Car/Unit	a. Initial and Number	b. Position in Train	c. Loaded *(yes/no)*
(1) First involved *(derailed, struck, etc)*	LI7764	1	yes
(2) Causing *(if mechanical cause reported)*	0	0	N/A

33. If railroad employee(s) tested for drug/alcohol use, enter the number that were positive in the appropriate box.

Alcohol	Drugs
N/A	N/A

34. Was this consist transporting passengers? (Y/N): Y

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

36. Cars	Loaded a. Freight	Loaded b. Pass.	Empty c. Freight	Empty d. Pass.	e. Caboose
(1) Total in Equipment Consist	0	9	0	0	0
(2) Total Derailed	0	0	0	0	0

37. Equipment Damage — This Consist: $46,122.00

38. Track, Signal, Way, & Structure Damage: $12,380.00

39. Primary Cause Code: M303

40. Contributing Cause Code: N/A

Number of Crew Members

41. Engineer/ Operators	42. Firemen	43. Conductors	44. Brakemen
1	0	1	1

Length of Time on Duty

45. Engineer/Operator: Hrs 4 Mi 25

46. Conductor: Hrs 4 Mi 25

Casualties to:	47. Railroad Employees	48. Train Passengers	49. Other
Fatal	0	0	1
Nonfatal	0	0	0

50. EOT Device? 1. Yes 2. No — N/A

51. Was EOT Device Properly Armed? 1. Yes 2. No — N/A

52. Caboose Occupied by Crew? 1. Yes 2. No — N/A

OPERATING TRAIN #2

53. Type of Equipment Consist *(single entry)* 1. Freight train 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	54. Was Equipment Attended? 1. Yes 2. No — Code	55. Train Number/Symbol
N/A	N/A	N/A

56. Speed *(recorded speed, if available)* — Code: N/A
R - Recorded
E - Estimated 0 MPH

58. 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

58a. Remotely Controlled Locomotive?
0 = Not a remotely controlled
1 = Remote control portable

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FRA FACTUAL RAILROAD ACCIDENT REPORT

FRA File # HQ-2009-6

57. 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

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

60. If railroad employee(s) tested for drug/alcohol use, enter the number that were positive in the appropriate box.

Alcohol	Drugs
N/A	N/A

61. Was this consist transporting passengers? (Y/N) N/A

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

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

64. Equipment Damage This Consist: $0.00

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

66. Primary Cause Code: N/A

67. Contributing Cause Code: N/A

Number of Crew Members

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

Length of Time on Duty

72. Engineer/Operator: Hrs 0 Mi 0

73. Conductor: Hrs 0 Mi 0

Casualties to:	74. Railroad Employees	75. Train Passengers	76. Other
Fatal	0	0	0
Nonfatal	0	0	0

77. EOT Device? 1. Yes 2. No N/A

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

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

OPERATING TRAIN #3

80. Type of Equipment Consist *(single entry)*: 1. Freight train; 2. Passenger train; 3. Commuter train; 4. Work train; 5. Single car; 6. Cut of cars; 7. Yard/switching; 8. Light loco(s); 9. Maint./inspect.car; A. Spec. MoW Equip. Code: N/A

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

82. Train Number/Symbol: N/A

83. Speed *(recorded speed, if available)* Code
R - Recorded
E - Estimated N/A MPH 0

84. Trailing Tons *(gross tonnage, excluding power units)* N/A

85. Method(s) of Operation *(enter code(s) that apply)*
a. ATCS; b. Auto train control; c. Auto train stop; d. Cab; e. Traffic; f. Interlocking; g. Automatic block; h. Current of traffic; i. Time table/train orders; j.Track warrant control; k. Direct traffic control; l.Yard limits; m.Special instructions; n. Other than main track; o. Positive train control; p. Other *(Specify in narrative)* Code(s): N/A N/A N/A N/A N/A

85a. Remotely Controlled Locomotive?
0 = Not a remotely controlled
1 = Remote control portable
2 = Remote control tower
3 = Remote control transmitter - more than one remote control transmitter: N/A

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

87. If railroad employee(s) tested for drug/alcohol use, enter the number that were positive in the appropriate box.

Alcohol	Drugs
N/A	N/A

88. Was this consist transporting passengers? (Y/N) N/A

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

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

91. Equipment Damage This Consist: $0.00

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

93. Primary Cause Code: N/A

94. Contributing Cause Code: N/A

Number of Crew Members

95. Engineer/ Operators	96. Firemen	97. Conductors	98. Brakemen
0	0	0	0

Length of Time on Duty

99. Engineer/Operator: Hrs 0 Mi 0

100. Conductor: Hrs 0 Mi 0

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

104. EOT 1. Yes 2. No N/A

105. Was EOT Device Properly 1. Yes 2. No N/A

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

Highway User Involved

107. A. Auto; B. Truck; C. Truck-Trailer.; D. Pick-Up Truck; E. Van; F. Bus; G. School Bus; H. Motorcycle; J. Other Motor Vehicle; K. Pedestrian; M. Other *(spec. in narrative)* Code: A

108. Vehicle Speed *(est. MPH at impact)*: 22

109. *geographical)* 1.North 2.South 3.East 4.West Code: 2

Rail Equipment Involved

111. Equipment
1.Train *(units pulling)*; 2.Train *(units pushing)*; 3.Train *(standing)*; 4.Car(s) *(moving)*; 5.Car(s) *(standing)*; 6.Light Loco(s) *(moving)*; 7.Light(s) *(standing)*; 8.Other *(specify in narrative)* Code: 1

112. Position of Car Unit in: 0

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FRA FACTUAL RAILROAD ACCIDENT REPORT

FRA File # HQ-2009-6

110. Position	Code	113. Circumstance	Code
1.Stalled on Crossing 2.Stopped on Crossing 3.Moving Over Crossing 4. Trapped	3	1. Rail Equipment Struck Highway User 2. Rail Equipment Struck by Highway User	1
114a. 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	4	114b. Was there a hazardous materials release 1. Highway User 2. Rail Equipment 3. Both 4. Neither	N/A

114c. State here the name and quantity of the hazardous materials released, if any.
N/A

115. Type Crossing Warning	1.Gates 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	116. Signaled Crossing *(See instructions for codes)* Code	117. Whistle Ban Code
Code(s)	01 / 03	06	07	N/A / N/A / N/A	01	1. Yes 2. No 3. Unknown: 2

118. Location of Warning Code	119. Crossing Warning with Highway Signals Code	120. Crossing Illuminated by Street Lights or Special Lights Code
1. Both Sides 2. Side of Vehicle Approach 3. Opposite Side of Vehicle Approach: 1	1. Yes 2. No 3. Unknown: 2	1. Yes 2. No 3. Unknown: N/A

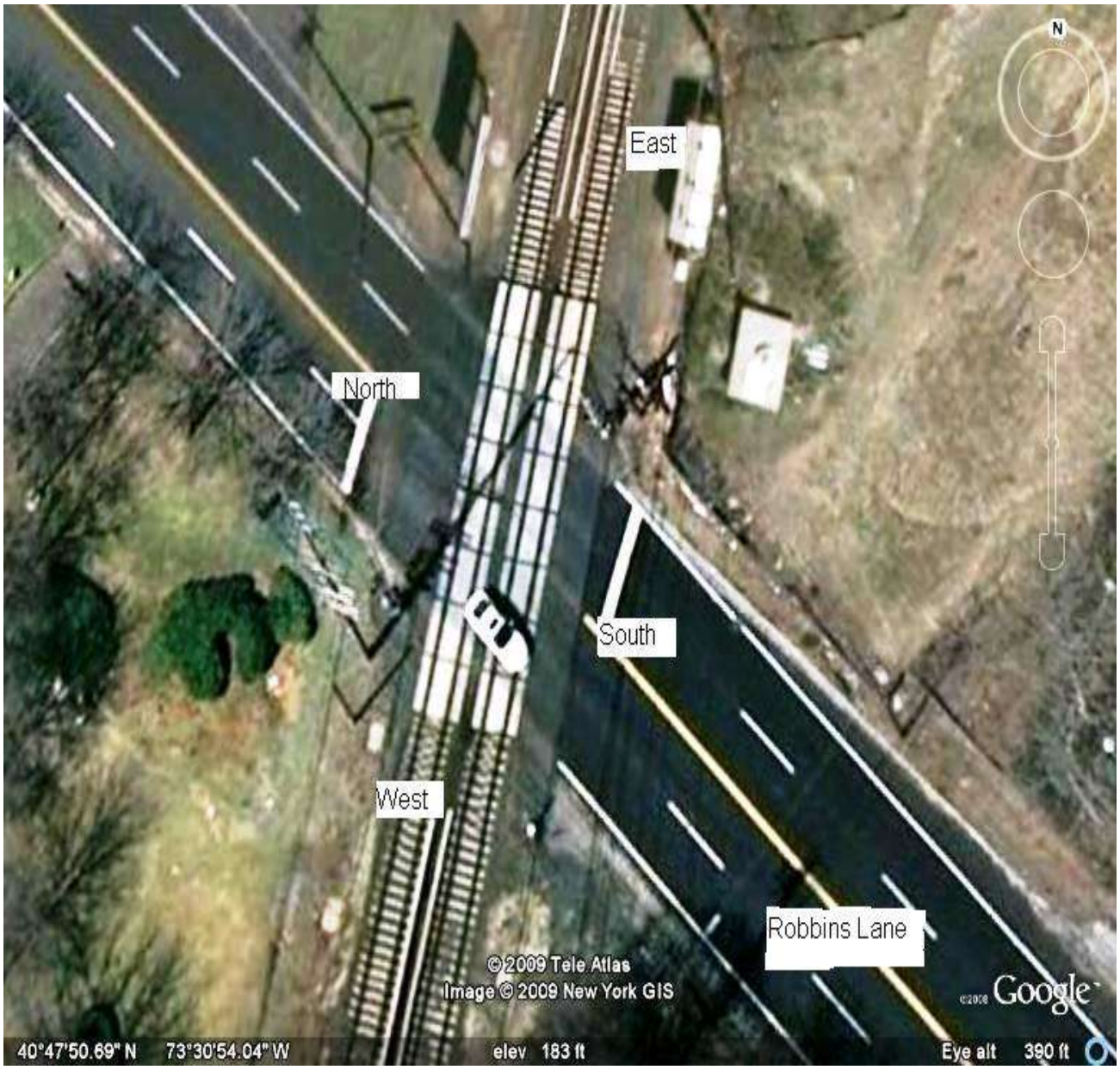
121. Age	122. Driver's Gender Code	123. Driver Drove Behind or in Front of and Struck or was Struck by Second Train Code	124. Driver Code
86	1. Male 2. Female: 1	1. Yes 2. No 3. Unknown: 2	1. Drove around or thru the Gate 2. Stopped and then Proceeded 3. Did not Stop 4. Stopped on Crossing 5. Other *(specify in narrative)*: 3

125. Driver Passed Highway Vehicle Code	126. View of Track Obscured by *(primary obstruction)* Code
1. Yes 2. No 3. Unknown: 2	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: 8

Casualties to:	Killed	Injured	127. Driver Code	128. Was Driver in the Vehicle? Code
			1. Killed 2.Injured 3. Uninjured: 1	1. Yes 2. No: 1
129. Highway-Rail Crossing Users	1	0	130. Highway Vehicle Property Damage *(est. dollar damage)*: 25000	131. Total Number of Highway-Rail Crossing Users *(include driver)*: 1

132. Locomotive Auxiliary Lights? Code	133. Locomotive Auxiliary Lights Operational? Code
1. Yes 2. No: 1	1. Yes 2. No: 1
134. Locomotive Headlight Illuminated? Code	135. Locomotive Audible Warning Sounded? Code
1. Yes 2. No: 1	1. Yes 2. No: 1

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



137. SYNOPSIS OF THE ACCIDENT

On February 13,2009, at approximately 8:59 a.m. EST, eastbound Long Island Rail Road (LIRR) passenger train #1612 struck a single person occupied automobile at the Robbins Lane grade crossing in Syosset, NY. The automobile was traveling southbound on Robbins Lane. The automobile was being driven by an 86 year old male. The driver of the vehicle failed to stop at the lowered crossing gates and was struck by Long Island Rail Road train # 1612. The train was traveling at a recorded speed of 69 mph. The automobile was traveling at 22 mph and there were no indication of the auto trying to slow or stop for the crossing. The occupant of the automobile was killed. There were no other injuries to the crew or passengers. Robbins Lane is located at milepost 27.1 on the Port Jefferson Branch of the Long Island Rail Road. The DOT number is 338 308 F.

The weather was clear and 32 degrees F.

The probable cause of the collision was the failure of the operator of the vehicle to yield the right of way to the oncoming LIRR Passenger Train.

138. NARRATIVE

CIRCUMSTANCES PRIOR TO THE ACCIDENT

LIRR Train #1612, carrying 285 passengers, departed Penn Station, N.Y. at 8:01 a.m. The eastbound passenger train was due at Huntington at 9:10 a.m. The crew consisted of one engineer, one brakeman, and one conductor. The locomotive engineer reported no unusual occurrences during the trip from Penn Station to the site of the accident. The locomotive event recorder substantiated the engineer's rendition. As Train #1612 approached Robbins Lane, it activated the grade crossing warning system, consisting of flashing lights and gates. This activation caused the gates to lower. The locomotive event recorder indicated that the engineer properly sounded the train horn as it approached the Robbins Lane crossing. The recorded train speed was 69 mph.

The automobile, driven by an 86 year old male, was a 2007 Lincoln Town Car. The automobile was being driven southbound on Robbins Lane. Robbins Lane is a four lane highway in a north/south direction. The speed limit on Robbins Lane is 35 mph.

The affected area is a 2 track territory in an east/west direction. Track # 1 is the north track and is closest to the entering gate of the automobile. Track # 1 is normally westbound. Track # 2 is normally eastbound and was the track that LIRR Train 1612 was traveling on the day of the accident. The Robbins Lane crossing is tangent track with clear visibility from the west.

The vantage point of the crew of the LIRR Train and the driver of the vehicle was unobstructed. Each had a clear view.

The weather was sunny and cold with the temperature 32º F. It was windy with gusts to 30 mph.

THE ACCIDENT

The accident occurred at 8:59 a.m. The automobile entered the grade crossing under the horizontal gate (north #1), crossed track # 1, and drove in the path of oncoming LIRR Train #1612 on track # 2. The automobile was struck on the front passenger side and shoved approximately 1400 feet from point of impact. The driver was killed instantly. LIRR Passenger Train #1612 was operating normally with no unusual occurrences. The crew of LIRR Train # 1612 initiated an emergency brake application upon observing the automobile enter the crossing.

ANALYSIS AND CONCLUSION

ANALYSIS

The locomotive event recorder was downloaded and provided the following information. LIRR Passenger Train #1612 was traveling at 69 mph with an MAS cab signal. The MAS cab signal allows for a speed up to 80 mph. Upon approach to the Robbins Lane crossing, the engineer sounded 2 short and 1 long horn bursts. It took LIRR Train #1612 approximately 24 seconds to decelerate from a speed of 69 mph to full stop, after the crew initiated the emergency brake application.

The signal event recorder at Robbins Lane was downloaded and provided the following information. The recorded times and actual times are four minutes apart. The recorded times indicate four minutes later than actual time. At 9:00:15 a.m., the Robbins Lane crossing was activated with the approach of LIRR Train #1612. At 9:00:29 a.m., the 1GRP relay (indicates the position of the # 1 north gate) picked up. At 9:00:31 a.m., the 2GRP relay (indicates the position of the # 2 south gate) picked up. When these gate position pick up relays indicate that the gates are within 5 degrees of fully horizontal they are energized. This indicated that the warning system flashing lights were functioning and the gates were horizontal with the approach of LIRR Train #1612. At 9:00:50, gate # 1 relay 1GRP drops, indicating that the gate has raised more than 5 degrees from fully horizontal. The 2GRP relay remains up, indicating that the south # 2 gate remains fully horizontal. Five seconds later, at 9:00:55 a.m., the 1 GRP again picked up, indicating that the north gate was fully horizontal. It is at this time that the automobile was struck by LIRR Train #1612. At 9:01:05 a.m., the 1GRP relay dropped and at 9:01:06 a.m., the 2GRP dropped. This indicates that LIRR Train #1612 has passed the crossing and deactivated the warning system. The north and south gates were now vertical.

An attempt to determine the reason that north gate #1 rose for 5 seconds before again becoming fully horizontal was made. It should be noted that the relay that controls the motors for the gates operate both gates. Therefore, if there had been a relay failure, both gates would have raised. The fact that the # 2 gate remained horizontal eliminates the possibility of a relay failure. Crossing gates are motor driven up and gravity driven down. It takes a minimum amount of effort to manually lift a crossing gate from a fully horizontal position.

The Lincoln Town Car has a hood height of 38 inches. The hood height is lower than a horizontal crossing gate. On February 20, 2009 a re-enactment was made utilizing a Ford Crown Victoria, which has the same hood height as the Lincoln Town Car. The re-enactment consisted of driving the Crown Victoria under the horizontal gates at various speeds to determine if the five seconds in question was caused by the Lincoln Town Car on the day of the accident. At 18 mph the crossing gate lifted from the fully horizontal position for four seconds, allowed the car to continue entering the crossing, and returned to a fully horizontal position. The windshield shattered at 18 mph so for safety reasons further testing was discontinued. It is estimated that to obtain the five second discrepancy the automobile would have to be traveling approximately 22 mph as it entered the crossing.

Further FRA analysis reveals that 22 mph is the approximate speed that the automobile would have to be traveling in order to be positioned in front of LIRR Passenger Train #1612. The automobile had 2 seconds from the time the gate indicated not fully horizontal to travel the 70 feet from the warning gate to the center of track 2. Mathematical computation puts the vehicle speed at approximately 22 mph.

The Long Island Rail Road also downloaded the event recorder at the crossing for the dates of February 14, 15, and 16, 2009. There were no exceptions taken to the functioning of the crossing system.

CONCLUSIONS

Based on the information provided by the event recorders, the re-enactment, and a time/distance computation, FRA determined that the automobile passed through the warning gate at approximately 22 mph. The vehicle hit the gate, forcing it up for 5 seconds as the car drove through the crossing and into the path of oncoming LIRR Train #1612.

The probable cause of the collision was the failure of the operator of the vehicle to yield the right of way to the oncoming LIRR Passenger Train.