



Long Island Rail Road

National Transportation Safety Board
Submission

DCA17FR009

Long Island Rail Road

Employee Fatality

Queens Village, New York

June 10, 2017

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SYSTEM DESCRIPTION

The Long Island Rail Road (LIRR) is the largest and oldest commuter railroad in the United States operating under its original name. Chartered in 1834, it extends from three major New York City terminals (Penn Station, Atlantic Terminal, and Hunterspoint Avenue) through a major transfer hub at Jamaica to the easternmost tips of Long Island (Greenport and Montauk). The Port Washington Branch is the only branch of the eleven that does not go through Jamaica.

MTA Long Island Rail Road at a Glance	
Rail lines in Nassau and Suffolk Counties and New York City	
2017 operating budget	\$2.1 billion
Annual ridership	89,351,676
Average weekday ridership	308,000
Daily Revenue Trains Weekday	742
Daily Revenue Weekend Trains	529
Rail lines	11
Rail cars	1,161
Track miles	594
Rail stations	124
Employees	Approximately 7,400

INCIDENT

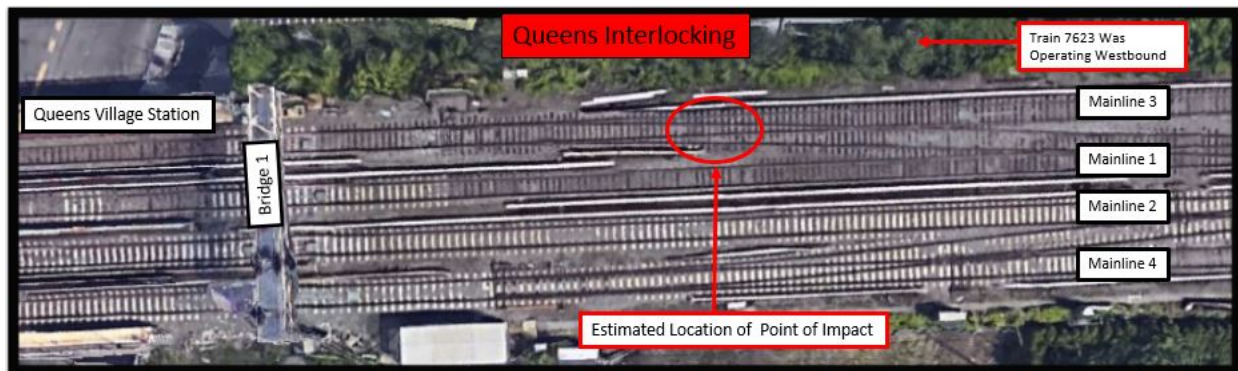
ACCIDENT SYNOPSIS

At approximately 10:12 AM on Saturday, June 10, 2017, a Long Island Rail Road (LIRR) Engineering Department Track Foreman was struck just east of the Queens Village Station by Train 7623 travelling west on Mainline 3 at 78 miles per hour (MPH). The employee suffered fatal injuries because of the collision.

The Engineering Department Track Foreman was supervising a Work Gang assigned to inspect insulated joints (IJ) in Queens Interlocking. They applied Train Approach Warning (Watchman) as their form of Roadway Worker Protection (RWP). While the Work Gang was walking west on Mainline 1, Train 7900 passed their location on Mainline 4 at approximately 10:10 AM and sounded the train horn per LIRR Rule 14L. Statements indicate that the Watchman sounded his air horn as train approach warning and the employees acknowledged the passing train as they continued inspecting the IJs on Mainline 1, in-service track.

Approximately two minutes later at 10:12 AM, Train 7623 was operating west on Mainline 3. According to the Locomotive Engineer's statement, he noticed the Work Gang and sounded the train horn per Rule 14L while operating through Floral Park Station. The Watchman gave audible Train Approach Warning using his air horn and held up the Watchman Disc. The Work Gang remained on in-service Track Mainline 1. The Foreman was walking in the crossover, leaned in to the fouling envelope of Mainline 3, and was struck.

Train 7623, a 12-car consist, originated from Huntington at approximately 9:36 AM, had made a passenger stop at Merillon Avenue Station. They were scheduled to make Hillside Support Facility as the next passenger stop. Queens Interlocking consists of four mainline tracks, from north to south tracks are numbered 3,1,2,4. Belmont Yard is located south of Queens Interlocking. The east and west leg signals of the Wye are the beginning and end of the Interlocking Limits.



EMERGENCY RESPONSE

Once the incident was reported at approximately 10:12 AM, the LIRR Movement Bureau initiated notifications consistent with their Operating Plan – Notification Matrix.

An LIRR Fire Marshal responded from Belmont Yard and designated a Command Post for the incident on the north side platform of the Queens Village Passenger Station, assisted with passenger evacuation, and coordinated response efforts between emergency responders.

Emergency Responders to Scene
Metropolitan Transportation Authority Police Department (MTAPD)
New York City Office of Emergency Management (NYCOEM)
New York City Fire Department (FDNY)
New York City Fire Department Emergency Medical Services (FDNY EMS)
New York City Police Department Emergency Services Unit (NYPD ESU)

A block was established on Mainline 1 and Mainline 3 from Queens to Hall, with third rail de-energized. Restricted Speed was put in place from Queens to Hollis on Mainline 2 and Mainline 4 due to the police activity on or about the tracks. All westbound trains were operated west on Mainline 2, bypassing any local stops between Queens and Hall to allow for continued train-service through the area. The Public Information Office (PIO) issued customer alerts during the incident, providing updates as the incident transpired. Announcements were made at all terminals and all stations along the Mainline, Hempstead, and Port Jefferson Branches. A download of Train 7623’s data recorder was performed on the scene at 12:07 PM, witnessed by an FRA inspector, and turned over to the MTAPD.

PASSENGER TRAIN EMERGENCY PREPAREDNESS

In accordance with the federally mandated Title 49 CFR Part 239 Passenger Emergency Preparedness LIRR Plan, the crew of Train 7623 initiated announcements and assisted passengers following the incident. Once Third Rail power was confirmed off, approximately 800 Passengers of Train 7623 were evacuated to track level, then to the Queens Village Platform, assisted by FDNY, MTAPD, and LIRR Employees.

COMMUNICATION AND EVACUATION

Evacuation efforts took approximately one and half-hours. The length of the evacuation was impacted by accommodations that were necessary for one passenger.

An evacuation train was set up in Jamaica for the customers of Train 7623, but this train was not utilized. Protect buses for the Belmont Program were utilized to shuttle the evacuated customers to Jamaica.

TRAIN EMERGENCY FEATURES

Emergency lighting and emergency door releases on the inside and outside of the cars operated as intended. The train crew made continual announcements on board and provided emergency water to passengers until the evacuation was complete.

INJURIES

The Engineering Department Track Foreman suffered fatal injuries.

The Locomotive Engineer of Train 7623 was transported to North Shore Long Island Jewish Hospital with trauma related injuries and remains out of work to date.

DAMAGES

As a result of this incident, there was damage to the third rail protection board in the area and to the south side F-end panel and air piping brackets of Car 7695.

Maintenance of Equipment Department Damages

Material:	\$10,774.64
Labor:	\$18,354.76
Total M of E Damage Costs:	\$29,129.40

Engineering Department Damages

Material:	\$279.96
Labor/Overhead	\$858.31
Total Engineering Damage Costs:	\$1,138.27

LIRR Total Damage Costs:	\$30,267.67
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ANALYSIS

HUMAN FACTOR

POST INCIDENT TESTING

Engineering Department employees involved were directed by supervision to submit a drug/alcohol test for reasonable cause; all results were negative. A toxicology report was produced by the Office of the Chief Medical Examiner of the City of New York, in conjunction with an autopsy performed by that office on the fatally injured LIRR employee. The LIRR refers the NTSB to the results contained in the toxicology report.

Federal Railroad Administration representatives on scene deemed that Transportation Department employee testing was unnecessary per Title 49 CFR Part 219 Control of Drug and Alcohol Use drug and alcohol testing requirements.

TRAINING HISTORY

All Transportation and Engineering employees that were involved with this incident were current on all certifications and annual trainings required by LIRR and FRA.

The Track Foreman was the Roadway Worker in Charge (RWIC) and up to date with all federally mandated annual RWIC training which includes the rules that prohibit clearing to in service live track. Clearing for train movement from one main track to another main track where no foul time is established is a violation of the regulatory requirements specified in Federal Rail Road Administration Title 49 CFR Part 214 Railroad Workplace Safety and the LIRR the Long Island Rail Road Roadway Worker Protection Program On-Track Safety Rules and Procedures Manual.

Employees and contractors working on or about the right of way receive annual training on the regulatory requirements specified in Federal Rail Road Administration Title 49 CFR Part 214 Railroad Workplace Safety as well as the FRA mandated LIRR On-Track Safety Rules and Procedures Manual. The Roadway Worker in Charge, “who provides for the on-track safety of roadway workers through establishment of working limits or the assignment and supervision of watchmen/lookouts or flagmen” (Title 49 CFR Part §214.353 Training and qualification of each roadway worker in charge), is also required to pass an annual qualifying exam. The Track Foreman passed the required LIRR annual qualifying exam which includes questions regarding the requirements for clearing track.

WORK HISTORY

The Locomotive Engineer hired as a Locomotive Engineer Trainee in August 2014 and promoted to Qualified Locomotive Engineer on November 2015. Discipline record shows that he was involved in two prior incidents.

- On July 17, 2016, he was involved in a derailment in Hall Interlocking that resulted in no discipline against the employee. He was re-instructed.
- On May 8, 2017, the employee failed to make a scheduled station stop. Discipline records indicate the employee utilized the C3Rs system; consequently, no discipline was charged.

The Track Foreman hired as a Track worker on October 2001 and promoted to Track Foreman June 2007. Discipline record shows that he had four prior discipline charges on his record:

- On May 2, 2013 - Employee charged with Failure to Supervise Your Gang and served a 15-day suspension.
- On September 19, 2013 - Employee charged with an Absence Control Policy infraction and was reprimanded.
- On May 21, 2015 - Employee charged with an Absence Control Policy infraction and was suspended for 15 days with 5 days held in abeyance for 3 years.
- On July 17, 2016 – Employee was involved in track maintenance car derailment in Woodside. Discipline is listed as pending.

The Watchman hired as a Track worker on November 2000 and had no previous discipline on his record.

OBSERVATION AND TESTING

In accordance with the requirements of Title 49 CFR 217 Railroad Operating Rules, in 2016:

The Locomotive Engineer was observed twenty times from June 2016 –June 2017. One non-compliance for a missed station stop on May 8, 2017.

The Track Foreman was observed thirty-eight times from June 2016 – June 2017. Twenty-eight of the observations were RWP related and all were in compliance. The last observations performed prior to the incident were done on April 22, 2017 by CSD in Rocky Interlocking. Seven observations were recorded, five were RWP related and all were in compliance.

The Watchman had no observations recorded from June 2016 – June 2017.

CELL PHONE

In his statements, the Locomotive Engineer indicated his phone was off and stowed away in his bag positioned on the off cab side of the cab.

TRAIN HANDLING

The train crew picked up their equipment in the West Side Storage Yard at 2:19 AM, retained the same equipment throughout their assignment, and took no exceptions to any pre-trip inspection and testing requirements, brake, horn, lights etc., prior to train 7623's departure. After successfully completing all required safety checks, 7623 departed Huntington on time at 9:36 AM. The last passenger station stop prior to the incident was Merillon Avenue with no scheduled stops until Hillside Support Facility.

M of E analyzed the event data recorder. From the last station stop, the train accelerated with no brake applied until the emergency application. The speed of Train 7623 just prior to being placed into an emergency brake application was 78 MPH. Statements and event recorder evidence indicate that the employee was struck at approximately 78 MPH.

ANALYSIS OF SCHEDULE

The train crew of Job 123 worked in accordance with Title 49 CFR Part 228 Hours of Service mandates. They had sufficient rest prior to reporting for duty on June 10, 2017 as required by Title 49 CFR Part 228.

The Locomotive Engineer was assigned to Run 346 with relief Days of Thursday/Friday.

The Locomotive Engineer worked an AM schedule for approximately two weeks prior to the incident. In his statements, he explained that he was particular in his sleeping habits and felt fit for duty the morning of the incident. He was out sick for a period of time in May and was trimmed upon his return. He did not operate for a total of 13 days. There was no documented violation of the LIRR Absence Control Policy.

The Locomotive Engineer's relief days were Thursday/Friday and incident occurred on a Saturday, which was his first day back from his normal relief days. Records indicate that he did not work more than five days per week for the 30-days prior to the incident.

The Locomotive Engineer started his tour of duty on Saturday, June 10, 2017, in West Side Storage Yard at 2:19 AM. Job 346, covers Job 123 on Saturday and Sunday. Job 123 makes two round trips, one to Ronkonkoma, and then one to Huntington. On the day of the incident, the Locomotive Engineer performed all necessary pre-trip required inspections and tests and operated Train 7623 his last scheduled train.

Job 346 Schedule						
Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
152	152	151	Relief	Relief	123	123

Job 123 Schedule:

123		Mon. to Fri.		
	Report	2.45 AM		
804	Lv. Penn Station	3.00	Arr. Long Beach	● 3.51 AM
811	Lv. Long Beach	6.37	Arr. Penn Station	7.28 AM
3804	Lv. Penn Station	7.43	Arr. Long Beach	8.30 AM
829	Lv. Long Beach	8.58	Arr. Penn Station	9.53 AM
			Release	9.58 AM
		Sat.-Sun.		
	Report WSY	2.19 AM		
8004 w	Lv. Penn Station	2.54	Arr. Ronkonkoma	4.14 AM
8007 w	Lv. Ronkonkoma	5.37	Arr. Penn Station	6.59 AM
7616 w	Lv. Penn Station	7.52	Arr. Huntington	8.55 AM
7623 w	Lv. Huntington	9.36	Arr. Penn Station	10.39 AM
			Release	10.54 AM
Relief Days - Saturday-Sunday				
Covered by Relief Crew 346				

Train 7623 was scheduled to leave Huntington at 9:36 AM and departed on-time the morning of the incident. The Locomotive Engineer departed Merillon Avenue Station and proceeded west toward Hillside Station, the next scheduled stop. Merillon Avenue is 6.3 miles from Hillside, with no crossings nor scheduled stops, enabling train speeds to reach the 80 MPH Maximum Authorized Speed (MAS) for that route.

- Monday: 5/15/17- Sick
- Tuesday: 5/16/17- Sick
- Wednesday: 5/17/17- Sick
- Thursday: 5/18/17- Relief Day
- Friday: 5/19/17-Relief Day
- Saturday: 5/20/17- Sick
- Sunday: 5/21/2017-Sick
- Monday: 5/22/2017-Sick
- Tuesday: 5/23/2017-Relief Day
- Wednesday: 5/24/2017- Relief Day
- Thursday: 5/25/2017- Trimmed (No job Assignment) did not work
- Friday: 5/26/2017- Picked up job 346, Relief Day Thurs/Fri- Relief Day
- Saturday: 5/27/2017- Job 123 2:19 AM-10:51 AM
- Sunday: 5/28/2017- Job 123 2:19 AM-10:51 AM

- Monday: 5/29/2017- Job 152 6:58 AM-3:48 PM
- Tuesday: 5/30/2017-Job 152 1:33 AM-9:28 AM
- Wednesday: 5/31/2017- Job 151 1:28 AM-9:36 AM

Thursday: 6/1/2017- Relief Day
 Friday: 6/2/2017- Relief Day
 Saturday: 6/3/2017- Job 123 2:19 AM-10:51 AM
 Sunday: 6/4/2017- Job 123 2:19 AM-10:51 AM

 Monday: 6/5/2017- Job 152 1:33 AM-9:28 AM
 Tuesday: 6/6/2017- Job 152 1:33 AM-9:28 AM
 Wednesday: 6/7/17- Job 151 1:28 AM- 9:36 AM
 Thursday: 6/8/2017- Relief Day
 Friday: 6/9/2017- Relief Day
 Saturday: 6/10/17- Job 123 2:19 AM- 10:12 AM (Day of Incident)

Track Worker (Watchman)

Relief Days: Saturday/Sunday

The Watchman's regular schedule was Monday through Friday 7:30 AM to 3:30 PM with Saturday/Sunday off. At the time of the incident, the Watchman was on duty for 11 hours, with 13 hours remaining in his scheduled tour. He had 7.5 hours off duty prior to his 24 hour accepted shift. During statements, he provided that his commute home in the afternoon averages approximately 45-minutes. He stated that he felt that he had sufficient rest regarding his responsibilities at work. When asked to provide information regarding hours worked prior to the incident, he could not recall.

For the week of Monday May 15, 2017 through Sunday May 21, 2017, the Watchman worked a total of 89 hours. 65 out of the 89 hours were worked during five of the seven working days.

Monday: 5/15/17- 7:30 AM-4:00 PM
 Monday: 5/15/17-9:00 PM-5:00 AM
 Tuesday: 5/16/17- 7:30 AM- 3:30 PM
 Wednesday: 5/17/17- 7:30 AM-3:30 PM
 Wednesday: 5/17/17- 9:00 PM-5:00 AM
 Thursday: 5/18/17- 7:30 AM-3:30 PM
 Thursday: 5/18/17-11:00 PM-7:30 AM
 Friday: 5/19/17-7:30 AM-3:30 PM
 Friday: 5/19/17- 9:00 PM-7:30 AM
 Saturday: 5/20/17- 7:30 AM-2:00 PM
 Saturday: 5/20/17- 3:00 PM-7:30 AM
 Sunday: 5/21/2017-7:30 AM-10:00 AM

The Watchman worked 40 hours for the week of May 22 through May 28, 2017.

Monday: 5/22/2017- 7:30 AM-3:30 PM
 Tuesday: 5/23/2017- 7:30 AM-3:30 PM
 Wednesday: 5/24/2017- 7:30 AM-3:30 PM

Thursday: 5/25/2017- 7:30 AM-3:30 PM
Friday: 5/26/2017- 7:30 AM-3:30 PM
Saturday: 5/27/2017- Relief Day
Sunday: 5/28/2017- Relief Day

During the week of Monday May 29, 2017 through Friday June 2, 2017, the Watchman worked a total of 43 hours. Because Memorial Day was a holiday, he worked these hours in a four day period.

Monday: 5/29/17- Memorial Day Holiday Relief Day
Tuesday: 5/30/17- 7:30 AM- 3:30 PM
Tuesday: 5/30/17- 9:00 PM- 6:30 AM
Wednesday: 5/31/17- 7:30 AM-4:30 PM
Thursday: 6/1/17- 7:30 AM-3:30 PM
Thursday: 6/1/17-10:00 PM-7:30 AM
Friday: 6/2/17-7:30 AM-3:30 PM
Saturday: 6/3/2017-Relief Day
Sunday: 6/4/2017-Relief Day

During the week of Monday June 5, 2017 through Saturday June 10, 2017, the Watchman worked 74 hours.

Monday: 6/5/17- 7:30 AM-4:00 PM
Tuesday: 6/6/17- 7:30 AM-3:30 PM
Wednesday: 7:30 AM- 4:00 PM
Thursday: 6/8/17-7:30 AM- 3:30 PM
Thursday: 6/8/17-10:00 PM- 7:30 AM
Friday: 6/9/17- 7:30 AM- 3:30 PM
Friday: 6/9/17- 11:00 PM- 7:00 AM
Saturday: 6/10/17 7:30 AM- Expected to work until 11:00 PM
(Incident Occurred Approx. 10:12 AM)

Track Worker (Foreman)

Relief Days: Saturday/Sunday

The Foreman's regular schedule was Monday through Friday 7:30 AM to 3:30 PM with Saturday/Sunday off. At the time of the incident, the Foreman had been on duty for 11 hours, with 13 hours remaining in his scheduled tour. He had 7.5 hours off duty prior to his 24 hour accepted shift. He worked a total of 64.45 hours prior to the incident.

During the week of Monday May 15, 2017 through Sunday May 21, 2017, the Foreman worked a total of 52.5 hours during a regular workweek; no overnight work was performed this week.

Monday: 5/15/17- 7:30 AM- 4:30 PM

Tuesday: 5/16/17- 7:30 AM- 3:30 PM
Wednesday: 5/17/17- 7:30 AM- 3:30 PM
Thursday: 5/18/17- 7:30 AM- 3:30 PM
Friday: 5/19/17-7:30 AM- 3:30 PM
Saturday: 5/20/17- 5:00 AM- 5:00 PM
Sunday: 5/21/2017- Relief Day

During the week of May 22, 2017, the Foreman worked a total of 56 hours.

Monday: 5/22/2017- 7:30 AM- 3:30 PM
Tuesday: 5/23/2017- 7:30 AM- 3:30 PM
Tuesday: 5/23/2017- 7:00 PM- 5:00 AM
Wednesday: 5/24/2017- 7:30 AM- 5:30 PM
Thursday: 5/25/2017- 7:30 AM- 3:30 PM
Friday: 5/26/2017- 7:30 AM- 3:30 PM
Saturday: 5/27/2017- Relief Day
Sunday: 5/28/2017- 10:30 AM- 2:30 PM

During the week of Monday May 29, 2017, the Foreman worked approximately 53 hours, he did not work Memorial Day Monday.

Monday: 5/29/2017- Holiday/Memorial Day
Tuesday: 5/30/2017- 7:30 AM- 3:30 PM
Wednesday: 5/31/2017- 7:30 AM- 5:30 PM
Thursday: 6/1/2017- 6:30 AM- 5:30 PM
Friday: 6/2/2017- 7:30 AM- 5:30 PM
Saturday: 6/3/2017- 12:30 PM- 2:30 AM
Sunday: 6/4/2017- Relief Day

During the week of Monday June 5, 2017 through Saturday June 10, 2017, the Foreman worked 64.45 hours.

Monday: 6/5/2017- 7:30 AM- 5:30 PM
Tuesday: 6/6/2017- 7:30 AM- 5:30 PM
Wednesday: 6/7/2017- 7:30 AM- 4:00 PM
Thursday: 6/8/2017- 7:30 AM- 3:30 PM
Thursday: 6/8/2017 10:00 PM- 7:30 AM
Friday: 6/9/2017- 7:30 AM- 3:30 PM
Friday: 6/9/2017- 11:00 PM- 7:00 AM
Saturday: 6/10/2017- 7:30 AM- Expected to work until 11:00 PM
(Incident occurred at approximately 10:12 AM)

EVENTS LEADING UP TO THE INCIDENT

Extra work assignment was created for Engineering Department employees for an increase of train service for the Belmont Stakes that occurred on Saturday, June 10, 2017. The extra work shift was offered as a Protect, allowing for a quick response to track infrastructure issues that may arise throughout the day. The incident Engineering Work Gang was also tasked with inspecting insulated joints (IJs) within Queens Interlocking. The five crew members began their shift at Queens Freight Yard at approximately 7:00 AM. At about 9:00 AM, the Foreman conducted a Job Briefing, which consisted of the Roadway Worker Protection (RWP) that would be utilized.

The Track Foreman was required to identify the predetermined place of safety to clear during the Job Briefing. On September 13, 2016, the Track Foreman successfully passed a Roadway Worker In Charge exam with a score of 92%. He correctly answered exam questions indicating knowledge that before Roadway Workers are allowed to perform a task that will foul track; a form of Roadway Worker Protection must be established, a Job Briefing must be conducted and when using Watchmen, Roadway Workers must be informed the predetermined place of safety where they were to clear.

All Trackmen, and Drivers, working Queens Interlocking with the Foreman that Saturday had experience there prior, having gained familiarity with the Queens interlocking layout through their experience working Queens Interlocking track maintenance.

Train Approach Warning (Watchman) was chosen as the form of RWP for this assignment. After performing their inspections on Mainline 4 and Mainline 2, the Work Gang proceeded to walk west toward Queens Village Station, inspecting Mainline 1 and 3. At approximately 10:10 AM eastbound Train 7900 on Mainline 4 sounded the train horn per Rule 14L for the Work Gang. The Watchman and Work Gang acknowledged this train and remained on in-service track, Mainline 1.

As Train 7900 cleared the Work Gang, Train 7623 was operating westbound on Mainline 3. On the approach of Train 7623, the Watchman gave audible warning and utilized the Watchman's Disc as per RWP procedures. Three of the Work Gang employees saw the train. One member of the Work Gang recalled the train being "very close" when he first noticed it. The Work Gang remained on Mainline 1 as Train 7623 approached on tangent track, Mainline 3. They felt that remaining on in-service track Mainline 1 was the safest place to remain until the train on Mainline 3 cleared. According to their statements, the Work Gang members recalled that the train horn was activated on approach, however each employee recalled a different number of trains that traveled through the area.

Employee statements during NTSB interviews indicated that they would typically clear the tracks but on occasion they felt it was safer for them to remain in live track. Clearing for train movement from one main track to another main track where no foul time is established is a violation of the regulatory requirements specified in Federal Rail Road Administration Title 49 CFR Part 214 Railroad Workplace Safety and the LIRR the Long Island Rail Road Roadway Worker Protection Program On-Track Safety Rules and Procedures Manual.

Transportation Department – Operational Factors

On a regular weekday schedule, 12:00 AM-11:59 PM, there is a total of 352 trains that pass through Queens Interlocking, approximately 192 eastbound trains and 160 westbound trains. Respective to the

incident, on a regular weekday schedule, 9:00 AM-10:12 AM, there is a total of 19 trains that pass through Queens Interlocking, approximately 11 eastbound and 8 westbound trains.

On a regular weekend schedule, 12:00 AM-11:59PM, there are 215 trains passing through Queens Interlocking, with 106 eastbound and 109 westbound trains. Respective to the incident, on a regular weekend schedule, 9:00 AM-10:12 AM, there is a total of 12 trains that pass through Queens Interlocking, 5 eastbound and 7 westbound trains.

It is important to note that LIRR timetables only encompass passenger trains and does not account for additional equipment trains, work trains, or freight equipment moved on the property. As a result, trains traveling through any given LIRR area may exceed the number of scheduled trains within the timetable and is why employees are instructed and always reminded to remain aware when fouling live tracks and not to rely on timetable schedules only.

Due to the Belmont Stakes Event on Saturday June 10, 2017, there was an increase, approximately 94 trains that traveled through Queens Interlocking.

- 37 - Additional Eastbound
- 42 - Additional Westbound
- 15 - Additional Equipment trains.

Respective to the incident, the amount of additional trains added between the hours of 9:00 AM-10:12 AM were 3. These were 2 eastbound and 1 westbound.

Minutes before the incident, Train 7900 had traveled eastbound through the Queens Interlocking between 10:07 AM - 10:12 AM. M of E, the event recorder data indicates that the horn on lead locomotive Car 7256 was activated at 10:09.04 AM.

MEDICAL

LIRR medical evaluations of safety sensitive personnel are conducted in accordance with LIRR Corporate Policy and Procedures, Medical Assessment Policy MED-001, 49 CFR 240.121, and 49 CFR 242.117. Federal mandates require that Locomotive Engineers and Conductors have triennial hearing and vision exams. In October 2015, LIRR Medical Services cleared the Locomotive Engineer for duty. LIRR Medical Services conducts these exams on a biennial basis, exceeding the federal requirements. To date, the Locomotive Engineer has not returned to work and remains out of work due to critical stress.

ENGINEERING

The signal system was inspected and tested by the Engineering Signal Department. No exceptions were taken.

SIGHT DISTANCE ANALYSIS POST INCIDENT RE-ENACTMENT

An initial sight analysis performed by the NTSB, supported by the LIRR, determined that there was adequate sight distance for detecting approaching trains within the vicinity of the incident. The sight

distance when standing adjacent to Queens Tower is approximately 8000 feet to the east and 5000 feet to the west.

MAINTENANCE OF EQUIPMENT

Train 7623 consist lay out from west to east was 7695/7696, 7403/7404, 7417/7418, 7625/7626, 7049/7050, 7743/7744. All Electric Multiple Unit (EMU) rail cars of Train 7623 were within specifications and passed all required calendar-day and 92-day Periodic Inspections.

LIRR and FRA personnel performed post-incident inspections of the involved equipment and did not identify any defects nor exceptions that would have contributed to the accident. Records of one year of Car History Reports, FRA Locomotive Inspection and Repair Records, MU Post Accident Brake Test Incident Report, most recent Periodic Inspection records, and three Months of Calendar Day Inspection / Brake Tests were analyzed. Analysis of mechanical records did not reveal any anomalies nor equipment issues that could have been contributory.

M of E analyzed the event data recorder. From the last station stop, the train accelerated with no brake applied until the emergency application. The speed of Train 7623 just prior to being placed into an emergency brake application was 78 MPH. Statements and event recorder evidence indicate that the employee was struck at approximately 78 MPH. Additionally, the event recorder shows that a train horn activation was recorded at the Covert Grade Crossing and that the next recorded train horn activation was 2.6 miles later, 3.7 seconds prior to the emergency brake application.

Horn / Event Recorder Investigation

All employee statements indicate that the horn was sounded, however the lead locomotive Car 7695 data event recorder did not corroborate, the event recorder and horn assembly of Car 7695 were further analyzed. LIRR and FRA personnel performed testing of the incident train horn and a random car (7710) which was used as a control factor. The horns and pressure switches (which send input signals to the event data recorder indicating that the horns were actuated) of both the incident and control cars operated as intended in the field. The incident Car 7695 was operated at speeds similar to the incident train while operating the horn at differing time spans and decibel intensity. The data event recorder of Car 7695 was then analyzed to ensure that the use of the horns was recorded properly. Although on-board static and dynamic tests indicated no failures, further bench testing of the horn pressure switch revealed intermittent failures of the electrical contacts. Consequently, the components were removed from service and led to the replacement of the pressure switch from the 7695.

EQUIPMENT SPECIFICATIONS

Weight & Capacity for B-Cars

Weight (empty): 129,240 lbs.
Full Seated: 145,905 lbs.
Crush Load: 167,685 lbs.
Number Seated Passengers: 101
Number Standees: 132
Truck weight: 23,300 lbs.

Weight & Capacity for A-Cars

Weight (empty): 127,500 lbs.
Full Seated: 145,650 lbs.
Crush Load: 166,935 lbs.
Number Seated Passengers: 110/112
Number Standees: 129
Truck Weight: 23,300 lbs.

Dimensions A/B Cars:

Length over coupler face: 85' 0"

With over side sheets: 10'4 ¾"

Height (rail to roof): 12' 11 ½"

Height (rail to floor): 4'3"

Doorway Width 4'2"

Doorway Height 6'6"

Wheel Diameter (new) 36"

Truck Wheelbase 8'6"

Truck Centers 59'6"

FINDINGS

CAUSE

The employee failed to clear for an oncoming train and was struck.

Contributing Factors

As required by federal regulation and LIRR rule, train approach warning did not provide sufficient warning of at minimum 15 seconds for clearing to the predetermined place of safety before the passage of a train. Evidence suggests that the Track Foreman was not aware of the approaching incident train.

The following factors were evaluated and determined not to have contributed to this incident:

- Weather
- Lighting
- Operating Rules in effect
- The Locomotive Engineer's Qualifications
- Track Foreman's Qualifications
- Mechanical aspects of the Train 7623
- Track Infrastructure
- Signal System
- Sight Distance

MITIGATIONS

COMPLETED

The following mitigations were implemented following the incident:

- On June 12, 2017, the Engineering Department held a Safety Stand Down for all Engineering Employees to discuss the events of June 10th.
- On June 13, 2017, an LIRR informational notice "Red Alert" emphasizing adherence to applicable RWP rules was distributed to be shared with employees during job briefings and posted in ready rooms.

- On June 14, 2017, a notification of an FRA defect was issued to the LIRR for clearing to main track that had no working limits established.
 - A Passenger Train Emergency Analysis (PTEA) Debriefing and Critique was conducted on June 21, 2017 by the Transportation Department. Participants included LIRR Transportation, Corporate Safety, MTAPD, NYPD, and FDNY.
 - Corporate Safety FOCUS Day was held for all LIRR Employees system wide on June 29, 2017, reviewing train approach warning, predetermined place of safety and other relevant RWP rules.
 - On August 8, 2017, a Labor Management Partnership Meeting was established. This Committee has met on a bimonthly basis to discuss the LIRR On-Track Safety Program and initiatives to augment how employees are experiencing safety in the field. Below are a few of the accomplishments of this committee:
 - LIRR Training is being adjusted to be more personal for employees in class and emphasizing the consequences of not focusing on RWP and safety. They are also ensuring that all employees receive classroom training on hand signs during Annual Roadway Worker Training.
 - Labor and Management agreed to implement Mentor Program for new employees and Foremen. Engineering has sent letters out inviting employees to express interest in serving as a mentor.
 - A management point of contact has been established and is documented in the Site Specific Work Plan Package. This package is distributed the Friday before a Large Scale Job. The Manager communicates with the RWIC in the field to help allow the RWIC focus on the work and safety.
 - Training for all employees on the purpose of the program as well as a “how to” is being done in New Employee Orientation and will be reinforced in Annual Roadway Worker and Roadway Worker in Charge Training.
 - FOCUS talking points for the last quarter 2017 emphasized the relationship between rules and testing/observation. Talking points were reviewed by working group and feedback was provided.
 - In August 2017, all Engineering employees performing SAFER observations were directed to perform a minimum of six Roadway Worker Protection rule observations.
 - During the month of August 2017, LIRR supported FRA focused inspections of LIRR compliance with Title 49 CFR Part 214 Railroad Safety.
 - A third party consultant was hired by the LIRR to evaluate the following:
 - LIRR Roadway Worker Protection Program On-Track Safety Manual
 - Roadway Worker Protection Training Program
 - Observation and Testing Program
 - Track Car Training and Qualification Program
 - Track Foreman Training and Qualification Program
- As of August 2018, the LIRR has reviewed the recommendations and is in the process of assessing their effectiveness and feasibility.

IN PROGRESS

- LIRR is participating in an FRA study of Engineering Department employee incidents and schedules. We are awaiting the study results.
- In response to National Transportation Safety Board Safety Recommendations (R-18-006 and -007), MTA Headquarters is conducting an audit of LIRR use of Train Approach Warning.