

NTSB Investigation

NTSB number DCA FR009
FRA number HQ FE-2017-12
Queens Village, N.Y.
June 10, 2017

Fatality of a Long Island Rail Road Employee struck by Train 7623

Motive Power and Equipment Group

Field notes of FRA Motive Power and Equipment Team

Team members: Raymond Tyrrell, Mario Dillberti, Mark Frasella.

Content Synopsis:

Federal Railroad Administration (FRA) post MP&E investigation of the fatality of the Long Island Rail Road Employee struck by Train 7623. At approximately 10:12 A.M., June 10, 2017, 5 Long Island Railroad (LI) Engineering department personnel were performing work under watchman (flag) protection east of Queen Village station, Queens, NY, on Mainline 1, and as westbound (LI) Train No. 7623 approached the location on Mainline 3 (adjacent main track to Mainline 1), a (LI) Foreman stepped into the path of the train (LI No. 7623), and was struck and fatally injured. Equipment received a Post-Accident Brake test at the accident scene prior to the equipment was moved to the (LI) Hillside maintenance facility. A Motive, Power and Equipment (MP&E) post-accident inspection was performed on the equipment in accordance with 49 CFR Parts 238, 229,223 and 231 with no exceptions taken to the equipment.

On June 11, 2017 Federal Railroad Administration (FRA) requested and received from LI, The Post-Accident Brake test incident report, Form FRA F 6180-49A for all locomotives in the consist as well as the car histories for 1 year.

All records were reviewed and inspected with no exceptions noted.

On June 12, 2017 Federal Railroad Administration (FRA) requested and received from LI the last 92 inspection records for all locomotives in the consist.

All records were reviewed and inspected with no exceptions noted.

Train information:

LI Train 7623 consisted of twelve electrically propelled MU locomotives; model M7, built by Bombardier 2002-2005. EMU M-7 locomotives are semi-permanently coupled and operate in married pairs of A&B cars with 2 trucks per car, power for the equipment is provided by a 650-volt system transmitted through a third rail to current collectors located on both sides of each truck.

Consist: 7695-96,7403-04,7417-18, 7625-26,7049-50, 7743-44.

The MU locomotive No. 7695 was in the lead with the engineer positioned at the controls.

Significant observations: Post accident

1st Mu locomotive LI 7695:

Front left under the observation there is damage to the fiberglass shell and the lower left bottom skirting is damaged as well as some damage to the air piping brackets.

2nd Mu locomotive LI 7696:

No damage or defects noted.

3rd Mu locomotive LI 7403:

No damage or defects noted.

4th Mu locomotive LI 77404:

No damage or defects noted.

5th Mu locomotive LI 7417:

No damage or defects noted.

6th Mu locomotive LI 7418:

No damage or defects noted.

7th Mu locomotive LI 7625:

No damage or defects noted.

8th Mu locomotive LI 7626:

No damage or defects noted.

9th Mu locomotive LI 7049:

No damage or defects noted.

10th Mu locomotive LI 7048:

No damage or defects noted.

11th Mu locomotive LI 7743:

No damage or defects noted.

12th Mu locomotive LI 7744:
No damage or defects noted.

Equipment specifications:

Weight & Capacity for B-Cars

Weight (empty) 129,240 lbs.
Full Seated 145,650 lbs.
Crush load 166,935 lbs.
Number seated passengers 101
Number standees 132
Truck weight 23,300 lbs.

Weight & Capacity for A-Cars

Weight (empty) 129,500 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:

Length over coupler face 85' 0"
With over side sheets 10'4 .75"
Height (rail to roof) 12' 11.50"
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"

Horn activation design:

Modulated horn control is accomplished by manually activating the fully modulated horn control valve. This provides a metered flow of air from the main reservoir pipe to the horn and a horn pressure switch.

Horn pressure switch (HPS):

The HPS contains one double pole double throw electrical switch. The HPS annunciates air pressure in the horn supply pipe. The pressure switch contact closes on increasing pressure at approximately 7 psi and opens at decreasing pressure at approximately 4 psi. However, the

pressure setting was modified do to ATC constraints the pressures are now set at 20 psi and 17 psi respectfully. (see attached)

Event recorder:

The event recorder was brought into question do to conflicting accounts between eyewitness and the downloaded horn events that was recorded prior to the accident. Also questioned was that the event recorder did not capture the duration of the horns activation.

Horn/ Event recorder testing observations:

The horn was activated on June 12, 2017 on car 7695 at the request of the NTSB for a series of horn tests that included one 10 second, one 4 second, one 5 second one 1 second and one 5 second activations and the event recorder be downloaded. When viewing the horn in the download in the graph option the horns duration is captured but the graph must be expanded to the 10 second level to capture the timing.

On June 13,2017 testing was performed at Hillside shop on car 7710 to verify that the event recorder does record the duration of the horn activation. The event recorder performed as intended.

The event recorder down load of the incident train 7623 was analyzed for its horn operation of car 7695 to verify the engineer's actions prior to the fatal strike. The data shows that the horn was activated at the Covert grade crossing then the train traveled 2.6 miles when the next horn activation was just prior to the incident.

On June 14, 2017 a second test was conducted on car 7695 consisting of: a 2 second full blast , 2 second break, 2 second light pull (just enough to allow the horn to make a sound) a 2 second break, a 2 second light pull, 2 second break, a 2 second slightly heavier pull, a 2 second break, a 2 second half pull, a 2 second break and a 2 second full pull The download was compared to the above.

The event recorder performed as intended.

Conclusion:

The event recorder performed as intended.

Attachments:

1. (96 report) LI FE-2017-12 6-10-17
2. MU Accident Incident Report
3. Blues
4. CDI-Class 1 & Class 1A Inspections 3-1 to 6-10
5. 7695 Air Brake card
6. 7623 Brake slip
7. Car Case History 1 yr. Train 7623- part a

8. Car Case History 1 yr. Train 7623- part b
9. Inspection packets
10. Horn information
11. Event Recorder testing
12. Train 7623 car 7695