



Charles D. Baker, Governor  
Karyn E. Polito, Lieutenant Governor  
Stephanie Pollack, MassDOT Secretary & CEO  
Frank DePaola, General Manager  
Brian Shortsleeve, Chief Administrator



February 26, 2016

Mr. Scott Andrews  
Assistant Director of Transportation  
Department of Public Utilities (DPU)  
One South Station  
Boston, MA 02110

Dear Mr. Andrews:

Attached for your review is MBTA Safety's Final Incident Report #A15-367. This involved an unintended train movement at Braintree Station on the Red Line on December 10, 2015.

If you have any questions or comments, please contact me at 617-222-6547.

Thank you.

Sincerely,

Ronald W. Nickle  
Chief Safety Officer

RWN/tpd

Attachments

cc: F. DePaola  
J. Gonneville  
R. Clarke  
T. Johnson  
W. McClellan



GENERAL INFORMATION						
<b>Incident Classification:</b> Unacceptable Hazard						
<b>Incident Description:</b> Near Miss - Unattended Red Line Train Movement						
<b>Date of Event:</b> 12/10/2015	<b>Time:</b> 6:08 AM	<b>Location:</b> Braintree Crossover			<b>Line:</b> Red Line, Braintree Branch	
<b>Route:</b> #933, northbound		<b>Weather Conditions:</b> Temp: 45° F Wind: 3 mph Cloudy		<b>Operator:</b> David Vazquez (# [REDACTED])		
<b>DPU Report #:</b> 3787		<b>Witnesses:</b> 50 passengers onboard Train #1502		<b>Instruction Department Determination:</b> N/A		
<b>Industry Safe #:</b> FY15-4830						
<b>Re-instruction:</b> N/A		<b>Discipline:</b> Yes		<b>Safety Investigator:</b> Ronald W. Nickle Chief Safety Officer 857-321-3255 <a href="mailto:rnickle@mbta.com">rnickle@mbta.com</a>		
INJURY AND FATALITY INFORMATION						
Fatalities and Injuries	Employee	Passenger	Vendor/ Occupant	Pedestrian/ Motorist	Trespasser	Contractor
a. Injuries	1	0	0	0	0	0
b. Fatalities	0	0	0	0	0	0
PROPERTY DAMAGE & IMPOUND INFORMATION						
<b>Property Damage (Dollar Amount):</b> \$500.00						
<b>Impound:</b> Yes			<b>Impound #:</b> 11648			
<b>What was Impounded:</b> Train #1502 <b>Why:</b> Inspection and Testing			<b>Impound requested by:</b> Red Line			
<b>Evacuation:</b> No			<b>Service Interruption:</b> > 60 minutes			
<b>NTSB Notification:</b> Yes			<b>FTA Notification:</b> Yes			

**Final Report #A15-367  
February 26, 2016**

**Incident Description**

On December 10<sup>th</sup>, 2015, at approximately 6:08<sup>1</sup> AM, Red Line Chief Inspector Todd Downey (#■■■■■) reported to MBTA Operations Control Center (OCC) that Train #1502-1503-1612-1613-1735-1734 (Train #1502) was moving on the northbound track north of Braintree Station, and there was no Motorperson onboard Train #1502. OCC dispatchers cut power to the northbound track between Braintree Station and North Quincy Station to disable Train #1502. After losing power, Train #1502 coasted to a stop just north of North Quincy Station, having traveled approximately 5.5 miles north from Braintree Station.

Prior to the incident, Train #1502, operated by Red Line Motorperson (MP) David Vazquez (#■■■■■), departed Braintree Station. MP Vazquez set the cineston control handle to the full propulsion mode, and inhibited the cineston's dead-man feature<sup>2</sup> by wrapping the public announcement microphone cord around the control dial, wedging the cord between the handle and the base plate indicator.

Approximately 300 feet north of Braintree Station, as Train #1502 approached the Braintree crossover, the Automatic Train Operation<sup>3</sup> (ATO) system experienced a wayside cab signal failure, resulting in a "stop and stay" code<sup>4</sup>, which prevented Train #1502 from moving further.

At approximately 6:04 AM, MP Vazquez requested permission from OCC to activate the emergency bypass<sup>5</sup> on Train #1502 in order to proceed past Braintree crossover. OCC granted MP Vazquez clearance to operate Train #1502 on emergency bypass to Quincy Adams Station.

MP Vazquez exited the front door of the driver's cab of Train #1502 to access the emergency bypass switch, which was located on the front exterior of the train. MP Vazquez did not remove the microphone cord that inhibited the cineston dead-man feature, nor did he set the hand brake, as required by procedure. As MP Vazquez activated the emergency bypass switch on Train #1502, the unattended train accelerated to 25 MPH<sup>6</sup> as the cineston was set to the full power position.

MP Vazquez suffered a laceration to his right leg while attempting to avoid the train. MP Vazquez proceeded back to the Braintree Station Chief Inspector's Office – a distance of about 750 feet – and notified Chief Inspector Downey that Train #1502 was moving without an operator. Chief Inspector Downey contacted OCC to report the unattended train incident and requested medical attention for MP Vazquez.

At approximately 6:11 AM, OCC dispatchers opened power to Power Sections B-7 and B-9, which extend on the northbound track from the Braintree crossover to north of Quincy Center Station. OCC dispatchers instructed Train #1603, proceeding northbound in front of Train #1502, to continue travelling and not make any station stops.

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1 Unless otherwise stated, all times of events were determined by a review of OCC transmission recordings.

2 A train protection system that defaults to a full-service brake condition if the operator fails to apply continuous pressure to the cineston control.

3 Automatic Train Operation (ATO): an operational and safety system to regulate speed, brakes and signal protection.

4 A cab signal sent electronically through the running rail that limits the train's speed to 0 mph when ATO is active.

5 Emergency bypass limits specific Automatic Train Protection (ATP) functions of the ATO system (signal, brake, speed) in order to allow train movement under prescribed operating conditions and rules.

6 Propulsion on trains operating under emergency bypass is limited to 25 MPH.

**Final Report #A15-367  
February 26, 2016**

At approximately 6:13 AM, OCC dispatchers opened Power Section B-13, immediately north of Power Section B-9. Approximately three minutes later, Power Section B-15, a section on the northbound track between North Quincy Station and JFK/UMass Station, was opened. OCC dispatchers instructed Train #1603 to proceed without stopping to Andrew Station. At approximately 6:21 AM, Train #1502 came to a stop between North Quincy Station and JFK/UMass Station.

Red Line Supervisor Rick Brown (# [REDACTED]) and Red Line Inspector Kevin Conroy (# [REDACTED]) boarded a southbound train, which was taken out of service, at JFK/UMass Station and proceeded to Train #1502. Supervisor Brown and Inspector Conroy secured Train #1502, removed the train from emergency bypass mode, applied the hand-brake, and returned the cineston to the full-brake position. Supervisor Brown and Inspector Conroy confirmed there were no passenger injuries onboard Train #1502.

At approximately 6:49 AM, power was restored to Power Section B-15. Train cars #1502 and #1503 were isolated from the rest of the train consist and pushed to JFK/UMass Station to offload 50 passengers. Train #1502-1503-1612-1613-1735-1734 was then shifted to Cabot Yard and subsequently train cars #1502-03 were impounded for inspection.

According to MBTA OCC logs, at approximately 7:13 AM, Red Line service resumed.

**Historical Review**

As part of the hazard and risk analysis review, the investigation team conducted a historical review of prior MBTA train incidents with similar characteristics to the subject incident. Additionally, the team examined other occurrences investigated by the NTSB of related transit and railroad incidents nationwide.<sup>7</sup>

The purpose of the analysis is to determine the hazard risk of the subject incident by examining, findings, frequency and severity of prior incidents, and other pertinent safety recommendations as part of the corrective action assessment.

**MBTA**

Over a three year span, the team identified one (1) incident involving train rollback which resulted in a collision with damage, ten (10) minor passenger injuries, one (1) injury with transport of the operator, and a service disruption of 2.25 hours, as follows:

- **November 26, 2014 – Unintended Train Movement (Rollback) – Cedar Grove Station, Mattapan Line**

On November 26, 2014, at 6:28 AM, Presidents' Conference Committee (PCC) streetcar #3238 became disabled due to a streetcar subsystem fault at Cedar Grove Station. The vehicle was offloaded, and operator Robert Clancy # [REDACTED] set up car #3238 for a tack-on by the following vehicle #3087. Operator Clancy failed to apply the hand brake on car #3238 and when he released the train's air line brake system, the train rolled back. Operator Clancy

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<sup>7</sup> Unattended or Unintended Train Movement Parameters: a. No operator at controls; b. Deadman switch or other safety device bypassed, tampered with or apparent failure; c. Does not include intentional, remote, or yard unattended movements.

**Final Report #A15-367  
February 26, 2016**

attempted to stop the streetcar via the hand brake mechanism. The hand brake mechanism failed to stop the streetcar's movement and it collided with streetcar #3087.

**Probable Cause(s)**

The probable cause of the incident was failure to follow prescribed tack-on procedures, which require setting the hand brake and releasing the air brakes only after the vehicle has been tacked onto the rescue vehicle.

**Contributory Cause(s)**

The investigation, review, and analysis of the incident determined the following contributory causes:

1. Limited Operator familiarity with Mattapan Line operations lay up procedure, and braking tools (such as the magnet track-brake toggle switch).
2. Operators from the Green Line are not required to retrain on the Mattapan Line after long periods away from its operation.

The MBTA unintended train movement was the result of errors in procedure, particularly setting the hand brake. The resulting corrective action reported to the DPU at that time was to re-instruct the operator with respect to hand brake application requirements.

**National Transportation Safety Board (NTSB)**

MBTA Safety reviewed NTSB accident reports for the past twenty years (since 1995), and discovered three relevant incidents:

<b>Report #</b>	<b>Agency</b>	<b>NTSB Title</b>	<b>Accident Date</b>	<b>Probable Cause</b>
<b>RAB-15-02</b>	Chicago Transit Authority (CTA)	Railroad Accident Brief: Collision of Two Chicago Transit Authority Trains	9/30/2013	Water in the control cables of two cars, which caused errant control signals to be sent to the cars' power systems. Contributing to the accident was the Chicago Transit Authority's practice of not securing unattended equipment.*
<b>RAB1402</b>	Angel's Flight (funicular)	Angel's Flight Railway Derailment	9/5/2013	Funicular safety system bypassed with a stick. **
<b>RAB-11-04</b>	San Francisco Municipal Railway Transit System (MUNI)	Collision of Two Municipal Transportation Agency Light Rail Vehicles	7/18/2009	Motorperson bypassed automatic train control without permission

**Final Report #A15-367  
February 26, 2016**

In response to RAB-15-02, the NTSB issued two Urgent Safety Recommendations to the CTA in response to the agency's **failure to secure an unattended or unoccupied train**, which stated:

R-13-034:

*“Review your operating and maintenance procedures for stored unoccupied cars to ensure the propulsion and brake systems are left in a condition that would not facilitate unintended movement.”*

R-13-035:

*“Immediately implement redundant means of preventing unintended rail car movements, such as wheel chocks or a derail device.”*

Additionally, the NTSB issued Urgent Safety Recommendation R-13-036 to the Federal Transit Administration (FTA), asking FTA to “issue a safety advisory to all rail transit properties asking them to review their operating and maintenance procedures for stored, unoccupied cars.”

In response to RAB1402, the NTSB issued Urgent Safety Recommendation R-13-037 to the California Public Utilities Commission (CPUC), which stated the following:

*“Before authorizing it to resume passenger service, independently verify that the Angel’s Flight Railway meets all applicable accepted industry standards and engineering practices including:*

- (1) preventing excessive wheel and track wear;*
- (2) providing emergency stopping under all foreseeable failure modes;*
- (3) ensuring safety systems are not bypassed;*
- (4) preventing passenger ejection in the event of a collision; and,*
- (5) providing a suitable means of emergency egress for passengers and ingress for emergency responders.”*

As part of an effective approach to analyze concerns, MBTA utilizes findings and recommendations that have been issued to other transit properties. While they do not have direct bearing on MBTA, we use them as part of our assessment process to provide guidance to our recommendations. MBTA Safety will incorporate the highlighted recommendations into its investigation, hazard and corrective action analysis.

**Injuries and/or Fatalities**

MP Vazquez was transported to South Shore Hospital with lacerations to his right leg. He was examined, treated, and released by the hospital the day of the incident.

The injuries appear to be related to MP Vazquez being struck by the unattended train or as a result of his trying to avoid being injured by the train as it accelerated. The location of the emergency bypass switch would have placed MP Vasquez standing on the left front side of the train, directly in the path of the train’s forward movement.

**Clinic Evaluation**

After being released from the hospital, MP Vazquez was transported to the MBTA Clinic for a post-

**Final Report #A15-367  
February 26, 2016**

incident evaluation. MP Vazquez was tested for prohibited drugs; results were negative. MP Vazquez was not tested for alcohol because he did not arrive at the MBTA Clinic within eight hours of the incident as required by MBTA's Drug and Alcohol Policy, due to his hospitalization and law enforcement investigation.

MP Vazquez was determined to be "not fit for work" because he did not attend a post-incident doctor's appointment scheduled for December 14, 2015, as required.

While drug & alcohol testing is a requirement, there is no evidence from any statements, interviews or observations to indicate the drugs or alcohol were contributory to this incident

**Property Damage**

The following property damage was estimated to be \$500, as a result of a passenger attempting to kick out the window panel:

- Damage to the glass on the D-1 passenger door on Vehicle #1503.<sup>8</sup>

**MBTA Personnel**

As part of the investigation and analysis process, MBTA Safety examined, interviewed and summarized pertinent information, statements, interviews, files and other details of the MBTA personnel involved directly or indirectly with the incident.

**Red Line Motorperson**

Name: David Vazquez

Employee #: [REDACTED]

Occupation: Rapid Transit Motorperson (full time)

Years of Service: 25 total (1987-1991, 1994-2015)

The investigation has determined the following information relating to MP Vazquez:

1. **Employment History:** MP Vazquez was first hired in March 1987. He worked briefly on the Red Line, and then moved to the Blue Line in May 1987. He resigned from the Blue Line in 1991, and was rehired to the Red Line in 1994. He continued to work on the Red Line until the date of the incident.
2. **Prior Violations:** Review of his past record, which spans 25 years of service, indicates thirteen (13) past rule violations, including five (5) safety violations:

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<sup>8</sup> After the train came to a stop, passengers attempted to self evacuate by damaging one door window on #1503. Passengers did not evacuate as personnel responded before anyone exited the train.

**Final Report #A15-367  
February 26, 2016**

- a. April 1, 2013 – Flagging site violation. Proceeded at approximately 40 mph through a flagging site that had limited clearance.
- b. May 10, 2011 – Flagging site violation. Proceeded through a Level 1 flagging site at line speed, which had no clearance for workers.
- c. August 31, 2006 – Use of bypass through a flagging site. Violated the double red and proceeded through a flagging site without proper clearance.
- d. August 24, 1997 – Proceeded on manual release without proper clearance or permission.
- e. May 15, 1995 – Code 3 derailment in the Cabot Yard. Failed to follow instructions and operated a train from the wrong track (Track #4 instead of #3) causing train on train contact and a derailment.
- f. The other eight (8) violations were related to attendance, courtesy, and failure to make PA announcements.

**3. Investigation Details:** In summary, the investigation determined the following details regarding MP Vazquez’s actions and declarations on the morning of December 10, 2015:

- a. MP Vazquez was scheduled to start his day at 6:00 AM and was assigned to Motorperson’s Run #1020.
- b. The OCC log at 6:08 AM states:  
*“Train 1502 on P2 Braintree request permission to place the train on the emergency bypass as 1502 will not take a manual release. (Manual release needed as a result of Braintree Crossover on hand due to an ongoing code failure in the Braintree area.)”*
- c. Employee statements reported that MP Vazquez entered the Chief Inspector’s office at approximately 6:09 AM and requested medical. He informed the Chief Inspector that his train was moving without him on board, and he was subsequently injured as the train departed the Braintree Crossover.
- d. MP Vazquez provided a written statement on December 10, 2015, indicating the following:  
*“At the time I was putting on my gloves with the mike cord on top of the cynister [sic] handle wedged...It was operator error, my fault. The light was off in the cab I could not see the situation at hand. I forgot and misplaced what I had done after talking to the dispatcher.”*

Investigation Comments: MP’s Vazquez’s hand written statement confirms a number of other investigation findings from witnesses, responding employees, and system characteristics that concluded the cineston deadman feature had been inhibited and/or tampered with using the PA Microphone cord, which led to the unattended train event.



**Final Report #A15-367  
February 26, 2016**

4. **Safety Fact Finding:** MP Vazquez did not report to the Safety Fact Finding<sup>9</sup> meeting scheduled for December 14, 2015, as directed by management, to answer questions regarding the incident.

**Operations Control Center (OCC)**

The following OCC employees were involved with the unattended train incident; statements made by each of these individuals were reviewed and are summarized as follows:

1. Mark G. McNeill (# [REDACTED]) – OCC Supervisor:  
Mark McNeill was assigned to supervise OCC on the morning of December 10, and was the supervisor directly responsible for the actions taken to halt the train movement.
2. Ainsley Saunders (# [REDACTED]) – Dispatcher:  
Ainsley Saunders was assigned to the Red Line (Braintree Branch, Cabot Yard, and the junction area at JFK) on the morning of December 10, and was the dispatcher directly responsible for the actions taken to halt the train movement.
3. Eugenia Adams (# [REDACTED]) – Dispatcher:  
Eugenia Adams was assigned to the Alewife-Ashmont segment of the Red Line on the morning of December 10. According to her statement, Dispatcher Adams notified Transit Police (TPD) and medical of MP Vazquez's injury.
4. Jackie Everidge (# [REDACTED]) – Dispatcher:  
Jackie Everidge was assigned to the Orange Line on the morning of December 10. He was asked by OCC Supervisor McNeill to speak with Chief Inspector Downey (Employee ID # [REDACTED], Portable Radio #119) regarding the incident to gather further information.

The power dispatcher at the time of the incident was Brad Byrne (# [REDACTED]). MBTA Safety did not receive a statement from Power Dispatcher Byrne.

The investigation confirmed that the OCC and power dispatch teams under the direction of Mark G. McNeil, OCC Supervisor, effectively and safely brought the subject train consist to a stop, utilizing a series of actions to clear the track way of potentially conflicting trains, and power disruptions to eliminate propulsion. The processes used were based on best practical judgment, falling outside the scope of established rules, procedure, special orders or practices.

MBTA Safety's analysis of unattended train movement incidents nationally and internationally determined that such unattended incidents resulted in either a derailment or collision with another train, equipment or stations. The consequences of such events entailed loss of life, injuries and damages.

The actions of the OCC and power dispatch teams are not only commendable, but represent a highly effective risk crisis management process to address a volatile and transient event. The lessons learned

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<sup>9</sup> A Safety Fact Finding is a post accident interview of person(s) involved in an incident or accident. The employee is directed to attend the meeting, which includes members of management, labor representation, Safety, Training and other pertinent departments. The purpose of the meeting is to ask questions and determine specifics relating to the incident or accident.

**Final Report #A15-367  
February 26, 2016**

benefits of the team's effectiveness in handling this circumstance should be incorporated into future training and procedural improvements.

**MBTA Field Personnel**

The following employees were involved with the unattended train incident, and statements were provided by all of these individuals. Relevant portions of their statements are cited or summarized below:

1. Rick Brown (# [REDACTED]) – Supervisor, Red Line Transportation:  
Supervisor Brown's statement indicated the following:

*"I did see cord from wall microphone wrap around the cineston handle."  
"A passenger informed me that the microphone cord was wrapped around the handle with no Motorperson in sight."*

Supervisor Brown participated in a Safety Fact Finding on December 14, 2015, where he further confirmed his written statement. He re-affirmed his observation of the placement of the Public Address (PA) microphone cord wrapped around the cineston handle and positioned in full power. He also stated that the handbrake was not set.

MBTA Safety met with Supervisor Brown to further discuss his observations. He described clearly the way the microphone cord had been wrapped around the cineston. He indicated that that the cord had been wrapped twice and clockwise around the circular dial of the cineston along a horizontal plane, with the width of the cord placed between the gap of the cineston dial and the propulsion indicator.

Upon boarding the train, Supervisor Brown met with two passengers who were in the cab and confirmed by interview that they had accessed the cab through the cabin door after the train had come to a full stop. The passengers had noticed that the lights had gone out, and that the train had come to a stop with no announcements or direction by MBTA personnel. At this juncture they had decided to enter the operating cab, and found it vacant.

These two passengers pointed out to him the placement of the cord around the cineston, and one of the passengers had taken a photograph. He also determined that passengers expressed concern as to the whereabouts of the operator, but did not seem particularly alarmed or distressed by the event. There was no indication of panic.

Supervisor Brown provided clear details of his observations; providing articulate recall and outstanding clarity.

2. Kevin Conroy (# [REDACTED]) – Inspector:  
Inspector Conroy's statement indicated the following

*"Cineston was in full power position and hand microphone cord was wrapped around*

**Final Report #A15-367  
February 26, 2016**

*handle.”*

Inspector Conroy provided the following answers to questions as part of the Safety Fact Finding on December 14, 2015:

*Q: In your own words, could you please tell us what happened on Thursday December 10, 2015?*

*A: I climbed up onto the train and cranked the hand brake, and noticed that the cineston was in full power with a cord wrapped around the handle. I pushed the cineston over to full brake. The cord of the microphone was wrapped around the cineston handle.*

*Q: Did you see any control features of the train tampered with?*

*A: The cineston handle was wrapped up in the cord from the microphone.*

*Q: What was the condition of the cineston handle?*

*A: Full power and wrapped in the microphone cord.*

*Q: Did you see any control features of the train tampered with?*

*A: Hand held microphone wrapped around the cineston handle.*

MBTA Safety conducted a further interview to clarify aspects of Inspector's Conroy statement. He confirmed seeing the placement of the microphone cord wrapped around the cineston handle. Inspector Conroy was able move the cineston to full brake and then unwound the cord in order to recover the train. He could not recall the exact specifics of the way the cord was wrapped as he was busy checking on passengers. He walked through each of the cars, and observed passengers as being curious and generally calm. He did observe one person who had attempted to kick out a window, but stopped once he arrived.

Inspector Conroy provides good recall and clarity with respect to the position of the cineston, and confirmation of the cord being wrapped around controller.

3. Todd Downey (# [REDACTED]) – Chief Inspector:

According to Chief Inspector Downey's statement, MP Vazquez came into the Chief Inspector's office at Braintree stating the train he was operating almost ran him over. Chief Inspector Downey immediately called Dispatcher Saunders to inform him of the "runaway train," and to report MP Vazquez's injuries. Chief Inspector Downey applied first aid to MP Vazquez, and after 10 minutes called 911 to get medical.

4. Dan Reimer (# [REDACTED]) – Part Time Motorperson:

MP Reimer's statement indicates he worked the overnight shift at Caddigan Yard prior to the incident. He further declared:

*"Before service I went through the trains to make sure they were prepared. At this time I went through train number 734-613-502 the train was ready for service, PA's, Doors, ATV all in working order. There were no issues with the train."*

5. Thomas Johnson (# [REDACTED]) – Yard Motorperson:

Yard MP stated:

**Final Report #A15-367  
February 26, 2016**

*“I Thomas Johnson bought [sic] the train below 734-613-502 out of the Caddigan Yard this morning for service. This train was used yesterday and last night before it was laid up with no problems. When I bought [sic] up the train I normald [sic] the PA’s the phone and the ATO compartment the train was cycled cleaned and ready for service nothing else follows.”*

6. Leanne Joyce (# [REDACTED]) – Motorperson:

MP Joyce confirmed Chief Inspector Downey’s statement that MP Vazquez reported the incident to the Chief Inspector in person at the Chief Inspector’s office at Braintree. She confirmed also that Chief Inspector Downey called OCC to inform them of the unattended train and MP Vazquez’s injuries, and she states that she helped Chief Inspector Downey apply first aid to MP Vazquez’s leg.

7. Christopher Shea (# [REDACTED]) –Deputy Director of Transportation:

Deputy Director Shea stated the following in an email to MBTA Operations senior management at 1:47 PM on December 10:

*“I just had a conversation with Mr. Vazquez in the presence of Nikki Ortiz and he was forthcoming with me about his role in this morning’s incident. He stated that he put the PA cord around the cineston handle in order to put his gloves on and once he got gloves on he realized he didn’t have the code. He then stated he called for the bypass and went outside of train without removing the PA cord, leaving the cineston in full power position and causing the train to move without him being in cab.”*

8. Nikki Ortiz (# [REDACTED]) – Superintendent:

Superintendent Ortiz witnessed the conversation between Chris Shea and MP Vazquez (referenced above). She conducted a fitness for duty check on MP Vazquez, ordered a post-incident drug and alcohol screening, and escorted MP Vazquez to MBTA Medical Services (10 Park Plaza).

The investigation of involved MBTA personnel provides essential details used to develop the respective findings detailed within the report, and general overview of important aspects used to construct the probable and contributory causes described herein. It is clear from the observations that the hand brake had not been set and that cineston’s deadman feature had been inhibited.

**Train 1502-03**

1. **Pullman-Standard 1500 Series:** Train consist 1502-1503 is part of a fleet of twenty-four (24) Pullman-Standard 1500 series cars that were built for the MBTA in 1968-1969 (47 plus years in operation. The 1500 series received a mid-life overhaul in 1985-1987.
2. **Rapid Transit Line (RTL) Maintenance Engineering**

RTL Maintenance Engineering inspected Train #1502-03 following the incident. RTL Maintenance Engineering inspections and testing determined the following:

**Final Report #A15-367  
February 26, 2016**

1. Brake rates were within specification.
2. Brake shoes were within thickness specification.
3. The cineston functioned as designed.
4. The ATP cineston dead-man feature functioned as designed.
5. The handbrake ATP subsystem functioned as designed.
6. Passenger emergency braking ATP system performed as intended.<sup>10</sup>
7. Passenger Emergency Intercom (PEI) breaker was found switched off during testing.
8. PEI handset in Vehicle #1502 cab had garbled audio from passengers, which may have been caused by the removal of the PA microphone for evidence in the police investigation.
9. ATP system and subsystems functioned as designed.
10. Emergency bypass modes functioned as designed.

RTL Maintenance Engineering did not identify any defects or limitations in the ATO, ATP, manual release, emergency bypass, deadman feature or braking systems that could have contributed to the incident. All systems performed and functioned as designed. The PA system and breaker position did not contribute to the unattended train event and were most likely affected when the cord was removed during the police investigation.

It is important to note that the 1500 series train protection system's design prohibits propulsion if the deadman feature is engaged. The train also inhibits forward motion or propulsion power if the hand brake is set. The train's design automatically places the train into a full service or emergency braking in the event the train is in motion and the system engaged.

Based on the automatic train protection design and the post incident inspection and testing confirmations; the investigation concludes that the train's performance was not a contributing factor to the incident.

Operating procedures require personnel to engage the hand brake anytime the operator leaves the cab or stows the train. Further, the deadman feature's design protects the train in the event the switch is deactivated either by the operator becoming incapacitated, distracted or by intentional means. Setting the hand brake and engaging the deadman feature both represent safety critical operational functions and require rigorous compliance by operating personnel.

The hand brake train protection system performed in accordance with system design safety requirements. The hand brake train protection system provides critical levels of system safety protection against inadvertent train movements when the hand brake is applied. Failure to set the hand brake represents an undesirable safety risk; requiring effective administrative controls to be implemented, enforced and monitored to ensure compliance of this safety critical function.

The post incident test and inspection confirms the viability and functionality of the hand brake train protection safety capability. The investigation analysis therefore concludes that the hand brake had not been set when the operator exited the operating cab, and is in direct violation of specified safety

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<sup>10</sup> Passenger emergency braking system: Located at the ends of each car, allow passengers to activate the emergency braking system. Activation of the handle places the train into emergency brake and allows for evacuation.

rule requirements.

The investigation further surmises that inhibiting or tampering with the deadman feature or any other train protection safety device is an unacceptable violation. The deadman feature is a safety critical train protection system and violations of such protection is strictly prohibited, and based on the investigations findings, is the probable cause of the unattended train event.

### **3. Cineston Design**

The cineston is designed to allow the lever to be depressed and then rotated to the selected propulsion, coast or braking mode. The downward force actuates the deadman switch. Once engaged into the appropriate mode, the downward pressure to hold the lever in position is minimal and can be held in position with one finger. There is no other force necessary to maintain the deadman switch in the selected mode. The downward exertion can be maintained with either hand.

Post incident downward force testing was performed to determine the energy force necessary to actuate the downward pressure of the deadman component of the cineston. Test results of the deadman switch indicate a downward force of 3.5 to 5 lbs is needed to actuate and hold the switch mechanism in position.

Comfort design dynamics suggest that hand strength sustained hold is 33 to 35 lbs; representing the amount of force a person can comfortably maintain with their hand grip for a sustained period of time.

The downward arm strength sustained hold depending on flexion of the arm at the elbow is estimated as follows:

- 120 degrees is 20 – 26 lbs.;
- 90 degrees is 20 – 26 lbs;
- 60 degrees is 18 to 20 lbs.

Based on the general hazard assessment, the downward force of 3.5 to 5 lbs is well below the sustained strength modeling described herein.

As part of the investigation, MBTA Safety conducted a random survey of a number of Red Line employees. Employees reported the ease of operation of the cineston handle, and deadman switch activation characteristics of the design. Employees also indicated that a person can switch hands.

The cineston handle is placed into its appropriate mode of operation at departure from a station and a downward force is maintained during the travel time between stations. The hold times vary depending on the distance between stations and operating conditions. Generally the hold times range from less than a one (1) minute (Downtown Crossing to Park Street, 0.22 miles) to eight (8) minutes (JFK/UMASS to North Quincy, 3.53 miles). During the duration of the travel time between stations the operator adjusts the mode of operation between propulsion and braking leaving and entering a station, or in response to speed restrictions.

During field examination, MBTA Safety personnel confirmed the ease of operation and the comfort level the design affords. MBTA Safety concludes that the comfort design of the cineston is within acceptable limits.

### **Signals and Communications**

OCC receives and transmits signal information via an analog communication system to the Braintree Crossover signal system. This system includes MBTA equipment at OCC and at the Braintree bungalow, which are connected via analog connections leased by Verizon. Because the system is non-vital, the system has redundancy with both “Normal” and “Standby” pathways and equipment.

Prior to the incident, from December 8 through December 10, 2015, both the Normal and Standby MBTA equipment logged communication and signal failures. The failures were intermittent, lasting from 20 seconds to a couple minutes at a time.

On December 8, in response to the failures, maintainers tested and rebooted the MBTA Programmable Logic Controllers (PLCs) to troubleshoot the faults. After testing, MBTA equipment was found to be functional and the failures were attributed to a poor connection on the leased Verizon signal network.

As train #1502 departed from Braintree station, the operator was given permissive signals to advance to the Braintree crossover and travel northbound. At this time, the crossover switches were in powered mode (controlled from OCC via the communication system). Subsequently, a communication failure to OCC occurred. This “code failure” resulted in a fail-safe condition for the signal system – red stop signals – which was picked up by the train. The failure also prevented OCC from detecting the position of Train #1502 until it entered the proceeding signal section at Quincy Adams Station.

Post-incident, Verizon replaced/repared their leased line connections to a stable functional condition. Following the incident, a test was conducted for electrical continuity at the insulated joints. This test determined system functionality and did not find the insulated joints to be contributory to the incident or signal failure. Signal infrastructure for the crossover was inspected and showed no signs of defects.

The Signals & Communications Department has appropriated funds to extend a signal trough from North Quincy to Braintree Station. This would replace the existing, aging data cables and provide a more robust signal without reliance on Verizon services.

While the communication and signal failures did not directly affect or contribute to the near miss unattended train incident; persistent and intermittent system failures do present an undesirable condition as they introduce abnormal operating conditions which may increase operational safety risks.

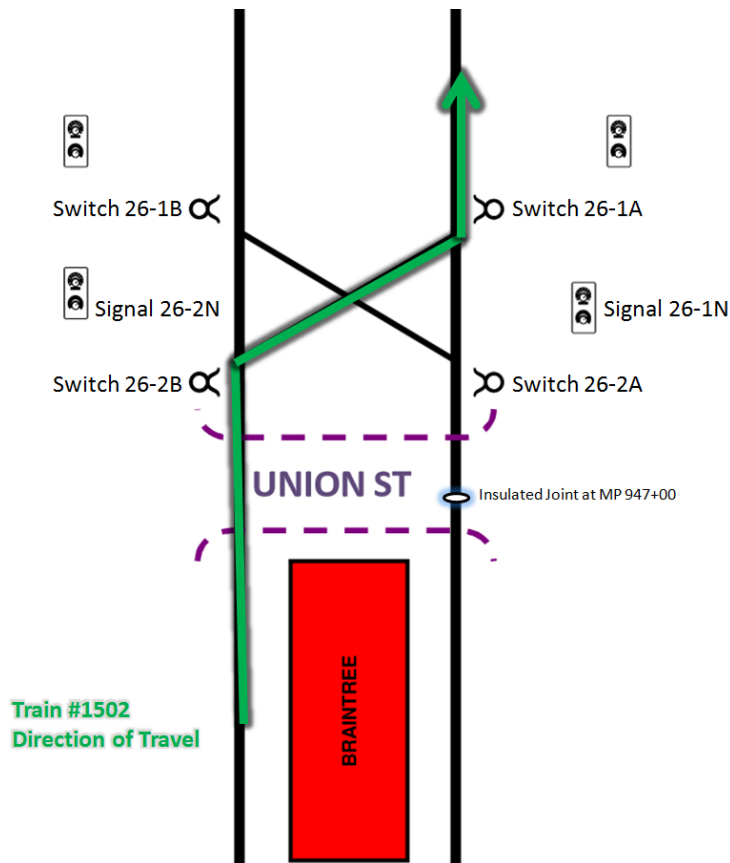
**Track**

The Track Department investigated the entire Braintree diamond crossover for gauge, rail condition, insulated joint defects, tie defects, and switch point defects, with a primary focus in the vicinity of the 26-1N signal on the northbound track, north of Braintree Station. The following was discovered during the post-incident investigation:

1. At Signal 26-1N/Switch 26-1A, track conditions were found to be within MBTA Track Standards. However the following defects (determined non-contributory to the incident) were identified and resolved:
  - a. Track gauge was within the upper limits of the MBTA Track Standards with indication of slight track movement. As a precaution, new tie rods were installed on December 11, 2015 to strengthen gauge.
  - b. Ties and tie plates were within track standards; however as an additional enhancement the track department has scheduled replacement.
2. At Switch 26-2A, track conditions were found to be within MBTA Track Standards. However the following defect (determined non-contributory to the incident) was identified and resolved:
  - a. An insulated joint in proximity to the switch (MP 947+00) was found to be deteriorated and recommended for replacement. Prior to replacement, this insulated joint was tested by the Signal Department and was found to be within continuity and design limits. There is no indication that the insulated joint contributed to the intermittent code failures.
3. At Switch 26-1B, track conditions were found to be within MBTA Track Standards.
4. At Switch 26-2B, track conditions were found to be within MBTA Track Standards.



Final Report #A15-367  
February 26, 2016



Track and Signals Diagram

As part of the post-incident investigation, MBTA Safety reviewed the previous three (3) months of track inspection reports from the north end of the Braintree Station platform to 100 feet north of Braintree Crossover (MM 948+84 to MM 941+82). During this time, the Track department routinely inspected the area for defects and the following was discovered:

Defect Identified	Remedial Action
Timber tie defects (rotting)	<ul style="list-style-type: none"> <li>Speed restriction of 25 mph from 40 mph from Route 3 Bridge to Braintree Crossover</li> <li>Timber ties to be monitored</li> </ul>
Minor insulated joint defects	<ul style="list-style-type: none"> <li>Repaired immediately, scheduled for repairs post incident, or monitored without operating restrictions in place</li> </ul>
Loose bolts at switches and tie plates	
Frog wear	
Switch wear (chipping)	

MBTA Safety also reviewed the previous four (4) months of track maintenance records along the same corridor, and discovered that geometry testing was performed on August 6, 2015. No defects were found at the time of the testing. After the incident, the Track Department discovered a few defects which were found to be non-contributory, shown in the table below:

**Final Report #A15-367  
February 26, 2016**

<b>Date</b>	<b>Activity</b>	<b>Defects Mitigated</b>
August 6, 2015	Track Geometry Test	No track defects detected
December 28, 2015	Repaired/Replaced	<ul style="list-style-type: none"><li>• Two (2) Rotten Ties</li><li>• One (1) worn Insulated Joint</li><li>• Worn Tie Plates</li></ul>
January 7, 2016	Repaired/Replaced	<ul style="list-style-type: none"><li>• Insulated Joint (1)</li><li>• Timber Ties (2)</li><li>• Tie Plates (28)</li></ul>

It is important to note that an effective track maintenance program of an interlocking is essential to ensuring continuity and integrity of the track structure and insulated joints. After reviewing the submitted records, conducting field inspections and testing, the investigation confirmed that there are no identified contributory causes to the incident from the Track Department. The track integrity and continuity elements were within safety standards, procedures and practices.

**Power**

After OCC was informed of the unattended train, the Power Dispatcher Brad Byrne (# [REDACTED]) stopped the train by cutting power as directed by OCC. MBTA Safety requested information from the Power Department regarding records for inspections, testing, and maintenance following the incident. The following was discovered:

- DC Breakers were routinely maintained with only minor repairs made during the previous three (3) months.
- DC Feeder Tests were completed on all sections on a weekly basis.
- Loss of DC Power affecting revenue service occurred only once in the area of interest in the previous three (3) months, due to a ROW fire.

After reviewing the submitted records, there are no identified contributory causes to the incident from the Power Department.

**Human Factors**

As part of its investigation, the investigation team has examined human factors related to the unattended train incident, including MP Vazquez's hours of service and adherence to Authority rules.

**Hours of Service**

MBTA Safety has reviewed the hours of service for MP Vazquez for 30 days prior to the incident. MP Vazquez did not work any overtime during those 30 days and did not violate the hours of service policy. His timecards indicated "delay time," but never more than 41 minutes. MP Vazquez worked a regular schedule, reporting to work at 6:00 AM on Monday through Friday, and working until 2:43 PM with a break from 8:57 AM to 9:39 AM. He did not work his regular schedule on Thanksgiving (November 26), when he worked from 5:54 AM to 1:28 PM.

**Final Report #A15-367  
February 26, 2016**

The employee operated within MBTA's Hours of Service requirements, and consistently with his schedule, therefore work schedule related fatigue is not a contributing factor.

**MBTA Red Line Operations**

MBTA Red Line Operations management reviewed the incident and determined MP Vazquez violated the following MBTA rules and procedures:

- **Rule #1:** *Knowledge of Rules*
- **Rule #19:** *Attention to Duty*
- **Rule #52:** *Safety of Customers and MBTA Property*
- **Rule #59:** *Use of Emergency Bypass*
- **Rule #64:** *Securing of Trains*
- **Rule #89:** *Speed and Restrictions*

Management determined that MP Vazquez violated a number of safety rules, including safety critical violations that lead to the unattended train event, which MBTA Safety asserts posed a catastrophic risk to life, property and the train system. MBTA has taken prompt disciplinary measures to address the egregious safety violations perpetrated by the operator.

**Conclusion**

After reviewing pertinent files and interviews, MBTA Safety concludes the following:

**Probable Cause:**

The probable cause of the incident resulted from the tampering with the deadman feature of the cineston in the control cab of Vehicle #1502. The method to inhibit the deadman was the use of the cab's PA microphone cord that was wrapped around the cineston control dial with the cord set between the dial and base plate indicator, with the cineston control set to the full propulsion mode. When the emergency bypass switch was activated, the train entered propulsion mode due to the tampered deadman feature. The train protection design in this mode restricts or limits propulsion to no greater than 25 MPH.

**Contributory Causes:**

1. A contributory cause of the incident was the failure to apply the handbrake on Vehicle #1502 before exiting the control cab pursuant to operational procedures. The train's ATP safety design restricts train propulsion with the hand brake applied.
2. The design configuration placement of the emergency bypass switch, on the outside of the cab, requires an unattended train condition during the duration of the procedure.
3. The design configuration of the cineston is such that tampering with or inhibiting the deadman feature can occur using readily available means or methods.
4. Prohibited tampering with a cineston is difficult to observe due to sight limitations between stations in the subway environment and location of the cineston below the window level of

**Final Report #A15-367  
February 26, 2016**

the car. Tests and observations personnel are only able to perform rules compliance activities from stations, from the cab of trains traveling in the opposite direction, or by performing ride-alongs in the cab.

5. The intermittent wayside code failures, while not directly attributable to the near miss incident, created an operating condition that required the use of the emergency bypass procedure to override the automatic train protection systems, thus increasing operational and safety risks.

**Corrective Action Recommendations**

In response to risk factors based on the preliminary assessment, MBTA initiated a number of interim corrective actions immediately following the incident, including:

1. Special Order #15-128, “Rule Reminder” (issued December 11, 2015):

*“The purpose of this Special Order is to remind all Authority Operations operating personnel that unless they are expressly authorized pursuant to the Authority’s Rules and procedures, they must never do anything that has the potential to override any safety features to circumvent the safe operation of any vehicle in any manner. This includes tampering or altering any authority equipment or property. Each Authority Operator must give their complete attention to his/her duty in order to ensure safe travel for our customers and employees.”*

2. Special Order #16–Draft Emergency Bypass Procedures (issuance TBA)

Subway Operations began developing a new Special Order and will implement a new procedure that will have two (2) distinct changes in the emergency bypass procedure:

- a) Before placing a train on emergency bypass, an Official must be present to observe the Motorperson’s actions.
- b) The OCC Dispatcher must walk the Motorperson through the emergency bypass procedure step by step, including reminding the Motorperson to set the hand brake.

Special Orders that affect operational safety procedures are regarded as rule changes and are queued into the rulebook revision database. MBTA will monitor the effectiveness of the special orders concerning equipment tampering and emergency bypass and determine safety as well as other operational impacts.

MBTA provides the following Corrective Action Plan items which are subject to further review, analysis, concurrence and revision before final determination.

1. Revise and strengthen operating rules to strictly prohibit tampering with, inhibiting, or disabling an onboard safety device such as a deadman feature or any other operator-alerting,

**Final Report #A15-367  
February 26, 2016**

train protection, or train warning system, and hold anyone who violates this rule absolutely accountable (prohibited act).

2. Review, improve and implement further measures to more effectively monitor and enforce compliance with safety rules, through testing observations and other monitoring activities.
3. Review, examine, and improve existing emergency bypass and handbrake procedures to eliminate ineffectual steps or redundancies.
4. Determine the feasibility and cost/benefit, with consideration of vehicle age and replacement schedule, of suitable technologies, such as CCTV monitoring, to continuously observe an operator's safety activities, safety performance, and adherence to safety critical rules and procedures, including whether the operator is engaged in any prohibited acts.
5. Determine the feasibility and cost/benefit, with consideration of vehicle age and replacement schedule, of redesigning and/or reconfiguring the cineston handle to remove, eliminate, or reduce the likelihood of tampering with, inhibiting, or disabling the deadman feature.
6. Determine the feasibility and cost/benefit, with consideration of vehicle age and replacement schedule, of redesigning and/or reconfiguring the emergency bypass switch to relocate it from the outside of the car to a suitable location within the car.
7. Analyze, develop, and implement state of good repair improvements and/or inspection and maintenance strategies to signal, track, and power to address or eliminate persistent intermittent code failures or other operational failures to reduce operational safety risks from manual release, emergency bypass, or other procedures that override critical safety systems.
8. Monitor the process for securing applicable Drug and Alcohol tests within the prescribed time frames as required by policy, as well as federal and state requirements.
9. Review, analyze, and ensure that the safety critical design elements of the current Orange and Red Line vehicle procurement addresses relevant safety concerns derived from this incident. These include, at a minimum, such systems as automatic train protection code specifications, manual release, emergency bypass, onboard monitoring (e.g., CCTV, event recorder), deadman/alerter features, and other applicable safety elements.

## **Attachments**

**Tab A: OCC Dispatcher Log**

**Tab B: OCC Event Time-Line**

**Tab C: Employee Statements**

**Tab D: Discipline Interview**

**Tab E: MBTA Post-Incident Clinic Form**

**Tab F: MBTA Signals and Communications Memorandum**

**Tab G: MBTA RTL Vehicle Maintenance Engineering Report**

**Tab H: Photographs**

**Tab I: Preliminary Incident Notification**

**Tab A**



Massachusetts Bay Transportation Authority

Printed: 2/9/16- 1:53 pm

Dispatchers Log - ODRB

\*\*\*\*\*  
 SERVICE: 113      ENTRY TYPE: ALL      STATUS: ALL      STARTING DATE: THURSDAY, 12/10/2015      TIME: 00:00      SORTED BY: DATE  
 ENDING DATE: THURSDAY, 12/10/2015      TIME: 23:59      ROUTE: ALL  
 \*\*\*\*\*

<u>OCCR</u>	<u>REPT</u>	<u>DATE</u>	<u>SRVC</u>	<u>TYP</u>	<u>DISPATCHER</u>	<u>EMP ID / REPORTED BY</u>	<u>OPERATOR ID/NAME</u>	<u>LOC</u>	<u>DIR</u>	<u>DELAY</u>	<u>ROUTE</u>	<u>TRAIN/TRIP</u>	<u>VEH NO</u>
06:08	06:09	2015-12-10	113	NRM	ASAUNDER S	██████ TODD DOWNEY	██████	BRAINTREE	N		n933	1502	1502 1503 1612 1613 1735 1734

\*\*\*\*\* NO INJURY REPORTED \*\*\*\*\*

**DETAILS:** 1502 ON BYPASS/NO MM AND MOVING FROM BRAINTRE

**WEATHER:** TEMP:45,WIND:3,CONDITIONS:MOSTLY CLOUDY [DEC 10 2015 5:53AM]





Massachusetts Bay Transportation Authority

Printed: 2/9/16- 1:53 pm

Dispatchers Log - ODRB

SERVICE: 113 ENTRY TYPE: ALL STATUS: ALL STARTING DATE: THURSDAY, 12/10/2015 TIME: 00:00 SORTED BY: DATE
ENDING DATE: THURSDAY, 12/10/2015 TIME: 23:59 ROUTE: ALL

ADDITIONAL REMARKS:

6:08AM TRAIN 1502 ON P2 BRAINTREE REQUEST PERMISSION TO PLACE THE TRAIN ON THE EMERGENCY BYPASS
AS 1502 WILL NOT TAKE A MANUAL RELEASE. (MANUAL RELEASE NEEDED AS A RESULT OF BRAINTREE CROSSOVER ON HAND DUE TO AN ON GOING CODE FAILURE IN THE BRAINTREE AREA.)
6:09AM PT.119 DOWNEY # [REDACTED] REPORTS VIA PHONE THAT "THERE IS NO MM ON BOARD 1502 AT QUINCY ADAMS
NB THE MM VASQUEZ # [REDACTED] 3 WAS INJURED AND REQUEST AN AMBULANCE FOR A GASH HE SUSTAINED WHILE
PLACING 1502 ON THE BYPASS, THE TRAIN TOOK OFF ON ITS OWN AS SOON AS IT WAS PLACED ON THE BYPASS! MM VASQUEZ WAS KNOCKED OUT OF THE WAY AND SUSTAINED A GASH ON HIS LEG, 1502 IS NOW MOVING WITHOUT AND OPERATOR AND IS ON THE EMERGENCY BYPASS.
6:10AM POWER DEPT. BYRNE# [REDACTED] NOTIFIED AND REQUESTED TO OPEN POWER SECTION B7 AND B9 IN THE QUINCY CENTER NB AREA,
6:11AM POWER SECTION B7 AND B9 (BRAINTREE TO QUINCY CTR NB) INDICATE OPEN FROM DPC/BYRNE
1502 CONTINUES TO TRAVEL POSSIBLY UNDER THE INITIAL MOMENTUM. LEADER TRAIN 1739-1738-1737-1736-1602-1603 (SOUTH TO NORTH) NOTIFIED TO BYPASS QUINCY CTR, WOLLASTON, NORTHQUINCY AND JFK UMASS NB. 21-9N UNFLEETED IN ANTICIPATION OF SENDING 1502 TOWARDS CABOT YARD.
6:12AM POWER SECTION B-13 (WOLLASTON TO NORTHQUINCY NB) REQUESTED OPEN.
6:13AM DPC BYRNE# [REDACTED] INDICATES POWER OPEN, 1502 CONTINUES TO TRAVEL (ACCORDING TO OCC INDICATION BOARD).
6:16AM POWER SECTION B-15 REQUESTED OPEN AS TRAIN 1603 IS NOW CLEAR OF JFK UMASS AND ROUTE SET TO CABOT VIA 21-9N INSTRUCTOR 42 MCDONALD# [REDACTED] PLACED A PORTABLE TRIP OUTSIDE OF 9 NORTH AND STANDING BY.
6:17AM DPC BYRNE\REPORTS B-15 INDICATES OPEN. 1502 APPEARS TO STILL BE STILL BE MOVING TOWARDS NORTH QUINCY NB.
6:18AM 1502 APPEARS STOPPED JUST NORTH OF NORTH QUINCY NB.

NOTIFY:

OCC/MCNEILL
PD/BYRNE
YM/STROBIS
CTO/JOHNSON
SECT/TRANS DEPAOLA
SHPS/STEVENS
SUP/BROWN
SUPT /HARDING
INFO OFFICER/BATISON
FTA/MELLO
NTSB/MERRIT
DPU/ROMAN
SAF/NICKEL
SAF/CULP



Massachusetts Bay Transportation Authority  
Dispatchers Log - ODRB

Printed: 2/9/16- 1:53 pm

\*\*\*\*\*  
SERVICE: 113      ENTRY TYPE: ALL      STATUS: ALL      STARTING DATE: THURSDAY, 12/10/2015      TIME: 00:00      SORTED BY: DATE  
ENDING DATE: THURSDAY, 12/10/2015      TIME: 23:59      ROUTE: ALL  
\*\*\*\*\*

6:27AM PT.114 CONROY # [REDACTED] AND PT.127 BROWN # [REDACTED] UNLOADED TRAIN 1731 AT JFK  
UMASS  
TO HEAD DOWN TO 1502.

6:36AM PASSENGERS PULLED EMERGENCY AND ENTERED THE CAB AND IS TRANSMITTING OVER  
THE RADIO.  
PASSENGERS REASSURED OFFICIAL WILL BE ON SCENE SHORTLY.

6:38AM PT.114 AND PT.127 SUPERVISOR BROWN ON SCENE AT 1502 AND CONFIRMS THE  
TRAIN IS IN FACT ON  
THE BYPASS BUT STOPPED AND PASSENGER CONFIRMED WHEN THEY ENTERED THE CAB  
THE TELEPHONE CORD  
WAS WRAPPED AROUND THE CYNESTON HANDLE AND NO OPERATOR ON BOARD.

6:44AM POWER SECTION B7 AND B9 RESTORED. TRAIN DEPARTING BRAINTREE TO QUINCY CTR  
ONLY.

6:47AM PT.114 COMPLETED CIRCLE CHECK AND READY TO RESTORE POWER SECTION B13 AND  
B15  
CALLED TO BE RESTORED.

6:49AM POWER SECTIONS B13 AND B15 INDICATE LIVE PER DPC/BYRNE.

6:55AM 1502 WILL NOT BUILD AND IS SPLIT BETWEEN THE 2ND AND 3RD CAR. 4 CARS WILL  
BE PUSHING 2

7:01AM DISABLED TRAIN 1502 MOVING WITH CLEARANCE TO JFK UMASS 114 AND 127 ON  
BOARD. THE TRAIN WILL  
BE UNLOADED AND SENT LIGHT TO CABOT YARD.

7:12AM 1502 CLEAR JFK UMASS NB IN ROUTE TO CABOT REPAIR FACILITIES.

7:21AM IMPOUND #11644 GIVEN BY SHOP FOREMAN STEVENS.

NTSB CASE #1135438

MM VASQUEZ TRANSPORTED TO SOUTH SHORE HOSP.

# **Tab B**



Charles D. Baker, Governor  
Karyn E. Polito, Lieutenant Governor  
Stephanie Pollack, MassDOT Secretary & CEO  
Frank DePaola, General Manager  
Brian Shortcreek, Chief Administrator

**massDOT**  
Massachusetts Department of Transportation

**MEMORANDUM**

**TO:** Jeffery Gonneville  
Chief Operating Officer

Todd Johnson  
Chief Transportation Officer

**FROM:** Gina M. Westwater  
Supervisor, Operations Control Centers

**DATE:** December 10, 2015

**SUBJECT:** Chronological Report of Runaway Train

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On December 10, 2015 at approximately 6:04am the Motorperson operating train 1502 called via radio to the Red Line Dispatcher that his train picked up a stop code while travelling over the Braintree Crossover northbound, he was instructed to place the train on the emergency bypass and given clearance. It was then the incident began to unfold. Attached is a chronological report of the events leading up to, and until the train came to rest north of North Quincy Station on the northbound track.

The data for the chronological report, was obtained by audio recordings only. Written statements and the dispatchers log have also been provided.

If you need further information regarding this matter, please advise.

**6:04am** Motorperson on train 1502 departs Braintree and picks up a stop code on the crossover and request permission from the dispatcher to place the train on the emergency bypass, with clearance to Quincy Adams northbound.

**6:05am** Motorperson acknowledges and repeats back the permission and clearance.

**6:07am** Code failure at Braintree and an official sent to the crossover to place on hand throw operation.

**6:08am** Pt. 119 reports to the Red Line dispatcher that there is a train on the move without a motorperson and almost struck the motorperson when he placed it on the bypass, stating it almost hit him and made a request for medical to come to Braintree.

**6:09am** RL dispatcher attempting to locate the "runaway train"

**6:11am** Request made to the power department to open power to B7 & B9 in an attempt to stop the train. At this time the leader of 1502, 1603 was instructed to bypass North Quincy Station and proceed to JFK to clear the path of the "runaway train" Supervisor McNeill is heard confirming to the motorperson on 1603 to keep moving northbound and not to stop the train.

**6:11am** Power Department confirms sections B7 & B9 have been opened.

**6:12am** RL dispatcher #2 contacts Braintree Fire for the motorperson who was assigned to train 1502 and was injured when he put the train on the bypass.

**6:12am** Instructed motorperson on 01603 to inform the customers that due to an emergency situation the train would not be making a station stop at North Quincy and passengers could exit the train at JFK/UMass and utilize southbound service back to North Quincy.

**6:12am** Section B13 requested by the RL dispatcher to be opened immediately.

**6:13am Pt. 116 was instructed to board the southbound train up to the "runaway train, but it was determined the train was still on the move.**

**6:13am Power department confirms power opened to section B13.**

**6:15am RL Dispatcher confirms Pt. 116 in position on the southbound.**

**6:16am Pt. 116 reports the "runaway train " is still moving and approaching North Quincy Station,**

**6:16am RL Dispatcher contacts the Power department to request section B15.**

**6:17am Power department confirms section B15 opened, train is still in the move Supervisor McNeill request all power opened on the northbound. RL dispatcher requests section B17.**

**6:17am Train 1603 was instructed not to stop at JFK/UMass to proceed to Andrew.**

**6:18am Pt. 114 at JFK/UMass instructed to board a southbound train and standby for instructions.**

**6:21am 1502 finally came to rest at Redfield Street. Pt. 114 on the southbound to ride up to the train and secure along with Pt. 127.**

**6:25am Supervisor McNeill instructed Pt. 117 to use caution when approaching the train due to the fact we did not know the circumstances leading up to the incident.**

**6:27am TPD/EMS/BFD on scene at Braintree for the motorperson injured.**

**6:35am transmission from train 1502 radio stating "hello, hello, is anybody there" I am on the train with no driver. Communication with a passenger and the RL dispatcher who informed them an official was en route.**

**6:36am passenger asking if there is anything he could do, RL dispatcher responded no we have help on the way.**

**6:37am RL dispatcher reminds official power is opened.**

**6:39am Pt. 114 reports he is walking up to the train and someone is in the cab of the train waving a flashlight at him.**

**6:42am Pt. 114 states he is in control of train, bypass has been normaied and has brakes set. Multiple emergency brakes have been pulled, and are being reset. He states we can begin to restore power. Supervisor McNeill request a circle check of the train is done, as well as a check of the well being of the customer.**

**6:44am RL dispatcher asks if any sections that were requested opened are tied. Power department states no, RL dispatcher request sections B7 & B9 closed.**

**6:44am Power department reports sections B7 & B9 closed.**

**6:45am Pt. 114 reports all passengers are fine, making his way to the rear to check the train and will report back any findings.**

**6:48am Pt. 114 did a visual check outside of the train, no issues to report and request power restored. Request made to power department to restore sections B13 & B15.**

**6:49am Power department confirms sections B13 & B15 closed.**

**6:50am Pt. 114 reports the train has power.**

**6:51am 1502 slow to build, RL dispatcher instructs Pt. 114 once built to proceed north into JFK northbound and unload the train.**

**6:53am Pt. 114 reports the train still will not build going to recheck an emergency pulled during incident.**

**6:56am Pt. 114 reports no build on 1502 incident train, is in the process of splitting train.**

**6:58am Pt. 114 reports the train is split configured to have 4 pushing 2. Supervisor Brown pulling BCO's in first two cars, and will be stationed up front as the eyes.**



**6:59am Pt. 114 given clearance to JFK.**

**7:01am Pt. 114 reports train 1502 moving and clear of the Neponset Bridge.**

**7:03am Pt. 114 reports train 1502 has cleared Tenean.**

**7:07am Pt. 127 instructs personnel on the platform at JFK/UMass to get a count of passengers on each car, prior to exiting.**

**7:11am Pt. 114 reports train is at JFK unloading and is looking for further clearance once all customers are clear.**

**7:12am Pt. 114 after receiving clearance is on the move to Cabot. Pt. 127 requesting TPD to JFK.**

**7:13am Pt. 127 and Pt. 129 taking information of passengers who were on board the incident train. Train 1502 is clear of the mainline and at Cabot, instructions given to preserve train for TPD investigation.**



# **Tab C**



Charles D. Baker, Governor  
Karyn E. Polito, Lieutenant Governor  
Stephanie Pollack, MassDOT Secretary & CEO  
Frank DePaola, General Manager  
Brian Shortsleeve, Chief Administrator

**massDOT**  
Massachusetts Department of Transportation

**TO:** Nikki Harding-Ortiz  
Superintendent, Red Line Operations

**FROM:** Ricky Brown  
Supervisor, Red Line Transportation

**DATE:** Thursday December 10, 2015

**RE:** Runaway train

---

**Date:** Thursday, December 10, 2015  
**Time:** 7:23 AM  
**Location:** Braintree northbound  
**Weather:** 43 Degrees, clear  
**Employees:** F.T. M.P. Dave Vasquez # [REDACTED]

**Car/Train:** Train #1502-1503-1612-1613-1735-1734  
**Direction:** North to Alewife

**Status:** Motorperson Vasquez # [REDACTED] has been transported to the MBTA Medical Facility for a post incident Drug and Alcohol screen by Superintendent Ortiz, for a FTA/DOT MBTA The removal from service of the Mass Transit Vehicle, when the Mass Transit Vehicle is a Rapid Transit or Trolley Vehicle or Vessel. The Train Starter's Office is aware that Motorperson Vasquez shall not perform any safety sensitive functions until further notice of the Superintendent's office.

**Responded:** Portable #114 Kevin Conroy # [REDACTED]  
Portable #127 Ricky Brown # [REDACTED]  
Portable# 129 Blake Artz # [REDACTED]  
Portable # 124 Athena Howell # [REDACTED]  
Portable # 111 Lynne Hiltz # [REDACTED]  
Portable # 120 Mark Cassino # [REDACTED]  
Portable # 18 Nikki Ortiz

**Narrative:** At approximately 6:10AM Motorperson Vasquez # [REDACTED] reported to Pt. # 119 that his train almost ran him over and no one was

operating train as it left towards Quincy Adams station. Pt. # 119 called Central Control and stated that a runaway train had just departed Braintree without Motorperson on board. The runaway train was closing in on the service train that left station 10 minutes earlier and that train had to go expressed so that both trains wouldn't collide into each other. At 6:11am OCC Dispatcher started opening power and called for Pt. # 114 and myself to unload next southbound into JFK Umass and proceed down towards the runaway train. The runaway train was stopped in the North Quincy area due to power being taken. When I boarded the train the motorperson cab door was open with two customers standing in door way. Pt. # 114 and I boarded the train and to ensure that all passengers were safe not injured. We asked the customers what happened to Motorperson that was operating this train and customers did not know. The train was checked and split between the second and third cars, moved up to JFK Umass where the train was unloaded and taken to Cabot Yard. The train was impounded by TPD. Motorperson Vasquez was transported to the South Shore Hospital for a leg injury and once released was ordered to remain in the custody of Superintendent Ortiz and transported to the 10 Park Plaza for a Post-Incident drug and alcohol screening.

**Corrective Actions:** Checked for Fitness of Duty by Superintendent Ortiz. Statements have been received from Motorperson Vasquez # [REDACTED] and all employees involved. Motorperson Vasquez was taken for a FTA post incident testing, No claim was placed on the equipment (Impound #11644), and will be assigned to JFK/UMASS Superintendent's Office. The Train Starters office was informed that Motorperson Vasquez will not be allowed to perform any safety sensitive duties until cleared by the Superintendent's Office.



Statement Made to Deputy Director / Supervisor of the OCC

Date 12 / 10 / 2015

By Mark G. McNeill Occupation OCC Supervisor Employee # [redacted]

Concerning Train 1502-1503-1612-1613-1735-1734 MM David Vazquez # [redacted] 6:02am trip

Rte N933 Occurring at 6:08am AM/PM Date 12 / 10 / 2015

6:08am Due to intermittent code failure at Braintree, MM David Vazquez on 1502 was given permission to utilize the manual release to get out of Braintree. The manual release would not take, so 1502 was given permission to place the train on bypass by OCC dispatcher Lee Saunders with clearance to Quincy Adams NB. As MM Vazquez placed the train on bypass, the train moved on it's own. MM Vazquez jumped out of the way incurring a gash to his leg and made his way to the Inspectors office. At 6:09am Pt 119 Todd Downey notified dispatcher Saunders of the runaway train. Dispatcher Saunders in turn notified me of the emergency. I instructed dispatcher Saunders to have the train in front of 1502 (which was 1602), not stop at Wollaston, North Quincy or JFK and to kill power under 1502. 6:11am section B-7 & B-9 (Quincy Adams to Quincy Center NB) were opened. But 1502 continued to move. 6:13am section B-13 (Wollaston to North Quincy NB) was opened, but the momentum carried 1502 out of North Quincy. 6:17am section B-15 (North Quincy to Anderson Bridge) was opened stopping train 1502 just north of North Quincy NB. At 6:21am train 1731 was unloaded at JFK SB. PT 114/Conway and supervisor Brown proceeded light SB to incident train 1502. Upon arrival supervisor confirmed all passengers were safe and power was restored @ 6:47am. Train 1502 was unloaded at JFK NB and proceeded light to Cabot yard where the train was impounded #11644.

Signature: Mark G. McNeill



# Massachusetts Bay Transportation Authority

Statement Made to Director / Supervisor of the OCC

Date 12/10/15

By Ainsley Saunders

Occupation

Dispatcher

Employee #

[REDACTED]

Concerning 1502 Runaway Train

Occurring at

P2 Braintree

06:09:00  
AM

Date 12/10/15

6:08am Train 1502 on P2 Braintree request permission to place the train on the Emergency Bypass as 1502 will not take a Manual release. (Manual release needed as a result of Braintree crossover on hand due to an on going code failure in the Braintree area.)

6:09am Pt.119 Downey # [REDACTED] reports via phone that "There is no MM on board 1502 at Quincy Adams

NB the MM Vasquez # [REDACTED] was injured and request an ambulance for a gash he sustained while placing 1502 on the Bypass, the train took off on its own as soon as it was placed on the bypass! MM Vasquez was knocked out of the way and sustained a gash on his leg, 1502 is now moving without and operator and is on the EMERGENCY BYPASS.

6:10am Power Dept. Byrne # [REDACTED] notified and requested to open power section B7 and B9 in the Quincy Center NB area,

6:11am Power section B7 and B9 (Braintree to Quincy ctr NB) indicate open from DPC/Byrne 1502 continues to travel possibly under the initial momentum. Leader train 1739-1738-1737-1736-1602-1603 (south to north) notified to bypass Quincy ctr, Wollaston, Northquincy and Jfk Umass NB. 21-9N unfleeted in anticipation of sending 1502 towards Cabot Yard.

6:12am Power section B-13(Wollaston to Northquincy NB) requested open.

6:13am DPC Byrne # [REDACTED] indicates power open, 1502 continues to travel (according to OCC indication board).

6:16am Power section B-15 requested open as train 1603 is now clear of JFK Umass and route set to Cabot via 21-9N Instructor 42 McDonald # [REDACTED] placed a portable trip outside of 9 North and standing by.

6:17am DPC Byrne reports B-15 indicates open. 1502 appears to still be still be moving towards North Quincy NB.

6:18am 1502 appears stopped just North of North Quincy NB

Signature: Ainsley Saunders [REDACTED]



Statement Made to Deputy Director / Supervisor of the OCC

Date 12/10/15

By Eugenia Adams

Occupation Dispatcher

Employee #

Concernin

614

AM/PM

Date

12/10/15 /

On or about 614am Dispatcher Saunders informed Supervisor McNiell that there was a problem with train 1502 departing Quincy Adams. He then asked me to Call Medical. I asked why I was calling medical so I could inform them on the phone. He was busy with Supervisor McNiell so I called Pt 119 at Braintree and he told me that a motor person was struck by a train and had a laceration to his leg and was bleeding pretty bad. Medical and TPD was notified.

*Eugenia Adams*

Signature:





Statement Made to Director / Supervisor of the OCC

Date 12/10/15

By JACKIE EVERIDGE

Occupation RTL

DISPATCHER

Employee #

Concerning BRAINTREE RUNAWAY TRAIN

Occurring at 06:48:00 AM

AM/PM

Date 12/10/15

**DISPATCHER EVERIDGE WAS INFORMED OF THE FOLLOWING INFORMATION FROM PT#119/DOWNEY, # [REDACTED] CONCERNING INCIDENT INVOLVING 1502**

**OPERATOR # [REDACTED] /VAZQUEZ WAS OPERATOR OF TRAIN 1502 AS FAR AS PT#119/DOWNEY KNOWS, NO ONE WAS IN CAB OTHER THAN THE OPERATOR TRAIN 1502 PICKED UP STOP CODE DEPARTING BRAINTREE, MANUAL RELEASE DID NOT WORK SO TRAIN WAS PLACED ON BYPASS.**

**PT#119 REPORTS MM VAZQUEZ CLAIMS ONCE TRAIN WAS ON BYPASS HE HEARD BRAKES RELEASED SO MM VAZQUEZ JUMPED OUT OF THE WAY OF TRAIN 1502, AS TRAIN SPEED OFF WITHOUT AN OPERATOR ONBOARD. MR. VAZQUEZ REPORTS HE WAS HIT BY TRAIN IN UPPER TORSO AND HAS A BIG GASH ON HIS RIGHT LEG.**

**AS FAR AS INSPECTOR DOWNEY KNOWS, MM [REDACTED] DID NOT MAKE CONTACT WITH THIRD RAIL**

**INSPECTOR DOWNEY REPORTS AS FAR AS HE KNOWS THE CINESTON HANDLE WAS IN THE "FULL OFF" POSITION**

**MM VAZQUEZ WAS TRANSPORTED TO SOUTH SHORE HOSPITAL AND PT# [REDACTED] /ORTIZ WAS GOING TO SOUTH SHORE HOSPITAL TO CHECK ON OPERATOR VAZQUEZ**

**DISPATCHER EVERIDGE WAS WORKING AS ORANGE LINE DISPATCHER BUT WAS ASKED BY OCC/MONLIEU TO FIND OUT THIS INFORMATION.**

*Jackie Everidge*

[REDACTED]

Surf. Lines  
 Statement made to Superintendent of RTL Lines Transp. Date: 12-10-15 200  
 By KEVIN R CONROY Occupation INSP. Badge # [REDACTED]  
 Occuring At \_\_\_\_\_ AM \_\_\_\_\_ PM Date \_\_\_\_\_, 200

APPROX 6<sup>10</sup> AM DISP ASKED FOR A PHONE CALL  
 I WAS TOLD TO TAKE SB BRAIN TRAIN FROM JFK  
 THERE WAS A RUNAWAY TRAIN NEAR REDFIELD ST.  
 BRIDGE NB. MYSELF AND SUPER BROWN GOT TO  
 TRAIN WHICH WAS STOPPED 3RD RAIL POWER HAD BEEN  
 KILLED ON NB. BOARDED FRONT OF TRAIN PASSENGERS  
 HAD PULLED EMERGENCY AND HAD ENTERED CAB  
 I HAD NORMAL BY-PASS AND CRANKED EMER.  
 BRAKE. CINESTON WAS IN FULL POWER ~~POWER~~

POSITION AND HAND MICROPHONE CORD WAS  
 WRAPPED AROUND HANDS. I THEN PROCEEDED  
 TO WALK THROUGH ALL SIX CARS ASKING  
 PASSENGERS IF THEY WERE OK ALL PASSENGERS  
 SAID THEY WERE OK. I THEN WENT OUTSIDE  
 OF TRAIN TO MAKE SURE ALL WAS CLEAR.  
 THEN I REQUESTED POWER. TRAIN HAD A  
 HARD TIME BUILDING DUE TO I BELIEVE  
 LINKAGE PROBLEM ON EMER BRAKE IN 1503  
 CAR WAS SPLIT BY MS BUILT UP IN 1613 CAR  
 (3RD NB) I HAD SUPER BROWN UP FRONT FOR  
 MY EYES PUSHED DUELS TO JFK UNLOADED.



Area # 113

Massachusetts Bay Transportation Authority

Area # 113

Statement made to the Superintendent of Rail Line Transportation

Date:

12/10

2015

By:

Tedd P. Downey

Occupation:

Chief Tugadge #

Occurring at

610 AM

FBI Date:

Same

2015

At approx 6:10 am Motorperson # [redacted] Dave Vasquez who was injured came into the C. Inspector's office at Braintree stating the train he was operating almost ran him over. Motorperson Vasquez said the train was moving northbound without any personnel on board operating with passengers on the train.

I immediately called dispatcher Lee Saunders to inform him we had a runaway train northbound. I also stated "Motorperson was injured (right leg, skinned badly) and in need of EMT's."

I pulled out the medical kit and administered first aid to Dave Vasquez, elevated his leg and applied a bandage and ice to his injuries.

Leann Joyce # [redacted] and I noticed the train closing in towards the train in front of it. We called dispatch to convey power needed to be cut to stop the train with no operator.

After waiting 10 minutes I called "911" to get medical for Dave Vasquez who was bleeding badly. I called and was connected to "State Police" who directed me to EMS directly. I informed the CSA to direct personnel up stairs to the Inspector's office.

Dispatch wanted service northbound and I was sent on crossover to talk to # [redacted] Anthony Joseph the front crossover was on hand.

At that time EMS had arrived at Braintree with METRA Police in tow.

We boarded passengers on Pt 2, by that time we heard power had been cut and Train 1734-1735-1613-1612-1513-1512

Area # 113

Massachusetts Bay Transportation Authority

Area # 113

Statement made to the Superintendent of Red Line Transportation

Date:

12/10

2015

By:

Todd Downey

Occupation:

Chief Insp

Badge #:

[Redacted]

Occurring at:

610 PD

PRI Date:

Same

2015

Mateo Vasquez was taken to the hospital and out of the station.

At that point I was coordinating with T-PD and our personnel to inform passengers of the disabled train delays and make Public Address announcements. I was interviewed by T-Police regarding the situation.

Sincerely

Todd Downey  
[Redacted Signature]

Area # 113

Massachusetts Bay Transportation Authority

Area # 113

Statement made to the Superintendent of Red Line Transportation

Date: 10

2015

By: Dan Reimer

Occupation: PM MP

Badge #

Occurring at

All

PM Date:

201

I was in Coddigan Yard December 10<sup>th</sup> 2015 working the overnight shift. The trains in the yard were cycled without issue. Before service I went through the trains to make sure they were prepared. At this time I went through train number 734-613-502 the train was ready for service. PA's, Doors, ATV all in working order. There were no issues with the train

D. Reimer

12/10/15

Area # 113

Massachusetts Bay Transportation Authority

Area # 113

Statement made to the Superintendent of Red Line Transportation

Date: 12-10-15 201

By: Thomas Johnson

Occupation: ~~Inspector~~

Badge #: [REDACTED]

Occuring at

At

PH Date:

201

I Thomas Johnson bought the TRAIN BELONGING TO  
 734-613-502 OUT OF THE CANNON YARD  
 THIS MORNING FOR SERVICE. THIS TRAIN WAS USED  
 YESTERDAY AND LAST NIGHT BEFORE IT WAS LAID UP  
 WITH NO PROBLEMS. WHEN I BOUGHT UP THE  
 TRAIN I NOTICED THE PAK THE PHONE AND  
 THE ATO COMPARTMENT THE TRAIN WAS CYCLED CLEARED  
 AND READY FOR SERVICE NOTHING ELSE FOLLOWS.

Thomas Johnson

# [REDACTED]

12-10-15



Area # 113

Massachusetts Bay Transportation Authority

Area # 113

Statement made to the Superintendent of Red Line Transportation

Date:

12-10-15 2015

By: Leanne Joyce

Occupation:

Motorperson

Badge #:

Occurring at

At

File Date:

12-10-15 2015

In the Braintree chief's office at approx. 1:05 am Motorperson Dave Vasquez # [REDACTED] came into the office out of sorts shaking and panicked telling me he just almost got hit by his train, and that it was operating by itself with no one on it! He was in shock and white as a ghost. Chief Insp. Downey # [REDACTED] hung up the phone as I began to yell oh my God Dave's train is ghost riding, it just knocked him over when he went to place it on the bypass. He explained to Chief Downey # [REDACTED] and I that after departing Braintree Sta. he had a stop code and after climbing down and placing it on the bypass he felt it begin to move he turned and went to get out of the way the train knocked him over the 3rd rail, he fell back, the train was moving so quick he could not attempt to get back on it. He then walked all the way back in the office at Braintree and showed us his leg, bloody with a big gash, we called the occ disp. and told them to call EMS and TPD and stop the train because it was riding with no operator & loaded w/passengers. I tried to keep M.M. Vasquez calm and applied a medical napkins to his leg until medical arrived.

Thank you, Leanne  
# [REDACTED] Joyce

Surf. Lines

Statement made to Superintendent of RTL Lines Transp. Date: November 10, 2015

By Nelson Scott Occupation Inspector Badge # [REDACTED]

Occuring At 7:00 AM PM Date November 10, 2015

While monitoring the radio, I went down to the JFK platform to assist with unloading train #1502. I unloaded car # [REDACTED] with 10 passengers on it.

*Nelson Scott* # [REDACTED]

Surf. Lines

Statement made to Superintendent of RTL Lines Transp. Date: 1/10, 2005

By Charles Aushey Occupation INSPECTOR Badge # [REDACTED]

INCIDENT TRAIN Occuring At 7:00 AM:        PM Date 1/10, 2005

When Incident Train Arrived at JFK North,  
Inloaded CAR # 1734, (Sixth CAR). THIRTEEN  
Passengers were aboard.

*[Signature]*  
Charles Aushey

# **Tab D**





# MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

## INTERVIEW SLIP

DATE: 12/15/2015 EMPL. CLASS: 003 NO. [REDACTED] NAME: Vazquez, David

See Interview of: **David Vazquez**

You are being interviewed in regards to being in violation of the Authority's rules for Trainpersons and Other Employees of the Heavy Rail Lines August 1, 2010, Rule #1 Knowledge of Rules (a); Rule #5 Obeying Orders (a); Rule #12 Reporting for and Remaining on Duty (a); Rule #14 Absence from Duty (a); Rule #18 Work Safety (a); Rule #19 Attention To Duty (a); Rule #52 Safety of Customers and MBTA Property (a); Rule #59D Use of Emergency Bypass (a) and (b); Rule #64 Securing of Trains (f); and Rule #89 Speed and Restrictions (a).

On Thursday, December 10, 2015, you were assigned to Motorperson Run #1020 (5:50 a.m.-8:57 a.m./9:39 a.m.-2:43 p.m.) and assigned train consist 1734-1735-1613-1612-1503-1502.


An investigation was conducted and found that during your first trip exiting Braintree Station at approximately 6:02 a.m., your train received a stop code. You called OCC Dispatcher to give the train a manual release. After notifying the OCC Dispatcher that the manual release did not work, you were then given permission to place the train on the bypass. You failed to put the master control (cineston) handle into maximum brake position and you also failed to set the hand brake before exiting the train to put it on bypass. At that time, the train began moving without a Motorperson and with customers on board. As a direct result, at approximately 6:02 a.m., the OCC Dispatchers were notified of a "runaway train".


The OCC Dispatchers records reflect that the train proceeded through four stations for approximately 9 minutes from Braintree Station to just north of North Quincy Station with customers on board and no Motorperson operating the train. The train was stopped by the OCC Dispatcher removing power from the rail.

According to your written statement and your statements to Deputy Director Shea and Superintendent Ortiz, you had put the P.A. cord around the cineston handle in order to put your gloves on. Once you received permission to put the train on bypass, you exited the train without removing the PA cord, leaving the master control in full power position, failed to set the emergency hand brake, causing the train to move without you being in cab. You proceeded to the Inspector's office to report the incident.

1. You intentionally disengaged the cineston's fail-safe feature;
2. You failed to place the cineston in maximum brake position; and
3. You failed to set the hand brake before exiting the cab.

These failures combined resulted in the train proceeding, un-manned, with passengers on board, putting their safety and the safety of others, as well as Authority equipment, in significant jeopardy.

  
 EMPLOYEE SIGNATURE  
 (Acknowledges Receipt)

  
 SIGNATURE FOR MANAGEMENT  
 Deputy Director Norman Michaud # [REDACTED]

  
 UNION REPRESENTATIVE  
 Barn Captain Michael Mangano # [REDACTED]

  
 SIGNATURE FOR MANAGEMENT  
 Superintendent Nikki Ortiz # [REDACTED]

**Notice of change to Personnel Record:**  
This serves as notice to you that this document has been added to your personnel file.



# MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

## INTERVIEW SLIP

On Thursday December 10, 2015 you signed an administrative leave slip in the presence of your union barn captain. On the slip it stated "When notified you are to report to the Red Line Superintendent" You were contacted by the Red Line Superintendent on Friday December 11, 2015 and ordered to report to 45 High Street at 11:00am on Monday December 14, 2015 for a Fact Finding meeting. You failed to appear for this meeting. On December 14, 2015, Deputy Director Shea hand delivered a letter ordering you to report to 45 High Street. You again failed to appear. You offered no explanation and did not offer another time to meet with the Fact Finding committee, just simply failed to appear as ordered.

As a Motorperson, it is your duty to follow all the operating policies and procedures set forth by the MBTA. Your actions and negligence could have been catastrophic in nature.

**This is the basis for your interview.**

**Employee States:**

*Union will file a statement with my delegate.*

**Union Representative:**

EMPLOYEE SIGNATURE  
(Acknowledges Receipt)

UNION REPRESENTATIVE  
Barn Captain Michael Mangan

SIGNATURE FOR MANAGEMENT  
Deputy Director Norman Michaud

SIGNATURE FOR MANAGEMENT  
Superintendent Nikki Ortiz

**Notice of change to Personnel Record:**

*This serves as notice to you that this document has been added to your personnel file.*



**MASSACHUSETTS BAY TRANSPORTATION AUTHORITY**

**INTERVIEW SLIP**

**Management:**

  
EMPLOYEE SIGNATURE  
(Acknowledges Receipt)

  
SIGNATURE FOR MANAGEMENT  
Deputy Director Norman Michaud # [REDACTED]

  
UNION REPRESENTATIVE  
Barn Captain Michael Mangan # [REDACTED]

  
SIGNATURE FOR MANAGEMENT  
Superintendent Nikki Ortiz # [REDACTED]

**Notice of change to Personnel Record:**

*This serves as notice to you that this document has been added to your personnel file.*



**MASSACHUSETTS BAY TRANSPORTATION AUTHORITY**

**DISCIPLINE SLIP**

**THIRTY (30) DAY SUSPENSION  
PENDING DISCHARGE**

**Date:** 12/15/2015    **Class:** 003    **Badge:** [REDACTED]    **Name:** Vazquez, David

**Please refer to the Interview Dated: December 15, 2015**

**You are found to be in violation of the rule(s) and/or policies cited in your Interview.**

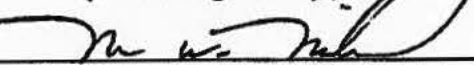
**Effective immediately, you are hereby SUSPENDED FOR THIRTY-DAYS PENDING DISCHARGE.**

**It is required that you turn in your badge, pass, rulebook, keys, and any other property belonging to the Authority.**

**Employee Comments:**

**Management Comments:**

  
EMPLOYEE SIGNATURE  
(Acknowledges Receipt)

  
SIGNATURE FOR MANAGEMENT  
Deputy Director Norman Michaud # [REDACTED]

  
UNION REPRESENTATIVE  
Barn Captain Michael Mangan # [REDACTED]

  
SIGNATURE FOR MANAGEMENT  
Superintendent Nikki Harding-Ortiz # [REDACTED]

**Notice of change to Personnel Record:**  
*This serves as notice to you that this document has been added to your personnel file.*

*(Revised 4/10/13)*

# Tab E

**TO:** Occupational Health Services

**Att:** Gail Jones, OHS  
Stephen Page, OHS

**CC:** Cora Lynn Varone, Asst. Director

**FROM:** Will Pelleteri

**RE:** Massachusetts Department of Public Utilities (DPU) Safety and Security Oversight Program

**DATE:** 12/21/2015

**TO BE COMPLETED BY MBTA SAFETY**

**Employee Name:** David Vazquez

**Employee Badge Number:** [REDACTED]

**Date and Approximate Time of Incident:** 12/10/2015 6:08 AM

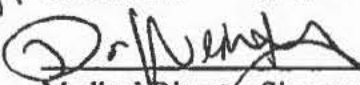
**Description of Incident:** Unattended red line train

**TO BE COMPLETED BY THE MEDICAL DIRECTOR OR BY THE DESIGNEE**

**Alcohol Test Completed (circle one):** Yes  No  **Reviewed Date:** \_\_\_\_\_  
*EE WAS NOT SEEN WITHIN THE 8hr TIME LIMIT.*

**Drug Test Completed (circle one):** Yes  No  **Reviewed Date:** 12/11/15

**Medical Examination Completed (circle one):** Yes  No  *EE WAS A NO SHOW TO FOLLOW UP APPT. ON 12/14/15.*

*SOFF*  
Circle One: FFW  NFFW  *UNTIL CLEARED BY M.D.*  
  
MATTHEW WEINTRAUB, MD

12/21/15  
Date

**PLEASE SCAN TO SENDER AT MBTA SAFETY**

# **Tab F**





Charles D. Baker, Governor  
Karyn E. Polito, Lieutenant Governor  
Stephanie Pollack, MassDOT Secretary & CEO  
Frank DePaola, General Manager  
Brian Shortsleeve, Chief Administrator

**massDOT**  
Massachusetts Department of Transportation

**To: Randy Clarke, Assistant General Manager Engineering & Maintenance**  
**From: Joseph T. McNall, Director Signal & Communications**  
**Date: December 11, 2015**  
**Subject: Braintree Code Failures**

---

On December 8, 2015 Braintree Interlocking started to experience intermittent code failures. The code failures started to be noticeably frequent at 10:28am. There were 20 second outages between 10:28am and 10:30am. Throughout the morning there were outages of a couple seconds at a time. Then beginning at 2:30pm the delays began to come 10 seconds at a time at more frequent intervals. Between 9:00pm and 10:00pm that night, there were some failures, but not as frequent.

At 2:00am on the December 9, 2015, failures picked up again lasting anywhere from a couple of seconds to 20 seconds at a time. Failures stopped again around 3:00am, and from 3:00am – 4:00am there were no failures. At 4:06am on December 9<sup>th</sup>, failures picked back up, and have been consistent since then. At this time December 10, 2015 9:58am Braintree was not in code failure, but only one Verizon line was up and operational.

When the code failures were reported Alex Yuen of Signals looked into the problem at Braintree and turned in tickets to Verizon at 2:31pm to evaluate the control line used. Verizon checked both FDDA circuits' (5:30pm) normal and standby lines and made adjustments. Alex then replaced the modem to normal circuit and continued to monitor.

Since the original call on December 8th signal personnel have been onsite troubleshooting the cause of these failures. Maintainers have been rebooting the Programmable Logic Controllers (PLC) to clear problem.

Verizon completed end to end testing from High Street to Braintree for the standby circuit reporting adjusted levels on the copper lines. Modems were then reset at both ends of circuit to be able to communicate and reported working. The normal circuit still has to be tested. At 4:46pm On December 9, 2015 FDDA circuits were still intermittent. Signals changed modems at High Street and Braintree, checked PLC's for faults, wires, batteries, and performed reset tests. Communications MBTA were called in 7:45pm to check interior lines which were found to be working as designed.

On December 10, 2015 I spoke with Operations Control Center Administrator Justin Cook at 7:00am to look at the historical data at Braintree for train 1502. Train 1502 had a clear signal to go inbound at 6:02am. A code failure at Braintree Station occurred at 6:03:03am. Then at 6:07:50am is the next time we see train 1502 just before Quincy Adams Station. While train 1502 was in Braintree Station ready to go inbound the signal was clear (26-2N) switches were locked reverse (26-1A,B) this is when the system at Braintree Station experienced a code failure and we could not see train 1502 until train 1502 entered the Quincy Adams Station code system.



# **Tab G**



**MASSACHUSETTS  
BAY  
TRANSPORTATION  
AUTHORITY**

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## **IMPOUND 11648 - REPORT**

**Vehicle Inspection  
Cars 1502-1503-1612-1613-1735-1734**

---

**ISSUED: 12/14/2015**

**RTL Vehicle Maintenance Engineering**

**Impound Date:** 12/10/2015  
**Impound No:** 11648  
**Vehicle/Consist:** 1502-1503-1612-1613-1735-1734  
**Location Inspection:** Cabot Maintenance Facility  
**Inspection Date:** 12/11/2015

**Description:**

Consist 1502-1503-1612-1613-1735-1734 started on 6:02 AM pullout at Braintree Station northbound and received a stop code while pulling out. With clearance from dispatcher, the operator placed car into ATO bypass to move through the stop code. When the ATP bypass was activated with cineston in power mode, the train immediately moved and hit Motorperson. The train proceeded without Motorperson onboard under limited power, up to 25 MPH, and rolled to a stop past North Quincy Station, a distance of 6 miles, after third rail power was shut off. The train was recovered by an Inspector and Supervisor that moved train to JFK/UMass Station where all passengers disembarked. The train was then impounded and moved to Cabot yard for incident investigation and inspection.

**Vehicle Engineering Inspection Results:**

After release of train 1502-1503-1612-1613-1735-1734 by the MBTA Transit Police and Safety Department, the Vehicle Maintenance Engineering Department performed brake and Automatic Train Operation (ATO) system testing on the lead cars 1502-1503.

Initial inspection by Vehicle Maintenance Engineering of the lead cars, 1502 and 1503, found:

- 1) Three passenger emergency brake handles pulled, they were the cab end emergency brake handle in 1502 and both passenger emergency handles, cab and rear, in car 1503.
- 2) The Passenger Emergency Intercom circuit breaker in car 1502 was turned off.
- 3) The passenger doors directly behind the cab of 1502, F doors, were open with the operating air valve shut off.
- 4) The 1503 car D-1 or rearmost passenger door glass was broken.

5) The 1502 cab side PA microphone was missing since it had been removed by investigators when the train arrived at Cabot yard.

**Brake Test:**

Train stopping distances were tested three times in maximum service mode and three times in emergency mode from an initial speed of 17 to 19 miles per hour. The expected stopping distances are based on standard values with a 2-second reaction time. The reaction time typically varies from 1 to 3 seconds depending on operator and condition of equipment.

Summary of Brake Stopping Distance 1502-1503-1612-1613-735-1734

Test Run	Train Speed MPH	Braking Mode	Expected Stopping Distance FEET	Measured Stopping Distance FEET
1	19.0	Maximum Service	152.0	145.0
2	18.0	Maximum Service	139.2	136.0
3	18.0	Maximum Service	139.2	134.0
4	18.0	Emergency	125.9	109.0
5	17.0	Emergency	115.1	114.0
6	18.0	Emergency	125.9	111.0

The measured stopping distances were within specification for type 1 and type 2 cars. Braking distance is derived from the car specifications of 2.75 MPH/S for maximum service brake and 3.25 MPH/S for emergency brake rates. Both rates have a tolerance of plus or minus 0.1 MPH/S. Pressure readings of Straight Air Pressure and Brake Cylinder Pressure in minimum, maximum and emergency brake applications were running at the top end of brake pressure tolerance range or +2 psi. The slightly higher brake pressures agree with the slightly shorter average stopping distances. All brakes were cut in on all cars. All brake shoes were above the 7/8" minimum lining thickness specification. All 48 brake packages and shoes were in good operating condition with normal signs of wear. The train brakes and operator controls including the Wabtec cineston of car 1502 were found to be in good operating condition. The handbrake in 1502 was in good working condition pressing axle 1 brake shoe firmly on wheel tread.

**Passenger Emergency Brake Test:**

The four passenger emergency brake handles located at both end doors of each car apply brakes to stop train and unlock end doors when pulled. The passenger emergency brake handles were inspected and reset. All four passenger emergency brake handles in 1502 and 1503 were tested and found to be working properly.

**Passenger Emergency Intercom Test:**

The passenger emergency intercom sounds a very loud audio alarm and flashing button on the PEI panel in all cabs when activated by a passenger. The operator presses the flashing active button and then can hear and press to talk with passenger.

The passenger emergency intercom in 1502 and 1503 activated alarm in the 1502 cab with the handset receiving garbled audio. The PEI control box and handset in 1502 will require repair to restore clear audio quality.

The passenger emergency intercoms in 1502 and 1503 activated cab alarms and communicated messages clearly with the cab PEI handset of the 1503 car.

**Automatic Train Operation and Protection Inspection:**

Under a STOP & STAY condition, train 1502 was placed into ATP Bypass. 1502 then took power and proceeded from Braintree without a Motorperson. 1502 traveled through several stations until 3<sup>rd</sup> rail power was removed and the train came to a stop.

Targeted Static testing was performed on the Carbone Cabsignal System of train 1502. Tested systems include the Over Speed (OS), Automatic Speed Regulation (ASR), and the ATP Bypass system. Testing focused primarily on the state at which train 1502 was in prior to the incident, which was a NO CODE/STOP & STAY condition.

**Over Speed & Automatic Speed Regulation System:**

Movement of a train is protected by the Cabsignal Systems OS, and ASR subsystems. These subsystems condition the trainlines (control signals) received from the cineston. The Propulsion and Brake Release trainlines are limited or completely isolated from the propulsion and brake systems, based upon speed and movement restrictions imposed by wayside signaling. During the incident, train 1502 was under a NO CODE/STOP & STAY

condition due to the loss of wayside signaling. During a STOP & STAY condition, the Power and Brake Release trainlines are isolated from a train's propulsion and brake system by a network of vital relays. The Propulsion and Brake Release trainline signals from the Carborne Cabsignal mechanism were tested specifically for a STOP and STAY condition.

<b>NO CODE/STOP &amp; STAY CONDITION TRAINLINES</b>			
<b>Cineston Position</b>	<b>Brake Release Trainline</b>	<b>Power Trainline Signal to ATP System</b>	<b>Power Trainline Output Signal to from ATP to Propulsion System</b>
<b>Full Service Brake</b>	<b>0 Volts</b>	<b>0 Volts</b>	<b>0 Volts</b>
<b>Coast/Brake Release</b>	<b>0 Volts</b>	<b>0 Volts</b>	<b>0 Volts</b>
<b>Power 1</b>	<b>0 Volts</b>	<b>37 Volts</b>	<b>0 Volts</b>
<b>Power 2</b>	<b>0 Volts</b>	<b>37 Volts</b>	<b>0 Volts</b>
<b>Power 3</b>	<b>0 Volts</b>	<b>37 Volts</b>	<b>0 Volts</b>
<b>Power 4</b>	<b>0 Volts</b>	<b>37 Volts</b>	<b>0 Volts</b>

***\*Trainline Control Signals:***

***\*Brake Release: 37volts = Brake Release***

***\*Power 1, 2, 3, 4: 37volts = Calls for corresponding stage of propulsion power***

***\*ATP Bypass limits the propulsion system to Power 2, approximately 25mph***

Propulsion and Brake trainline signals were tested with the cineston controller in all positions. In all positions, the OS and ASR system isolated the control signals from the propulsion and brake systems, and prevented the train from releasing its brakes and taking power.

### ATP Bypass Test:

The Motorperson must stop the train, leave the cab and put the switch into BYPASS to initiate this mode. Doing so will turn on the BYPASS, LOC (Local), and STOP indicators on the Aspect Display Unit (ADU). The bypass mode cannot be controlled by the remote mechanism in the B car (1503). In this mode, the train is in complete control of the Motorperson. In Bypass, there is no over speed protection or speed regulation. The train's propulsion system is limited to P2 (Power 2), approximately 25mph.

Testing of the ATP Bypass system found the system to be fully functional. Power and Brake trainline signals are conditioned by the Cabsignal System to allow for a brake release and limited propulsion power to P2.

<b>ATP BYPASS TRAINLINES</b>			
<b>Cineston Position</b>	<b>Brake Release Trainline from ATP</b>	<b>Power Trainline Signal to ATP System</b>	<b>Power Trainline Output Signal to from ATP to Propulsion System</b>
<b>Full Service Brake</b>	<b>0 Volts</b>	<b>0 Volts</b>	<b>0 Volts</b>
<b>Coast/Brake Release</b>	<b>37 Volts</b>	<b>0 Volts</b>	<b>0 Volts</b>
<b>Power 1</b>	<b>37 Volts</b>	<b>37 Volts</b>	<b>37 Volts</b>
<b>Power 2</b>	<b>37 Volts</b>	<b>37 Volts</b>	<b>37 Volts</b>
<b>Power 3</b>	<b>37 Volts</b>	<b>37 Volts</b>	<b>0 Volts</b>
<b>Power 4</b>	<b>37 Volts</b>	<b>37 Volts</b>	<b>0 Volts</b>

***\*Trainline Control Signals:***

***\*Brake Release: 37volts = Brake Release***

***\*Power 1, 2, 3, 4: 37volts = Calls for corresponding stage of propulsion power***

***\*ATP Bypass limits the propulsion system to Power 2, approximately 25mph***



**Inspection and Test Summary:**

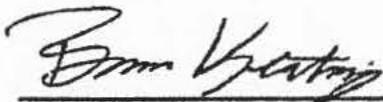
Testing has determined that the ATP system and subsystems are operating as designed. Conditioning of the Propulsion and Brake trainline signals via the OS and ASR subsystems were found to be fully functional and operating as designed. The Propulsion and Brake Release trainline signals are isolated from the propulsion and brake systems during a STOP & STAY condition. The ATP Bypass system was operating as designed by allowing brake release, Power 1 and Power 2 trainlines to be energized independent of wayside signals.

Stopping distances were measured in the expected range for the type 1 and 2 subway cars. Passenger emergency brake and door controls were in proper operating condition.

The brakes and propulsion controls were found to be free of any equipment fault or defect that would have caused the train to fail to stop or move without operator intervention.

It is recommended all missing or damaged PA equipment and door glass be repaired or replaced before returning to revenue service.

**PREPARED BY**

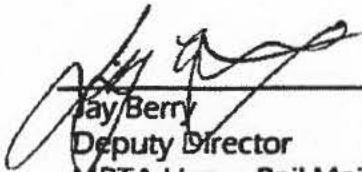


\_\_\_\_\_  
Brian Keating  
Vehicle Maintenance Engineer,  
MBTA Red Line

12/14/15

Date

**APPROVAL**



\_\_\_\_\_  
Jay Berry  
Deputy Director  
MBTA Heavy Rail Maintenance

12.14.15

Date



# **Tab H**



Figure 1. Cineston handle wrapped 2x's as described by responding personnel and customers with the dead-man feature activated (above view)



**Figure 2.** Cineston wrapped two times as described by responding personnel and customers with the dead-man feature activated (MP view). This is a recreation based on descriptions provided.



Figure 3. Cineston wrapped 2x's dead-man feature deactivated (MP view). This is a recreation based on descriptions provided.





Figure 4. Red Line 1500 In-Cab Handbrake



Figure 5. Red Line Emergency Bypass Switch (Outside View)

# **Tab I**



Charles D. Baker, Governor  
 Karyn E. Polito, Lieutenant Governor  
 Stephanie Pollack, MassDOT Secretary & CEO  
 Frank DePaola, General Manager  
 Brian Shortsleeve, Chief Administrator



**This Report is to be Completed for the Director of the Transportation Oversight Division  
 of the Massachusetts Department of Public Utilities  
 Per Requirement 220 C.M.R. §151.06(4), §151.08(2), §151.09(1), and §151.09(4)**

<b>PRELIMINARY REPORT OF: Unacceptable Condition</b>						Report #A15-367 # FY15-4830	
Date of Event: 12/10/2015		OCC Log Time: 6:08 AM			Location: Braintree Station Line: Red Line		
Date of written DPU notification: 12/11/2015		Employee Name: David Vazquez Employee # [REDACTED]			Safety employee hazard reported to: Ronald Nickle		
DPU Notified Via All Page: Yes		Safety employee assigned to investigation and contact information: Anthony Phu 617-222-5140 Safety Inspector Fax #: 617-222-5127					
<b>GENERAL INFORMATION</b>							
Fatalities and Injuries	Employee	Passenger	Vendor/ Occupant	Pedestrian	Trespasser	Other Worker	Other
a. Injuries	1	0	0	0	0	0	0
b. Fatalities	0	0	0	0	0	0	0
Estimated Property Damage: \$0							
Impound: Yes				Impound #: 11644			
What was Impounded: Train Consist #1502-1503-1612-1613-1735-1734				Impound Requested by: Red Line			
NTSB Notified? Yes				FTA Notification: Yes			
<p><b>Description of Incident:</b> Inspector Todd Downey (employee # [REDACTED]) reported to Operations Control Center (OCC) that Train Consist #1502-1503-1612-1613-1735-1734 has departed out of Braintree Station, northbound without an operator.</p> <p>Operator David Vazquez (employee # [REDACTED]) requested and received approval for a manual release to depart Braintree Station due to intermittent train code failure in the Braintree Area. The manual release attempt was unsuccessful to move train. Operator Vazquez requested and received permission by OCC Dispatcher Ainsley Saunders (employee # [REDACTED]) to place Train #1502 on emergency bypass, with clearance to Quincy Adams Station, northbound. Operator Vazquez exited Train #1502 to activate the emergency bypass switch which was located outside the train near the coupler. Once bypass was engaged, Train #1502 began departing Braintree Station area without him. Operator Vazquez jumped out of the way, but sustained an injury to his leg. Operator Vazquez made his way to the Inspector's Office to report the unmanned train. Operator Vazquez was transported to South Shore Hospital.</p> <p>At approximately 6:09 AM, the train consist in front of Train #1502 (Lead Train #1602) was instructed to proceed express northbound to Andrews Station and not stop at Wollaston, North Quincy or JFK/UMass Stations. The Power Department opened power sections #B-7, #B-9, #B-13, and #B-15 to turn off power between Quincy Adams Station, northbound and the Anderson Bridge. Train #1502 stopped just north of North Quincy Station, northbound.</p> <p>Inspector Conroy and Supervisor Brown boarded Train #1502. They stated that passengers were in the control cab. They also stated the public address cable was wrapped around the cineston (controller) in a power up position. After confirming that no injuries had occurred and all passengers were safe, Inspector Conroy and Supervisor Brown secured the train and proceeded to JFK/UMass Station, northbound to unload the passengers. Train #1502 then proceeded light to Cabot Yard where it was impounded (Impound #11644).</p>							



**HAZARD IDENTIFICATION**

Severity: Critical

Probability: Remote

How Identified: Operations Control Center

Most Probable Cause: Under Investigation and Review

Immediately Implemented and/or Planned Corrective Action: Train Consist was stopped and impounded

Signature: *Ronald W. Nickle*

Ronald W. Nickle, Chief Safety Officer

DPU Official: \_\_\_\_\_

Notification prepared by: Timothy Davis