



## **WMSC Commissioner Brief: W-0121 – Collision, Customer Fatality – Union Station – June 23, 2021**

*Prepared for Washington Metrorail Safety Commission meeting on October 26, 2021*

### **Safety event summary:**

A Metrorail customer deliberately placed themselves in front of a train as the train entered Union Station on June 23, 2021 at approximately 12:29 p.m. The Train Operator applied emergency braking, but the person was struck and killed by the train.

Riders on the train were escorted through the train and exited directly onto the station platform.

During the response, Metrorail did not properly de-energize third rail power and did not take steps required by Metrorail procedures to confirm that third rail power was de-energized. Power was also not de-energized immediately. The initial attempt to de-energize the third rail occurred four minutes after the person was struck.

D.C. Fire and Emergency Medical Services (FEMS) personnel later identified upon their arrival that power remained energized at the rear of the train, just outside of the Union Station platform.

Due to the rear of the train's presence on that energized segment of third rail, the front of the train also remained energized and bridged the gap in third rail, which kept the segment inside the station energized despite the Advanced Information Management (AIM) system display showing that power was de-energized within the platform limits. The AIM display demonstrated only that the Rail Operations Control Center (ROCC) had opened breakers that feed that section of third rail, not the actual electrical condition of the third rail. This put first responders and Metrorail personnel who had entered the roadway at risk of electrocution.

A Rail Transportation (RTRA) supervisor had been granted permission to access the roadway at approximately 12:38 p.m., but neither the supervisor nor Metro Transit Police Department (MTPD) personnel who arrived on scene had stuck to confirm that third rail power was de-energized, and the ROCC did not ensure that this step had taken place, as required. The checklist available to the ROCC controller to assist with this process was outdated and did not include all necessary information. D.C. FEMS reported at 12:55 p.m. that power had remained energized, and that they had used the Emergency Trip Station (ETS) box to de-energize the third rail.

During the response, the Emergency Response Team (ERT) and Car Maintenance (CMNT) personnel bypassed the incident command post. Metrorail later instructed these individuals to report to the incident command post as required. The RTRA Forward Liaison repeated back incorrect signal names, and the ROCC did not require 100 percent repeat back during the Foul Time request.

Metrorail's SOP 26 governing events in which a person is struck by a train specifies the steps to be taken to close the station or to gain approval to continue service during the emergency response. These steps were not followed, and Metro single-tracked through the area during the entirety of the response without following the procedures requiring that the station be closed until the incident commander determines it is safe to restore service.

Metrorail did not remove ROCC or other personnel involved in the lack of de-energization of power from service for post-event testing as required by Metrorail policy. The Train Operator was removed from service for testing, and was found to be in compliance with WMATA's Drug and Alcohol Policy.



**Probable Cause:**

The probable cause of this event was a person intentionally placing themselves in the path of the train.

The probable cause of the unsafe response to the event was inadequate supervisory oversight of training on and awareness of procedures for power de-energization and the response to a person struck by a train.

**Corrective Actions:**

ROCC distributed a lessons learned document related to the requirements for de-energizing third rail power under the entirety of a train and the required use of 100 percent radio repeat backs. Distribution included a “work session” incorporating these procedures.

Metrorail is in the process of revising power energization and de-energization procedures SOP 2 and SOP 28 to reflect a newly expanded Power Desk in the ROCC that will have primary responsibility for third rail power.

Metrorail is revising SOP 26 (person struck by train) to more closely align with revised SOP 28.

**WMSC staff observations:**

Responding personnel must report to an incident command post regardless of which entity is serving as the incident commander, and liaisons to the command post must communicate situational updates and direction from the incident commander as required. The WMSC is evaluating Metrorail's compliance with incident command system (ICS) requirements as part of the Emergency Management and Fire-Life Safety Audit (draft transmitted to Metrorail this month for 30-day technical review).

Metrorail has open corrective action plans (CAPs) related to ROCC training. Other personnel, such as RTRA personnel, should also have identified that hot-sticking was required for their own safety and the safety of others. The WMSC is pleased that D.C. FEMS personnel followed safety procedures and ensured that power was properly de-energized.

Metrorail has an opportunity to better incorporate third rail safety, including in unusual situations such as a train stopped on two different segments of third rail, into regular training.

**Staff recommendation:** Adopt final report.



Washington Metro Area Transit Authority

Department of Safety and Environmental  
Management (SAFE)

**FINAL REPORT OF INVESTIGATION A&I E21255**

<b>Date of Event:</b>	6/23/2021
<b>Type of Event:</b>	Person Struck by Train
<b>Incident Time:</b>	12:29 hours.
<b>Location:</b>	Union Station, Track 1
<b>Time and How received by SAFE:</b>	13:39 hours. SAFE On-call Phone
<b>WMSC Notification Time:</b>	13:54 hours.
<b>Responding Safety Officers:</b>	WMATA SAFE: Yes WMSC: No Other: N/A
<b>Rail Vehicle:</b>	Train ID 118, <b>L7442-7443</b> . 7325-7324. 7284-7385. 7403-7402T
<b>Injuries:</b>	Fatality
<b>Damage:</b>	Train-to-Wayside Communication Antenna
<b>Emergency Responders:</b>	Office of Rail Transportation (RTRA), Metro Transit Police Department (MTPD), District of Columbia Fire and Emergency Services (DCFEMS), Office of Car Maintenance (CMNT), Emergency Response Team (ERT), and Office of Plant Maintenance (PLNT).
<b>SMS I/A Incident Number:</b>	20210623#94044MX

Union Station Person Struck by Train  
June 23, 2021  
Table of Contents

Abbreviations and Acronyms .....	3
Executive Summary .....	4
Incident Site .....	5
Field Sketch/Schematics.....	6
Purpose and Scope .....	7
Investigation Methods .....	7
Investigation.....	7
Audio Recording System (ARS) Chronological Event Timeline .....	13
Metro Transit Police Department .....	19
Office of Car Maintenance (CMNT).....	20
Office of Chief Mechanical Officer (CMOR) / Incident Investigation Team (IIT).....	20
Event Recorder (ER) Data Graph/Sequence of Events .....	20
Office of System Maintenance Communication Section (COMM) .....	21
Interview Findings .....	21
Mitigations Completed to Prevent Recurrence .....	22
Findings .....	22
Weather .....	23
Human Factors .....	23
Evidence of Fatigue: Train Operator .....	23
Fatigue Risk: Train Operator.....	23
Evidence of fatigue: Rail Traffic Controller .....	23
Fatigue Risk: Rail Traffic Controller .....	23
Post-Incident Toxicology Testing .....	23
Probable Cause Statement.....	24
Recommendations/Corrective Actions .....	24
Appendices .....	26
Appendix A – Incident Statement / Interviews.....	26
Appendix B – Incident Response Non-Compliance of Rules and Procedures.....	28
Appendix C – ROCC Lesson Learned .....	29
Appendix D - Root Cause Analysis .....	30

## **Abbreviations and Acronyms**

<b>AIMS</b>	Advanced Information Management System
<b>ATC</b>	Automatic Train Control
<b>ARS</b>	Audio Recording Service
<b>CAD</b>	Computer-Aided Dispatch
<b>CCTV</b>	Closed Circuit Television
<b>CENV</b>	Vehicle Program Services
<b>CSS</b>	Crime Scene Search
<b>DOA</b>	Deceased on Arrival
<b>DCFEMS</b>	District of Columbia Fire and Emergency Medical Services
<b>DCOCME</b>	District of Columbia Office of the Chief Medical Examiner
<b>ETS</b>	Electronic Trip Station
<b>ER</b>	Event Recorder
<b>ESR</b>	Event Scene Release
<b>FT</b>	Foul Time
<b>IC</b>	Incident Command
<b>ICP</b>	Incident Command Post
<b>MC</b>	Master Controller
<b>MOC</b>	Maintenance Operations Center
<b>MSRPH</b>	Metrorail Safety Rules and Procedures Handbook
<b>MTPD</b>	Metro Transit Police Department
<b>OSC</b>	On-scene Commander
<b>PLNT</b>	Plant Maintenance
<b>ROCC</b>	Rail Operations Control Center
<b>ROIC</b>	Rail Operations Information Center
<b>RTC</b>	Rail Traffic Controller
<b>RTRA</b>	Office of Rail Transportation
<b>SOP</b>	Standard Operating Procedure
<b>VMDS</b>	Vehicle Monitoring and Diagnostic System
<b>WMSC</b>	Washington Metrorail Safety Commission
<b>WSAD</b>	Warning Strobe and Alarm Device

## **Executive Summary**

On Wednesday, June 23, 2021, at approximately 12:05 hours, Union Station Closed Circuit Television (CCTV) showed an unidentified person at Union Station metro station, entering the station from the First Street side, and walking down to the platform area. The person appeared to be on their phone and boarded a Shady Grove-bound train at approximately 12:08 hours. The unidentified person then arrives back at Union Station on a Glenmont train at approximately 12:22 hours and walks down the platform in Massachusetts Avenue's direction. Union Station camera views are obstructed and distant; however, at approximately 12:29 hours, the unidentified person can be seen stepping toward the tracks and placing themselves within the dynamic envelope of Train ID 118, L **7442-7443**.7325-7324.7284-7385.7403-7402T, approximately 566 feet from the 8-car marker.

At approximately 12:29 hours, a Red Line train [Train ID 118] on Track 1 traveling outbound in the direction of Glenmont entered Union Station platform limits and struck a person on the roadway. The Train Operator of Train ID 118 notified the Rail Operations Control Center (ROCC) Radio Rail Traffic Controller (RTC) of the event. The Radio RTC acknowledged the transmission. The Button RTC made calls to Rail Operation Information Center (ROIC), ROCC Assistant Superintendent. The Radio RTC proceeded to dispatch an Office of Rail Transportation (RTRA) Supervisor to Union Station.

Train ID 118 Train Operator conducted a ground walk-around and reported there were no signs of life. Persons aboard Train ID 118 were escorted through the trailing cars and exited directly onto the Union Station platform, assisted by RTRA personnel. There were no reported injuries to persons aboard the train or to WMATA personnel. RTRA removed the Train Operator from service for post-incident toxicology testing and subsequent Metro Transit Police Department (MTPD) interview.

Based on Advanced Information Management System (AIMS) Playback, at approximately 12:33 hours, the Button RTC de-energized third rail power on Track 1. The ROIC Specialist notified the District of Columbia Fire and Emergency Medical Services (DCFEMS). The Button RTC notified Metro MTPD at approximately 12:32 hours with duplicated efforts from ROIC and the ROCC Assistant Superintendent.

At approximately 12:38 hours, the first MTPD officer arrived at Union Station. The Radio RTC then appointed the two RTRA Supervisors as the RTRA Forward Liaison and RTRA Incident Command (IC) Liaison.

At approximately 12:43 hours, DCFEMS arrived on the scene and established the Incident Command Post (ICP) at the Kiosk on the Massachusetts Avenue side. The unidentified person sustained fatal injuries, and RTRA Supervisor 1 and MTPD located the unidentified person under the second car [7443]. DCFEMS pronounced the person deceased at the scene at approximately 12:58 hours and de-escalated to a recovery operation. The District of Columbia Office of the Chief Medical Examiner (DCOCME) arrived on the scene and initiated its investigation at approximately 13:48 hours. The incident train was not moved until DCOCME and WMSC Event Scene Release (ESR) were received.

At approximately 14:27 hours, MTPD requested that third rail power be re-energized to move Train ID 118 towards Shady Grove Yard to conduct its investigation. MTPD completed its investigation, cleared the incident scene, and relinquished control to RTRA at approximately 15:32 hours.

The Office of Plant Maintenance Department (PLNT) personnel were standing by on the platform. They were permitted to enter the roadway under Foul Time (FT) Roadway Worker Protection (RWP) to disinfect the roadway in preparation for mainline restoration. PLNT personnel began cleaning mitigation efforts at approximately 15:27 hours. At approximately 16:18 hours, ROCC commanded third rail power breakers closed and re-energized at Union Station, Track 1. ROCC resumed normal service, and Train ID 105 was the first train to continue in revenue service from Judiciary Square to Glenmont.

The probable cause of the Union station person struck by train event was that a person intentionally placed themselves in the train's dynamic envelope 34 feet within the platform limits. Train ID 118 Train Operator activated the Emergency Pushbutton and MC handle as the person jumped onto the roadway. Unfortunately, Train ID 118 Train Operator was unable to prevent contact with the person, resulting in a fatality.

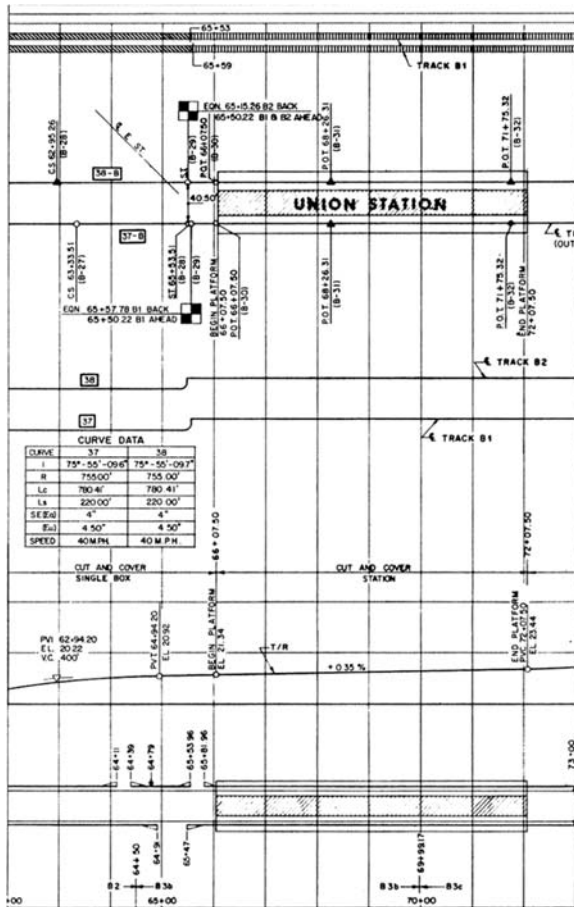
In reviewing the incident response, it was later identified that third rail power was de-energized beneath the entire consist of the train immediately following notification of the event. The ROCC Radio RTC did not instruct the RTRA Supervisor to hot stick and confirm power status before entering the roadway. During the event, ROCC continued to single-track around the location while keeping the station open for operations during the incident response.

An analysis of data collected from the record systems, staff incident report review, and CCTV review determined that no safety deficiencies related to any WMATA station facility or rail vehicle failures contributed to the person being struck by the train. A review of the Vehicle Monitoring and Diagnostic System (VMDS) recordings revealed that the Train Operator of Train ID 118 applied the Console Emergency Pushbutton before striking the unidentified person.

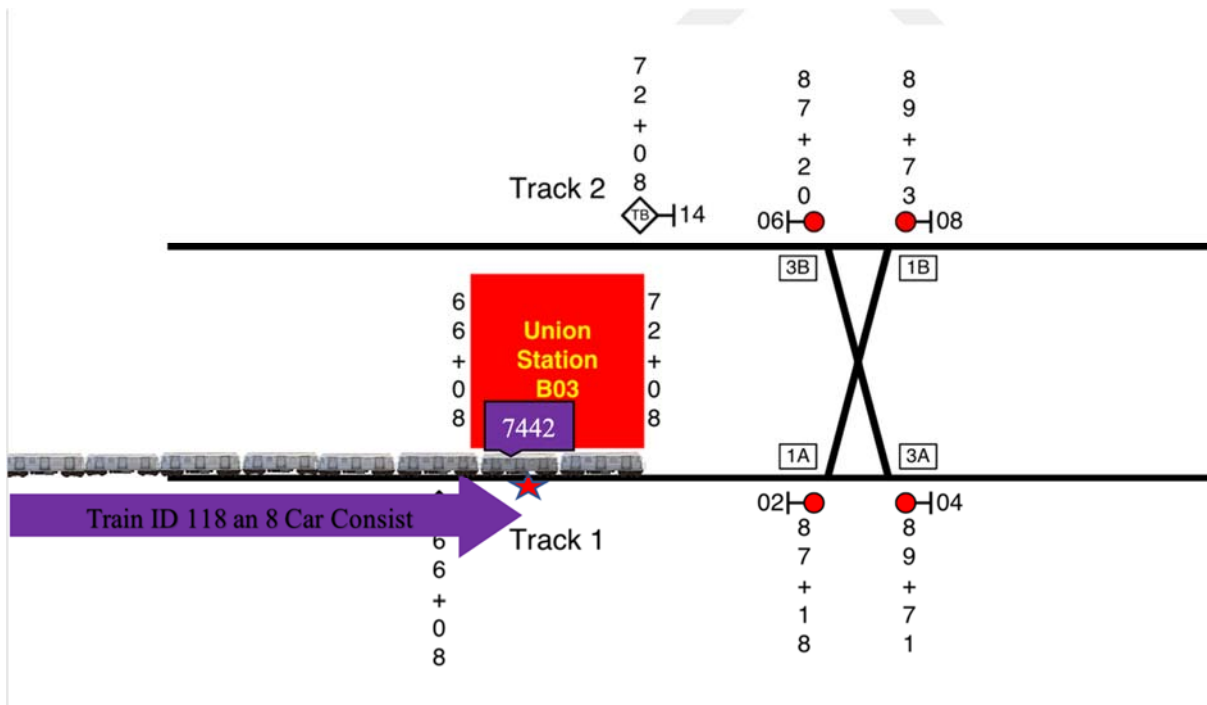
### **Incident Site**

Union Station, Track 1  
Direct Fixation Track  
Length of Curve - 780-feet  
The radius of Curve - 755.00.'  
Elevation of 20.22  
Point of Vertical Intersect C1 - 62+94.20  
Point of Vertical Tangent Track C1 - 64+94.20  
Point of Tangent Track C1 66+07.50  
400-foot Vertical Curve at C1 - 62+95.26

Based on the system of record data, the Train Operator had a limited view of Union Station, Track 1, while on approach.



## Field Sketch/Schematics





## **Purpose and Scope**

The purpose of this incident investigation and candid self-evaluation is to collect and analyze available facts, determine the probable cause(s) of the incident, identify contributing factors, and make recommendations to prevent a recurrence.

## **Investigation Methods**

The investigative methodologies included the following:

Formal Interview – SAFE conducted one interview of the following involved persons as part of this investigation:

- Radio RTC

**\*\*Note:** At the time of the submission of this report, SAFE was unable to interview the Train Operator due to unscheduled leave of absence as a result of this event.

Informal Interviews – Collected through conversations with individuals during the investigation to provide background and supporting information.

Documentation Review – A collection of relevant work history information and process documentation in Metro systems of record. These records include:

- Employee Training Procedures & Records
- Certifications
- The 30-Day work history
- Metrorail Safety Rules and Procedures Handbook (MSRPH)
- National Oceanic and Atmospheric Administration (NOAA)
- Rail Operations Control Center (ROCC) Procedures Manual
- Office of Systems Maintenance Communication Section (COMM)
- Office of Chief Mechanical Officer (CMOR) / Incident Investigation Team (IIT) post-incident analysis data
- Office of Car Maintenance (CMNT) post-incident inspection data

System Data Recording Review – A collection of information contained in Metro Data Recording Systems and Open MHz This data includes:

- Audio Recording System (ARS) playback [Radio and Phone Communications]
- Open MHz (DCFEMS)
- Closed-Circuit Television (CCTV) playback
- Advanced Information Management System (AIMS) Playback pending
- Oracle Report
- AIMS Event Log

## **Investigation**

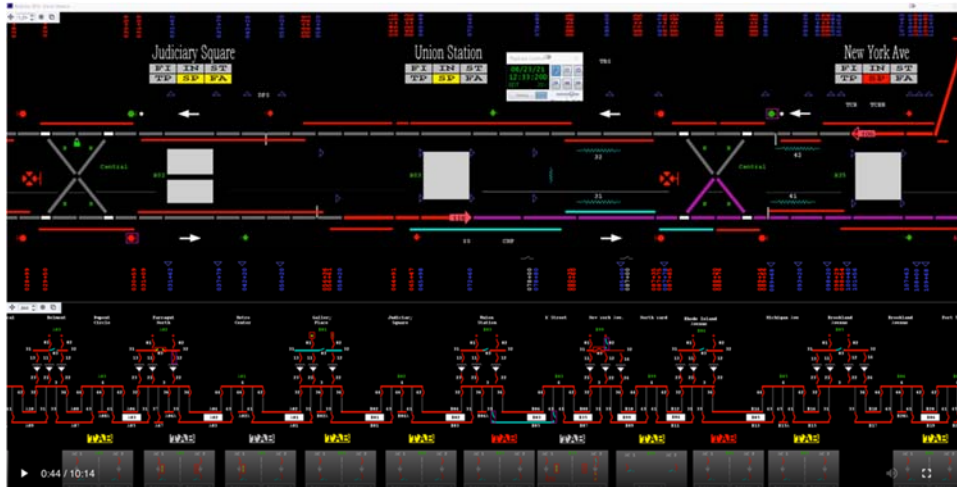
On Wednesday, June 23, 2021, at approximately 12:05 hours, Union Station CCTV showed an unidentified person who arrived at Union Station, entered the station from the First Street side, and walked down to the platform area. The person appeared to be on their phone and boarded a Shady Grove train at approximately 12:08 hours. The unidentified person returned to Union Station on a Glenmont-bound train at approximately 12:22 hours and walked down the platform in Massachusetts Avenue's direction. Union Station CCTV views are obstructed and distant; however, at approximately 12:29 hours, the unidentified person can be seen stepping toward the

tracks and placing themselves within the dynamic envelope of the Train ID 118 [L **7442-7443**. 7325-7324. 7284-7385. 7403-7402T] approximately 566 feet from the 8-car marker.

At approximately 12:29 hours, a Red Line train [Train ID 118 consist L **7442-7443**. 7325-7324. 7284-7385. 7403-7402T] on Track 1 traveling outbound Glenmont Stations direction entered Union Station platform limits and made contact with a person on the roadway 34 feet within the platform limits. The Train Operator of Train ID 118 notified the ROCC RTC of the event. The Radio RTC acknowledged the transmission. The Button RTC made the respective calls to ROIC and ROCC Assistant Superintendent. The Radio RTC proceeded to dispatch an RTRA Supervisors to Union Station.

Train ID 118 Train Operator conducted a ground walk-around and reported there were no signs of life. Persons aboard Train ID 118 were walked through the trailing cars and exited onto the Union Station platform assisted by RTRA personnel. There were no reported injuries to persons aboard the train or to WMATA personnel. RTRA removed the Train Operator from service for post-incident toxicology testing and subsequent MTPD interview.

Based on AIMS Playback, at approximately 12:33:20 hours, the Button RTC de-energized third rail power on Track 1.



*Diagram 1 - ROCC commanded Third rail power circuit breakers open after Train ID 118 reported striking a person at 12:33:20 hours.*

The ROIC Specialist notified the DCFEMS and the Button RTC notified MTPD at approximately 12:32:19 hours with duplicated calls to MTPD from ROIC and ROCC Assistant Superintendent. At approximately 12:38:17 hours, RTRA Supervisor Unit 4 requested permission from the Radio RTC to go on to the roadway to assess the situation of the person struck by a train. ROCC set up FT protection for the RTRA Supervisor at approximately 12:36:40 hours and granted FT at approximately 12:38:30 hours.

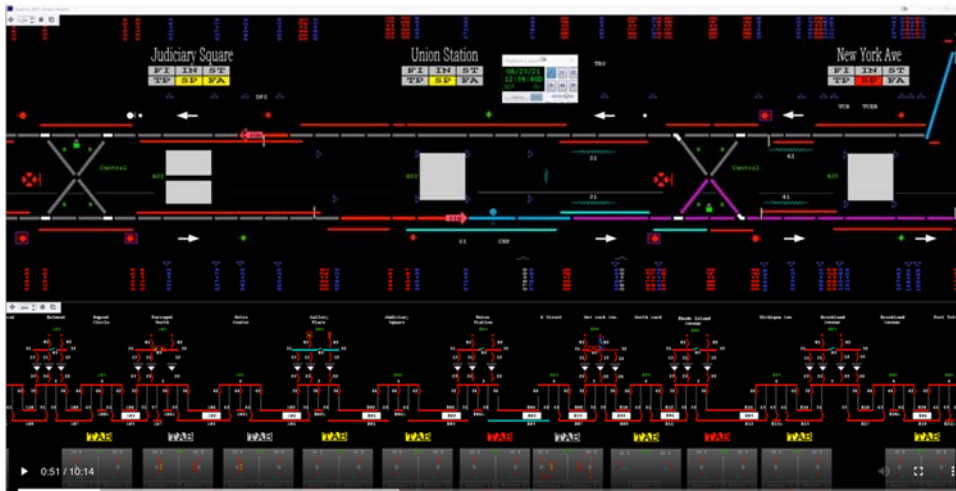


Diagram 2 – ROCC setup FT Protection for RTRA Supervisor Unit 4 at 12:36:40 hours.

At approximately 12:38:42 hours, the first MTPD officer arrived at Union Station; the Radio RTC then appointed the two RTRA Supervisors [Unit 4 and Unit 19] as the RTRA Forward Liaison and RTRA Incident Command (IC) Liaison.

The AIMS playback revealed the Radio RTC re-blocked the incident train from Train ID 118 to Train ID 718 at approximately 12:42:30 hours.

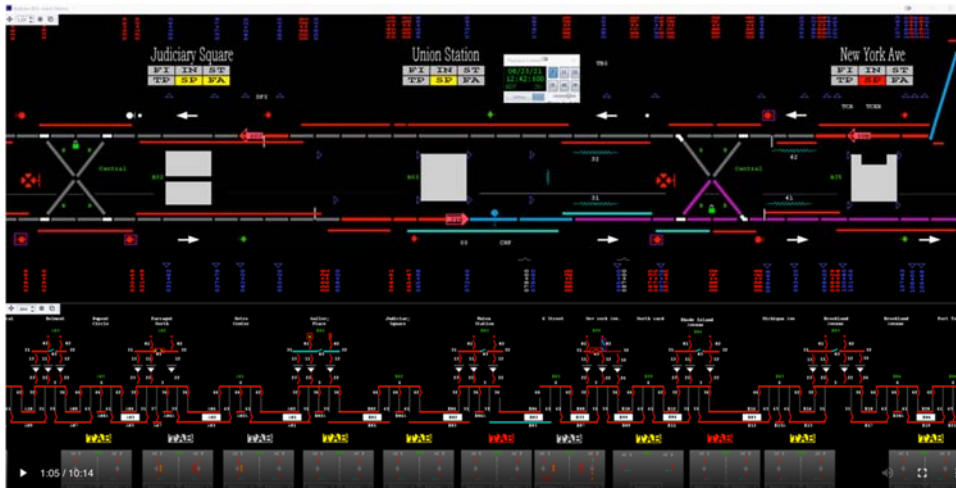


Diagram 3 – ROCC re-blocked Train ID 118 to Train ID 718 [non-revenue] at 12:42:30 hours.

At approximately 12:43:07 hours, DCFEMS arrived on the scene and established the Incident ICP at the Kiosk on the Massachusetts Avenue side.

A review of Open MHz DCFEMS tactical channel revealed Safety Truck 4 notified the ICP that third rail power was still energized 300 feet from the Union Station platform limits on Track 1 at approximately 12:55 hours. The Safety Truck 4 notified the ICP they were located at C1-62+00 and activated the Electronic Trip Station (ETS) box to de-energize third rail power.

Wed Jun 23 12:57:00 EDT 2021	Judiciary	Sq B02-B03 Third Rail Power CURRENT STATE = Deenergize	R	LAMS	REVENUE
Wed Jun 23 12:57:00 EDT 2021	Judiciary	Sq B02-41 DC Feeder Tie Breaker COMMANDED Prohibit Close BY SYSTEM AT ctsc-hostbpva	R	LAMS	REVENUE
Wed Jun 23 12:57:00 EDT 2021	Judiciary	Sq B02-41 DC Feeder Tie Breaker CURRENT STATE = Tripped	R	LAMS	REVENUE
Wed Jun 23 12:56:59 EDT 2021	Union	Station B03-31 DC Feeder Tie Breaker COMMANDED Prohibit Close BY SYSTEM AT ctsc-hostbpva	R	LAMS	REVENUE
Wed Jun 23 12:56:59 EDT 2021	Union	Station B03-31 DC Feeder Tie Breaker CURRENT STATE = Tripped	R	LAMS	REVENUE

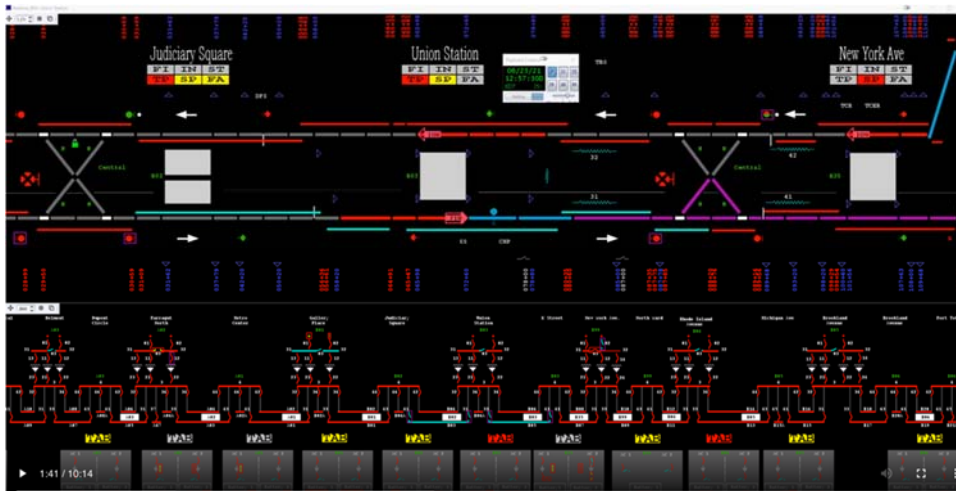


Diagram 4 – Third rail power circuit breakers commanded open at Judiciary Square via ETS trip station by the DCFEMS at approximately 12:57:30 hours.

A review of the track schematic and train data shows the incident train came to a complete stop approximately 370 feet from the eight-car marker at Union Station with three rail cars in the station. An eight-car consist is approximately 600 feet in length in relation to the platform limits. This would indicate that 370 feet of the incident train, approximately five rail cars, were outside the platform limits within the tunnel on energized rail based on DCFEMS reported CM C1-62+00.

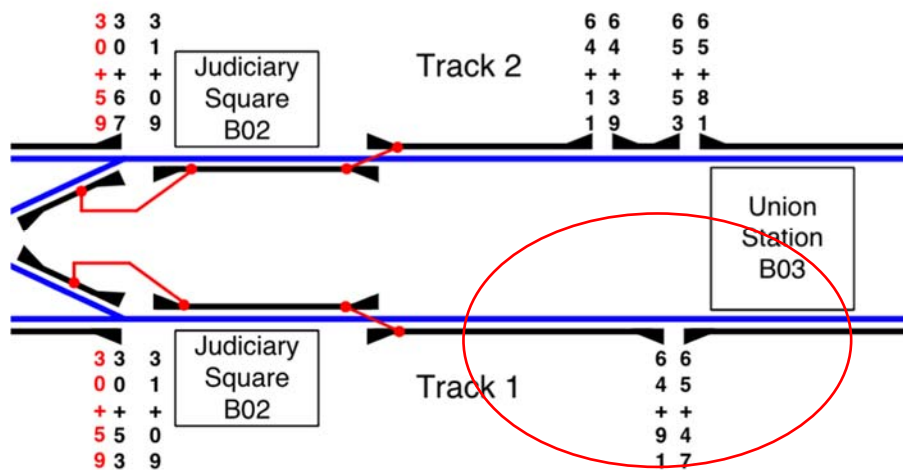


Diagram 5 - Contact rail schematic indicating CM and the affected third rail outside Union station.

The IC notified Safety Truck 4 that WMATA personnel were at the ICP and will ensure third rail power remained de-energized in that area.

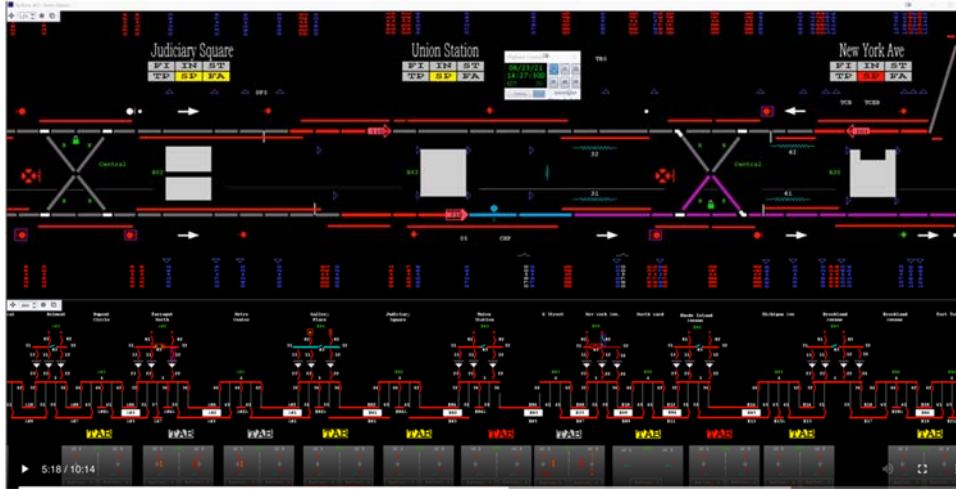
The MTPD after-action “Hot Wash” report reflects that the Battalion Chief requested third rail power north on Union station track 1 be de-energized to give DCFEMS better access to the scene.

RTRA Supervisor Unit 4 and MTPD located the unidentified person under the second car [7443] within the consist. Further investigation revealed the unidentified person sustained fatal injuries. DCFEMS pronounced the person deceased at the scene at approximately 12:58 hours and de-escalated to a recovery operation. The DCOCME arrived on the scene and initiated their



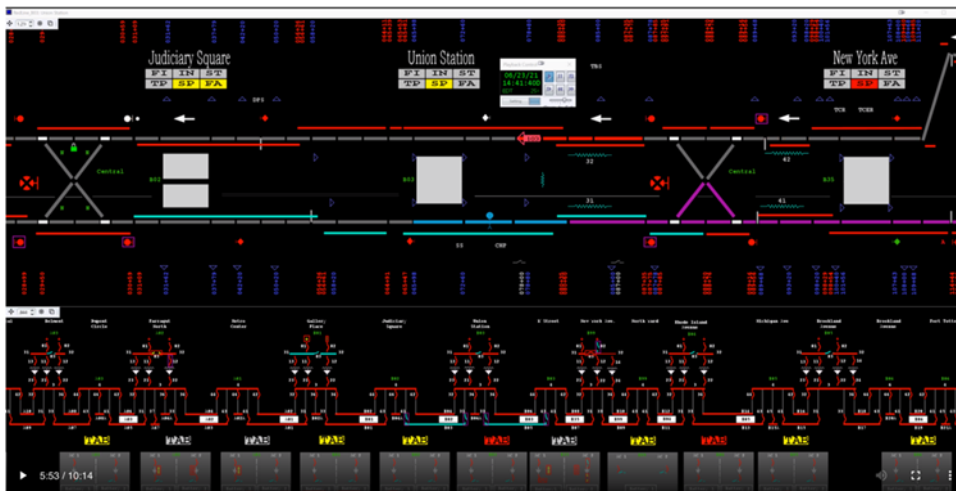
investigation at approximately 13:49 hours. The Incident Scene was not altered until DCOCME and WMSC gave authorization. The ESR was received at approximately 12:50 hours.

At approximately 14:27:26 hours, MTPD requested third rail power be re-energized to move Train ID 118 towards Shady Grove Yard to conduct their investigation. AIMS reflects ROCC commanded third rail power circuit breakers closed at Judiciary Square and Union Station at approximately 12:57:30 hours to move Train ID 718.



*Diagram 6 – ROCC commanded, third rail power circuit breakers closed at Judiciary Square and Union Station at approximately 14:27:30 hours to move Train ID 718.*

The ROCC subsequently de-energized third rail power again after Train ID 718 left the area to continue their investigation. This was done to remove the unidentified person from the roadway by DCOCME.



*Diagram 7 – ROCC Commanded Third rail power circuit breakers commanded open at Judiciary Square and Union Station at approximately 14:41:40 hours.*

MTPD completed their investigation, cleared the incident scene, and relinquished control to RTRA at approximately 15:32:23 hours.

PLNT personnel were standing by on the platform and were permitted to enter the roadway under FT RWP to disinfect the roadway in preparation for mainline restoration. PLNT personnel began cleaning mitigation efforts at approximately 15:27 hours.

At approximately 16:23 hours, ROCC commanded third rail power breakers closed and re-energized at Union Station, Track 1.

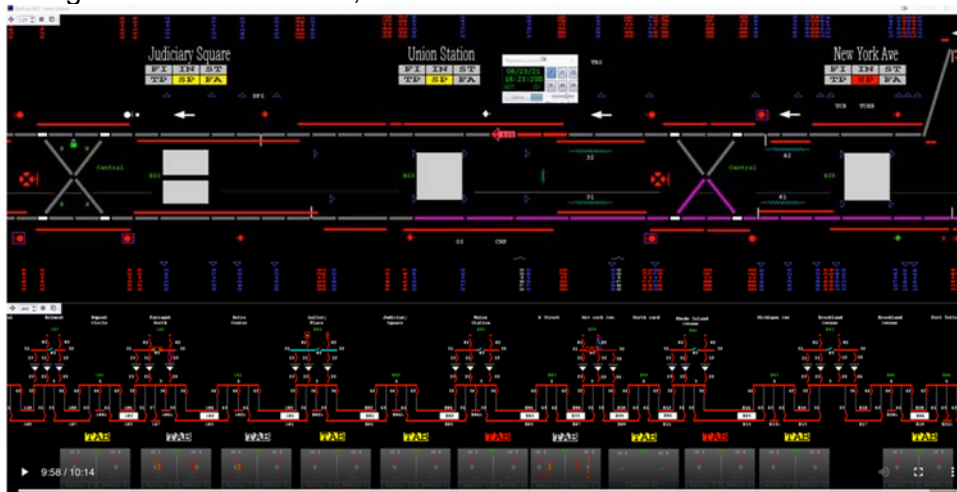


Diagram 8 – ROCC commanded, third rail power circuit breakers closed at approximately 16:23 hours.

ROCC resumed normal service, and Train ID 105 was the first train to continue in revenue service from Judiciary Square to Glenmont.

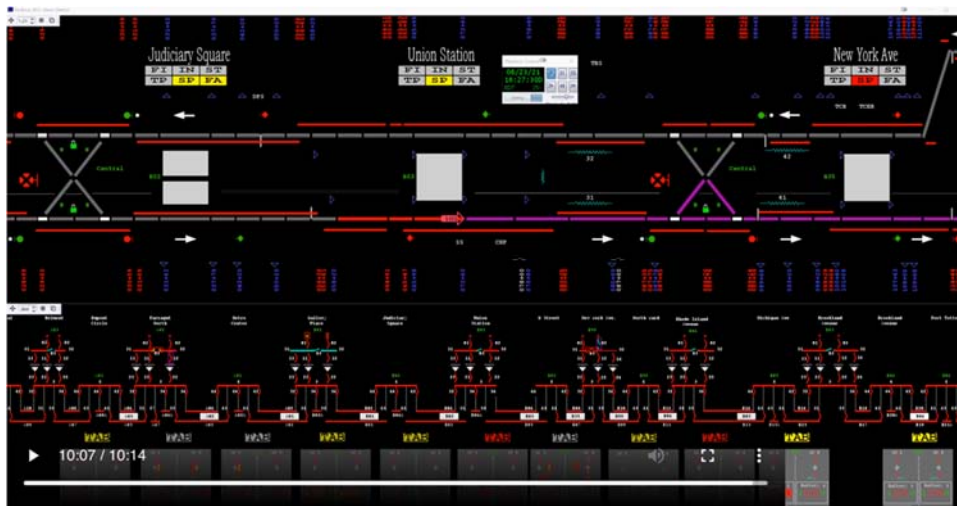


Diagram90 – Train ID 105 traversed the incident and serviced the station at approximately 16:27:30 hours.

## **Audio Recording System (ARS) Chronological Event Timeline**

A review of ARS playback, i.e., phone and radio communications and the MTPD Computer-aided dispatch (CAD) report, revealed the following:

<b>Time</b>	<b>Description</b>
12:29:31 hours	<u>Train ID 118 Train Operator:</u> Emergency, Emergency, Emergency Train ID 118, I just had someone jump in front of my train. <u>Radio RTC:</u> Train ID 111 I copy, person struck by train. Do you have any cars on the platform at this time? <u>Train ID 118 Train Operator:</u> About two or three on the platform, if I am not mistaken. <u>Radio RTC:</u> Train ID 111, You are displaying a Train ID of 118. <u>Train ID 118 Train Operator:</u> Lead Car 7442. <u>Radio RTC:</u> Train ID 118. Are you Okay? Are you able to perform a ground walk-around? [Radio Ops 1]
12:30:36 hours	<u>Train ID 118 Train Operator:</u> Umm, yes, I can perform a ground walk around. <u>Radio RTC:</u> Affirmative at this time SOP1A is implemented, let me know if you see any signs of life Train ID 118 Track 1 Union Station over. [Radio Ops 1]
12:30:58 hours	<u>Radio RTC:</u> How do you copy Train ID118 over? <u>Train ID 118 Train Operator:</u> Central come back, I was trying to get my radio, and someone was keying me up on the intercom as well. Hold on one second. [Radio Ops 1]
12:31:10 hours	<u>RTRA Supervisor Unit 4:</u> Responding on the next train to Union Station. I am at NoMa-Gallaudet Station Over. <u>Radio RTC:</u> Affirmative, Unit 4, once you arrive, you will be the OSC; how do you copy? <u>RTRA Supervisor Unit 4:</u> Unit 4 copy; once I arrive, I will be the OSC. <u>Radio RTC:</u> Again, Train ID 118 Track 1 Union Station, you will be the OSC at 12:31 hours. How do you copy 118? Perform a ground walk-around and advise central if you see any signs of life. <u>Train ID 118 Train Operator:</u> Copy that Radio check on a handset <u>Radio RTC:</u> Radio Check loud and clear. [Radio Ops 1]
12:31:53 hours	<u>Radio RTC:</u> RTRA Supervisor Unit 14, you will be the RTRA IC Liaison once you arrive. I will keep you updated with the incident command post over. [Phone]
12:31:56 hours	<u>Button RTC:</u> Notified the ROCC Assistant Superintendent Train ID 118 struck personnel on the roadway Union Station Track 1. [Phone]
12:32:19 hours	<u>Button RTC:</u> Notified the MTPD Liaison personnel struck by a train Union Station Track 1. [Phone]

Time	Description
12:32:19 – 12:33:08 hours	<p><u>ROIC Specialist</u>: Hi, this is Unit 14 from Metro. I need medical assistance immediately to Union Station Metro Station.</p> <p><u>DCFEMS</u>: Okay, that's 50 Mass Avenue</p> <p><u>ROIC Specialist</u>: Yes.</p> <p><u>DCFEMS</u>: What is the medical situation?</p> <p><u>ROIC Specialist</u>: We have a report of a person hit by a train.</p> <p><u>DCFEMS</u>: Okay, and this is inside the metro station?</p> <p><u>ROIC Specialist</u>: Yes</p> <p><u>DCFEMS</u>: Are they conscious?</p> <p><u>ROIC Specialist</u>: I do not think so.</p> <p><u>DCFEMS</u>: Do you know if it is a male or female?</p> <p><u>ROIC Specialist</u>: I do not know?</p> <p><u>DCFEMS</u>: Is it more than one platform?</p> <p><u>ROIC Specialist</u>: It is just one platform here, and they are on track 1 heading in the direction of Glenmont.</p> <p><u>DCFEMS</u>: We have the ambulance on the way. [Phone]</p>
12:33:14 hours	<u>ROIC Specialist</u> : Notified MTPD of person struck by a train at Union Station, Track 1 with ambulance en route. [Phone]
12:33:20 hours	AIMS reflected third rail power was commanded de-energized.
12:33:34 hours	<u>ROIC Specialist</u> : Notified ROCC Fire Liaison of person struck by a train at Union Station, Track1. [Phone]
12:34:12 hours	<u>Train ID 118 Train Operator</u> : Notified the Radio RTC there were no signs of life. I do not see the person under the train unless you allow me to go to the roadway. Note: The Radio RTC made blanket announcements to all Train Operators of the incident and to make good announcements to their customers. [Radio Ops 1]
12:34:31 hours	MTPD communications dispatched the 1 <sup>st</sup> MTPD unit to Union Station for a person struck by a train. [CAD Report]
12:34:38 hours	<p><u>Radio RTC</u>: At 12:34 hours, no signs of life, not sure if you copied me, but you will be the OSC until a Supervisor arrives. How do you Copy? Can you do me a favor and return back to your train and key the customers off.</p> <p><u>Train ID 118 Train Operator</u>: I can walk the customers through the bulkhead doors to the lead car and exit off the train this way. [Radio Ops 1]</p>



Time	Description
12:35:07 hours	<p><u>Radio RTC</u>: Unit 14, Unit 14 over.</p> <p><u>RTRA Supervisor Unit 19</u>: Central I believe Unit 14 [unintelligible]. RTRA Supervisor 19, I am on Track 2, arriving at Union station.</p> <p><u>Radio RTC</u>: Since you are the first RTRA Supervisor on the scene, you will assume the position of OSC. Can you assist with walking the customers through that train and keying those customers off?</p> <p><u>RTRA Supervisor Unit 19</u>: Copy that, Train Track 1</p> <p><u>Radio RTC</u>: Affirmative. You are the OSC 12:35 hours.</p> <p><u>RTRA Supervisor Unit 4</u>: Notified Radio RTC they were on-scene.</p> <p><u>Radio RTC</u>: Affirmative. You are now the IC Liaison; I will keep you updated with the ICP.</p> <p><u>RTRA Supervisor Unit 4</u>: Reported they did not see any other RTRA Supervisor.</p> <p><u>Radio RTC</u>: Notified RTRA Supervisor Unit 4 that RTRA Supervisor Unit 19 was on the train assisting with offloading the customers.</p> <p><u>RTRA Supervisor Unit 4</u>: Confirmed. [Radio Ops 1]</p>
12:35:53 hours	Metro rescue alarm Engine 3 Truck 4 Battalion 1, Rescue Squad 1 Rescue squad 2, EMS 6, Medic 2, Ambulance 6 respond for reports of a person struck by a train Union station Track 1 towards Glenmont. Cross street North Capitol Street. [Open MHz DCEMS Channel]
12:36:49 hours	Metro station rescue alarm, Engine 3 Truck 4 Battalion 1, Rescue Squad 1 Rescue squad 2, EMS 6, Medic 2 ambulance 6 responding for reports of a person struck by a train 50 Massachusetts Ave NW Union station Track 1 in the direction towards Glenmont. [Open MHz DCEMS Channel]
12:37:18 hours	<p><u>Fire Chief DCFEMS</u>: Contacted the ROCC Fire Liaison.</p> <p><u>ROCC Fire Liaison</u>: It is confirmed, I did pull the camera back, and there are no signs of life. It was a person struck by a train. It is Train ID 118. They de-energized the rail at 12:33 hours. Note: Phone disconnects with no other audio. [Phone]</p>
12:38:17 hours	<u>RTRA Supervisor Unit 4</u> : Requested permission from the Radio RTC to go on to the roadway to assess the situation of the person struck by a train. [Radio Ops 1]
12:38:42 hours	1 <sup>st</sup> MTPD Unit arrived on scene at Union Station. [MTPD CAD Report]
12:38:53 hours	<p><u>Radio RTC</u>: B02-02 is Red, Prohibit Exits, Blue Block Human Form is established FT Granted Track 1 Union Station to check for signs of life Unit 4 Over.</p> <p><u>RTRA Supervisor Unit 4</u>: You said B02-04 is Red at this time permission granted.</p> <p><u>Radio RTC</u>: Affirmative FT Granted at 12:39 over</p> <p><u>RTRA Supervisor Unit 4</u>: FT Granted at 12:39 over. [Radio Ops 1]</p>
12:39:16 hours	DCFEMS engine 14 arrived at Union Station. [MTPD CAD Report]
12:42:58 hours	<p><u>RTRA Supervisor Unit 4</u>: Notified the Radio RTC of a body under car 7443, the second car back.</p> <p><u>Radio RTC</u>: Affirmative. 7443, and again there are no signs of life.</p> <p><u>RTRA IC Liaison Unit 4</u>: That is affirmative; there are no signs of life.</p> <p><u>Radio RTC</u>: Advise when you are safely back on the platform and relinquishing that FT. Again, you will be the RTRA IC Liaison; I will keep you updated with the ICP. [Radio Ops 1]</p>

Time	Description
12:43:07 hours	The Battalion 1 Chief established an Incident Command Post at the Kiosk on the Massachusetts Ave side at Union Station. <u>ICP</u> : Right now, we have a person down on the tracks unknown extent of the injuries, and ROCC confirming all train movement stopped on track 1, and third-rail power is de-energized. DCFEMS Communications: Ok Battalion 1, 12:43 hours. [Open MHz DCEMS Channel]
12:43:40 hours	Radio RTC: Unit 4, do you copy over? [Radio Ops 1]
12:44:32 hours	The Radio RTC gave the First Train (Train ID 119) permission to Single-track between Judiciary Square to Union Station. [Radio Ops 1]
12:45:33 hours	<u>Radio RTC</u> : RTRA Supervisor Unit 4 correction RTRA Supervisor unit 19. <u>RTRA Supervisor Unit 4</u> : Central Unit 4 for Here on the platform over. <u>RTRA Supervisor Unit 19</u> : Be advised Unit 4 is here on the platform; I will head to the ICP. <u>Radio RTC</u> : Affirmative, The ICP is located on Massachusetts Ave. How do you copy Unit 14? [Radio Ops 1]
12:46:09 hours	<u>RTRA Supervisor Unit 19</u> : That is a good copy. Massachusetts Ave. I am currently with MTPD Lieutenant now over. <u>Radio RTC</u> : RTRA Supervisor Unit 4, can you ascertain the badge number and name of the Officer. You will be assuming the role of the RTRA Forward Liaison. [Radio Ops 1]
12:46:45 hours	WMATA determined the event was a recovery operation [MTPD CAD Report]
12:54:00 hours	<u>ERT</u> : Central, ERT <u>Radio RTC</u> : Go ahead ERT <u>ERT</u> : We are here at Union Station. <u>Radio RTC</u> : 12:54 Standby Stand clear. You need to report to the ICP on Massachusetts Ave. [Radio Ops 1]
12:55:39 hours	<u>Engine 3</u> : We are going to hit another blue light; in front of the train, we still have power on the third rail. <u>ICP</u> : Copy in the station or the tunnel <u>Engine 3</u> : We are in the tunnel. I would say 300 feet north of the station, C1 062+00. <u>ICP</u> : Copy [Open MHz DCEMS Channel]
12:56:50 hours	<u>ICP</u> : Command to Safety, did you want me to go direct with the ROCC to get that power shut down? [Open MHz DCEMS Channel]
12:57:06 hours	<u>Safety Truck 4</u> : We just hit the blue light station. <u>ICP</u> : Copy that. <u>ICP</u> : Command to Safety Truck 4, I have metro here with me. They are confirming now that they are going to make sure power stays off in that area. <u>Safety Truck 4</u> : Copy. [Open MHz DCEMS Channel]
12:58:20 hours	<u>ICP</u> : We have one individual DOA. We are returning the EMS units and holding Engine 3 Track 4 Squad 1 and Battalion 1. We are taking command of the channel until we can get the units out and perform an accountability. <u>DCFEMS Communications</u> : Okay Union Station Command, 15:58 hours. [Open MHz DCEMS Channel]

Time	Description
12:59:25 hours	<u>Safety Truck 4</u> : ICP WSAD northbound and southbound are in place. [Open MHz DCEMS Channel]
13:01:11 hours	<u>ICP</u> : Metro Confirmed Power down north of the interlock. Does that give you enough space to work? <u>Safety Truck 4</u> : Yes. [Open MHz DCEMS Channel]
13:05:16 hours	<u>Fire Liaison</u> reported CID notified the DCOCME [MTPD CAD Report]
13:08:20 hours	<u>Radio RTC</u> : Unit 4, we have CMNT reported to the scene advise when they are on the scene. <u>RTRA Forward Liaison Unit 4</u> : Central CMNT is on the scene already. <u>Radio RTC</u> : Unit 4, can you have CMNT report to the ICP on First Street over. <u>RTRA Forward Liaison Unit 4</u> : Central, at this time, officers on the platform with me at this time over. [Radio Ops 1]
13:08:59 hours	<u>Radio RTC</u> : Unit 4, can you repeat your transmission over? <u>RTRA Forward Liaison Unit 4</u> : Central calling Unit 4 over [Radio Ops 1]
13:09:16 hours	<u>Radio RTC</u> : Unit 4, were you trying to communicate about MTPD on the platform over. <u>RTRA Forward Liaison Unit 4</u> : Negative I was informing you that CMNT was on the platform with me at this time. <u>Radio RTC</u> : I need them to respond to the ICP on First Street again; all units responding need to go to the ICP until RTRA gets the scene. <u>RTRA Forward Liaison Unit 4</u> : Copy, all units need to report to the ICP.  Note: Radio RTC switches shift @ 13:10 hours. [Radio Ops 1]
13:12:45 hours	A Person is located between the running rails. [MTPD CAD Report]
13:13:52 hours	The Fire Liaison notified the ICP that the train could not be moved until the DCOCME arrived. [MTPD CAD Report]
13:14:00 hours	DCOCME requested the train not be moved. [MTPD CAD Report]
13:26:12 hours	<u>ICP</u> : Command to remaining units, accountability even all my units have left track bed turned over to metro. [Open MHz DCEMS Channel]
13:27:53 hours	DCFEMS Cleared the Scene and turned the event over to MTPD. The Command Post Moved to Massachusetts Ave Side Kiosk. [MTPD CAD Report]
13:48:58 hours	DCOCME arrived on-scene. [MTPD CAD Report]
14:08:17 hours	<u>CMNT Road Mechanic</u> : Notified the Radio RTC they were about to conduct a visual inspection of lead car 7442 for damage with MTPD. <u>Radio RTC</u> : CMNT Road Mechanic be advised B02-02 signal Red over. [Radio Ops 1]
14:08:52 hours	<u>Radio RTC</u> : How did you Copy CMNT? <u>CMNT Road Mechanic</u> : I copy; I have MTPD with me also. <u>Radio RTC</u> : You have Foul Time to enter the roadway and advise central when you are clear of the roadway and relinquishing your Foul Time. <u>CMNT Road Mechanic</u> : Okay, Copy. [Radio Ops 1]
14:10:39 hours	<u>CMNT Road Mechanic</u> : Contacted the Radio RTC reported they were back on the platform, relinquished their FT, and Car 7442 TWC antenna was damaged. <u>Radio RTC</u> : Confirms transmission [Radio Ops 1]

Time	Description
14:13:51 hours	Units have been cleared to begin moving trains [MTPD CAD Report]
14:22:33 hours	<u>RTRA Forward Liaison Unit 4:</u> Notified All personnel and equipment are clear at Union Station Track 1; we are requesting third rail power be restored to access the customer. <u>Radio RTC:</u> Confirmed Transmission [Radio Ops 1]
14:23:12 hours	Third Rail Power announcements made on Ops 1. [Radio Ops 1]
14:27:26 hours	<u>Radio RTC:</u> Notified RTRA Forward Liaison Unit 4 third rail power was restored at Union Station, track 1. <u>RTRA Forward Liaison Unit 4:</u> Confirmed Transmission. [Radio Ops 1]
14:30:24 hours	<u>Radio RTC:</u> Notified RTRA Forward Liaison Unit 4 Third rail power was re-energized Union Station Track 1 and notify central when power needed to be de-energized again. <u>RTRA Forward Liaison Unit 4:</u> Confirmed Transmission [Radio Ops 1]
14:31:29 hours	<u>RTRA Forward Liaison Unit 4:</u> Gave ROCC authorization to go direct with the Train Operator positioned in the lead car Shady Grove end. <u>Radio RTC:</u> Communicated with Train ID 118 Train Operator and instructed the Train Operator to operate at no greater than 5 mph. <u>Train ID 718 Train Operator:</u> Confirms Transmission [Radio Ops 1]
14:35:57 hours	<u>RTRA Forward Liaison Unit 4:</u> Requested the Radio RTC de-energize third rail power when it was safe to do so. <u>Radio RTC:</u> Notified RTRA Forward Liaison Unit 4 to standby until the incident train leaves Judiciary Square. [Radio Ops 1]
14:41:11 hours	<u>Radio RTC:</u> Notified RTRA Forward Liaison Unit 4 that Third rail breakers were commanded open and to hot stick and confirm power is de-energized with FT on Track 1. The Radio RTC further stated, provide CM's to central. <u>RTRA Forward Liaison Unit 4:</u> confirmed the transmission. [Radio Ops 1]
14:43:23 hours	<u>RTRA Forward Liaison Unit 4:</u> Notified the Radio RTC third rail power was confirmed de-energized, and they were within the platform limits. <u>Radio RTC:</u> Confirmed the Transmission. [Radio Ops 1]
15:19:23 hours	<u>RTRA Forward Liaison Unit 4:</u> Contacted Radio RTC a reported DCOCME was still on location with the deceased customer and will advise when they were clear. <u>Radio RTC:</u> Confirmed the Transmission. [Radio Ops 1]
15:27:21 hours	<u>RTRA Forward Liaison Unit 4:</u> Notified the Radio RTC the deceased customer was removed from the roadway, and cleaning mitigation was underway. <u>Radio RTC:</u> Confirmed the Transmission. [Radio Ops 1]
15:32:23 hours	<u>Radio RTC:</u> Contacted RTRA Forward Liaison Unit 4 and stated they received reports that the scene was turned back over to WMATA and designated WMATA the OSC.  <u>OSC Unit 4:</u> That is a good copy; MTPD turned the scene over to WMATA at this time. I am the OSC. <u>Radio RTC:</u> Affirmative, 13:32 hours keep us updated over. [Radio Ops 1]

Time	Description
16:17:20 hours	<u>OSC Unit 4:</u> Notified the Radio RTC all personnel and equipment were clear of the roadway; cleaning mitigation concluded and requested power to be re-energized on Track 1 Union Station. <u>Radio RTC:</u> Confirmed the transmission and gave a clearing time of 16:17 hours. [Radio Ops 1]
16:18:05 hours	<u>Radio RTC:</u> Made Third Rail Power announcements on Ops 1. [Radio Ops 1]
16:18:40 hours	<u>OSC Unit 4:</u> Requested a test train through the affected area. <u>Radio RTC:</u> Confirmed the Transmission [Radio Ops 1]
16:24:06 hours	<u>Radio RTC:</u> Made announcements that service was resuming at Union Station Track 1 and 2. [Radio Ops 1]

*Note: Times listed above may differ from other sources due to system settings.*

## **Metro Transit Police Department**

### **Case Summary:**

At approximately 12:33 hours, MTPD Communications received a call for service from the ROCC stating that a possible WMATA employee was struck by a train at the Union Station metro station. It was later determined that the individual that had been struck by a train was not an employee. MTPD POB units, Criminal Investigation Division units, and DCFMES responded to the scene. The victim was reported as showing no signs of life and was pronounced at 12:58 hours by DCFMES. The DCOCME was notified and responded to the scene.

### **Further investigation revealed:**

MTPD Detectives responded to the Union Station metro station to assist with the investigation.

DCFMES units responded, and the victim was located between the running rails, under the rear doors of rail car 7443, showing no signs of life. DCFEMS pronounced the victim at 12:58 hours. DCOCME was notified and asked to respond at 13:04 hours by MTPD Detective. At approximately 13:50 hours, the DCOCME arrived on the scene. The decedent suffered injuries to the head and body.

An MTPD Detective interviewed the Train Operator. The operator reported they were operating Red line Train ID 118 in the direction of Glenmont on Track 1. The operator stated that they were approaching Union Station at approximately 35-40 mph; as they exited the tunnel, the Train Operator noticed a female that was on the platform. The operator stated that the female looked as if she was "jumping rope" as she was jumping forward and then backward to time the train.

The operator stated that they screamed, "Don't do it!" As the Train Operator set the train to emergency mode and hit the Console Emergency Push-button. The operator stated that the victim had already jumped and was struck by the front of the train by that time. The operator said that they advised the ROCC and performed a walk-around of the train. The operator then started escorting passengers off the train, as only 2.5-3 rail cars were on the platform.

MTPD Crime Scene Search (CSS) Officers processed the scene and incident train, including personal property belonging to the victim. The train was moved to the Shady Grove rail yard for further processing. Video review of the incident train corroborated the operator's account of the

incident. Additionally, the camera view of the train operator appears to show that the operator was paying full time and attention to their operation.

A review of the Union Station metro station video revealed at 12:05 hours, the decedent entered the station on the First Street side and walked down to the platform. The decedent appears to be on her phone and boards a Shady Grove train at 12:08 hours. The decedent then arrives back at Union Station on a Glenmont train at 12:22 hours and walks down the platform in the direction of the Massachusetts Avenue side. The camera views are obstructed and distant, but the decedent can be seen stepping toward the tracks and places herself in front of the train at 12:29 hours.

#### **Office of Car Maintenance (CMNT)**

CMNT technicians inspected the incident consist for damage and found the TWC antenna damaged on Lead Car 7442. CMNT personnel replaced the front-end TWC antenna. CMNT technicians performed Master Controller (MC) operational checks on the incident consist and did not find any indications of an anomalous condition with the MC. CMNT personnel performed brake rate testing and determined the readings were within acceptable ranges.

#### **Office of Chief Mechanical Officer (CMOR) / Incident Investigation Team (IIT)**

##### **Event Recorder (ER) Data Graph/Sequence of Events**

Based on CMOR IIT analysis of the downloaded VMDS and ER, details from the data analysis are as follows: CMOR IIT completed the detailed analysis of the reported incident of Lead Car 7442 striking a person on the roadway. After departing the Judiciary Square on Track 1, Lead Car 7442 struck a person 34 feet into the Union Station platform limits while traveling at a speed of 32.14 mph. Immediately after making contact, the Deadman handle was released, the Train Operator placed the MC in the EMERGENCY position, and the Console Emergency Pushbutton was activated. The Train came to a complete stop 370.61 feet away from the 8-Car Marker. Based on the data collected, IIT did not find any faults with the train during the reported time that would have contributed to this incident. All the Subsystems and components acted as designed.

<b>TIME</b>	<b>Description</b>
12:28:49.4 hours	Train ID 118, Lead car 7442 left Judiciary Square towards Union Station on Track 1
12:29:49.5 hours	Train ID 118 entered Union Station with the MC placed in B5, Speed at 32.88 mph.
12:29:50.1 hours	The train struck a person on the roadway.
12:29:50.2 hours	The MC Deadman Handle was released, initiating emergency braking, speed was 32.14 mph, 34 Feet into the platform.
12:29:50.5 hours	MC moved to Emergency Brake Position; Speed was 31.65 mph. Consist traveled 45.76 feet into the platform.
12:29:50.6 hours	Emergency Push Button on Console activated, MC was in the Emergency position, speed 31.34 mph. 55.63 feet into the platform.
12:29:59 hours	The train came to a complete stop 370.61 feet from the 8 Car Marker at Union Station on Track 1
12:31:54 hours	Lead Car 7442 is keyed down.



Based on the VMDS and ER data, all the subsystems' safety components such as Automatic Train Control (ATC), brakes, and propulsion acted as designed, and there were no faults with the train that contributed to this event.

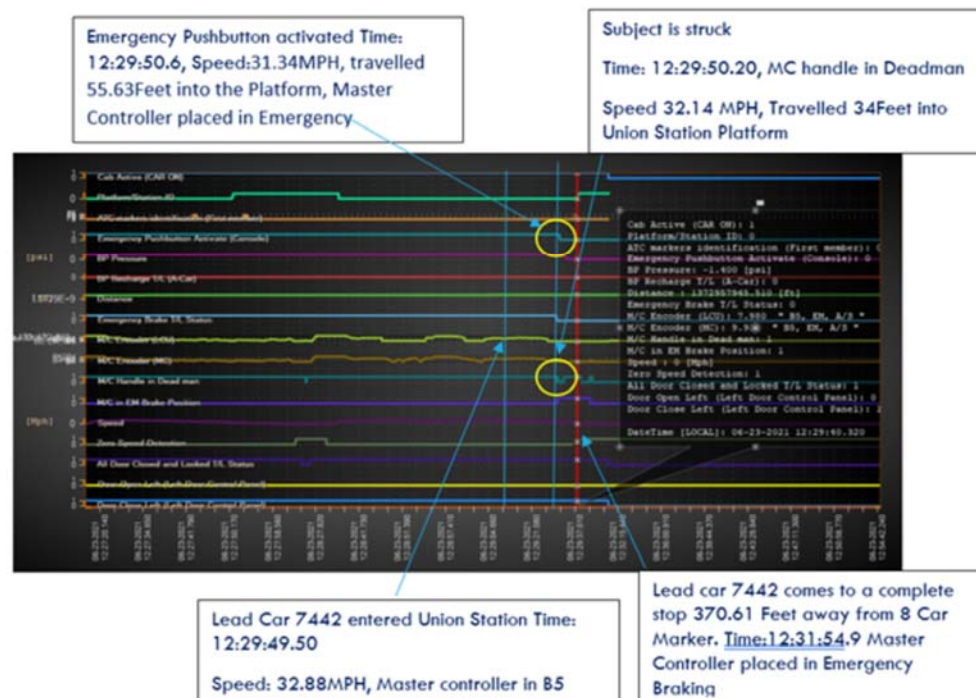


Diagram 1 - Event Recorder Graphical Analysis

## Office of System Maintenance Communication Section (COMM)

After reviewing the Audio Recording System playback, there did not appear to be any communication deficiencies over the radio.

## Interview Findings

Based on the investigation launched into the Union Station person struck by train event, SAFE reviewed MTPD and Train Operator incident reports via Safety Measurement System Incident/Accident module, including the investigation team and relevant Metro management. These incident reports identified the following key findings associated with this event, as follows:

The Train Operator entered the Union Station Track 1 at approximately 35-40 mph. As they exited the tunnel, the Train Operator noticed a female that was on the platform. The operator stated that the female looked as if she was “jumping rope” as she was jumping forward and then backward to time the train.

The Train Operator stated that they screamed, “Don’t do it!” As the Train Operator set the train to emergency mode and hit the “mushroom” button. The operator stated the victim had already jumped and was struck by the front of the train. The operator said that they advised the ROCC

and performed a walk-around of the train. The operator then started escorting passengers off the train, as only 2.5-3 rail cars were on the platform. The Train Operator was unable to locate the person and reported no signs of life.

The Radio RTC stated they gave the RTRA Supervisor on scene permission to hot stick and confirm. The Radio RTC also noted the individual responsible for confirming third rail power de-energized in the area would hot stick within the platform limits and parameters of the train. The Radio RTC mentioned they were not privy to any information of the request for additional third rail power, nor did they hear any notification from the Fire Liaison or managerial staff that DCFEMS activated the ETS. The Radio RTC was not sure of the proper procedures for closing the station under SOP 26. The Radio RTC stated the emergency responders give the authorization to service the station, and at times, the RTC's request permission to service the station.

### **Mitigations Completed to Prevent Recurrence**

- RTRA removed the Train Operator from service for post-incident toxicology testing.
- RTRA removed Train ID 118 from service for post-incident inspection.
- ROCC developed lessons learned outlining the miscues and discrepancies identified during the event such as inconsistent use of 100 percent repeat back and de-energizing third rail power under the entire consist.

### **Findings**

- At 12:05 hours, Union Station CCTV showed an unidentified person arrived at Union Station metro station, entered the station from the First Street side, and walked down to the platform area.
- The unidentified person is seen stepping toward the tracks and placing themselves within the dynamic envelope of the Train ID 118.
- Train Operator of Train ID 118 activated the emergency console push button 55.63 feet within the platform limits at 31.34 mph.
- CMNT found Lead car 7442 TWC antenna damaged.
- Train ID 118 Train Operator, Lead Car 7442, entered Union station, Track 1, at 32.88 mph with the MC in the B5 position.
- Train ID 118 Train Operator released the MC Deadman handle on Lead Car 7442, initiating Emergency Braking with a speed of 32.14 mph, 34 feet into the platform limits.
- Train ID 118 Train Operator came to a complete stop 370.61 feet from the 8-car marker.
- SAFE did not identify any slip or trip hazards that may have contributed to this event.
- Train Operator appeared to be paying full time and attention to their operation at the time of the incident.
- Train ID 118 had approximately three cars within the platform limits, with approximately five cars within the tunnel.
- The three trailing cars in the consist were still on energized third rail.
- ERT and CMNT did not immediately report to the ICP upon arrival, however ROCC instructed the RTRA Forward Liaison to direct the units to the ICP until RTRA gets the scene.
- The RTRA Forward Liaison repeated back incorrect signals, and ROCC did not enforce 100 percent repeat back during the FT request.
- Third rail power remained energized for approximately four minutes after the initial report.
- There is no audio evidence to support Third rail power was verified de-energized between 12:29 hours until 12:43 hours until DCFEMS established the ICP.
- The ROCC did not de-energize third rail power under the entire incident consist. DCFEMS Safety Truck 4 de-energized a section of third rail power via ETS near CM C1-62+00.



- The RTRA Supervisor did not initially confirm third rail power was de-energized.
- ROCC did not close the station to customers and unauthorized personnel. ROCC allowed trains to service the station during the emergency.

## **Weather**

At the time of the incident, NOAA recorded the temperature at 83°F with clear skies. The incident occurred within a tunnel section of the rail system. The weather was not a contributing factor. (Weather source: National Oceanic Atmospheric Administration – Location: Washington, DC)

## **Human Factors**

### **Evidence of Fatigue: Train Operator**

We evaluated conditions at the time of the incident to distinguish whether evidence of fatigue was present. The available data indicated no evidence of fatigue. SAFE reviewed the video of the incident for behaviors suggesting fatigue. No evidence of fatigue was evident from the video.

### **Fatigue Risk: Train Operator**

As of the date of this report, SAFE was unable to interview the Train Operator as a result of being out on leave for an undetermined amount of time. Based on video review of the operator's actions at the outset of the incident, fatigue is determined to not be a likely contributing factor to the incident.

Since fatigue evidence were not present, the biomathematical fatigue modeling application (SAFTE-FAST Web SFC) was not applied.

### **Evidence of fatigue: Rail Traffic Controller**

We evaluated conditions at the time of the incident to distinguish whether evidence of fatigue was present. The available data indicated no evidence of fatigue. SAFE reviewed the video of the incident for behaviors suggesting fatigue. No evidence of fatigue was evident from the video.

### **Fatigue Risk: Rail Traffic Controller**

Data was evaluated for fatigue risk factors. Risk factors for fatigue were not present. The employee reported keeping a regular sleep schedule in the days leading up to the incident. The employee worked day shift in the days leading up to the incident. The employee was unable to provide accurate accounts of their time awake for this incident. The employee reported 8 hours of sleep in the 24 hours preceding the incident. The off-duty period was 11.91 hours which provides an opportunity for 7-9 hours of sleep. This was a comparable amount of the employee's usual workday sleep durations. The employee reported no issues with sleep.

Since fatigue evidence and risk factors were not present, the biomathematical fatigue modeling application (SAFTE-FAST Web SFC) was not applied.

## **Post-Incident Toxicology Testing**

WMATA's Drug and Alcohol Program determined that the Train Operator was not in violation of the Drug and Alcohol Policy and Testing Program 7.7.3/6.

### **Probable Cause Statement**

The probable cause of the Union station person struck by train event was a person intentionally placed themselves in the train's dynamic envelope 34 feet after the station entrance. Train ID 118 Train Operator activated the Emergency Pushbutton and MC handle as the person jumped onto the roadway. Unfortunately, Train ID 118 Train Operator was unable to prevent contact with the customer, resulting in a fatality.

As noted above, while unrelated to the incident, several areas of non-compliance were observed during the incident response. Notably, ROCC did not de-energize third rail power beneath the entire consist of the train upon receiving notification of the event. ROCC Radio RTC did not instruct the RTRA Supervisor to hot stick and confirm the location before entering the roadway. During the event, ROCC continued to single-track around the location and did not take the necessary steps per SOP 26 [Person Struck by Train] to close the station or note the decision-making process to maintain single-tracking operations during the response.

An analysis of data collected from the record systems, staff incident report review, and CCTV review determined no safety deficiencies related to any WMATA station facility or rail vehicle failures contributed to the person being struck by the train. An examination of VMDS revealed that the Train Operator of Train ID 118 applied the emergency push button before striking the unidentified person.

### **Recommendations/Corrective Actions**

There are no recommendations for this person struck by train event because the person intentionally placed themselves onto the roadway fouling the train's dynamic envelope. The Train Operator, vehicles, and infrastructure were found to be non-contributors to the incident.

The following are the recommendations and corrective actions identified as a result of the incident response. These recommendations and corrective actions are tracked using WMATA's Safety Measurement System Incidents/Accidents (SMS I/A) Module and are verified by SAFE upon completion. The responsible department is identified in the corrective action code, and the respective departmental Safety Risk Coordinator (SRC) will manage the mitigation. Refer to the SMS I/A module for additional information.

<b>Corrective Action Code</b>	<b>Description</b>	<b>Responsible Party</b>	<b>Due Date</b>
94044_SAFECAPS_ ROCC_001	(RC-1, CF-1) ROCC shall develop lessons learned and conduct a work session incorporating station closing procedures, 100 percent repeat back, de-energization of the third rail under the entire consist or affected incident location, and confirmation of de-energized third rail power, i.e., hot sticking the affected location.	ROCC	Completed

<b>Corrective Action Code</b>	<b>Description</b>	<b>Responsible Party</b>	<b>Due Date</b>
94044_SAFECAPS_ ROCC_002	Implement revisions to SOP 2 and SOP 28 as prescribed in Permanent Order T-21-30, which establishes the Power Desk within ROCC that is responsible for power energization and de-energization	ROCC	December 31, 2021
94044_SAFECAPS_ RTRA_001	(CF-1) RTRA shall continue their efforts communicating with operations personnel on the importance of General Rule 1.79 Communications.	RTRA	Completed
94044_SAFECAPS_ SAFE_001	(RC-1) SOP #26 will undergo a review identifying opportunities to craft the language to echo SOP #28 de-energization of the third rail under the entire consist.	SAFE	December 1, 2021

## **Appendices**

### **Appendix A – Incident Statement / Interviews**

#### Train Operator

*The below narrative summarizes the interview with SAFE and represents the statements made by the involved individual. As such, times and details may present a conflict with the data contained in systems of record.*

The Train Operator is a WMATA employee with nine years of experience as a Train Operator and 16 years of service in various roles such as Bus Operator. The Train Operator record does reflect two safety violations for Station Overruns in December of 2020 and July of 2018 within the last three years. The Train Operator was last certified on December 16, 2020 (QL-1)

The Train Operator reported they entered Union station Track 1 at approximately 35-40 mph. As the Train Operator entered the station, they observed a person on the platform getting ready to jump in front of their train. Note: The Train Operator indicated in the MTPD report, the person appeared as if they were about to “start jumping rope.” At that point, the Train Operator began braking their train down into a lower braking mode. The Train Operator witnessed the person place themselves [jump] in front of their train. The Train Operator activated the emergency mushroom to stop the train. The Train Operator then contacted ROCC and reported the event. The Train Operator was unable to locate the person and reported no signs of life. The Train Operator then outlines their actions after reporting the event, corroborating with ARS playback and CCTV footage.

Based on the MTPD interview synopsis, the Train Operator entered the Union Station Track 1 at Approximately 35-40 mph. As they exited the tunnel, the Train Operator noticed a female that was on the platform. The operator stated that the female looked as if she was “jumping rope” as she was jumping forward and then backward to time the train.

The Train Operator stated that they screamed, “Don’t do it!” As the Train Operator set the train to emergency mode and hit the mushroom button. The operator stated the person jumped and was struck by the front of the train by that time. The operator said that they advised the ROCC and performed a walk-around of the train. The operator then escorted passengers off the train, as only 2.5-3 rail cars were on the platform.

#### Radio RTC

*The below narrative summarizes the interview with SAFE and represents the statements made by the involved individual. As such, times and details may present a conflict with the data contained in systems of record.*

The RTC is a WMATA employee with four years of experience as an RTC and nine years of service in various roles such as Train Operator and Bus Operator. The RTC was last certified in March 2021.

SAFE asked the Radio RTC to describe the events of June 23, 2021. The Radio RTC was unable to provide a detailed synopsis of the event; however, the Radio RTC said: “On June 23, 2021, we had a person struck by a train. My partner and I brought down third rail power and dispatched

RTRA Supervisor to the location to assist.” The Radio RTC did not recall how the third rail power de-energization process occurred on the day of the event.

The Radio RTC recalled asking the Train Operator whether they were comfortable with performing a ground walk around, but an RTRA Supervisor conducted the walk around upon arrival. The Radio RTC stated they gave the RTRA Supervisor on scene permission to hot stick and confirm. The Radio RTC also noted the individual responsible for verifying third rail power de-energized in the area would hot stick within the platform limits and parameters of the train. The Radio RTC mentioned they were not privy to any information of the request for additional third rail power, nor did they hear any notification from the Fire Liaison or managerial staff that DCFEMS activated the ETS. The Radio RTC was not certain of the proper procedures for closing the station under SOP 26. The Radio RTC stated the emergency responders give authorization and, at times, the RTC’s for permission to service the station.

The Radio RTC did receive the lesson learned for this event before the interview.

## **Appendix B – Incident Response Non-Compliance of Rules and Procedures**

SOP #26 Person Struck by train

26.5.3 ROCC Supervisor Responsibilities:

- *26.5.3.5 Initiate action to close the affected station to passengers, and unauthorized personnel, with assistance from the Station Manager and MTPD.*

Section 1. General Rules:

- *1.79 Personnel shall not take any action until they are positive that all radio transmissions or receptions are heard, fully understood, and acknowledged. Individual radio transmissions shall, at all times, be repeated by the receiver so the transmitter can confirm the message was received completely and by the intended receiver. Whenever the transmitter has completed their transmission and is turning the airtime over to the receiving party for acknowledgment or reply, they are to end their communication with the word "over."*



## Appendix C – ROCC Lesson Learned



# ROCC

Rail Operations Control Center

Incident Date:  
June 23, 2021

## LESSONS LEARNED

### Failure to completely de-energize power in affected area (person struck by train)



On Wednesday, June 23, 2021 at 12:29.31 hours, ROCC received a report from train #118, Track #1, Union Station (B03) that a person had jumped in front of their train. During this initial radio exchange the train operator communicated that "about 2-3 cars" were on the platform. The controller asked the operator if they were able to complete a ground walkaround, to which they replied, "yes". At 12:31:10 hours the operator was instructed that they are the OSC, to perform a ground walkaround, and to advise central if they saw any signs of life. AIMS playback indicated that 3rd rail power was de-energized at 12:33:20 in the area affecting the front of the incident train, but not the area affecting the rear of the train, which was still in the tunnel (as indicated by the AIMS display above). Power was not completely de-energized in the entire affected area until 12:55, when Safety Truck 4 notified the Incident Command Post that power was still energized 300 feet into the tunnel and that they were using an ETS box to de-energize power. Power was confirmed de-energized at 12:57 hours.

#### APPLICABLE POLICIES AND PROCEDURES:

- ROCC Procedures Manual, Major Incident Checklist 15.5 indicates that the first action to be taken when a person is hit by a train is to de-energize third rail power.
- MSRP SOP 26.5.3 ROCC Supervisor Responsibilities: During a Person Struck by Train Incident, the ROCC Supervisor shall: 26.5.3.1 Remove third rail power and verify the removal to the Train Operator.

#### ANALYSIS:

Upon notification of the person struck by the train at B03, track #1, the first action of the controllers should have been the immediate de-energizing of 3rd rail power in the **entire affected area of the incident**. This is the first course of action, as indicated by the ROCC Procedures Manual and by SOP 26.5.3, to be taken by the controller [ROCC Supervisor]. **In this case, power was not initially de-energized until 4 minutes after the original report of the incident. This should have been the first action taken.**

#### The devil is in the details!

The controllers received several clues that the incident was not confined to the station itself. The operator answered that only 2-3 cars of the train were on the platform. The AIMS indication also clearly shows occupied track circuits in areas where power is still energized. **From these indications, the controllers should have removed power from the areas affecting the rear of the train, which was straddling the third rail gap between chain markers B1 64+91 and B1 65+47. Failure to do so was a serious safety violation that put first responders at risk of electrocution, as they were working under the advisement that power had been de-energized.**

#### ADDITIONAL AREA OF CONCERN

It was also noted that when the RTRA supervisor, Unit 4, was given foul time to enter the roadway, the incorrect signal was repeated back to the controller by the supervisor. **This error was not corrected by the controller.**

RTC: "B02-02 is red, prohibit exits, blue block human form is established, FT granted track #1 union station to check for signs of life Unit 4, over. UNIT 4: "You said B02-04 is red at this time permission granted." RTC: "Affirmative FT granted at 12:39 over." UNIT 4: "FT granted at 12:39 over."

**100% REPEAT BACK IS A MUST!**

Attachment 1 – ROCC Lessons Learned Page 1 of 1

## Appendix D - Root Cause Analysis

