



Improper Roadway Worker Protection

At or Near College Park-UMD, Forest Glen, Potomac Ave, Ballston-MU, Wiehle-Reston East, Metro Center, Morgan Boulevard and Southern Ave stations

February 25, 2023 – March 20, 2023 – April 11, 2023 – June 5, 2023 – August 15, 2023

October 2, 2023 – October 17, 2023 – October 28, 2023

Document Purpose:

This WMSC written report on WMATA Metrorail's safety event investigations and review of Metrorail's findings in accordance with the WMSC Program Standard, in conjunction with the attached Metrorail investigation reports that have undergone WMSC staff review and, if necessary, feedback and revision, describes the investigation activities, identifies factors causing or contributing to the safety events, and sets forth ongoing, additional, or upcoming corrective actions and further oversight work (such as inspections and audits) as necessary or appropriate. The WMSC's ongoing oversight during the investigative process, including safety event reporting and verification, participation in investigative interviews, data review, consistent communication with the Metrorail investigations team, and feedback on Metrorail's reports leads to further improvements prior to consideration of the reports by WMSC Commissioners for adoption. The WMSC's safety event investigation oversight assures the sufficiency and thoroughness of Metrorail's investigations. The WMSC Commissioners are considering these documents (the WMSC review and Metrorail's investigation reports) as a unified item for adoption at the Washington Metrorail Safety Commission meeting on August 6, 2024.

WMSC staff recommend adoption of these investigations.

Roadway Worker Protection

The [WMSC's audit of Metrorail's Roadway Worker Protection Programs](#) issued on July 31, 2024, demonstrates that although Metrorail has established policies and procedures, rules, training, and oversight of its RWP program, there are still deficiencies that put the safety of workers at risk. During this audit, WMSC personnel observed unsafe practices contrary to Metrorail policies and procedures at every observation activity conducted. As further explained in Finding 1 of the audit report, Metrorail is not effectively ensuring that its personnel on and around the roadway are consistently following the Roadway Worker Protection rules designed for their safety. This increases the risk that personnel may be injured or killed. Between 2005 and 2010, eight Metrorail employees were struck and killed by rail vehicles. In the years since, there have been several near miss collisions with roadway workers, including a 2016 safety event where Federal Transit Administration (FTA) track inspectors were forced to jump out of the path of a train to avoid being hit. Since then, there have been near misses that include workers narrowly escaping a fatal collision, including events that occurred in 2021, 2022, and 2023.

When Metrorail addresses the 13 findings of the RWP Audit through the required corrective action plans, the safety of the system will improve. Metrorail is now developing these corrective action plans in accordance with the Program Standard. These build on immediate mitigations and initial steps to correct outdated materials and communicate the importance of safety rules that Metrorail took based on the WMSC's communication of safety issues as those issues were observed and validated during the audit process.

The reports covered by the investigations described below and attached occurred in 2023 prior to the start of that audit. The information available at the time of the audit related to these events was considered in determining audit activities.



The causes of and contributing factors to the events described in more detail below include:

- Non-compliance with written operational rules and procedures
- Insufficient supervisory oversight including oversight to ensure compliance with safety rules and procedures
- Loss of/lack of focus and situational awareness
- A lack of training and supervisory oversight to ensure:
 - compliance with safety rules and procedures, including those related to personal protective equipment
 - personnel are comfortable and competent to perform the work assigned to them
 - handheld radio calibration in accordance with Metrorail policy
 - personnel understood instructions
- Poor radio communication transmission quality
- Ineffective communication between personnel

As a result of these investigations, Metrorail implemented corrective actions including:

- Metrorail issued a bulletin on the selection of speed couplers during Exclusive Track Occupancy Local Signal Control RWP
- Personnel received RWP refresher training, with emphasis on topics such as properly completing Roadway Job Safety Briefings and hand signal procedures
- Metrorail conducted a Safety Stand Down to address Improper RWP events with Track and Structures personnel
- Metrorail re-distributed a smoke-free workplace personnel notice
- Metrorail issued a safety bulletin and a Lessons Learned document regarding the October 28, 2023 event at Southern Avenue Station that included short-term mitigations
- Metrorail developed a Lessons Learned document regarding the February 25, 2023 safety event at College Park –UMD Station and is reviewing the proper steps when communicating with the RWIC during field operations when radio communications fail to include the use of cellular devices.

Metrorail could consider reemphasizing the importance of monitoring radio communications while on the roadway and in the Metrorail system to improve safety and help maintain situational awareness.

Metrorail is in the process of implementing related corrective action plans (CAPs) including:

- C-0181 addresses the finding that elements of Metrorail have a culture that accepts noncompliance with written operational rules, instruction, and manuals (Scheduled completion October 2024).



- C-0130 addresses the recommendation that Metrorail does not collect fitness for duty data in a manner that allows for identification, tracking and trending of issues.

As noted above, Metrorail is in the process of developing corrective action plans to address the 13 findings of the WMSC's Audit of Metrorail Roadway Worker Protection Programs issued on July 31, 2024.

Safety event summaries:

W-0313 – Trains not briefed by AMF – College Park-UMD Station – February 25, 2023 (WMATA ID: E23131)

A miscommunication among members of an Automatic Train Control Maintenance crew led to two Green Line trains passing workers on the roadway without the required protection against collision. Only the second train operator reported this emergency. The investigation also identified that poor radio transmission quality, and an advanced mobile flagger leaving their position based on direction not received from a Roadway Worker In Charge further contributed to this event.

The Train Operator of Green Line Train 505 notified the Rail Operations Control Center (ROCC) that there was no Advanced Mobile Flagger (AMF) at College Park-UMD Station and that they did not receive the required briefing and notification before encountering a mobile work crew on the roadway.

Closed-circuit Television shows the AMF received a phone call on a non-WMATA issued cellphone, that was later determined to be from the ATC Maintenance technician in the Train Control Room who was monitoring whether shunts placed by the crew on the roadway led to the intended outcomes of the preventive maintenance instruction. In the phone call, the AMF was told by this AA (highest level) technician, who was not acting as the Roadway Worker In Charge, that the crew was being directed to move to another task.

However, the work crew on the roadway had not cleared. The Roadway Worker In Charge (RWIC) attempted to request that a train pick the crew up, but had difficulty due to radio transmission quality. The RWIC then requested the pickup by phone, and informed the technician in the room.

The crew still required protection.

However, a minute later, and before the crew the AMF was protecting was picked up, the AMF boarded a train departing College Park-UMD Station.

The ROCC Assistant Operations Manager directed the Rail Traffic Controller in the ROCC to have Train 506 pick the crew up.

W-0314 – Excessive Speed Past Workers – near Forest Glen Station – March 20, 2023 (WMATA ID: E23190)

An Automatic Train Control Maintenance crew operating without an Advanced Mobile Flagger required by Metrorail rules requested a train pickup from the interlocking near Forest Glen Station. The Rail Traffic Controller was unable to establish communications with Red Line Train 103 regarding the pickup when the train was at Wheaton Station. The Train Operator operated past the crew at more than 45 mph, three times the 15 mph required safe speed at the time of this event.



The Roadway Worker In Charge signaled the Train Operator to stop via hand signal with a flashlight, as they had been instructed by the Rail Traffic Controller.

The Operator did not stop the train and continued past the work crew at 45.5 mph.

The Train Operator stated during an investigative interview that they believed the hand signal to be either a vertical proceed hand signal or an acknowledgement hand signal. The Train Operator did not report this emergency of encountering a roadway work crew without the presence of an Advanced Mobile Flagger. The Roadway Worker In Charge initially reported only that the train did not stop. Additional information was provided after the crew was picked up by the next train to clear the roadway.

The handheld radio the Train Operator was using during this event was out of calibration and the Operator stated they experienced radio communication issues throughout the event.

The WMSC's Audit of Metrorail's Roadway Worker Protection Program issued on July 31, 2024 includes the finding (Finding 6) that Metrorail is directing personnel to use local signal control without training or qualification required by Metrorail rules and required for their safety. Metrorail is developing a corrective action plan to address this finding.

W-0315 – Train not briefed by AMF – Potomac Ave Station – April 11, 2023 (WMATA ID: E23244)

The Train operator of Train 612 notified the Radio Rail Traffic Controller in the ROCC that they had not received a briefing from an AMF at Potomac Avenue Station before encountering a work crew on the roadway.

A Track and Structures work crew was conducting track inspections between Stadium-Armory and Smithsonian stations. When the RWIC requested permission to enter the roadway at Stadium-Armory Station from the Radio Rail Traffic Controller, they were instructed to allow two trains to pass before entering the roadway. After Train 896 and 906 passed the crew on the platform at Stadium-Armory Station, they entered the roadway. The RWIC did not notify the AMF that they were entering the roadway. The Advanced Mobile Flagger (AMF) at Potomac Ave Station therefore did not brief the operator of Train 612 that there were workers on the roadway ahead. The AMF was not wearing the required PPE at this time (safety vest) and had not activated their amber lantern.

Following the event report by the Train Operator of Train 612, the Rail Traffic Controller instructed another train to pick up the work crew. There were radio communications transmission issues between the Rail Traffic Controller and the Train Operator of Train 612 at the time the Operator reported the event.

W-0316 – Unauthorized Roadway Entry – Ballston-MU Station – June 5, 2023 (WMATA ID: E23376)

The RWIC of a work crew performing a track inspection incorrectly requested permission to conduct a track walk between Virginia Square-GMU and Clarendon stations when they were in fact at Ballston-MU Station. The work crew had an Advanced Mobile Flagger in place, but the Rail Traffic Controllers were not aware of the location of the work crew when on the roadway and had not provided permission to enter that segment of track. Therefore, the Rail Traffic Controllers had not placed redundant forms of protection through the Advanced Information Management computer system (prohibit exit on signal system and blue visual indication of work crews in area). One train passed the work crew while they were on the roadway without the required protection.



The Rail Traffic Controller in the ROCC correctly repeated the request as it was made by the Roadway Worker In Charge to enter the roadway at Virginia Square-GMU Station, granted the work crew permission and made announcements alerting train operators of the roadway personnel.

The RWIC entered the roadway at Ballston-MU Station, not Virginia Square-GMU station, without all required safety protection.

The Rail Traffic Controller identified the location discrepancy after the RWIC requested to continue their track walk between Virginia Square-GMU and Clarendon station. The RWIC was removed from service for post-incident toxicology testing.

Review of the Roadway Job Safety Briefing during this investigation showed that one of the track walkers in the work crew did not sign the briefing sheet, as is required by Metrorail policy.

W-0317 – Excessive Speed Past Workers – Wiehle-Reston East Station – August 15, 2023 (WMATA ID E23565)

A Roadway Worker In Charge reported to a Rail Traffic Controller via phone that a train passed their mobile work crew at a high rate of speed.

Vehicle data showed the train was travelling approximately 25 mph, 10 mph greater than the maximum speed allowed when passing roadway workers at the time of this event.

The RWIC stated during an investigative interview that they reported the event via phone instead of by radio because they feared the reaction from other train operators. When questioned by a Rail Traffic Controller, the Train Operator of the out-of-service train confirmed they had received a briefing from an Advanced Mobile Flagger at Wiehle-Reston East Station alerting them to personnel on the roadway and the proper operating procedure for passing roadway workers.

Review of inward-facing cab video as part of this investigation showed that the Train Operator was smoking a cigarette and drinking a non-alcoholic beverage while operating the train, both of which are prohibited by Metrorail safety requirements. Review of vehicle data showed that the Train Operator activated the train's horn consistently as required from Wiehle-Reston East Station to Spring Hill Station.

During investigative interviews, both the RWIC and the Train Operator expressed concerns regarding a restricted view in this area. The Train Operator indicated that the incline and decline of the track made it difficult to scan for workers on the roadway and maintain the appropriate speed. The RWIC stated that there is curve and a fence that could obstruct train operators' views. The WMSC's 2024 audit of Metrorail's Roadway Worker Protection program requires Metrorail to assess the Metrorail system to determine whether there are any additional hot spot locations that require foul time (or greater protection) in accordance with its rules and procedures.

W-0318 – Unauthorized Roadway Entry – Metro Center Station – October 2, 2023 (WMATA ID E23688)

Two Information Technology Intergrated Network Technicians entered the roadway at Metro Center Station without permission and without protection against electrocution. The Roadway Worker In Charge, located at Farragut North Station, requested a Supervisory Power Outage from the Power Desk in the Metro Integrated Command and Communications Center (MICC) and was instructed to standby while third rail power was being de-energized. The Roadway Worker In Charge instructed two IT Technicians to report to Metro Center Station to assist with setup of the



work area. Contractors, who the IT personnel were escorting, were preparing to conduct a clearance verification and control survey in this work area between Farragut North and Metro Center stations. The RWIC called one of the IT Technicians as the technicians were enroute to Metro Center Station and instructed them to shorten the working limits. The IT Technician incorrectly understood the updated instruction to mean that they had permission to enter the roadway. The Radio Rail Traffic Controller identified on the Advanced Information Management System display that Metro Center Station, tracks 1 and 2 showed occupancy and notified the RWIC that they had not yet been granted permission to enter the roadway. The RWIC informed the Rail Traffic Controller that the two IT Technicians had entered the roadway without permission. The IT Technicians cleared the roadway and were removed from service for post-event toxicology testing.

W-0319 – Unauthorized Roadway Entry – Morgan Boulevard Station – October 17, 2023 (WMATA ID E23732)

Two Metrorail employees entered the roadway prematurely, before being granted Foul Time Protection, causing a near-miss event that was not properly reported.

A General Equipment Mechanic and a carpenter requested Foul Time Protection to access a jet fan control room from a Radio Rail Traffic Controller in the Metro Integrated Command and Communications Center (MICC). The Rail Traffic Controller acknowledged the request and instructed the personnel to stand by. The personnel did not follow this instruction and instead entered the roadway without permission or the protection necessary to prevent collision with a train or other vehicle. During an investigative interview, the mechanic stated that they understood the Rail Traffic Controller's acknowledgement of their request to mean they had permission to enter the roadway. The mechanic also stated they experienced radio communications quality issues. The Train Operator of Train 613 encountered the carpenter on the catwalk, which is considered roadway, and notified the Radio Rail Traffic Controller. The Rail Traffic Controller confirmed with the Mechanic that they were at the emergency egress door and not on the roadway. The mechanic did not notify the Rail Traffic Controller that the carpenter was on the catwalk and had been passed by a train. The Controller, unaware of the safety event, granted the Mechanic Foul Time and allowed the crew to conduct their work. The following day, the Mechanic reported the event to their supervisor, who reported the event using Metrorail's Safety Hotline. This led to a full investigation, which also found that a job safety briefing had not been conducted prior to the personnel entering the roadway as required by Metrorail safety processes.

W-0320 – Unauthorized Roadway Entry – Southern Ave Station – October 28, 2023 (WMATA ID (E23768)

After being granted permission to setup a work area on track 1 between Southern Ave and Naylor Road stations, an Office of Track and Structures AA Track Repairer, acting as the Roadway Worker In Charge (RWIC), incorrectly set up the work area on track 2, without permission or protection against train collision on that track. There are chain markers along the roadway and signs at the end gates leading from the platform to the roadway that identify track number and location. A Train Operator, operating a train with no passengers on track 2, contacted a Radio Rail Traffic Controller in the Metro Integrated Command and Communications Center (MICC) and notified them that the train had zero speed commands. The Rail Traffic Controller did not identify the indication on the display screen that showed an occupied block due to the shunt placed on the rails, and instructed the Train Operator to continue toward Southern Ave Station, where the Train Operator reported seeing an installed shunt. The Rail Traffic Controller instructed the Train Operator to stand by as the Controller tried, unsuccessfully, to contact the RWIC via radio. The Rail Traffic Controller granted



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the Train Operator Foul Time, set a red signal, and instructed them to remove the shunt. After the Controller was able to contact the RWIC, the Train Operator was instructed to continue toward Southern Ave Station. The RWIC was removed from service for post-event toxicology testing.

Review of documents during this investigation found that the Train Operator had worked 18 consecutive days leading up to the safety event, in violation of Metrorail policy.



Washington Metropolitan Area Transit Authority
Department of Safety (SAFE)
Office of Safety Investigations (OSI)

FINAL REPORT OF INVESTIGATION A&I E23131

| | |
|---------------------------------------|---|
| Date of Event: | February 25, 2023 |
| Type of Event: | Improper RWP – AMF Road Worker Protection |
| Incident Time: | 11:10 hours |
| Location: | College Park Station |
| Time and how received by SAFE: | 11:51 hours Mission Assurance Coordinator (MAC) |
| WMSC Notification Time: | 11:51 hours |
| Responding Safety Officers: | WMATA: None WMSC: None Other: None |
| Rail Vehicle: | None |
| Injuries: | None |
| Damage: | None |
| Emergency Responders: | ATCM |
| SMS I/A Incident Number: | 20230225#106429 |

Improper RWP College Park Station
February 25, 2023
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Abbreviations and Acronyms

| | |
|--------------|---|
| AIMS | Advanced Information Management System |
| AMF | Advanced Mobile Flagger |
| AOM | Assistant Operations Manager |
| ARS | Audio Recording Services |
| ATCM | Automatic Train Control Maintenance |
| CAP | Corrective Action Plan |
| CCTV | Closed-Circuit Television |
| COMR | Office of Radio Communications |
| CM | Chain Marker |
| LCP | Local Control Panel |
| MSRPH | Metrorail Safety Rules and Procedures Handbook |
| NOAA | National Oceanic and Atmospheric Administration |
| RTRA | Office of Rail Transportation |
| RWIC | Roadway Worker in Charge |
| ROCC | Rail Operations Control Center |
| SAFE | Department of Safety |
| SPOTS | System Performance on Time Summary |
| SMS | Safety Measurement System |
| WMATA | Washington Metropolitan Area Transit Authority |
| WMSC | Washington Metrorail Safety Commission |

**Washington Metropolitan Area Transit Authority
Department of Safety – Office of Safety Investigations**

Executive Summary

**Note that all times listed are approximate and may contain minor variations due to differences between systems of record. **

On February 25, 2023, at 11:20 hours, Train Operator 505 reported that they did not observe an Advanced Mobile Flagger (AMF) positioned at the eight-car marker at College Park Station (E09) before passing a mobile work crew on the roadway.

Closed Circuit Television (CCTV) review confirmed several aspects of the reporting Train Operator. The AMF was located at the eight-car marker on College Park Station platform on Track 2 at 10:46 hours. From 10:46 hours to 11:06 hours, the AMF properly performed their AMF duties as prescribed by the Metrorail Safety Rules and Procedures Handbook (MSRPH). In addition, the AMF did appear to have all the prescribed equipment, including the amber lantern, properly positioned vertically on the ground.

At 11:05 hours, the AMF received a phone call on a non-Washington Metropolitan Area Transit Authority (WMATA)-issued cellular device, utilizing their blue tooth while gathering their equipment from the platform. After speaking on the phone with the Local Control Panel (LCP) operator, the AMF entered car number 3193 on Track 2 at College Park at 11:07 hours.

At 11:06 hours, an Automatic Train Control Maintenance (ATCM) Roadway Worker in Charge (RWIC) requested a trackside pickup of their personnel at Chain Marker (CM) E2 482+00 via radio. At 11:10 hours, the RWIC contacted the Rail Operations Control Center (ROCC) via landline for a second request for trackside pickup of their personnel and provided their location of E2 482+00. The secondary request was made due to poor radio communications for the ATCM Units' location. The AMF returned to their post via track 1 and set up AMF equipment again on track 2 at the eight-car marker.

At 11:23 hours, the ROCC Assistant Operations Manager (AOM) arranged for Train ID 506 to pick up the ATCM personnel from the prescribed CM. At 11:39 hours, Train ID 506 completed the pickup of all personnel located by the prescribed CM. At 11:41 hours, the RWIC and their work crew reached the Hyattsville Crossing Station platform. The RWIC relinquished all AMF protection and ceased further operations.

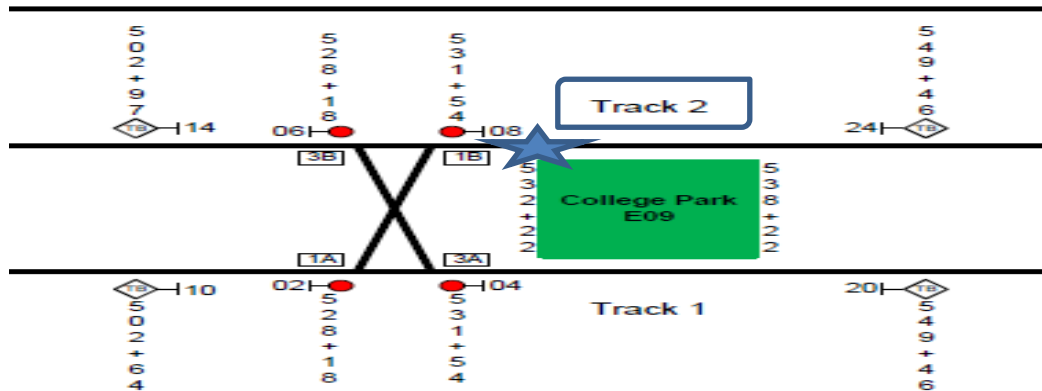
ATCM removed the AMF from service for post-incident testing. There were no reported injuries to any WMATA personnel or customers during this event.

The probable cause for this Improper RWP event was the combination of communication errors and failure to follow established procedures for AMF Operations, resulting in an AMF abandoning their assigned post while personnel were still on the roadway. A Contributing Factor to the event was the AMF's acceptance of instruction from a crew member instead of the RWIC.

Incident Site

College Park Station Platform, Track 2

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

Upon receiving notification of the Improper RWP at College Park Station on February 25, 2023, SAFE dispatched a cross-functional team to assess the scene and conduct the subsequent investigation. SAFE team members worked with relevant WMATA subject matter experts to review the incident's facts and data.

The investigative methodologies included the following:

- Site assessment through video and document review.
- Informal Interviews – Collected through conversations with individuals during the investigation to provide background and supporting information. Written statements were reviewed from personnel present during the event.
- Formal Interviews – SAFE interviewed three individuals as part of this investigation. The interviews included persons present at, during, and after the incident, those directly involved in the response process, and representatives from the Washington Metrorail Safety Commission (WMSC). SAFE interviewed the following personnel:
 - ATCM Mechanic AA
 - ATCM Technician (AMF)
 - ATCM Mechanic B (RWIC)
- Documentation Review – A collection of relevant work history information and process documentation contained in Metro systems of record. These records include:
 - Metrorail Safety Rules and Procedures Handbook (MSRPH)
 - National Oceanic and Atmospheric Administration (NOAA)
 - Employee's Incident Report

- Supervisor's Incident Report
 - Safety Briefing
 - 30 Day work History
- System Data Recording Review – A collection of information contained in Metro Data Recording Systems. This data includes:
 - Audio Recording System (ARS) playback, including OPS 3 Radio
 - Closed-Circuit Television (CCTV)
 - System Performance on Time Summary (SPOTS)
 - Advanced Information Management System (AIMS)

Investigation

On February 25, 2023, at 11:20 hours, Train Operator 505 reported that they did not observe an AMF positioned at the eight-car marker at College Park Station (E09) before passing a mobile work crew on the roadway.

CCTV review confirmed several aspects of the reporting Train Operator. On the footage, the stationed AMF was located on the College Park Station platform on Track 2 at 10:46 hours by the eight-car marker. From 10:46 hours to 11:06 hours, the AMF did properly perform their AMF duties as prescribed by the MSRPH. In addition, the AMF did appear to have all the prescribed equipment, including the amber lantern properly positioned vertically on the ground.

At 11:05 hours, the AMF was observed receiving a phone call on their personal cellular device, utilizing their blue tooth device, and gathered their equipment from the platform. The AMF boarded car number 3193 on Track 2 from College Park at 11:07 hours. At 11:06 hours, the RWIC requested a trackside pickup of their personnel at Chain Marker E2-482+00 via OPS3 radio.

At 11:10 hours, the RWIC contacted the ROCC via landline for a secondary request for a trackside pick up of their personnel and provided their location of E2 482+00. The secondary request was made due to poor radio communication transmittal for their location. At 11:23 hours, the ROCC AOM arranged for Train ID 506 to pick up the personnel from the prescribed CM. At 11:39 hours, Train ID 506 completed the pick-up of all personnel located by the prescribed CM.

At 11:41 hours, the RWIC and their work crew reached the Hyattsville Crossing Station platform to a place of safety. The RWIC relinquished all AMF protection and ceased further operations. The AMF was removed from service for post-incident testing. There were no reported injuries during this event to any WMATA personnel or customers.

All interviewed ATCM personnel reported major radio communication issues in the vicinity of E08 – Prince George Plaza – E09 – College Park Station. A COMR Comprehensive Radio Transmission check was requested accordingly.

Chronological Event Timeline

A review of ARS playback, i.e., phone and radio communications, revealed the following timeline:

| Time | Description |
|-----------------------------|--|
| 10:20:07 hours | <u>ATCM RWIC</u> : Requested access to the roadway for track circuit verification-E2-435+00 to E2 485+00, AMF form of protection. A safety brief was conducted, Hot Spots were identified, and proper PPE and AMF are located at E09. <u>Radio RTC</u> : Acknowledged and Repeated. Requested ATCM RWIC to go direct with their AMF. AMF Acknowledged and repeated the location and work status. Verified clear to enter the roadway, instructed on all safety measures [Radio OPS3] **note radio communications were distorted- ATCM RWIC was asked to change location*** |
| 10:24:10- 10:30:00 hours | <u>OPS7</u> : Channel monitored for the detailed period. Channel were used by Track/ATCM personnel for work-related reasons. No communication of work completed by any member of the work crew. [Radio OPS7] |
| 10:46:00- 11:05:00 hours | <u>OPS7</u> : Channel reviewed for the detailed time frame ATCM Unit #2 (AMF) did transmit train activity and performed their AMF duties as prescribed. The AMF did not contact the RWIC during this time to relinquish their post. [Radio OPS7] |
| 10:46:00 hours | AMF observed on the platform in the vicinity of the 8-car marker with all the prescribed equipment at College Park Station on Track 2. [CCTV] |
| 10:50:00- 11:06:00 hours | AMF performed prescribed duties at the 8-car marker on Track 2 [CCTV] |
| 11:06:02 hours | <u>ATCM RWIC</u> : Requested a track pick up from E2-482+00-destination unclear-poor radio communications. <u>Radio RTC</u> : Acknowledged and repeated. [Radio OPS3] **note radio communications distorted*** |
| 11:07:00 hours | AMF observed securing their equipment and entered Train 3193. [CCTV] |
| 11:10:10 hours | <u>ATCM RWIC</u> : Requested pickup at CM E2-482+00. RTC Radio instructed ATCM RWIC to go over the air to make a request. The RWIC states they are having issues communicating on OPS3 [OPS3 Phone] **note phone call distorted-low volume] |
| 11:23:04 hours | <u>ROCC AOM</u> : Requested the next train pick-up personnel at E2-482+00. <u>RTC Button</u> : Acknowledged and repeated. [OPS3 Phone] |
| 11:28:25 hours | <u>Radio RTC</u> : Asked Train ID 554 if they picked up personnel. <u>Train ID 554</u> : Responded they did not know personnel were in the roadway. [Radio Ops. 3] |
| 11:28:43 hours | <u>Radio RTC</u> : Asked Train ID 554 if they saw they AMF at College Park Station. <u>Train ID 554</u> : Responded there was no AMF at College Park. [Radio Ops. 3] |
| 11:29:42 hours | RTC Radio and Operations Manager (OM) discussed RWP at College Park. ROCC OM gave instructions on the next steps. The Operation Manager advised the RTC Radio to call the RWIC and ascertain where the AMF is located. [OPS3 Phone] |
| 11:29:47 hours | <u>Radio RTC</u> : Contacted the ATCM RWIC and informed them that the AMF was not flagging, and two trains passed College Park Station. <u>ATCM RWIC</u> : Responded that they would speak to the AMF when they boarded the train. [Radio Ops. 3] |

| Time | Description |
|----------------|---|
| 11:39:40 hours | ATCM personnel picked up at CM E2 482+00 by Train ID 506. [AIMS Verified] |
| 11:41:20 hours | ATCM personnel cleared the roadway at E2 482+00. [AIMS Verified] |
| 11:42:00 hours | AMF: Discussed the RWP incident with the ROCC AOM. The AMF stated that it was their error in abandoning their post. The AOM gave instruction to stay in place and await the RWIC. [Phone] |

***Note: Times above may vary from other systems' timelines based on clock settings and reporting sources.*

Interview Summaries

As part of the investigation launched into the event, SAFE interviewed three employees. The interview identified the following key findings associated with this event. The findings detailed below include reported information from involved personnel and may conflict with other data sources contained in the report.

ATCM Mechanic AA

- The ATCM Mechanic AA stated that they were a member of a work crew assigned to [Hyattsville Crossing] station to conduct shunt verification inspections.
- The ATCM Mechanic AA stated that they received a phone call (not on a WMATA device) from an ATCM supervisor who assigned their team additional work assignments to travel to CTF and retrieve a mechanical part.
- The ATCM Mechanic AA stated that they knew the AMF had to sign out by 12:30 so they called the AMF via a non-WMATA device and instructed them to take the train back to the yard because they received an additional assignment.
- The ATCM Mechanic AA stated that the AMF inquired if they were finished with the shunt verification inspection, and they advised that they completed the inspection, but did not say to the AMF that the crew is clear of the roadway.
- The ATCM Mechanic AA stated that their phone call may have confused the AMF and they never contacted the RWIC to offer the information of additional assignments and to verify if the work crew cleared the roadway.

ATCM Technician (AMF)

- The ATCM Technician stated they received a call from the Lead Mechanic in the room, who stated that they just received a call from the supervisor that they wanted us to respond to CTF to pick up some cable.
- The ATCM Technician stated that they asked the Lead Mechanic if the job was done, and they were told the job was completed. The ATCM Technician stated that the Lead Mechanic reiterated that the job was complete.
- The ATCM Technician stated that they were instructed to bring the vehicle key and take the train to complete their day so they will not violate the fourteen-hour rule. The ATCM Technician further stated that they did not question the Lead Mechanic because they were in constant communication with the crew and assumed that the work crew was in a place of safety. (Via OPS7)
- The ATCM Technician stated while enroute to [Hyattsville Crossing], they received a phone call from the RWIC instructing them to return to College Park and continue their duties as the AMF.
- The ATCM Technician stated that they returned to College Park Station and resumed their duties as the AMF.

ATCM Mechanic B (RWIC)

- The ATCM Mechanic B they were assigned to be the RWIC for a Track circuit verification inspection.
- The ATCM Mechanic stated that they completed their assignment and contacted the ROCC for a wayside pickup from CM E2-482+00.
- The ATCM Mechanic B, 10-15 minutes later, received a communication from the ROCC pertaining to the AMF at College Park and whether they were performing their duties.
- The ATCM Mechanic B stated that the Radio RTC contacted the AMF and asked if they were in place, and they responded A-firm.
- The ATCM Mechanic B stated that when they arrived at College Park Station, they asked if the AMF had abandoned their post. The ATCM mechanic stated that the AMF stated they received a call from the technician stating that the work was completed and for them to take the train and sign out, which the AMF did.
- The ATCM Mechanic B stated that at no time did they authorize the AMF to leave their post, nor did they ask for the technician to call and instruct the AMF.

Automatic Train Control Maintenance (ATCM)

ATCM conducted an investigation and determined the AMF was in violation of the following MSRPH rules and procedures and received progressive discipline for the violation.

The AMF also received retraining on MSRPH Operating Rule 5.10.3 and Rule 5.13.6 among others.

Office of Radio Communications (COMR)

Radio Tests were conducted in College Park Station with no deficient findings. A secondary testing of the radio system in the vicinity of CM E2 CM 482+00 were completed on March 10, 2023. All radio checks did report as successful.

Related Rules and Procedures

- MSRPH Operating Rule 3.87
- MSRPH Operating Rule 5.10.3
- MSRPH Operation Rule 5.13.6
- Rail Vehicle Operating Procedures During AMF “3”
- MSRPH AMF Script to Operators: *“There may be multiple work groups ahead. Proceed at half your regulated speed until you reach the next station. Continuously blow your horn. Reduce speed to 15 mph when observing and passing all work crews. Current AMF procedures govern you.”*
- MSRPH 5.13.6.3 - The AMF is required to follow PPE guidelines per the Minimum PPE Standard for On-Track Safety in the MSRPH Section 5 - RWP.

Safety Equipment and Devices – Mobile Work Crew

| Safety Equipment and Devices – Mobile Work Crew | Advanced Mobile Flagger | Watchman/ Lookout | Roadway Worker in Charge (RWIC) |
|---|-------------------------|-------------------|---------------------------------|
| Whistle | R | R | R |
| Air Horn | R | R | R |
| Orange Flag | R | NA | NA |
| Amber Lantern/E-Flares | R | NA | NA |
| Hot Stick/VAD | NA | NA | AR |
| High-Voltage Electrical Safety Gloves | NA | NA | AR |
| Certified Radio/Cell Phone | R | AR | R |
| Watch | R | R | R |

- MSRPH 5.13.6.14 - If ANY Rail Vehicle fails to stop at the AMF's location and is proceeding towards the Mobile Work Crew, the AMF must IMMEDIATELY contact the RWIC and advise them to clear all personnel from the Roadway, alerting them to the approaching rail vehicle. If the RWIC does not acknowledge the AMF's alarm to the approaching rail vehicle, the AMF shall warn the work crew utilizing their air horn and whistle in short rapid blasts. The incident must be reported to ROCC, at the first available opportunity, and an investigation by SAFE shall be completed.

Orange Warning Flag



An 18" X 18" Flag used by the AMF while positioned on a station platform to signal Rail Vehicle Operators to Stop.

ROCS SPOTS Report

Spots Report 1 Spots Report 2 Spots Wild cards

ROCS SPOTS REPORT

based on up-to-the-second operational performance data from the Rail Operations Control System
 Current date/time: Thu Mar 9 09:58:23 2023

Select Platform: and/or Select ID: Leave blank to remove criteria
 and/or Select 4-digit car number: Leave blank to remove criteria
 Select Date: Select Times (0-24HRS): From To

Generate Report

| ID | Platform | length | dcode | Right door open | Right door close | dwll | Left door open | Left door close | dwll | Head Arrived | Tail cleared | cars | Headway door open to door open |
|-----|----------|--------|-------|-----------------|------------------|------|----------------|-----------------|------|--------------|--------------|-------------------------------|--------------------------------|
| 504 | E09-2 | 6 | 43 | | | | 11:03:10 | 11:03:35 | 25 | 11:02:36 | 11:04:02 | 3127-3126 3110-3111 3176-3177 | - |
| 553 | E09-2 | 6 | 46 | | | | 11:09:52 | 11:10:08 | 16 | 11:09:15 | 11:10:31 | 3023-3022 3043-3042 3192-3193 | 6.42 |
| 505 | E09-2 | 6 | 44 | | | | | | | 11:19:41 | 11:21:03 | 3169-3168 3052-3053 3065-3064 | - |
| 554 | E09-2 | 6 | 46 | | | | 11:26:08 | 11:26:22 | 14 | 11:25:41 | 11:26:46 | 3160-3161 3019-3018 3062-3063 | 16.16 |
| 506 | E09-2 | 6 | 43 | | | | 11:35:27 | 11:35:53 | 31 | 11:34:54 | 11:36:17 | 3230-3231 3060-3061 3247-3246 | 9.14 |
| 551 | E09-2 | 6 | 46 | | | | 11:42:19 | 11:42:39 | 20 | 11:41:47 | 11:43:00 | 3185-3184 3116-3117 3151-3150 | 6.57 |
| 507 | E09-2 | 6 | 43 | | | | 11:51:06 | 11:51:26 | 20 | 11:50:34 | 11:51:51 | 3011-3010 3017-3016 3115-3114 | 8.47 |
| 522 | E09-2 | 6 | 46 | | | | 11:50:00 | 11:50:32 | 23 | 11:50:55 | 11:50:55 | 3000-3000 3140-3140 3004-3003 | 0.00 |

Figure 1 ROCS SPOTS Report

Advanced Information Management System (AIMS)

The screenshot shows the AIMS Playback interface. At the top, it displays 'Prince Georges Plaza' and 'College Park-UMD' with status indicators for FI, IN, ST, TP, SP, and FA. The main area shows a track diagram with various train IDs and a lightning bolt icon indicating a power issue. A yellow circle highlights the playback controls, showing the date 02/25/23, time 11:39:40, and EST 10%. Another yellow circle highlights a lightning bolt icon on the track diagram, and a third yellow circle highlights a specific train ID (506) on the track diagram.

Figure 2 AIMS Playback. Train ID 506 Picking up Personnel at CM E2 482+00



Figure 3 AIMS Playback - Roadway clear of all personnel

Weather

On February 25, 2023, at 11:11 hours, NOAA recorded the temperature as 34° F, with cloudy skies, and snow. The weather was not a contributing factor in this incident (Weather source: NOAA) – Location: College Park, MD.

Human Factors

Evidence of Fatigue: AMF

SAFE evaluated conditions at the time of the incident to distinguish whether evidence of fatigue was present. No indications of fatigue were present. The AMF reported feeling fully alert at the time of the incident. The AMF reported experiencing no symptoms of fatigue in the time leading up to the incident.

Fatigue Risk: AMF

SAFE evaluated incident data for fatigue risk factors. Risk factors for fatigue were not present. 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 Personnel involved complied with and were not in violation of the Drug and Alcohol Policy and Testing Program 7.7.3/6.

Findings

- The AMF abandoned their post after receiving a phone call, advising them that the work was completed.
- The AMF was concerned about working longer than permitted and was going to clock out at the conclusion of their AMF duties.
- Poor radio communications caused the RWIC to contact the ROCC via phone to request a train pick-up.
- The Work Crew did not communicate with the RWIC about the AMF leaving their post.

Immediate Mitigation to Prevent Recurrence

- The AMF was removed from service.
- All personnel were pick up and removed to a place of safety.
- All roadwork operations were canceled.
- Safety Bulletin SB 23-02E was issued to all personnel.
- Radio tests in the area were completed.

Probable Cause Statement

The probable cause for this Improper RWP event was the combination of communication errors and failure to follow established procedures for AMF Operations, resulting in an AMF abandoning their assigned post while personnel were still on the roadway. A Contributing Factor to the event was the AMF's acceptance of instruction from a crew member instead of the RWIC.

Recommended Corrective Actions

| Corrective Action Code | Description | Responsible Party | Estimated Completion Date |
|----------------------------------|--|--------------------------|----------------------------------|
| 106429_SAFE CAPS_ATCM _001 | AMF will be re-trained following the guidelines of the MSRP sections 1.1, 1.3, 5.1.1 and 5.12.3. Complete a two-week supervised observation period. | ATCM | Completed |
| 106429_SAFE CAPS_ATCM _002 | Develop a Lessons Learned document to parallel Safety Bulletin 23-01-13 and reviewing the proper steps when communicating with the RWIC during field operations when radio communications fail to include the use of cellular devices. | ATCM | Completed |

Appendices

Appendix A – Interview Summary

The below narratives summarize the incident and represent the statements made by the involved individual. As such, times and details may present a conflict with the data contained in systems of record.

ATCM Mechanic AA

The ATCM Mechanic AA is a WMATA employee with five years of experience and five years as an ATCM Mechanic AA. The ATCM Mechanic AA holds a Roadway Worker Protection (RWP) Level 4 certification.

The ATCM Mechanic AA stated that they were a member of a work crew assigned to Prince George Plaza station to conduct shunt verification inspections. The ATCM Mechanic AA stated that they received a phone call (not on a WMATA device) from an ATCM supervisor who assigned their team additional work assignments to travel to CTF and retrieve a mechanical part. The ATCM Mechanic AA stated that they knew the AMF had to sign out by 12:30 so they called the AMF via a non-WMATA device and instructed them to take the train back to the yard because they received an additional assignment.

The ATCM Mechanic AA stated that the AMF inquired if they were finished with the shunt verification inspection, and they advised that they completed the inspection, but I did not say to the AMF that the crew is clear of the roadway. The ATCM Mechanic AA stated that their phone call may have confused the AMF and they never contacted the RWIC to offer the information of additional assignments and to verify if the work crew cleared the roadway. The ATCM Mechanic AA stated that the work crew utilized OPS7 to communicate throughout the operation as well as cellphone communication due to distorted radio communication in the area. (E08-E09)

ATCM Technician (AMF)

The ATCM Technician is a WMATA employee with eleven years of experience and eleven years as an ATCM Technician. The ATCM Mechanic AA holds a Roadway Worker Protection (RWP) Level 4 certification.

The ATCM Technician stated they were assigned AMF duties during a Shunt verification inspection operation. The ATCM Technician stated they received a call from the Lead Mechanic in the room, who stated that they just received a call from the supervisor that they wanted us to respond to CTF to pick up cable. The ATCM Technician stated that they asked the Lead Mechanic if the job was done, and they were told the job was completed. The ATCM Technician stated that the Lead Mechanic reiterated that the job was complete. The ATCM Technician stated that they were instructed to bring the vehicle key and take the train to complete their day so they will not violate the fourteen-hour rule.

The ATCM Technician further stated that they did not question the Lead Mechanic because they were in constant communication with the crew and assumed that the work crew was in a place of safety. (Via OPS7). The ATCM Technician stated while enroute to PG Plaza, they received a phone call from the RWIC instructing them to return to College Park and continue their duties as the AMF. The ATCM Technician stated that they returned to College Park Station and resumed their duties as the AMF. The ATCM Technician stated that the radio reception and radio communication was poor. They had to constantly move around the platform to gain reception to the ROCC and the work crew.

ATCM Mechanic B (RWIC)

The ATCM Mechanic B is a WMATA employee with Twelve years of experience and seven years as an ATCM Mechanic B. The ATCM Mechanic B holds a Roadway Worker Protection (RWP) Level 4 certification.

The ATCM Mechanic B they were assigned to be the RWIC for a Track circuit verification inspection. The ATCM Mechanic stated that they completed their assigned assignment and contacted the ROCC for a wayside pickup from CM E2-482+00. The ATCM Mechanic B, 10-15 minutes later, received a communication from the ROCC pertaining to the AMF at College Park and whether they were performing their duties. The ATCM Mechanic B stated that the RTC Radio contacted(phone) the AMF and asked if they were in place and they responded A-firm.

The ATCM Mechanic B stated that when they arrived at College Park Station, they asked the AMF did they abandon their post. The ATCM mechanic stated that the AMF commented they received a call from the technician stating that the work was complete and for them to take the train to sign out, which they did. The ATCM Mechanic B stated at no time did they authorize the AMF to leave their post, nor did they ask for the technician to call and instruct the AMF. The ATCM Mechanic stated that they understand the responsibilities of the RWIC, and they are the only person to delegate instructions to the crew.

Appendix B – ROCC INCIDENT REPORT

View Approved Incident Report

INCIDENT ID: 2023056GREEN5

| | | | | | |
|--|---|--|---|-----------------------|-----------------|
| DATE 2023-02-25 | TIME 1119 | LINE Green | ITEM 5 | | |
| LOCATION (STATION/YARD) College Park-U of MD (E09) | | LOCATION/CHAIN MARKER (If Applicable) | REPORTED BY [REDACTED] | | |
| TRAIN ID 505 | DIRECTION I/B | TRACK NUMBER 2 | DEPTS NOTIFIED Everbridge Alert/Messaging | | |
| CAR NUMBERS (XXXX-XXXX) Lead Car | | | | | |
| - | - | - | - | | |
| Caused Issue <input type="checkbox"/> | Caused Issue <input type="checkbox"/> | Caused Issue <input type="checkbox"/> | Caused Issue <input type="checkbox"/> | | |
| TRBL CODE RWPV-RWP VIOLATION | | RESP CODE ATC | | | |
| TYPE INCIDENT RWP Violation | | | | | |
| ACTION PLAN Removed AMF from service | | | | | |
| DELAYS IN MINUTES | | | | | |
| LINE | INCIDENT | TRAIN | TOTAL DURATION | | |
| 0 | 0 | 0 | 0 | | |
| TRIPS MODIFIED | | | | | |
| PARTIAL | GAP TRAIN | LATE DISPATCHES | REROUTED | NOT DISPATCHED | OFFLOADS |
| 0 | 0 | 0 | 0 | 0 | 0 |
| FIVE PRIMARY CONSOLE INDICATIONS | | | | | |
| BCP | BRAKES ON ILLUMINATED | ALL DOORS CLOSED ILLUMINATED | AUTO\MANUAL BPP ILLUMINATED | AUTO | |
| INCIDENT CHRONOLOGY | | | | | |
| TIME | DESCRIPTION | | | | |
| 1127 | Train 554 was instructed to pick up ATC Personnel from the roadway track 2 at E2 482+00. Train 505 track 2 West Hyattsville reported there was no AMF track 2 College Park while ATC Personnel were on the roadway track 2 between Hyattsville Crossing and College Park. AOM, ROIC, MOC and all necessary personnel were notified. | | | | |

Figure 4 ROCC Incident Report PG-1

View Approved Incident Report

0000 All ATC personnel were instructed to clear the roadway for investigation. AMF 2247 was removed from service and transported for post incident analysis.

MAXIMO TICKET#
8566111

| REPORT PREPARED BY | NAME | CLICK TO SIGN |
|---------------------|------------|---------------|
| RADIO CONTROLLER 1 | [REDACTED] | ✓ |
| BUTTON CONTROLLER 1 | [REDACTED] | ✓ |
| RADIO CONTROLLER 2 | | |
| BUTTON CONTROLLER 2 | | |

SUPERINTENDENTS OR ASSISTANTS SECTION

ADDITIONAL FOLLOW-UP CORRECTIVE ACTIONS OR REMARKS

FOLLOW-UP INFORMATION OBTAINED FROM SUPPORT DEPARTMENTS

NOTIFICATIONS/PAGE GROUPS #1/CEO #2/DGM & BELOW

ADDITIONAL NOTIFICATIONS MADE BY PHONE Rail 1 notified

| APPROVED BY | NAME | CLICK TO SIGN |
|--|------------|---------------|
| REPORT APPROVED BY SUPT. OR ASST SUPT. | [REDACTED] | ✓ |

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Figure 5 ROCC Incident Report PG-2

Advanced Mobile Flagger Alertness

OVERVIEW/DESCRIPTION

Roadway Worker Protection (RWP) provides personnel with a uniform method of establishing on-track protection while minimizing dangers and hazards associated with working on the roadway. It is important that all personnel involved in RWP, including Roadway Workers, Rail Vehicle Operators (RVO), and Rail Traffic Controllers (RTC), know and understand the various forms of RWP being provided.

There were two significant RWP violations today (Saturday, February 25) involving AMF:
(The following briefs are based on a preliminary review of the events)

- **Event 1 – 10:11 AM:** A revenue train passed a roadway crew at high speed on the aerial structure CM 251+00. There were two AMFs posted at Benning Road Track 2. Before departing, the Train Operator received an AMF brief regarding the first work crew ahead. As the Operator received this AMF brief, a two-person crew boarded the train and reportedly requested a drop-off. As the Train Operator closed the cab window, the second AMF activated and installed their strobe (now two strobes for two crews). The preliminary contributing factor was confusion over which crew was being protected by the initial AMF brief.
- **Event 2 – 11:07 AM:** An AMF was posted at College Park Track 2, providing protection for a crew between that station and Hyattsville Crossing. The AMF left their post with no replacement. An RVO reported the unprotected crew to the ROCC upon encountering them on the roadway. The preliminary contributing factor was the AMF's loss of situational awareness and potentially miscommunication with the Roadway Worker in Charge (RWIC) to verify protections.

DETAILS AND ACTIONS

Advanced Mobile Flagger (AMF) Procedures

- If in doubt, RVOs should verify the AMF protection being briefed at the 8-car marker.
- If the AMF needs to leave their position, the RWIC must be notified and clear the crew from the roadway before the AMF leaves their assigned position. The AMF must never leave their position while the Mobile Work Crew is still on the roadway.
- AMFs must be placed at the station immediately ahead of the direction the work crew is traveling. The RWIC must verify that the AMF is in place before entering the roadway.
- AMFs must brief every rail vehicle (revenue and non-revenue) approaching their location. It is the RVO's responsibility to ensure they receive/verify all necessary instructions before proceeding.

Roadway Job Safety Briefings (RJSB)

- All roadway personnel must be present for the RJSB before entering the roadway.
- The RWIC must ensure the RJSB includes, but not be limited to, the type of on-track safety being provided, the limits of protection, and the predetermined place of safety.

All RWP rules and procedures can be found in their entirety in Section 5 of the Metrorail Safety Rules and Procedures Handbook (MSRPH), available on MetroDocs.

For questions regarding this Safety Bulletin or other safety-related issues, contact the Safety Hotline at 202-249-SAFE (7233).



Figure 6 SAFE Safety Bulletin SB-23-013 Page-1

Appendix D – Signature Acknowledgement Sheet

Acknowledgment

February 25, 2023
Safety Bulletin Advanced Mobile Flagger Alertness

By signing this document, I hereby acknowledge that I have read and fully understand the safety bulletin SB 23-02-E, dated February 25, 2023, regarding roadway worker protection Advanced Mobile Flagger Alertness.

Contact your immediate supervisor or SAFE if you have any additional questions regarding the attached safety bulletin or roadway worker protection. [Redacted]

Witness Name: [Redacted] Witness Signature: [Redacted]

Witness EID: [Redacted] Location: B08

Department: ATC Date: 02/28/23 Time: 1700

| | Employee ID # | Print First Name | Print Last Name | Dept. | |
|----|---------------|------------------|-----------------|-------|---|
| 1 | | | | ATCM | [Redacted] |
| 2 | | | | ATCM | [Redacted] |
| 3 | | | | ATCM | [Redacted] |
| 4 | | | | ATCM | [Redacted] |
| 5 | | | | ATCM | Richard Porter <small>Digitally signed by Richard Porter Date: 2023.02.28 17:34:43 -0500</small> |
| 6 | | | | | [Redacted] |
| 7 | | | | | [Redacted] |
| 8 | | | | | [Redacted] |
| 9 | | | | | [Redacted] |
| 10 | | | | | [Redacted] |
| 11 | | | | | [Redacted] |
| 12 | | | | | [Redacted] |

Please email completed forms to the administrative team at ATCM_Administration
ATCM_Administration@wmata.com.

Figure 7 Signature Acknowledgement Location B08 PG-2

Appendix E – Supervisor Written Statement

Incident Date: 2/25/2023 Time: 11:51 hours
Final Report – Improper RWP Rev. 1
E23131

Drafted By: SAFE 706 3/23/2023
Reviewed By: SAFE 704 04/26/2023
Approved By: SAFE 71 – 04/26/2023



Witness or Employee Statement Form

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY


USE SEPARATE FORM FOR EACH PERSON

TO BE COMPLETED AND DISTRIBUTED WITHIN 24 HOURS

| PERSONNEL INVOLVED | | | |
|--|-----------------|-----------------------------------|--------------------|
| Name | | [REDACTED] | |
| Phone Number | Job Title | Department | Division/Section |
| 301-955-5026 | ATCM Supervisor | ATCM | DIV4/Glenmont Yard |
| Last Day Worked (prior to) | | Hours Worked (within last 24 hrs) | Overtime? |
| 2/24/2023 | | 8 | No |
| INVOLVED PERSON OR WITNESS | | | |
| Name | | Phone Number | E-Mail |
| [REDACTED] | | [REDACTED] | [REDACTED] |
| Address | | | |
| [REDACTED] | | | |
| INCIDENT | | | |
| Date | Incident Time | Date/Time Reported | Location |
| 2/25/2023 | 10:20 AM | 11:00 AM | E08 PG Plaza |
| Incident ID# (From ROCC, BOCC, etc.) | | Worksafe Incident # | |
| [REDACTED] | | [REDACTED] | |
| What happened prior to the incident? | | | |
| I was at B98 Field office | | | |
| [REDACTED] | | | |
| Describe the incident | | | |
| Around 11:00 AM OCC called me and reported there was a AMF violation at E08. OCC said AMF reported to OCC that wayside crew has been cleared road way; however, they were still wayside. | | | |
| I went to E08 and asked crew filled out incident report. I then took AMF, [REDACTED] and [REDACTED] to downtown for post incident test | | | |
| [REDACTED] | | | |
| What happened after the incident? | | | |
| I went to field office and send out end of shift report and incident report to management | | | |

Figure 8 ATCM Supervisor's Written Statement PG-1

Appendix F – Mechanic’s Written Statements

|  Witness or Employee Statement Form | | TO BE COMPLETED AND DISTRIBUTED WITHIN 24 HOURS | |
|---|-----------------------------------|--|------------------|
| WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY | | USE SEPARATE FORM FOR EACH PERSON | |
| | | Page of | |
| PERSONNEL INVOLVED (Use This Block For WMATA Employees and Contractors) | | | |
| Name | Age | Employee # or MTPD Badge # | |
| Phone Number | Job Title | Department | Division/Section |
| | AJC AA mechanic | ATCM | 4 |
| Last Day Worked (prior to) | Hours Worked (within last 24 hrs) | | Overtime? |
| 02-23-23 | 14 hours | | YES |
| INVOLVED PERSON OR WITNESS (Use This Block For Non-WMATA Involved Person or Witness) | | | |
| Name | Phone Number | E-Mail | |
| Address | | | |
| INCIDENT | | | |
| Date | Incident Time | Date/Time Reported | Location |
| 02-25-23 | 11:10 | 11:30 | E08 |
| Incident ID# (From ROCC, BDDC, etc.) | | Worksafe Incident # | |
| What happened prior to the incident? Performing High frequency Shunt verification on stall 2. | | | |
| Describe the incident: During our first assignment shunt verification I was on the TCR taking reading and [redacted] called me and give us additional assignments to pick up parts from CTF. Because of there is no enough time for ATC 2247/Thierry to go to CTF with the rest of the crew and make it on time to clock out at B98 yard at 12:30 After 14 hour shift I called him ATC 2247 and inform him about the new assignment told him to take the train to B98 to make it on-time after we done. He asked me if we have done with our shunt verification and I told him yes we done but I didn't tell him the way stake crew clear from the road way. He told me me he have the track key, I told him to bring it to TCR or meet us on platform. After that I hang up the phone. | | | |
| What happened after the incident? I explain to rocc and [redacted] what happened | | | |
| Form Completed by: (Print Name) | | | Date |
| [redacted] | | | 02-25-23 |
| Signature | | | |
| [redacted] | | | |

10.689 10/09 Original: RISK Copy 1: Department Copy 2: SAFE Copy 3: Employee File Photocopy to Employee

Figure 9 Employee's written statement PG-1

Witness or Employee Statement Form TO BE COMPLETED AND DISTRIBUTED WITHIN 24 HOURS
WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY USE SEPARATE FORM FOR EACH PERSON Page of

PERSONNEL INVOLVED (Use This Block For WMATA Employees and Contractors)

Name: [Redacted] Age: [Redacted] Employee # or MTPD Badge #: [Redacted]

Phone Number: [Redacted] Job Title: **ATC MECHANIC** Department: **ATC M** Division/Section: **4**

Last Day Worked (prior to): **FRIDAY 24 FEBRUARY 2023** Hours Worked (within last 24 hrs): **08 hours** Overtime?: **YES**

INVOLVED PERSON OR WITNESS (Use This Block For Non-WMATA Involved Person or Witness)

Name: [Redacted] Phone Number: [Redacted] E-Mail: [Redacted]

Address: [Redacted]

INCIDENT

Date: **02-25-2023** Incident Time: **1115** Date/Time Reported: **02-25-2023** Location: **E09**

Incident ID# (From ROCC, BOCC, etc.): [Redacted] Worksafe Incident #: [Redacted]

What happened prior to the incident?
 - I DROVE THE VEHICLE FROM B98 TO E08
 - I WAS ASSIGNED AS AMF, FOLLOW SAFETY BRIEFING,
 AND JUMPED ON THE TRAIN FROM E08 TO E09 -
 - I ASSUMED THE DUTY OF AMF AFTER FOLLOWING DUE PROCEDURES

Describe the incident: I WAS PERFORMING MY DUTY AS AMF AT THE END OF EIGHT CAR CHAIN MARKER TRUCK AT E09 PLATFORM WHEN I RECEIVED A CALL FROM E08 TCR ROOM FROM [Redacted] HE TOLD ME THAT THE JOB WAS COMPLETED AND THAT THE CREW CLEAR THE ROADWAY AND TO RETURN TO E08 TO HANDLE THEM THE PICK UP TRUCK KEY - IT WAS BASED ON THAT INFORMATION THAT I GOT TO THE TRAIN TO COME TO E08 - THE RWIC THEN CALLED ME AND INFORM ME THAT I SHOULD GO BACK TO E09 - WHICH I DID - ALL THIS HAPPENED AROUND 1115 AM

What happened after the incident?
 I FOLLOWED THE INSTRUCTION OF THE RWIC AND ROLL AND STAND BY TO WAIT FOR THE SUPERVISOR BEFORE THAT, I CALLED ROLL AND ANOTHER OFFICE THEY INSTRUCTED ME TO CALL.

Form Completed by: (Print Name) [Redacted] Date: [Redacted]

Signature: [Redacted]

50.689 10/09 Original: RISK Copy 1: Department Copy 2: SAFE Copy 3: Employee File Photocopy to Employee

Figure 10 Employees Written Statement PG-2

Incident Date: 2/25/2023 Time: 11:51 hours
 Final Report – Improper RWP Rev. 1
 E23131

Drafted By: SAFE 706 3/23/2023
 Reviewed By: SAFE 704 04/26/2023
 Approved By: SAFE 71 – 04/26/2023

**Witness or Employee Statement Form**TO BE COMPLETED AND
DISTRIBUTED WITHIN 24 HOURS

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

USE SEPARATE FORM FOR EACH PERSON

Page of

| | | | |
|---|---|-------------------------------|------------------------|
| PERSONNEL INVOLVED (Use This Block For WMATA Employees and Contractors) | | | |
| Name [Redacted] | | | |
| Phone Number [Redacted] | Job Title Mechanic-B | Department ATC | Division/Section 4. |
| Last Day Worked (prior to) 2/23/23 | Hours Worked (within last 24 hrs) 14 | Overtime? yes | |
| INVOLVED PERSON OR WITNESS (Use This Block For Non-WMATA Involved Person or Witness) | | | |
| Name | | Phone Number | E-Mail |
| Address | | | |
| INCIDENT | | | |
| Date 2/25/23 | Incident Time 10:20 | Date/Time Reported 2/25/23 | Location E08 |
| Incident ID# (From ROCC, BOCC, etc.) | | Worksafe Incident # | |
| What happened prior to the incident? We came to E08 from B98 to do track circuit verification on track-2 E08. I was the RWIC got permission to go to away side, start verification. | | | |
| Describe the incident After we have done verification on track-2, I requested Central to pick up a train. Few minutes later, central called me on the radio & asked me to verify with my AMF if he is still on the place and still flagging & briefing with the next train operator. Almost immediately central asked me his radio number. I gave central that info. Central went to the air location for him, asked him his places and if he missed briefing couple trains. Amy told central he will give land line. we got picked up & come back to the platform. central told me to give land line. I did. explained the above. | | | |
| What happened after the incident? I explained to central what I know happened. asked me question. I answered then what I know. Central told me not go anywhere but wait at E08. At first phone call central told us to go College park but changed the plan to wait. | | | |
| Form Completed by: (Print Name) [Redacted] | | | Date 2/25/23 |
| Sig [Redacted] | | | |

50.689 10/09 Original: RISK Copy 1: Department Copy 2: SAFE Copy 3: Employee File Photocopy to Employee

Figure 11 Employees Written Statement PG-3

Incident Date: 2/25/2023 Time: 11:51 hours
Final Report – Improper RWP Rev. 1
E23131Drafted By: SAFE 706 3/23/2023
Reviewed By: SAFE 704 04/26/2023
Approved By: SAFE 71 – 04/26/2023

Page 23



Witness or Employee Statement Form
WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
USE SEPARATE FORM FOR EACH PERSON

**TO BE COMPLETED AND
 DISTRIBUTED WITHIN 24 HOURS**
 Page of

| PERSONNEL INVOLVED (Use This Block For WMATA Employees and Contractors) | | | |
|--|---------------|-----------------------------------|------------------|
| Name [REDACTED] | | | |
| Phone Number | Job Title | Department | Division/Section |
| [REDACTED] | B TECH | ATCM | A |
| Last Day Worked (prior to) | | Hours Worked (within last 24 hrs) | Overtime? |
| 2/24/2023 | | 14 | NO |
| INVOLVED PERSON OR WITNESS (Use This Block For Non-WMATA Involved Person or Witness) | | | |
| Name | | Phone Number | E-Mail |
| Address | | | |
| INCIDENT | | | |
| Date | Incident Time | Date/Time Reported | Location |
| 2/25/23 | 11:20 | 2/25/23 9:30AM | E08 |
| Incident ID# (From ROCC, BOCC, etc.) | | Worksafe Incident # | |
| | | | |
| What happened prior to the incident? | | | |
| We came to E08 from B98 to do track circuit verification on track #2 - E08. I was the Man in the Room. | | | |
| Describe the incident | | | |
| I was working with [REDACTED] in the Room, and we are just finish the midpoint and verification in the Room. | | | |
| What happened after the incident? | | | |
| Standby @ E08 waiting for supervisor come. | | | |
| Form Completed by: (Print Name) | | | Date |
| [REDACTED] | | | 2/25/2023 |
| Signature | | | |
| [REDACTED] | | | |

50.689 10/09 Original: RISK Copy 1: Department Copy 2: SAFE Copy 3: Employee File Photocopy to Employee

Figure 12 Employees Written Statement PG-4



Witness or Employee Statement Form

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

TO BE COMPLETED AND DISTRIBUTED WITHIN 24 HOURS

USE SEPARATE FORM FOR EACH PERSON

Page of

| PERSONNEL INVOLVED (Use This Block For WMATA Employees and Contractors) | | | |
|---|-----------------------------------|---------------------|------------------|
| Name <i>[Redacted]</i> | | | |
| Phone Number | JOB TITLE | Department | Division/Section |
| <i>[Redacted]</i> | <i>B mechanic</i> | <i>ATC</i> | <i>4</i> |
| Last Day Worked (prior to) | Hours Worked (within last 24 hrs) | Overtime? | |
| <i>2/24/23</i> | <i>19hrs prior on 2/24/23</i> | <i>yes</i> | |
| INVOLVED PERSON OR WITNESS (Use This Block For Non-WMATA Involved Person or Witness) | | | |
| Name | | Phone Number | E-Mail |
| Address | | | |
| INCIDENT | | | |
| Date | Incident Time | Date/Time Reported | Location |
| <i>2/25/23</i> | <i>11:15/11:20</i> | <i>2/25/23</i> | <i>E08</i> |
| Incident ID# (From ROCC, BOCC, etc.) | | Worksafe Incident # | |
| What happened prior to the incident? | | | |
| <i>Prior to incident we was doing track circuit verification @ E08 track 2 under amf protection walking toward's E09.</i> | | | |
| Describe the incident | | | |
| <i>During incident while freshening up verifying under amf protection it was discovered our <i>[Redacted]</i> had left his post @ the 8 car marker while our <i>[Redacted]</i> was waiting to make a request for train pick-up. Apparently it was some miscommunication and person <i>[Redacted]</i> had told <i>[Redacted]</i> we was done verifying and <i>[Redacted]</i> thought we was done and clear of roadway before confirming with the RWIC.</i> | | | |
| What happened after the incident? | | | |
| <i>after incident we was told to standby, the RWIC had to contact central explain what happened and wait for supervisors to fill out paperwork.</i> | | | |
| <i>[Redacted]</i> | | | |

50.689 10/09 Original: RISK Copy 1: Department Copy 2: SAFE Copy 3: Employee File Photocopy to Employee

Figure 13 Employees Written Statement PG-5

Incident Date: 2/25/2023 Time: 11:51 hours
Final Report – Improper RWP Rev. 1
E23131

Drafted By: SAFE 706 3/23/2023
Reviewed By: SAFE 704 04/26/2023
Approved By: SAFE 71 – 04/26/2023



Witness or Employee Statement Form

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

TO BE COMPLETED AND DISTRIBUTED WITHIN 24 HOURS

USE SEPARATE FORM FOR EACH PERSON

Page of

| PERSONNEL INVOLVED (Use This Block For WMATA Employees and Contractors) | | | | |
|--|---------------|-----------------------------------|---------------------|------------------|
| Name | | | Age | WMATA Badge # |
| Job Title | | | Department | Division/Section |
| D Tech. | | | ATCM | 4 |
| Last Day Worked (prior to) | | Hours Worked (within last 24 hrs) | | Overtime? |
| 2/25/23 | | 14 | | NO |
| INVOLVED PERSON OR WITNESS (Use This Block For Non-WMATA Involved Person or Witness) | | | | |
| Name | | Phone Number | E-Mail | |
| Address | | | | |
| INCIDENT | | | | |
| Date | Incident Time | Date/Time Reported | AM | Location |
| 2/25/23 | 11:20 | 2/25/23-9:30 | | EOB |
| Incident ID# (From ROCC, BOCC, etc.) | | | Worksafe Incident # | |
| What happened prior to the incident? | | | | |
| According to the incident, we was working track circuit verification on track No. 2 (EOB). I was the one's using the hot shunt at those time | | | | |
| Describe the incident | | | | |
| At the last person in the team, I did not know what is happening until the brief told me the the AMT person was leave. | | | | |
| What happened after the incident? | | | | |
| We was stand by at EOB. | | | | |
| Form Completed by: (Print Name) | | | | Date |
| [Redacted] | | | | 2/25/23 |
| Sig | | | | |
| [Redacted] | | | | |

50.689 10/09 Original: RISK Copy 1: Department Copy 2: SAFE Copy 3: Employee File Photocopy to Employee

Incident Date: 2/25/2023 Time: 11:51 hours
Final Report – Improper RWP Rev. 1
E23131


Drafted By: SAFE 706 3/23/2023
Reviewed By: SAFE 704 04/26/2023
Approved By: SAFE 71 – 04/26/2023

Appendix G – WMATA Roadway Job Safety Briefing Form

434 - 483.

WMATA Roadway Job Safety Briefing Form

This form must be completed legibly and accurately and be retained and made available for inspection for a period of 90 days.



Part 1: General Job Briefing

| | | | |
|---|---|--|---|
| 1 | Date: 02/25/23 | Time: 10:05 | RWIC: [Redacted] |
| | RWIC Call #: 2263 | | RWIC: [Redacted] |
| 2 | Safety Contact: Third Seal Hazard. | | |
| | RWP Rule: Cald #2 | | |
| 3 | Work Location: E08 | | |
| | Job Task(s): Track Circles Verification TRK-2 | | |
| 4 | Worksite, Electrical, Chemical, or Environmental Hazards: Third Seal, Tripping hazard, darkness in the tunnel | | |
| | PPE Inspected: <input checked="" type="checkbox"/> | Electronic Device Policy Reviewed: <input checked="" type="checkbox"/> | Radio Certification Date Inspected: <input checked="" type="checkbox"/> |
| | RWP Stickers Inspected: <input checked="" type="checkbox"/> | Tools and Equipment Inspected: <input checked="" type="checkbox"/> | Radio Checks Performed: <input checked="" type="checkbox"/> |
| 5 | What Specialized PPE Will Be Used? Hard hat, Safety shoe, flashlight. | | |
| 6 | Emergency Response Plan: Platform - E09 | | |

Part 2: RWP Briefing: This section must be filled out before any Roadway Workers enter the Roadway.

**Track Time On/Off: 10:10/11:40. : / : : / : **

| | | | |
|----|---|--|---------------------------------|
| 7 | Rail Line: E | Track Number(s): 2 | Track Access Guide (TAG) Speed: |
| | Working Limits Chain Markers: E2+434 ¹⁰ - E2+483 ¹⁰ . | | |
| | OPS Radio Channel: 3 | OPS Phone Number: 21508 | |
| | Place of Safety: Catwalk | Time Needed to Reach Place of Safety: 15 | |
| | Are There Red Hot Spots Within Your Working Limits? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | |
| | Red Hot Spot Chain Markers: | | Red Hot Spot Hazard(s): |
| 8 | Form of RWP: IT <input type="checkbox"/> ETO Authority <input type="checkbox"/> Local Signal Control <input type="checkbox"/> AMF <input checked="" type="checkbox"/> FT <input type="checkbox"/> | | |
| | RWP Notes: [Redacted] 8 Cal markers at E09. - Track-2. | | |
| 9 | Advanced Mobile Flagger Call #(s) or Last Name(s): [Redacted] | | |
| | Advanced Mobile Flagger Placement: E09 Track-2 8 Cal marker. | | |
| | Watchman/Lookout Placement: | | |
| | Required Site Distance: | Watchman/Lookout Rotation Schedule: | |
| | Will There be a Speed Restriction on the Adjacent Track? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | |
| | How Will the Speed Restriction be Implemented? | | |
| 11 | Will Class 2 Vehicles be Part of the Working Limits? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | |
| | # of Class 2 Vehicles: | Type of Class 2 Vehicles: | |

52.002 06/22

Figure 14 WMATA Roadway Job Safety Briefing Form PG-1

WMATA Roadway Job Safety Briefing Form



This form must be completed legibly and accurately and be retained and made available for inspection for a period of 90 days.

Part 2: RWP Briefing, continued:

| | | | | |
|---|---|------------------------|------------------------------------|------------------------|
| 12 | Power Outage: Red Tag <input type="checkbox"/> Supervisory <input type="checkbox"/> | | Hot Sticking Chain Markers: | |
| | Red/Supervisory Tag #: | | | |
| | Red/Supervisory Tag Holder: | | | |
| | Insulated Mat(s) Color Blue <input type="checkbox"/> Red <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Yellow <input type="checkbox"/> | | | |
| | WSAD Certification Due | WSAD Serial #/Asset ID | WSAD Certification Due | WSAD Serial #/Asset ID |
| | / / | | / / | |
| | / / | | / / | |
| Will a Piggyback Crew(s) be Working Within Your Working Limits? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | | | |
| 13 | Crew Leader/EIC Call #(s): | | Piggyback Work Area Chain Markers: | |
| | Piggyback Work Assignment(s): | | | |

Part 3: Good Faith Challenge: The following must be read aloud by the RWIC to the Roadway Workers.

"WMATA guarantees each Roadway Worker the right to challenge, in good faith, the effectiveness of the Roadway Worker Protection being provided. The Roadway Worker making the challenge, and those that are sympathetic to the challenge, shall remain clear of the roadway until the challenge has been resolved."

| | |
|--|-----------------|
| RWP Issues: | Worker Name(s): |
| | |
| Was the GFC Issue Resolved? Yes <input type="checkbox"/> No <input type="checkbox"/> | |

Part 4: Roadway Worker Acknowledgement

"I understand and agree with all aspects of the Roadway Job Safety Briefing I just received. I am adequately protected from any train movement or roadway hazards. I understand I have a responsibility to conduct myself in a safe manner at all times."

ROADWAY WORKERS HAVE THE RIGHT AND RESPONSIBILITY TO INITIATE A GOOD FAITH CHALLENGE WHEN NECESSARY

| Signature | Employee ID # | Crew Leader/EIC Signature | Crew Leader/EIC Employee ID # |
|------------|---------------|---------------------------|-------------------------------|
| [Redacted] | | | |
| | | | |
| | | | |
| | | | |
| | | | |

Part 5: RWIC Signature(s)

| | |
|----------------------------|-------------------------------|
| Additional RWIC Comments: | |
| RWIC Signature: [Redacted] | |
| Relieving RWIC Name: | Relieving RWIC Employee ID #: |
| Relieving RWIC Signature: | Date/Time: / / |
| Relieving RWIC Call #: | Relieving RWIC Cell Phone #: |

FORM SAF-889-001-00

Figure 15 WMATA Roadway Job Safety Briefing Form PG-2

Appendix H – COMR Radio Tests



Washington Metropolitan Area Transit Authority Maintenance and Material Management System Work Order Details

Page 1 of 1
MX76PROD

Work Order #: 17729283
Type: CM



Status: CLOSE
03/12/2023 05:26

Work Description: E08/E09, Safety request Radio operational test, tracks1&2 Platform to Platform
Job Plan Description:

| Work Information | | | | | | | | | | |
|--|-----------------------------|--|---------------------|--|------------------|------------------|---------------|---------------|-----------|--|
| Asset: | 60335 | RADIO, CRCS, REMOTE SITE, T38 | Owning Office: | COMM-TSSM-RADO | Parent: | | | | | |
| Asset Tag: | | | Maintenance Office: | COMM-TSSM-RADO | Create Date: | 03/10/2023 15:18 | | | | |
| Asset S/N: | CRCSRST38 | | Labor Group: | COMMR3RADO | Actual Start: | 03/10/2023 21:13 | | | | |
| Location: | 3952 | T38, CARMEN TURNER FACILITY, BUILDING (G) SVMT BODY, 2ND FLOOR | Crew: | | Actual Comp: | 03/10/2023 21:13 | | | | |
| Work Location: | | | Lead: | ██████████ | Item: | N60040086 | | | | |
| Failure Class: | COMR003 | RADIO COMMUNICATIONS SYSTEMS | GL Account: | WMATA-02-33540-50499280-042-*****-****-OPR** | | | | | | |
| Problem Code: | 3541 | NO TX AUDIO | Supervisor: | ██████████ | Target Start: | | | | | |
| Requested By: | 55385 | | Requestor Phone: | ██████████ | Target Comp: | | | | | |
| Chain Mark Start: | | | Chain Mark End: | | Scheduled Start: | | | | | |
| Create-Mileage: | 0.0 | | Complete-Mileage: | 0.0 | | | | | | |
| Task IDs | | | | | | | | | | |
| Task ID | | | | | | | | | | |
| 10 | RADIO CHECKS LOUD AND CLEAR | | | | | | | | | |
| TECHS 317 AND 321 PERFORMED RADIO CHECKS FROM E08 TO E09 ON BOTH TRACKS. BOTH PLATFORMS RADIO CHECKS ARE LOUD AND CLEAR. | | | | | | | | | | |
| Component: | Work Accompl: | Reason: | Status: | CLOSE | Position: | Warranty?: | N | | | |
| Actual Labor | | | | | | | | | | |
| Task ID | Labor | Start Date | End Date | Start Time | End Time | Approved? | Regular Hours | Premium Hours | Line Cost | |
| 10 | ██████████ ██████████ | 03/10/2023 | 03/10/2023 | 18:00 | 20:00 | Y | 02:00 | 00:00 | \$93.20 | |
| 10 | ██████████ ██████████ | 03/10/2023 | 03/10/2023 | 18:00 | 20:00 | Y | 02:00 | 00:00 | \$91.82 | |
| Total Actual Hour/Labor: | | | | | | | 04:00 | 00:00 | \$185.02 | |
| Failure Reporting | | | | | | | | | | |
| Cause | Remedy | Supervisor | Remark Date | | | | | | | |
| 2500 | NO PROBLEM FOUND | 3191 TESTED - NO TROUBLE FOUND | ██████████ | 03/10/2023 | | | | | | |
| Remarks: RADIO CHECKS LOUD AND CLEAR | | | | | | | | | | |

Figure 16 - COMR Testing of tracks 1 and 2 in the event area.

M E M O R A N D U M



TO: [Redacted]
Mechanic B

DATE: March 21, 2023

FROM: [Redacted]

SUBJECT: AMF Violation Closeout

This memorandum is regarding your conduct in the position of Signaling Maintenance Technician. You are expected to demonstrate knowledge, skills, abilities and conduct at a satisfactory level which has not occurred.

On February 25th, 2023, you were assigned as an AMF and posted at PG Plaza Station track 2 providing protection for crew between that station and Hyattsville Crossing. You left your post with no replacement while the crew was still wayside. A train operator reported the unprotected crew to OCC upon encountered them wayside.

The probable cause for this Improper RWP event was combination of communication errors and failures to follow established procedures for AMF Operations. The AA tech told you that the crew was done with shunt verification wayside, but he never told you that crew was clear wayside. You thought that crew clear roadway, and therefore you left your AMF position.

According to RWP rules, if the AMF needs to leave their assigned position, the RWIC must be notified and clear the crew from wayside before AMF leaves their assigned position. The RWP rules and procedures can be found in Section 5 of the Metro Safety Rules and procedures Handbook (MSRPH)

Your conduct is unacceptable and found to specifically violate the following policies:

5.1.1 Zero Tolerance Policy

WMATA has a "Zero Tolerance" policy regarding safety infractions. As a condition of employment with the Authority, all Roadway personnel, regardless of rank or title, shall acknowledge, comply with and be knowledgeable of the rules and procedures set forth in this section. Failure of Roadway personnel to abide by WMATA rules, procedures, regulations that intentionally compromise safety will result in disciplinary actions that may lead to termination from service.

5.10.3 Advanced Mobile Flagger – AMF

A watchman/lookout whose duty is to verbally warn Rail Vehicle Operators of Roadway Workers on the track ahead. AMFs are required to be RWP Level 2 or 4 qualified.

Washington
Metropolitan Area
Transit Authority

Figure 17 ATCM Memorandum PG-1

5.13.17. If the AMF is not in position at the 8-car marker, or a distraction requires them to leave their position, the Roadway-Worker-In-Charge (RWIC) of the Mobile Work Crew must be notified by the assigned AMF and clear the crew from the Roadway prior to the AMF leaving their assigned position. The AMF must never leave their position while the Mobile Work Crew is still on the Roadway.

Close out Actions are as Follows

- 1) This disciplinary action for failure to comply with AMF rule you have 5 days suspension starting from March 28th, 2023, to April 1, 2023
- 2) Your supervisor will schedule you to attend RWP refresher class

I CERTIFY THAT THE ABOVE WAS CALLED TO MY ATTENTION TODAY:

[Redacted]
Employee Name

03-22-2023
Date

[Redacted]
Witness for the Authority

22 MARCH 23
Date

- CC: Division 4 Asst. Superintendent [Redacted]
- CC: Division 4 Superintendent [Redacted]
- CC: [Redacted] Asst. General Superintendent
- CC: Human Capital
- CC: Local 689

Employee Initial [Redacted]

Figure 18 ATCM Memorandum PG-2

Appendix J – Why-Tree Analysis

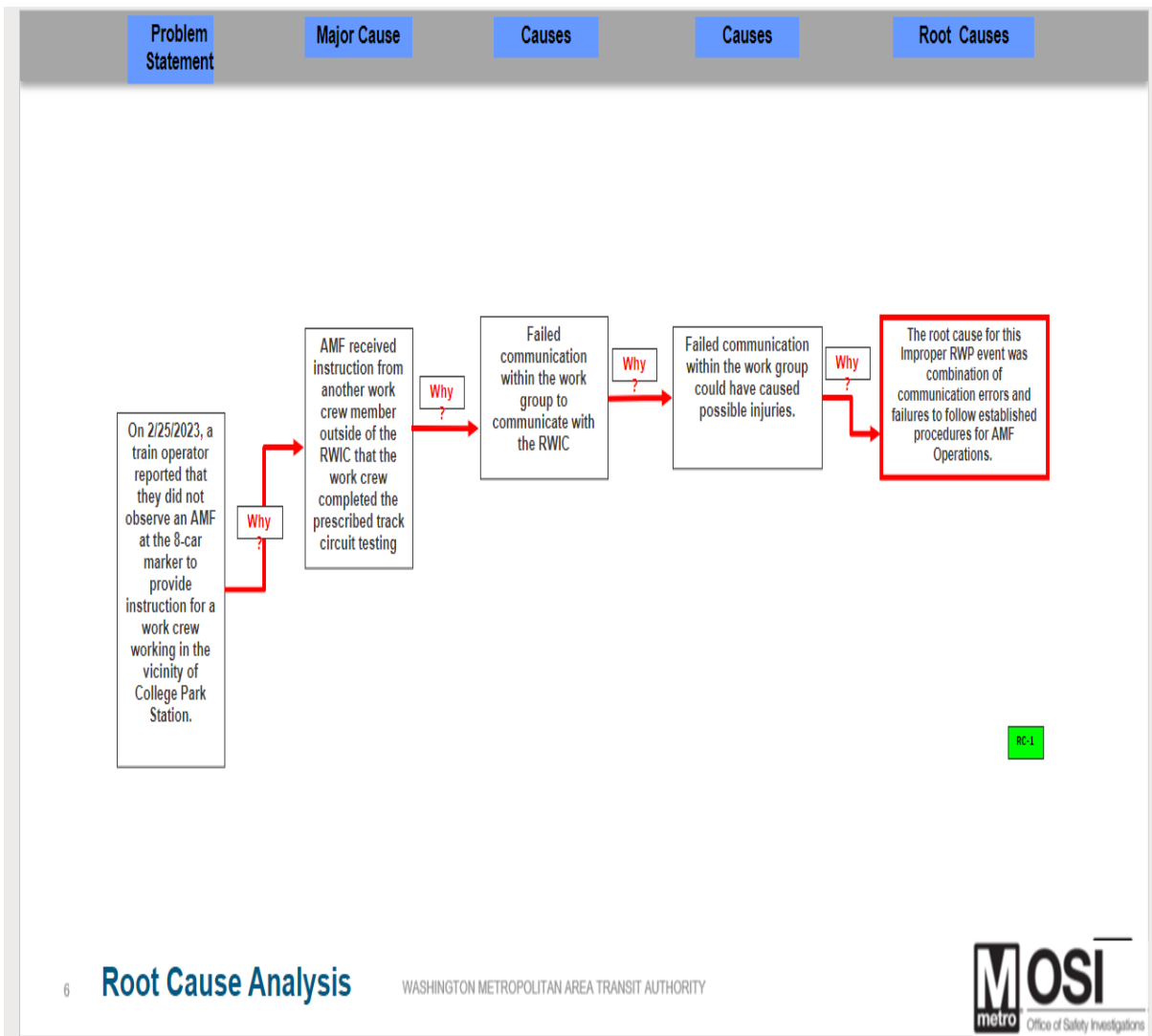


Figure 19 - Root Cause Analysis page 1 of 1 .



Washington Metropolitan Area Transit Authority
Department of Safety (SAFE)
Office of Safety Investigations (OSI)
FINAL REPORT OF INVESTIGATION A&I E23190

| | |
|---------------------------------------|---|
| Date of Event: | March 20, 2023 |
| Type of Event: | Improper Roadway Worker Protection (RWP) |
| Incident Time: | 09:34 hours |
| Location: | Forest Glen Station, Track 2 CM B2 563+00 |
| Time and How received by SAFE: | 09:37 hours/MAC Notification |
| WMSC Notification Time: | 09:37 hours |
| Responding Safety Officers: | None |
| Rail Vehicle: | Train ID 103 L7018/19X7357/56X7440/41X7173/72T |
| Injuries: | None |
| Damage: | None |
| Emergency Responders: | None |
| SMS I/A Number | 20230320#107038 |

Forest Glen Station – Improper RWP

March 20, 2023

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Abbreviations and Acronyms

| | |
|--------------|---|
| AIMS | Advanced Information Monitoring System |
| ARS | Audio Recording System |
| ATCM | Automatic Train Control Maintenance |
| CAP | Corrective Action Plan |
| CCTV | Closed-Circuit Television |
| CMOR | Office of Chief Mechanical Officer |
| ETO | Exclusive Track Occupancy |
| IIT | Incident Investigation Team |
| LCP | Local Control Panel |
| LCS | Local Signal Control |
| MSRPH | Metrorail Safety Rules and Procedures Handbook |
| RTC | Rail Traffic Controller |
| NOAA | National Oceanic and Atmospheric Administration |
| RTRA | Office of Rail Transportation |
| ROCC | Rail Operations Control Center |
| RWIC | Roadway Worker In Charge |
| SAFE | Department of Safety |
| SMS | Safety Measurement System |
| TSR | Temporary Speed Restriction |
| VMDS | Vehicle Monitoring and Diagnostic System |
| WMATA | Washington Metropolitan Area Transit Authority |
| WMSC | Washington Metrorail Safety Commission |

**Washington Metropolitan Area Transit Authority
Department of Safety – Office of Safety Investigations**

Executive Summary

**Note that all times listed are approximate and may contain minor variations due to differences between systems of record. **

On March 20, 2023, at 09:34 hours, the Roadway Worker in Charge (RWIC) for an Automatic Train Control Maintenance (ATCM) work crew located between Wheaton Station and Forest Glen Station at the interlocking at Chain Marker (CM) B2 563+00 reported to the Rail Operations Control Center (ROCC) that Train ID 103 (L7018/19X7357/56X7440/41X7173/72T) failed to respond to a “stop” hand signal. The RWIC was attempting to stop the train for their work crew to board within the vicinity of Forest Glen Station.

At 08:51 hours, the RWIC requested permission to enter Forest Glen Station Interlocking via track 1, when their work was completed, they would exit via track 2, taking possession of the control panel under Exclusive Track Occupancy (ETO) protection and using speed couplers. At 09:30 hours, the RWIC advised that the interlocking inspection was completed and requested retrieval from the roadway via train pick-up. The Radio Rail Traffic Controller (RTC) then attempted to contact Train ID 103, located at Wheaton Station multiple times with no response.

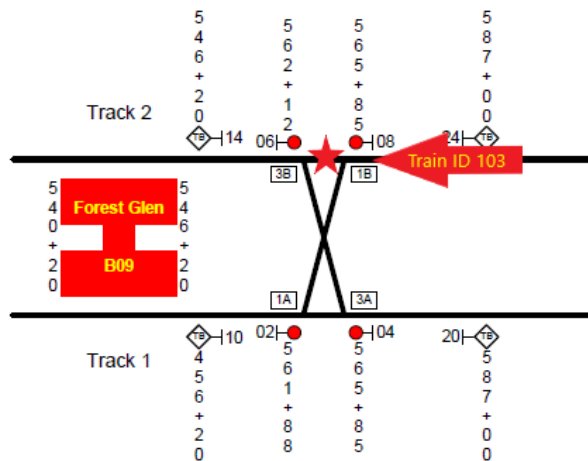
At 09:32 hours, the Radio RTC advised the RWIC that they were unable to contact Train ID 103 for retrieval; the RWIC acknowledged. The Radio RTC advised the RWIC to attempt to stop the train using the appropriate hand signals. At 09:33 hours, Train ID 103 passed the ATCM work crew at a speed greater than 15MPH. At 09:34 hours, the RWIC advised that Train ID 103 failed to stop after the RWIC displayed the stop hand signal, and the crew was standing by and clear for the next available train. There was no Near Miss related to the event.

The probable cause for the event was the Train Operator’s failure to maintain vigilance of the roadway and the ability to reduce the train’s speed in approach to the work crew. Contributing Factors to the event included ATCM’s use of a medium speed coupler when a slow speed coupler would have been appropriate to limit the train’s speed to 15 miles per hour in approach to their location.

Incident Site

Forest Glen Station, Track 2
Interlocking CM B2 563+00

Field Sketch/Schematics



The above depiction is not to scale.

Purpose and Scope

The purpose of this accident 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.

Investigative Methods

The investigative methodologies included the following:

- Site Assessment through video and document review
- Formal Interviews – SAFE interviewed two individuals as part of this investigation. The interviews included persons present at, during, and after the incident, those directly involved in the response process, and representatives from the Washington Metrorail Safety Commission (WMSC). SAFE interviewed the following individual(s):
 - The ATCM RWIC
 - The Train Operator (Train ID 103)
- Documentation Review – Collection of relevant work history information and process documentation contained in WMATA systems of record. These records include:
 - Train Operator Training Records
 - Train Operator Certifications
 - Train Operator 30-Day work history review
 - Metrorail Safety Rules and Procedures Handbook (MSRPH)
 - National Oceanic and Atmospheric Administration (NOAA)
 - Rail Operations Control Center (ROCC) Incident Report
 - Maximo Data
- System Data Recording Review – Collection of information contained in Metro Data Recording Systems. This data includes:
 - Audio Recording System (ARS) playback [Radio and Landline Communications]
 - The Office of Chief Mechanical Officer (CMOR) Incident Investigation Team (IIT) Vehicle Monitoring and Diagnostic System (VMDS)

- Advanced Information Monitoring System (AIMS)
- Closed-Circuit Television (CCTV)

Investigation

On March 20, 2023, at approximately 09:34 hours, the RWIC for an ATCM work crew reported to the Radio RTC that they attempted to stop Train ID 103 for retrieval from the roadway within the vicinity of Forest Glen Station.

Prior to the event, at 08:51 hours, the RWIC requested permission to enter the roadway at the Forest Glen Station Interlocking via track 1 and exit via track 2, taking possession of the control panel under ETO protection using speed couplers. The Radio RTC acknowledged and permitted the RWIC and their work crew to enter the roadway and to take control of the control panel to perform an interlocking inspection, then advised all personnel on Radio Ops 1 that ATCM personnel was working in the roadway.

At 09:29 hours, Train ID 103 arrived at Wheaton Station. The Audio Recording System (ARS) revealed that at 09:30 hours, the RWIC advised ROCC that the interlocking inspection was completed and requested retrieval from the roadway via train pick-up. The Radio RTC attempted to contact Train ID 103, located at Wheaton Station multiple times and there was no response from the Train Operator. At 09:31 hours, Train ID 103 departed at Wheaton Station.

At 09:32 hours, the Radio RTC advised the RWIC that they were not able to contact Train ID 103 over the radio, then advised the RWIC to attempt to stop the train using the stop hand signal.

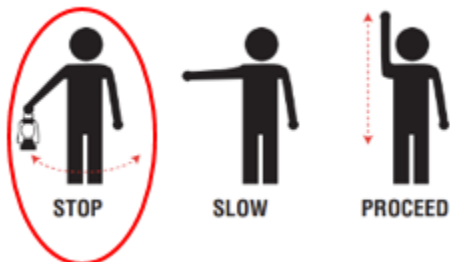


Figure 1 – Standard Hand Signals

According to the MSRP Section 5 – RWP Rules, 5.12.4 Standard Hand Signals: All hand signals are given facing oncoming Rail vehicles. To enhance signaling, flags and/or lights may be used. When giving hand signals: 1. Use the proper safety equipment when required. 2. Hand signals must be given in sufficient time to permit compliance. It must be given from a point where it can be plainly seen and so that it cannot be misunderstood.

Closed-Circuit Television (CCTV) revealed at 09:32:25 the flashlight from the RWIC can be observed as the train approached the work crew which would have allowed the Train Operator 35 seconds to begin reducing the train speed and have enough time to stop the train to allow the work crew to board before passing the work crew at 09:33:00 hours. The RWIC is observed standing at an angle with their flashlight held at hip level. The physical position of the RWIC caused confusion to the Train Operator since the RWIC was not facing the train and displaying the stop hand signal.



Figure 2 - Footage taken from the forward-facing camera of rail car 7018 determined the train observed the work crew at 09:33 hours.

The Office of Chief Mechanical Officer/Vehicle Monitoring and Diagnostic System (CMOR/VMDS) performed an inspection of Train ID 103 and determined that after Train ID 103 departed Wheaton Station the train traveled at speeds up to 56.9 MPH (12 MPH greater than the Regulated Speed of 44 MPH and 1.5 MPH greater than the Limiting Speed of 55 MPH) and the train's speed was reduced to 45.5 MPH (30.5 MPH greater than the 15 MPH requirement¹) as the train passed the work crew.

At 09:34 hours, the RWIC advised ROCC that Train ID 103 did not stop after the RWIC displayed the stop hand signal as the train approached their location, and the crew was standing by and clear for the next available train.

At 09:39 hours, the Button RTC notified the Assistant Operations Manager (AOM) of the incident. The AOM instructed that the Train Operator be removed from service.

At 09:40 hours, the Radio RTC advised the RWIC that Train ID 104 would retrieve the crew from the roadway. The RWIC acknowledged and repeated back.

At 09:42 hours, the Radio RTC contacted and instructed an RTRA Supervisor to take over operating Train ID 103 as the Operator would be removed from service due to the incident. At 09:43 hours, the Train Operator of Train ID 103 attempted to contact the ROCC multiple times

¹ MSRP Section 3 – Operating Rules, 3.87 Class I and Class II Rail Vehicle Operators shall maintain a constant lookout in the direction in which their vehicles are moving. When Rail Vehicle Operators observe persons on the roadway, they shall:

a) Sound mainline horn (2 Long Sounds) to warn those people of the vehicle's approach and immediately reduce the train's speed to 15 MPH.

without a response. At 09:45 hours, the Train Operator of Train ID 104 advised the Radio RTC that they had a red signal at Forest Glen Station. The Radio RTC instructed Train ID 104 to retrieve the ATCM personnel from the roadway. The Train Operator of Train ID 104 acknowledged.

At 09:46 hours, the RWIC requested permission to board Train ID 104 along with the work crew. The Radio RTC confirmed that Train ID 104 had come to a complete stop, then permitted the work crew to board the train. At 09:47 hours, the RWIC advised the Radio RTC that all ATCM personnel were aboard Train ID 104 and relinquished foul time. The Radio RTC acknowledged and requested the RWIC contact them once the control panel could be returned to ROCC. At 09:49 hours, the RWIC advised the Radio RTC that they had relinquished control of the control panel and that the speed couplers could be turned back to normal.

The Office of Car Maintenance (CMNT) performed an inspection on Car 7018 and reported no discrepancies found during the daily inspection and no issues was detected with the console radio.

The Office of Automatic Train Control Maintenance (ATCM) performed an investigation on the event and determined the following:

“An error of the ATC RWIC’s lack of application of the Temporary Speed Restriction (TSR) plug coupler that should have been set to the “slow” speed limitation through the area (approximately 15 MPH). At the time of the event the “medium” plug coupler (approximately 45 MPH) was in place.” The RWIC attended refresher training on the performance of hand signals.

The Office of Rail Transportation (RTRA) performed an investigation on the event and determined the following:

The handheld radio that the Train Operator utilized on the day of this event was not in compliance (The calibration date was expired). The handheld radio has been recalibrated for proper use. Additionally, RTRA has performed a check of all handheld radios to ensure all handheld radios are in compliance.

The Train Operator in this event attended refresher training on RWP procedures. The Office of Rail Operations Quality Training (ROQT) performed the Train Operator’s refresher training and reported successful completion.

Chronological Event Timeline

A review of ARS playback, i.e., phone and radio communications, revealed the following timeline:

| Time | Description |
|----------------|---|
| 08:51:16 hours | <u>ATCM RWIC</u> : Requested permission to enter the roadway at the interlocking entering via way of track 1 and exiting via way of track 2 and taking possession of the control panel under ETO protection using speed couplers. <u>Radio RTC</u> : Acknowledged, repeated back, and gave permission for ATCM to take control of the control panel. <u>Radio RTC</u> : Granted permission to enter the roadway and advised all personnel of ATCM personnel in the roadway. [Radio, OPS 1] |
| 09:29:58 hours | Train ID 103 arrived at Wheaton Station. [Spots] |
| 09:30:11 hours | <u>ATCM RWIC</u> : Requested a train pick up at CM B2 563+00. <u>Radio RTC</u> : Acknowledged and repeated back. [Radio, OPS 1] |
| 09:30:58 hours | <u>Radio RTC</u> : Attempted to contact Train ID 103 multiple times without success. [Radio, OPS 1] |
| 09:31:21 hours | Train ID 103 departed Wheaton Station. [Spots] |
| 09:32:19 hours | <u>Radio RTC</u> : Advised the RWIC that they were unable to contact Train ID 103 and advised the RWIC to stop the train using the appropriate hand signals. <u>ATCM RWIC</u> : Acknowledged and repeated back. [Radio, OPS 1] |
| 09:33:00 hours | Train ID 103 passed the ATCM crew on the roadway. [CCTV] |
| 09:34:07 hours | Train ID 103 arrived at Forest Glen Station. [Spots] |
| 09:34:30 hours | <u>ATCM RWIC</u> : Advised that Train ID 103 failed to stop at their location and the work crew was standing by and standing clear and awaiting the next train. <u>Radio RTC</u> : Acknowledged and requested a landline. [Radio, OPS 1] |
| 09:39:00 hours | <u>Buttons RTC</u> : Advised the AOM of the incident and advised Train Operator would be removed from service. [Phone, Red Line 1] |
| 09:40:55 hours | <u>Radio RTC</u> : Advised the RWIC that Train ID 104 would retrieve the work crew from their location and to give the ROCC a landline when they clear the roadway. <u>ATCM RWIC</u> : Acknowledged and repeated back. [Radio, OPS 1] |
| 09:41:30 hours | <u>Radio RTC</u> : Advised the RTRA Supervisor to landline. <u>RTRA Supervisor</u> : Acknowledged. [Radio, OPS 1] |
| 09:42:06 hours | <u>Radio RTC</u> : Advised the RTRA Supervisor that they would need to take control of Train ID 103 as the Train Operator would need to be removed from service. <u>RTRA Supervisor</u> : Acknowledged. [Phone, Red Line 1] |
| 09:43:32 hours | <u>Train ID 103</u> : Attempted to contact the ROCC multiple times without success. [Radio, OPS 1] |

| Time | Description |
|----------------|---|
| 09:45:16 hours | <u>Train ID 104:</u> Advised the Radio RTC that they had a red signal at Forest Glen Station. <u>Radio RTC:</u> Advised the Train Operator Train ID 104 that they would be required to retrieve a crew of ATCM personnel in the roadway. <u>Train ID 104:</u> Acknowledged and repeated back. [Radio, OPS 1] |
| 09:46:39 hours | <u>ATCM RWIC:</u> Requested permission to board Train ID 104. <u>Radio RTC:</u> Acknowledged, requested that Train ID 104 came to a complete stop. <u>ATCM RWIC:</u> Confirmed that the train had stopped. <u>Radio RTC:</u> Acknowledged, granted permission to board Train ID 104 [Radio, OPS 1] |
| 09:47:57 hours | <u>ATCM RWIC:</u> Advised the Radio RTC that all personnel were aboard, clear of the roadway and they were relinquishing foul time. <u>Radio RTC:</u> Acknowledged, repeated back, and requested ATCM RWIC to contact the ROCC to relinquish control of the panel and return the speed couplers. <u>ATCM RWIC:</u> Acknowledged and repeated back. <u>Radio RTC:</u> Acknowledged, advised crew clear of the roadway at 09:48 hours. [Radio, OPS 1] |
| 09:49:57 hours | <u>ATCM RWIC:</u> Advised the Radio RTC that they were relinquishing control of the panel and that the couplers could be turned back to normal. <u>Radio RTC:</u> Acknowledged and repeated back. [Radio, OPS 1] |

Note: Times above may vary from other systems' timelines based on clock settings.

Advanced Information Management System (AIMS)

AIMS Playback determined that at approximately 08:40 hours, ATCM had set up speed couplers to cover the interlocking while they performed their inspection (purple coloration). Train ID 115 and Train ID 117 were the first trains to traverse the area.

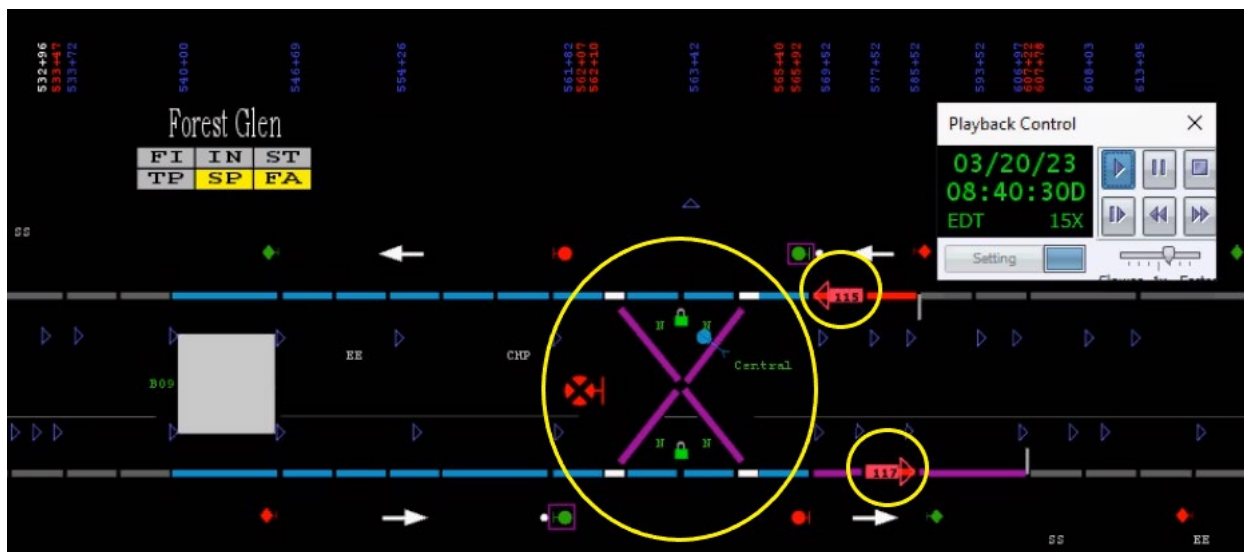


Figure 3: Train ID 115 and Train ID 117 traversing the interlocking at 08:40 hours.

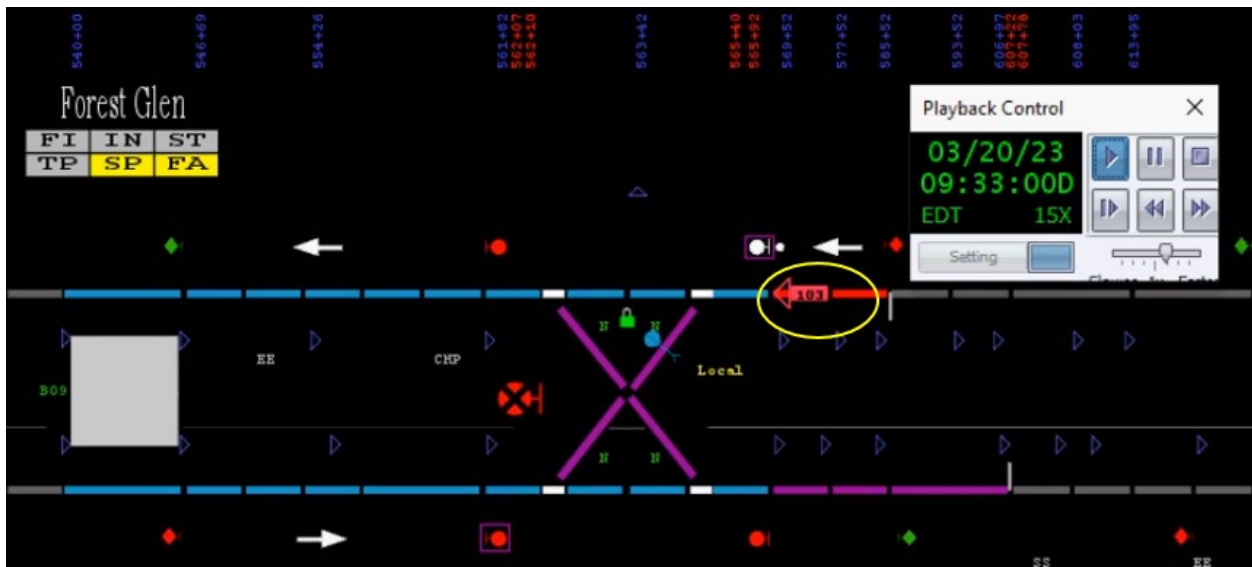


Figure 4: Train ID 103 traversing the interlocking at 09:33 hours.

At approximately 09:49 hours, the ATCM crew relinquished foul time and control of the control panel once aboard Train ID 104.

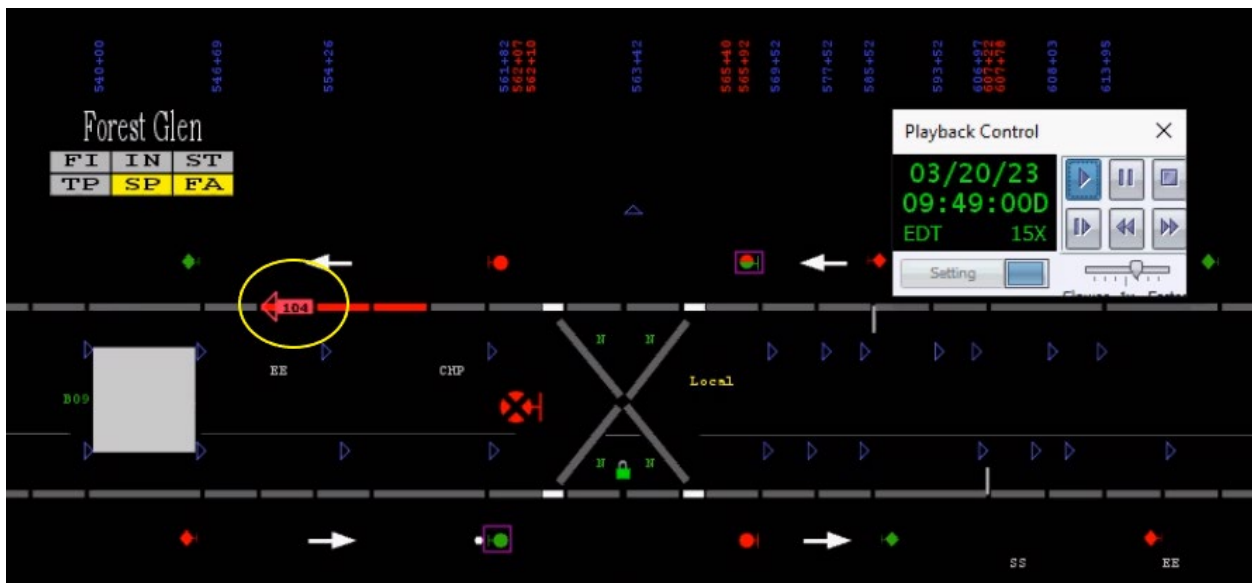


Figure 5: Train ID 104 observed transporting work crew from the site as the crew relinquished control to the ROCC at 09:49 hours.

The Office of Chief Mechanical Officer (CMOR) / Vehicle Monitoring and Diagnostic System (VMDS)

Adopted from CMOR IIT report with minor formatting and grammatical edits:

“Train ID 103 arrived at Wheaton Station (B10) at 09:30:19 (7K Video Time) on Track # 2 and departed Wheaton Station (B10) toward Forest Glen Station on Track # 2 Inbound. Train Closed Doors at 09:30:58 AM and moved MC to P5. Then to P1~P4. Master Controller moved to “Coast” and then to” B1-B3” at 09:31:28. Maximum Speed was 56.8 MPH. Road Horn was sounded at 09:31:40, and MC was placed in B1-B3 braking. The train passed Road Crew at 45.5 MPH.

Based on the edited Video, the Road Crew appears to have given a Hand Signal to Slow Down. The Train was already Braking in B1~B3. This event occurred at approximately 00:02:58 Elapse Time.”

| Date & Time | Description of Event | Distance in Feet | Distance From Wheaton (Feet) | Speed (MPH) | Master Controller | Limiting Speed | Regulated Speed | Video Segment Start Time | Elapse Time |
|------------------------|---|------------------|------------------------------|-------------|-------------------|----------------|-----------------|--------------------------|-------------|
| 03/20/2023 9:27:39 AM | Car 7018 Begins to Move @ Glenmont | 1602311155.178 | | 0.0 | | | | - | - |
| 03/20/2023 9:30:58 AM | Car 7018 Closes Doors @ Wheaton (B10-2) No AMF Flagman at 8 Car Gate | 1602320720.781 | 0.000 | 0.0 | P5 (89.94) | 50 | 44 | 03/20/2023 09:30 AM | 00:01:00 |
| 03/20/2023 9:31:12 AM | MC Moved to "P1~P4" | 1602321153.093 | 432.312 | 32.8 | P1~P4 (88.92) | 50 | 44 | | |
| 03/20/2023 9:31:13 AM | MC Moved to Coast | 1602321232.369 | 511.588 | 40.4 | Coast (49.370) | 50 | 44 | | |
| 03/20/2023 9:31:28 AM | MC Moved to "B1~B3" | 1602322231.564 | 1510.783 | 51.6 | B1~B3 (46.140) | 55 | 44 | | |
| 03/20/2023 9:31:43 AM | MC Moved to Coast | 1602323450.398 | 2729.617 | 56.6 | Coast (14.99) | 55 | 44 | | |
| 03/20/2023 9:31:40 AM | Maximum Speed Before Work Crew | 1602323520.534 | 2799.753 | 56.9 | Coast (14.99) | 55 | 44 | | |
| 03/20/2023 9:31:51:58 | Road Horn Sounded (1 Time) | 1602324552.579 | 3831.798 | 45.5 | B1~B3 (40.48) | 55 | 44 | | |
| 03/20/2023 09:32:59 AM | Car 7018 Forward Camera - Work Crew Ahead (Work Crew on Left Steps Side & Catwalk) Train is moving toward Forest Glen Station (B09-2) | 1602324557.918 | 3837.137 | 45.5 | B1~B3 (40.48) | 55 | 44 | 03/20/2023 09:30 AM | 00:02:58 |

Figure 6: CMOR-IIT incident timeline.

*The absence of an AMF was noted prior to learning of the ETO protections in place. It is not a relevant factor.

**Time correction between 40 seconds and 7 minutes, 16 seconds.

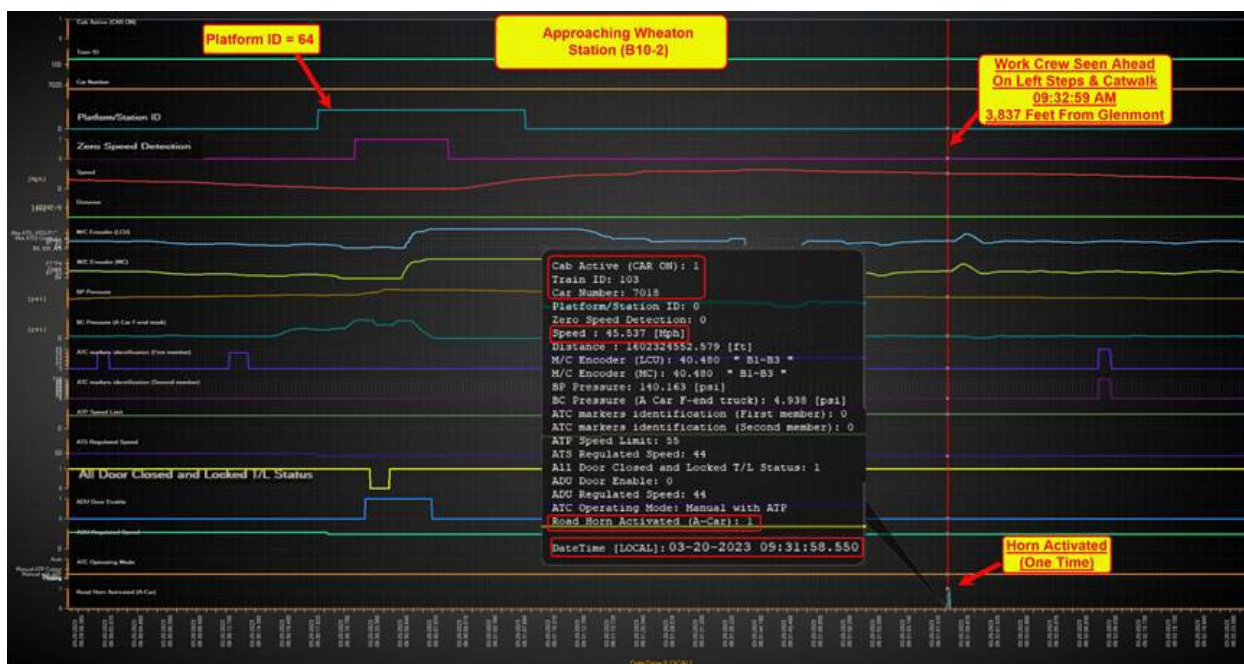


Figure 7: CMOR-IIT EMM graph established Train ID 103 activated their horn one time during the course of the incident.

Note: Times above may vary from other systems' timelines based on clock settings.

Office of Systems Maintenance, Office of Radio Communications (COMR)

COMR made several Radio Check throughout Forest Glen Station. All Radio checks were loud and clear. Radio System is in normal Operation.

Office of Car Maintenance (CMNT)

CMNT performed an inspection on Car 7018 and reported no discrepancies found during the daily inspection and no issues was detected with the console radio. (See Appendix C)

Office of Rail Transportation (RTRA)

The handheld radio that the Train Operator utilized on the day of this event was not in compliance (The calibration date was expired). The handheld radio has been recalibrated for proper use. Additionally, RTRA has performed a check of all handheld radios to ensure all handheld radios are in compliance.

The Train Operator in this event attended refresher training on RWP procedures. The Office of Rail Operations Quality Training (ROQT) performed the Train Operator's refresher training and reported successful completion.

Automatic Train Control Maintenance (ATCM)

ATCM conducted an investigation of this event and determined the following: An error of the ATC RWIC's lack of application of the Temporary Speed Restriction (TSR) plug coupler that should have been set to the "slow" speed limitation through the area (approximately 15 MPH). At the time of the event the "medium" plug coupler (approximately 45 MPH) was in place.

Interview and Written Statement Findings

As part of the investigation launched into the event, SAFE interviewed two people and reviewed three written statements. The interviews and written statements identified the following key findings associated with this event. Findings detailed below include reported information from involved personnel and may conflict with other data sources contained in the report.

ATCM RWIC

- The RWIC stated they were responsible for three other crew members. The RWIC said they were performing an interlocking inspection at the interlocking located by Forest Glen Station at the time of the incident.
- The RWIC stated they had received permission to enter the roadway and did so to conduct the inspection. The RWIC said they had instructed one of their crew to control signals and monitor trains as part of the ETO protections from within the control room.
- The RWIC stated they requested a pickup from the next train to leave the work site. The RWIC said the ROCC attempted to contact Train ID 103 to negative effect. The RWIC stated that the Radio RTC advised them to utilize their flashlight to stop the train and board when safe to do so.
- The RWIC stated that Train ID 103 failed to stop at the location and did not decrease their speed when passing.
- The RWIC stated they then relayed this information to the Radio RTC, who then instructed Train ID 104 to stop at the location and allow the crew to board. The RWIC stated they used the horizontal hand signal to stop Train ID 104.
- The RWIC stated they then boarded Train ID 104 without incident. The RWIC said they relinquished signal control when the crew was aboard Train ID 104.
- The RWIC stated that medium-speed couplers were implemented during the incident.

Train Operator Train ID 103

- The Train Operator stated they initially heard that ATCM personnel were in the interlocking while en route to Shady Grove Station, from Glenmont Station, via track 2. The Train Operator stated they were undertaking their first trip of the day when they arrived at Forest Glen Station.

- The Train Operator stated they first observed a red signal when they flashed their lights and tapped their horn. The Train Operator said this then changed to lunar with no impact to speed readouts. The Train Operator stated they initially saw a flashlight ahead flashing approximately 35-50 feet away with what appeared to be a vertical “proceed” hand signal or an acknowledgment. The Train Operator stated that when they got closer, they observed the ATCM crew up against the wall on the catwalk.
- The Train Operator stated they observed a flashlight “dangling” by the legs of one of the ATCM crew standing on the catwalk’s stairs. The Train Operator said they proceeded past the work crew at approximately 15 MPH.
- The Train Operator stated they did not hear the ROCC request a pickup for personnel on the roadway on OPS 1; however, they had listened to the exchange between the ATCM RWIC and the ROCC stating that a train had not stopped to retrieve the crew.
- The Train Operator stated they were removed from service at Farragut North Station and submitted for post-incident testing.
- The Train Operator stated they did not observe any speed-limiting applications during the incident from their console. The Train Operator said they were having issues with their radio throughout the incident but did not advise the ROCC of the issues.

Crew Assistant (Written Statement)

- “The RWIC requested a pickup. Gave the proper hand signal. Train operator did not pick us up. Central told the next train to pick us up.” [\(See Appendix B\)](#)

AA Mechanic (Written Statement)

- “We were using ETO signal as protection, and I ran the control panel. I was not involved in the train pick up.”

Mechanic (Written Statement)

- “RWIC requested a pickup. We gave [the] train [a] hand signal to stop. Train kept proceeding slowly without stopping.”

Weather

On March 20, 2023, at the time of the incident, NOAA recorded the temperature as 29° F, with clear skies, average wind speed of 12.7 mph and 35% humidity. The event occurred within a tunneled section of the rail system. Weather was not a contributing factor in this incident (Weather source: NOAA – Location: Wheaton, MD).

Related Rules and Procedures

MSRPH Section 5 – RWP Rules, 5.12.4 Standard Hand Signals: All hand signals are given facing oncoming Rail vehicles. To enhance signaling, flags and/or lights may be used. When giving hand signals: 1. Use the proper safety equipment when required. 2. Hand signals must be given in sufficient time to permit compliance. It must be given from a point where it can be plainly seen and so that it cannot be misunderstood.

MSRPH SOP 1.3.2, Speed Restrictions: “A given speed less than the normal operating speed for a section of track or rail vehicle/equipment. This speed is imposed by verbal instructions, written notices (i.e., RSA's or general orders), flagging procedures and/or speed commands issued by ROCC to mitigate special situations.”

MSRPH 3.87, Operating Rules for Class I and Class II Vehicles: “Class I and Class II Rail Vehicle Operators shall maintain a constant lookout in the direction in which their vehicles are moving. When Rail Vehicle Operators observe persons on the roadway, they shall:

a) Sound mainline horn (2 Long Sounds) to warn those people of the vehicle's approach and immediately reduce the train's speed to 15 MPH. When personnel are located on the same track as the operating rail vehicle, and they do not physically clear the roadway to a place of safety and appropriately acknowledge the horn signal; the Rail Vehicle Operator shall bring the vehicle to an immediate stop one car length away from the watchman's position. The Rail Vehicle Operator shall contact the Rail Operations Control Center (ROCC) and await their instructions before moving the vehicle. Rail Vehicle Operators shall report all near misses to ROCC.”

MSRPH 5.13.7.5, Exclusive Track Occupancy (ETO) Local Signal Control (LSC): “ETO LSC is the handling of control of signals at an interlocking by qualified ATC personnel at a mainline or rail yard location equipped with a Local Control Panel (LCP). This allows for controlling the interlocking and/or signal aspects. LSC must be coordinated with and authorized by ROCC or Rail Yard Tower. ATC personnel accomplish ETO utilizing LSC by taking local control of an interlocking to establish Roadway Worker Protection via speed restrictions and canceling routes. Normal operations will resume after it is verified and confirmed through positive communications between ROCC or Rail Yard Tower and ATC RWICs that all ATC work crew personnel have cleared the Roadway.

To establish ETO LSC protection, the ATC RWIC will:

- Request control of the LCP from ROCC or Rail Yard Tower
- ROCC or Rail Yard Tower will direct ATC personnel to take control of the LCP
- Cancel all automatic signals
- Ensure and confirm LCP operator set FIXED RED signals at all entrances to the working limits
- Direct ATC personnel to align routes as requested
- Notify ROCC or Rail Yard Tower once the work is completed and coordinate the relinquishing of control of the LCP.”

Human Factors

Fatigue

Evidence of Fatigue

No signs or symptoms of fatigue were evident from the responses given.

Fatigue Risk

Fatigue risk was evaluated from incident data for fatigue risk factors. No significant risk was identified. The incident time of day did not suggest an increased risk of fatigue-related impairment. Train Operator reported keeping a regular sleep schedule in the days leading up to the incident.

The Train Operator worked day shift in the days leading up to the incident. The Train Operator was awake for 4.5 hours at the time of the incident. The Train Operator reported 7 hours of sleep in the 24 hours preceding the incident. The off-duty period was 14 hours which provides an opportunity for 7-9 hours of sleep. This was a comparable amount of sleep to that of the Train Operator's usual workday sleep durations. The Train Operator reported no issues with sleep.

Post-Incident Toxicology Testing

WMATA's Drug and Alcohol Program determined that the Train Operator complied with the Drug and Alcohol Policy and Testing Program 7.7.3/6.

Findings

- ATCM was inspecting the Interlocking of Forest Glen Station at the time of the incident using ETO with medium speed couplers for protection.
- The ATCM RWIC stated Train ID 103 did not stop at the interlocking for the ATCM crew after the RWIC requested a pick-up through ROCC and attempted to stop the train using authorized hand signals.
- The three other ATCM crew members corroborated the RWIC's version of events.
- The CCTV from the forward-facing camera of car 7018 determined the RWIC was standing ajar, on the catwalk, flashlight held at hip-level.
- The Train Operator stated they received a red signal and then observed a lunar without interruption to speed readouts.
- The Train Operator of Train ID 103 stated they were having radio issues and did not receive the request for pick up.
- The Train Operator stated they passed the work crew at 15 MPH and observed a flashlight flashing but did not associate it with a signal to stop the train.
- The Train Operator's handheld radio had an expired calibration date.
- The CMOR-IIT report determined that the train passed the work crew passed at 45.5 MPH.
- CMNT and CMOR determined that there were no issues with the console radio.
- ATCM confirmed that the ATCM crew should have had the "slow" TSR plug coupler applied rather than the "medium."
- AIMS determined that ATCM had placed speed couplers and tested them by allowing two trains to pass the interlocking before requesting permission to enter the roadway.

Immediate Mitigation to Prevent Recurrence

- The Train Operator of Train ID 103 was removed from service for post-incident testing.

Probable Cause Statement

The probable cause for the event was the Train Operator's failure to maintain vigilance of the roadway and the ability to reduce the train's speed in approach to the work crew. Contributing Factors to the event included ATCM's use of a medium speed coupler when a slow speed coupler would have been appropriate to limit the train's speed to 15 miles per hour in approach to their location.

Recommended Corrective Actions

| Corrective Action Code | Description | Responsible Party | Estimated Completion Date |
|-------------------------------|--|--------------------------|----------------------------------|
| 107038_SAFECA PS_ATCM_001 | ATCM bulletin on the selection of speed couplers during ETO LSC RWP. | ATCM | Completed |
| 107038_SAFECA PS_RTRA_001 | Refresher training on RWP procedures for the Train Operator. | RTRA | Completed |
| 107038_SAFECA PS_ATCM_002 | ATCM refresher training on hand signal procedures. | ATCM | Completed |

Appendices

Appendix A – Interview Summaries

The below narratives summarize the incident and represent the statements made by the involved individual. As such, times and details may present a conflict with the data contained in systems of record.

ATCM RWIC

The RWIC has been with WMATA for approximately 9.5 years, having spent the last 1.5 years in their current role. The RWIC is currently qualified as an RWP Level 4 that expires 11/30/2023.

The RWIC stated they were responsible for 3 other crew members. The RWIC stated they were performing an interlocking inspection at the interlocking located by Forest Glen Station at the time of the incident.

The RWIC stated they had received permission to enter the roadway and did so to conduct the inspection. The RWIC stated they had instructed one of their crew to control signals and monitor trains as part of the ETO protections from within the control room.

The RWIC stated they had requested a pickup from the next train to leave the work site. The RWIC stated the ROCC attempted to contact Train ID 103 to negative effect. The RWIC stated the Radio RTC advised them to utilize their flashlight to stop the train and board when safe to do so. The RWIC stated Train ID 103 failed to stop at the location and did not decrease their speed when passing.

The RWIC stated they then relayed this information to the Radio RTC who then instructed Train ID 104 to stop at the location and allow the crew to board. The RWIC stated they used the horizontal hand signal to stop Train ID 104. The RWIC stated they then boarded Train ID 104 without incident. The RWIC stated they did not relinquish signal control until the crew was aboard Train ID 104. The RWIC stated that medium speed couplers were implemented during the incident.

Train Operator Train ID 103

The Train Operator has been with WMATA for approximately eight years, having spent the last two years in their current role. The Train Operator is qualified as an RWP Level 2, expiring 09/30/2023.

The Train Operator stated they initially heard that ATCM personnel were in the interlocking while en route to Shady Grove Station, from Glenmont Station, via track 2. The Train Operator stated they were undertaking their first trip of the day when they arrived at Forest Glen Station.

The Train Operator stated they first observed a red signal when they flashed their lights and tapped their horn. The Train Operator said this then changed to lunar with no impact to speed readouts. The Train Operator stated they initially saw a flashlight ahead flashing approximately 35-50 feet away with what appeared to be a vertical “proceed” hand signal or an acknowledgment. The Train Operator stated that when they got closer, they observed the ATCM crew up against the wall on the catwalk.

The Train Operator stated they observed a flashlight “dangling” by the legs of one of the ATCM crew standing on the catwalk’s stairs. The Train Operator said they proceeded past the work crew at approximately 15 MPH.

The Train Operator stated they did not hear the ROCC request a pickup for personnel on the roadway on OPS 1; however, they had listened to the exchange between the ATCM RWIC and the ROCC, stating that a train had not stopped to retrieve the crew.

The Train Operator stated they were removed from service at Farragut North Station and submitted for post-incident testing.

The Train Operator stated they did not observe any speed-limiting applications during the incident from their console. The Train Operator said they were having issues with their radio throughout the incident but did not advise the ROCC of the issues.

Appendix B – Written Statements

Crew Assistant

| Initial Incident Form | | TO BE COMPLETED AND DISTRIBUTED WITHIN 24 HOURS | | Page 1 of |
|---|--|--|---|--|
| WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY | | | | |
| INCIDENT | | | | |
| Date 3/20/2023 | Incident Time <input checked="" type="checkbox"/> AM <input type="checkbox"/> PM | Date/Time Reported 9:40 | <input checked="" type="checkbox"/> AM <input type="checkbox"/> PM | Worksafe Incident ID# |
| Location B09 Rail Station(Fort Totten) | | | | Incident ID# (From ROCC, BOCC, etc.) |
| Type of Incident: | | | | |
| <input type="checkbox"/> Altercation | <input type="checkbox"/> External Complaint | <input type="checkbox"/> Gas Detection Alarm | <input type="checkbox"/> Medical Treatment | <input type="checkbox"/> Vandalism |
| <input type="checkbox"/> Assault | <input type="checkbox"/> Fatality | <input type="checkbox"/> Hazardous Material | <input type="checkbox"/> Near Miss | <input checked="" type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Derailment | <input type="checkbox"/> Fire | <input type="checkbox"/> Handling | <input type="checkbox"/> No Treatment | |
| <input type="checkbox"/> Elevator Entrapment | <input type="checkbox"/> First Aid Case | <input type="checkbox"/> Internal Complaint | <input type="checkbox"/> Rupture or Spill | |
| <input type="checkbox"/> Escalator | <input type="checkbox"/> Flood | <input type="checkbox"/> Leak | <input type="checkbox"/> Trespassing | |
| WMATA PERSONNEL INVOLVED | | | | |
| Name | | Age | Employee # or MTPD Badge # | |
| | | 32 | | |
| Phone Number | Job Title | Department | Division/Section | |
| | Helper | ATCM | Division 4 | |
| Last Day Worked (prior to) | Hours Worked (within last 24 hrs) | Overtime? | | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| 3/16/2023 | 8 | | | |
| COMPLETE FOR INCIDENTS WITHIN THE RAIL SYSTEM: | | | | |
| Train/Vehicle ID | Direction | Track # | Car/Vehicle Numbers | Trouble Code |
| | | | | |
| Mezzanine # | AFC Equipment # | Escalator/Elevator # | Entrance | Platform |
| | | | | |
| COMPLETE FOR INCIDENTS WITHIN THE BUS SYSTEM | | | | |
| Bus or Tag Number | Vehicle or Tag Number | Block Number | Run Number | |
| | | | | |
| DESCRIBE THE INCIDENT AND PROPERTY/EQUIPMENT DAMAGE | | | | |
| Provide factual information about the task, actions before and after the incident, the injury causing agent and any damage caused to property or equipment. Provide a diagram(s) and/or photos as attachments. If necessary, provide diagram in this space or on a separate page. | | | | |
| The Rwcio requested a pick up. Gave the proper hand signal. Train operator did not pick us up. | | | | |
| Cental told the next train to pick us up. | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| EXTERNAL AGENCIES INVOLVED | | | | |
| <input type="checkbox"/> Fire Dept. – Arrival Time: _____ | | <input type="checkbox"/> EMS. – Arrival Time: _____ | | |
| <input type="checkbox"/> Police – Arrival Time: _____ | | <input type="checkbox"/> Other – Arrival Time: _____ | | |
| Name | Badge Number | Complaint Number | Jurisdiction | |
| | | | | |
| Engine Number | Ambulance Number | Hospital | | |
| | | | | |
| ACTIONS TAKEN BY SUPERVISOR. | | | | |
| Describe immediate changes made to address the incident. | | | | |
| Make sure to remain at the place of safety at all times | | | | |
| | | | | |
| Form completed by (Signature) | | | | Date |
| | | | | 3/20/23 |
| Print name | Employee Number | Phone Number | | |
| | | | | |
| Supervisor (Signature) <i>Messan Sogho F010634</i> Digitally signed by Messan Sogho | | | | Date |
| WMATA | | | | 3/20/23 |
| Print name | Employee Number | Phone Number | | |
| | | | | |

50.688 04/09 Original: RISK Copy 1: Kiosk Copy 2: Department Photocopy to SAFE, Employee and other per Department requirements

Attachment 1 – Crew Assistant Written Statement page 1 of 1

Incident Date: 03/20/2023 Time: 09:34 hours
Final Report – Improper RWP
E23190

Drafted By: SAFE 705 5/14/2023
Reviewed By: SAFE 707 5/16/2023
Approved By: SAFE 704 5/19/2023

Page 20

| Initial Incident Form | | | | TO BE COMPLETED AND DISTRIBUTED WITHIN 24 HOURS | | Page 1 of 1 | |
|---|---|--|--|--|--------------------------------|--------------------------------------|-----------------------|
| WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY | | | | | | | |
| INCIDENT | | | | | | | |
| Date 3-20-23 | Incident Time Approx. 11:30 | AM <input type="checkbox"/> | PM <input type="checkbox"/> | Date/Time Reported 11:30 | AM <input type="checkbox"/> | PM <input type="checkbox"/> | Worksafe Incident ID# |
| Location B09 Rail Station | | | | | | Incident ID# (From ROCC, BOCC, etc.) | |
| Type of Incident: | | | | | | | |
| <input type="checkbox"/> Altercation | <input type="checkbox"/> External Complaint | <input type="checkbox"/> Gas Detection Alarm | <input type="checkbox"/> Medical Treatment | <input type="checkbox"/> Vandalism | | | |
| <input type="checkbox"/> Assault | <input type="checkbox"/> Fatality | <input type="checkbox"/> Hazardous Material | <input type="checkbox"/> Near Miss | <input checked="" type="checkbox"/> Other: _____ | | | |
| <input type="checkbox"/> Derailment | <input type="checkbox"/> Fire | <input type="checkbox"/> Handling | <input type="checkbox"/> No Treatment | | | | |
| <input type="checkbox"/> Elevator Entrapment | <input type="checkbox"/> First Aid Case | <input type="checkbox"/> Internal Complaint | <input type="checkbox"/> Rupture or Spill | | | | |
| <input type="checkbox"/> Escalator | <input type="checkbox"/> Flood | <input type="checkbox"/> Leak | <input type="checkbox"/> Trespassing | | | | |
| WMATA PERSONNEL INVOLVED | | | | | | | |
| Name | | | | Age | Employee # or MTPD Badge # | | |
| | | | | 49 | | | |
| Phone Number | Job Title AA Mech | Department ATC | Division/Section 4 | | | | |
| Last Day Worked (prior to) | | Hours Worked (within last 24 hrs) | | Overtime? <input type="checkbox"/> Yes <input type="checkbox"/> No | | | |
| 3-20-23 | | 11 | | | | | |
| COMPLETE FOR INCIDENTS WITHIN THE RAIL SYSTEM: | | | | | | | |
| Train/Vehicle ID | Direction | Track # | Car/Vehicle Numbers | | Trouble Code | Resp Code | |
| | | | | | | | |
| Mezzanine # | AFC Equipment # | Escalator/Elevator # | Entrance | Platform | Track | Room# | |
| | | | | | | | |
| COMPLETE FOR INCIDENTS WITHIN THE BUS SYSTEM | | | | | | | |
| Bus or Tag Number | Vehicle or Tag Number | Block Number | Run Number | | | | |
| | | | | | | | |
| DESCRIBE THE INCIDENT AND PROPERTY/EQUIPMENT DAMAGE | | | | | | | |
| Provide factual information about the task, actions before and after the incident, the injury causing agent and any damage caused to property or equipment. Provide a diagram(s) and/or photos as attachments. If necessary, provide diagram in this space or on a separate page. | | | | | | | |
| We were using ETO signal as protection and I ran the control panel . I was not involved with train pick up . | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| EXTERNAL AGENCIES INVOLVED | | | | | | | |
| <input type="checkbox"/> Fire Dept. – Arrival Time: _____ | | <input type="checkbox"/> EMS. – Arrival Time: _____ | | | | | |
| <input type="checkbox"/> Police – Arrival Time: _____ | | <input type="checkbox"/> Other – Arrival Time: _____ | | | | | |
| Name | Badge Number | Complaint Number | Jurisdiction | | | | |
| Engine Number | | Ambulance Number | Hospital | | | | |
| ACTIONS TAKEN BY SUPERVISOR. | | | | | | | |
| Describe immediate changes made to address the incident. | | | | | | | |
| Make sure to remain at the place of safety all time. | | | | | | | |
| | | | | | | | |
| Form completed by (Signature) Kenneth C. Johnson E002034 WMATA <small>Digitally signed by Kenneth C. Johnson E002034 WMATA Date: 2023.03.20 14:06:57 -0400</small> | | | | | | Date | |
| Print name | | | | | | Employee Number | Phone Number |
| Supervisor (Signature) Messian Sogbo E010634 WMATA <small>Digitally signed by Messian Sogbo E010634 WMATA Date: 2023.03.20 14:26:15 -0400</small> | | | | | | Date | |
| Print name | | | | | | Employee Number | Phone Number |

50.688 04/09 Original: RISK Copy 1: Kiosk Copy 2: Department Photocopy to SAFE, Employee and other per Department requirements
Attachment 2 – AA Mechanic Written Statement page 1 of 1

Incident Date: 03/20/2023 Time: 09:34 hours
Final Report – Improper RWP
E23190

Drafted By: SAFE 705 5/14/2023
Reviewed By: SAFE 707 5/16/2023
Approved By: SAFE 704 5/19/2023

Mechanic

| Initial Incident Form | | TO BE COMPLETED AND DISTRIBUTED WITHIN 24 HOURS | | Page 1 of | | |
|---|---|--|---|--|-----------|-------|
| WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY | | | | | | |
| INCIDENT | | | | | | |
| Date | Incident Time | AM / PM | Date/Time Reported | Worksafe Incident ID# | | |
| 3/20/23 | 9:40 | PM | | | | |
| Location | | | Incident ID# (From ROCC, BOCC, etc.) | | | |
| B09 Rail Station | | | | | | |
| Type of Incident: | | | | | | |
| <input type="checkbox"/> Altercation | <input type="checkbox"/> External Complaint | <input type="checkbox"/> Gas Detection Alarm | <input type="checkbox"/> Medical Treatment | <input type="checkbox"/> Vandalism | | |
| <input type="checkbox"/> Assault | <input type="checkbox"/> Fatality | <input type="checkbox"/> Hazardous Material | <input type="checkbox"/> Near Miss | <input checked="" type="checkbox"/> Other: _____ | | |
| <input type="checkbox"/> Derailment | <input type="checkbox"/> Fire | <input type="checkbox"/> Handling | <input type="checkbox"/> No Treatment | | | |
| <input type="checkbox"/> Elevator Entrapment | <input type="checkbox"/> First Aid Case | <input type="checkbox"/> Internal Complaint | <input type="checkbox"/> Rupture or Spill | | | |
| <input type="checkbox"/> Escalator | <input type="checkbox"/> Flood | <input type="checkbox"/> Leak | <input type="checkbox"/> Trespassing | | | |
| WMATA PERSONNEL INVOLVED | | | | | | |
| Name | | Age | Employee # or MTPD Badge # | | | |
| | | 35 | | | | |
| Phone Number | Job Title | Department | Division/Section | | | |
| | Mechanic C | ATC | | | | |
| Last Day Worked (prior to) | Hours Worked (within last 24 hrs) | | Overtime? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | | | |
| 3/19/23 | 14 | | | | | |
| COMPLETE FOR INCIDENTS WITHIN THE RAIL SYSTEM: | | | | | | |
| Train/Vehicle ID | Direction | Track # | Car/Vehicle Numbers | Trouble Code | Resp Code | |
| | | | | | | |
| Mezzanine # | AFC Equipment # | Escalator/Elevator # | Entrance | Platform | Track | Room# |
| | | | | | | |
| COMPLETE FOR INCIDENTS WITHIN THE BUS SYSTEM | | | | | | |
| Bus or Tag Number | Vehicle or Tag Number | Block Number | Run Number | | | |
| | | | | | | |
| DESCRIBE THE INCIDENT AND PROPERTY/EQUIPMENT DAMAGE | | | | | | |
| Provide factual information about the task, actions before and after the incident, the injury causing agent and any damage caused to property or equipment. Provide a diagram(s) and/or photos as attachments. If necessary, provide diagram in this space or on a separate page. | | | | | | |
| RWIC requested pick up. We gave train hand signal to stop. Train kept proceeding slowly without stopping. | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| EXTERNAL AGENCIES INVOLVED | | | | | | |
| <input type="checkbox"/> Fire Dept. – Arrival Time: _____ | | <input type="checkbox"/> EMS. – Arrival Time: _____ | | | | |
| <input type="checkbox"/> Police – Arrival Time: _____ | | <input type="checkbox"/> Other _____ – Arrival Time: _____ | | | | |
| Name | Badge Number | Complaint Number | Jurisdiction | | | |
| | | | | | | |
| Engine Number | Ambulance Number | Hospital | | | | |
| | | | | | | |
| ACTIONS TAKEN BY SUPERVISOR. | | | | | | |
| Describe immediate changes made to address the incident. | | | | | | |
| Make sure to remain at the place of safety at all times | | | | | | |
| | | | | | | |
| Form completed by (Signature) | | | | Date | | |
| Ton Nguyen E010048 WMATA <small>Digitally signed by Ton Nguyen E010048 WMATA DN: cn=TON NGUYEN, o=WMATA, ou=SAFE, email=ton.nguyen@wmata.com</small> | | | | 3/20/23 | | |
| Print name | Employee Number | Phone Number | | | | |
| | | | | | | |
| Supervisor (Signature) | | | | Date | | |
| Messan Sogbo E010634 WMATA <small>Digitally signed by Messan Sogbo E010634 WMATA Date: 2023.03.20 14:34:19 -04'00'</small> | | | | 3/20/23 | | |
| Print name | Employee Number | Phone Number | | | | |
| | | | | | | |

50.688 04/09 Original: RISK Copy 1: Kiosk Copy 2: Department Photocopy to SAFE, Employee and other per Department requirements

Attachment 3 – Mechanic Written Statement page 1 of 1

Incident Date: 03/20/2023 Time: 09:34 hours
Final Report – Improper RWP
E23190

Drafted By: SAFE 705 5/14/2023
Reviewed By: SAFE 707 5/16/2023
Approved By: SAFE 704 5/19/2023

Appendix C – Maximo Work Orders



Washington Metropolitan Area Transit Authority Maintenance and Material Management System Work Order Details

Work Order #: 17764698
Type: TST



Status: CLOSE
03/28/2023 07:09

Work Description: B09 Station, Safety request for RAdio Operational test, please test with OPS#1 also
Job Plan Description:

| Work Information | | | | | | | | | |
|---|---------------|------------|---|------------|------------|--------------------------------|---------------|---------------|-----------|
| Asset: COMMB09 COMM, COMMUNICATIONS SYSTEM, B09 | | | Owning Office: COMM-TSSM | | | Parent: | | | |
| Asset Tag: | | | Maintenance Office: COMM-TSSM-BFLD | | | Create Date: 03/27/2023 15:00 | | | |
| Asset S/N: COMM B09 | | | Labor Group: COMMR3RADO | | | Actual Start: 03/27/2023 21:28 | | | |
| Location: 6199 B09, FOREST GLEN, STATION, PLATFORM, ROOM 619, COMMUNICATIONS ROOM | | | Crew: | | | Actual Comp: 03/27/2023 21:28 | | | |
| Work Location: | | | Lead: [REDACTED] | | | Item: R6000001 | | | |
| Failure Class: | | | GL Account: WMATA-02-33540-50499280-042-*****-OPR** | | | Target Start: | | | |
| Problem Code: | | | Supervisor: [REDACTED] | | | Target Comp: | | | |
| Requested By: [REDACTED] | | | Requestor Phone: [REDACTED] | | | Scheduled Start: | | | |
| Create-Mileage: 0.0 | | | Complete-Mileage: 0.0 | | | | | | |
| Task IDs | | | | | | | | | |
| Task ID | | | | | | | | | |
| 10 3072 Responded to B09 | | | | | | | | | |
| Made several Radio Check throughout the station. | | | | | | | | | |
| All Radio checks loud and clear. | | | | | | | | | |
| Radio System is in normal Operation. | | | | | | | | | |
| Component: | Work Accompl: | Reason: | Status: | Position: | Warranty?: | | | | |
| Actual Labor | | | | | | | | | |
| Task ID | Labor | Start Date | End Date | Start Time | End Time | Approved? | Regular Hours | Premium Hours | Line Cost |
| 10 | [REDACTED] | 03/27/2023 | 03/27/2023 | 16:00 | 19:00 | Y | 03:00 | 00:00 | \$147.37 |
| Total Actual Hour/Labor: | | | | | | | 03:00 | 00:00 | \$147.37 |
| Failure Reporting | | | | | | | | | |
| Cause | Remedy | Supervisor | Remark | Date | | | | | |
| Remarks: All Radio checks loud and clear. | | | | | 03/28/2023 | | | | |

Attachment 1 – Maximo Work Order, 17764698 page 1 of 2

Incident Date: 03/20/2023 Time: 09:34 hours
Final Report – Improper RWP
E23190

Drafted By: SAFE 705 5/14/2023
Reviewed By: SAFE 707 5/16/2023
Approved By: SAFE 704 5/19/2023



**Washington Metropolitan Area Transit Authority
Maintenance and Material Management System
Work Order Details**

Work Order #: 17749031
Type: CM



Status: CLOSE
03/21/2023 06:48

Work Description: Operator RWP Violation. Train 103 operator continued operating past personnel on the roadway after being signaled to stop the train.
Job Plan Description:

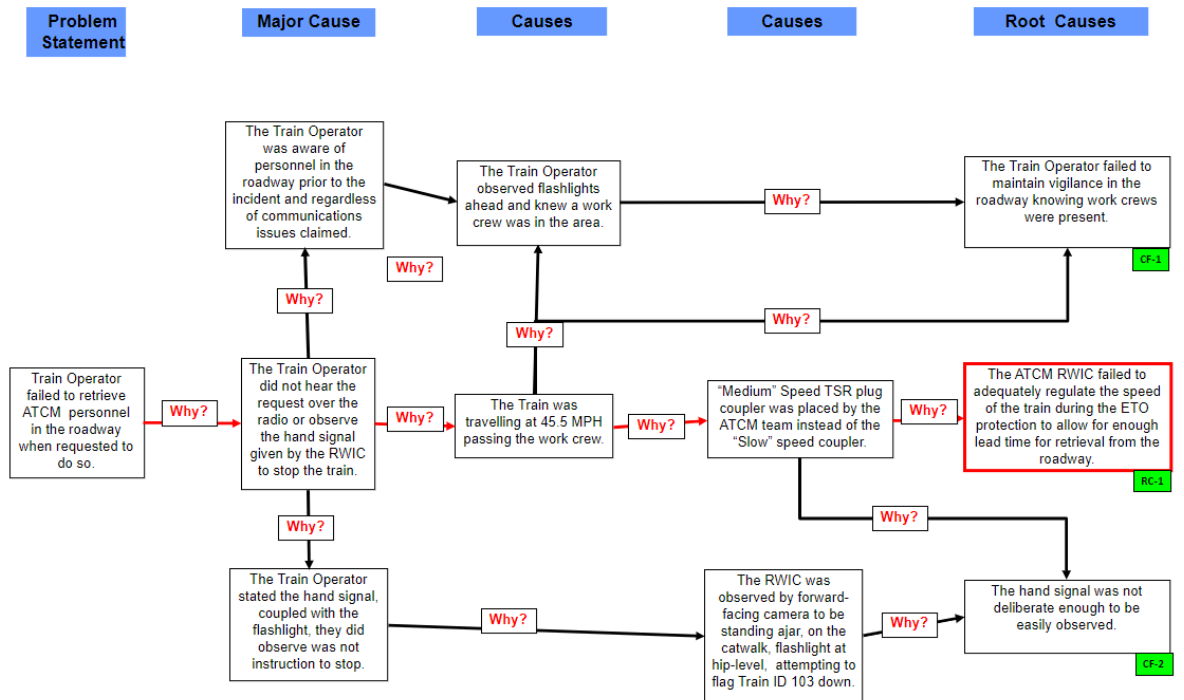
| Work Information | | | | | | | | | | |
|--|--|---|--------------------------------|--------------|------------------|-----------|--------------------------|---------------|------------|---------|
| Asset: R7018 | 7018, RAIL CAR, KAWASAKI, 7000 AC, A CAR | Owning Office: CMNT-CMNT-CMNT | Parent: | | | | | | | |
| Asset Tag: R7018 | | Maintenance Office: CMNT-SDYG-INSP | Create Date: 03/20/2023 12:45 | | | | | | | |
| Asset S/N: 7018 | | Labor Group: CMNT | Actual Start: 03/20/2023 12:47 | | | | | | | |
| Location: 1136 | A99, SHADY GROVE YARD | Crew: | Actual Comp: 03/21/2023 02:37 | | | | | | | |
| Work Location: 1136 | A99, SHADY GROVE YARD | Lead: | Item: K18050001 | | | | | | | |
| Failure Class: CMNT018 | AUTOMATIC TRAIN CONTROL (ATC) | GL Account: WMATA-02-33320-50499160-041-*****-OPR** | | | | | | | | |
| Problem Code: 2437 | N/A CODE (ATC SYSTEM) | Supervisor: | Target Start: | | | | | | | |
| Requested By: | | Requestor Phone: | Target Comp: | | | | | | | |
| Chain Mark Start: | | Chain Mark End: | Scheduled Start: | | | | | | | |
| Create-Mileage: 460034.0 | | Complete-Mileage: 460245.0 | | | | | | | | |
| Task IDs | | | | | | | | | | |
| Task ID | 10 NO DISCREPANCIES FOUND DURING DAILY INSPECTION. | | | | | | | | | |
| Component: | 000-300 RAIL CAR; 2K/3K/6K/7K | Work Accomp: | INSPECTED | Reason: | NO TROUBLE FOUND | Status: | CLOSE | Position: | Warranty?: | N |
| Actual Labor | | | | | | | | | | |
| Task ID | Labor | Start Date | End Date | Start Time | End Time | Approved? | Regular Hours | Premium Hours | Line Cost | |
| 10 | | 03/21/2023 | 03/21/2023 | 00:30 | 01:15 | Y | 00:45 | 00:00 | \$34.43 | |
| | | | | | | | Total Actual Hour/Labor: | 00:45 | 00:00 | \$34.43 |
| Related Incidents | | | | | | | | | | |
| Ticket | Description | Class | Status | Relationship | | | | | | |
| 8659604 | Operator RWP Violation. Train 103 Operator continued operating past personnel on the roadway after being signaled to stop the train. | SR | CLOSED | ORIGINATOR | | | | | | |
| Failure Reporting | | | | | | | | | | |
| Cause | Remedy | Supervisor | Remark Date | | | | | | | |
| 2475 | NO DEFECT; NO REPAIRS PERFORMED | 3192 | TESTED / INSPECTED | 03/21/2023 | | | | | | |
| Remarks: NO DISCREPANCIES FOUND DURING DAILY INSPECTION. | | | | | | | | | | |

Attachment 1 3 – Maximo Work Order, 17749031 page 2 of 2.

Incident Date: 03/20/2023 Time: 09:34 hours
Final Report – Improper RWP
E23190

| |
|---------------------------------|
| Drafted By: SAFE 705 5/14/2023 |
| Reviewed By: SAFE 707 5/16/2023 |
| Approved By: SAFE 704 5/19/2023 |

Appendix D – Why-Tree Analysis



Root Cause Analysis

Attachment 1 – RCA page 1 of 1.





Washington Metropolitan Area Transit Authority
Department of Safety (SAFE)
Office of Safety Investigations (OSI)

FINAL REPORT OF INVESTIGATION A&I E23244

| | |
|---------------------------------------|---|
| Date of Event: | April 11, 2023 |
| Type of Event: | Improper Roadway Worker Protection (RWP) |
| Incident Time: | 10:42 Hours |
| Location: | Potomac Avenue Station, track 1 |
| Time and How received by SAFE: | 10:53 Hours SAFE/MAC |
| WMSC Notification Time: | 11:32 Hours |
| Responding Safety Officers: | WMATA: None WMSC: None Other: None |
| Rail Vehicle: | Train ID 612 L6048-6049x6086-6087x6054-6055T |
| Injuries: | None |
| Damage: | None |
| Emergency Responders: | None |
| SMS I/A Incident Number: | 20230411#107593MX |

Potomac Avenue Station – Improper Roadway Worker Protection

April 11, 2023

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Abbreviations and Acronyms

| | |
|--------------|---|
| AMF | Advanced Mobile Flagger |
| AIMS | Advanced Information Management Systems |
| AOM | Assistant Operations Manager |
| CAP | Corrective Action Plan |
| CCTV | Closed-Circuit Television |
| MSRPH | Metrorail Safety Rules and Procedures Handbook |
| NOAA | National Oceanic and Atmospheric Administration |
| RTC | Radio Traffic Controller |
| RTRA | Office of Rail Transportation |
| ROCC | Rail Operations Control Center |
| ROCS | Rail Operations Control Systems |
| RWIC | Roadway Worker in Charge |
| SMS | Safety Measurement System |
| SAFE | Department of Safety |
| SPOTS | System Performance On Time Summary |
| TRST | Office of Track and Structures |
| WMATA | Washington Metropolitan Area Transit Authority |
| WMSC | Washington Metrorail Safety Commission |

Washington Metropolitan Area Transit Authority
Department of Safety – Office of Safety Investigations

Executive Summary

**Note that all times listed are approximate and may contain minor variations due to differences between systems of record. **

On Tuesday, April 11, 2023, at 10:46 hours, Train ID 612 located at Stadium-Armory Station on track 1 reported to the Rail Operations Control Center (ROCC) that they passed an Office of Track and Structures (TRST) Mobile Work Crew and was not briefed by the Advanced Mobile Flagger (AMF) before departing Potomac Avenue Station, track 1. The Radio Rail Traffic Controller (RTC) inquired about the location of the Mobile Work Crew and instructed Train ID 452 to retrieve the personnel from the roadway.

Prior to the event, at 10:38 hours, the TRST Roadway Worker in Charge (RWIC) requested access to the roadway for a walking track inspection from Stadium-Armory Station to Smithsonian Station on track 1, beginning the first inspection between Stadium-Armory to Potomac Avenue Station.

At 10:39 hours, Train ID 896 departed Potomac Avenue Station, track 1. The Radio RTC then instructed the RWIC to allow two trains to pass their location, and after the trains passed, they had permission to begin the track inspection. At 10:40 hours, Train ID 896 (Train #1) arrived at Stadium-Armory Station, track 1 and Train ID 906 (Train #2) departed Potomac Avenue Station, track 1.

At 10:41 hours, Train ID 612 arrived at Potomac Avenue Station, track 1, departed at 10:42 hours. The AMF stood by and had deactivated their amber light. They did not brief the Train Operator as they believed Train ID 612 was the second train to pass the work crew prior to starting AMF operations.

At 10:43 hours, Train ID 906 (Train #2) arrived at Stadium-Armory Station, track 1. The Mobile Work Crew entered the roadway after the train berthed on the platform.

At 10:46 hours, the Train Operator of Train ID 612 reported they were not briefed by the AMF at Potomac Avenue Station after observing the Mobile Work Crew on the roadway. At 10:50 hours, the Radio RTC instructed Train ID 452 to retrieve the Mobile Work Crew from the roadway.

At 10:55 hours, Train ID 452 advised that the Mobile Work Crew was aboard the train and clear from the roadway.

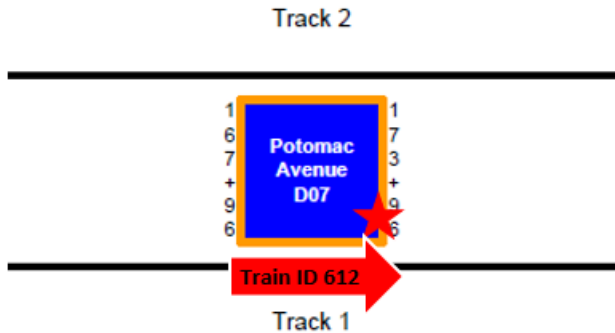
The Assistant Operations Manager (AOM) was notified of the event. TRST removed the AMF from service. There were no injuries or damage resulting from this event.

The probable cause of the Improper RWP event on April 11, 2023, at Potomac Avenue Station was a failure to brief the Train Operator of Train ID 612 by the AMF. A Contributing Factor to the event was a misunderstanding of instructions by the AMF when the RWIC was instructed to allow two trains to pass before entering the roadway. They understood that two trains were to pass the work crew after Train ID 896 departed the platform; however, Train ID 896 was the first of two trains to pass the work crew.

Incident Site

Potomac Avenue Station, Track 1

Field Sketch/Schematics



The above depiction is not to scale.

Purpose and Scope

The purpose of this accident 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.

Investigative Methods

The investigative methodologies included the following:

- Site Assessment through document review
 - Formal Interviews – SAFE interviewed two individual as part of this investigation. The interview included persons present at, during, and after the incident, those directly involved in the response process, and representatives from the Washington Metrorail Safety Commission (WMSC). SAFE interviewed the following individuals:
 - RWIC
 - AMF
- Informal Interviews – Collected through conversations with individuals during the investigation to provide background and supporting information. Written statements were reviewed from personnel present during the event.
- Documentation Review – Collection of relevant work history information and process documentation contained in WMATA systems of record. These records include:
 - Metrorail Safety Rules and Procedures Handbook (MSRPH)
 - National Oceanic and Atmospheric Administration (NOAA)
 - Roadway Job Safety Briefing
 - Employee 30-Day Work History

- System Data Recording Review – Collection of information contained in Metro Data Recording Systems. This data includes:
 - Audio Recording System (ARS) playback
 - Closed-Circuit Television (CCTV)
 - Advanced information System (AIMS)
 - System Performance On-Time Summary (SPOTS)

Investigation

On Tuesday, April 11, 2023, at 10:38 hours, a TRST Roadway Worker in Charge (RWIC) requested permission to perform a track inspection between Stadium-Armory Station to Smithsonian Station on track 1, beginning between Stadium-Armory Station and Potomac Avenue Station. The Radio RTC instructed the RWIC to confirm that the AMF was in place. The RWIC contacted the AMF and the AMF confirmed that they were in place at Potomac Avenue Station on track 1. The Radio RTC announced that personnel would be on the roadway between Stadium-Armory Station and Potomac Avenue Station on track 1. Closed-Circuit Television (CCTV) revealed that the AMF was at the 8-car marker at Potomac Avenue Station when they confirmed their location with the RWIC at 10:38 hours.

The Advanced Information Management System (AIMS) confirmed that at 10:39 hours, Train ID 896 departed Potomac Avenue Station, track 1.

The Audio Recording System (ARS) revealed that at 10:40 hours, the Radio RTC then instructed the RWIC to stand by for two trains to pass their location before accessing the roadway. The RWIC acknowledged and responded that one train had berthed on the platform at Stadium-Armory Station.

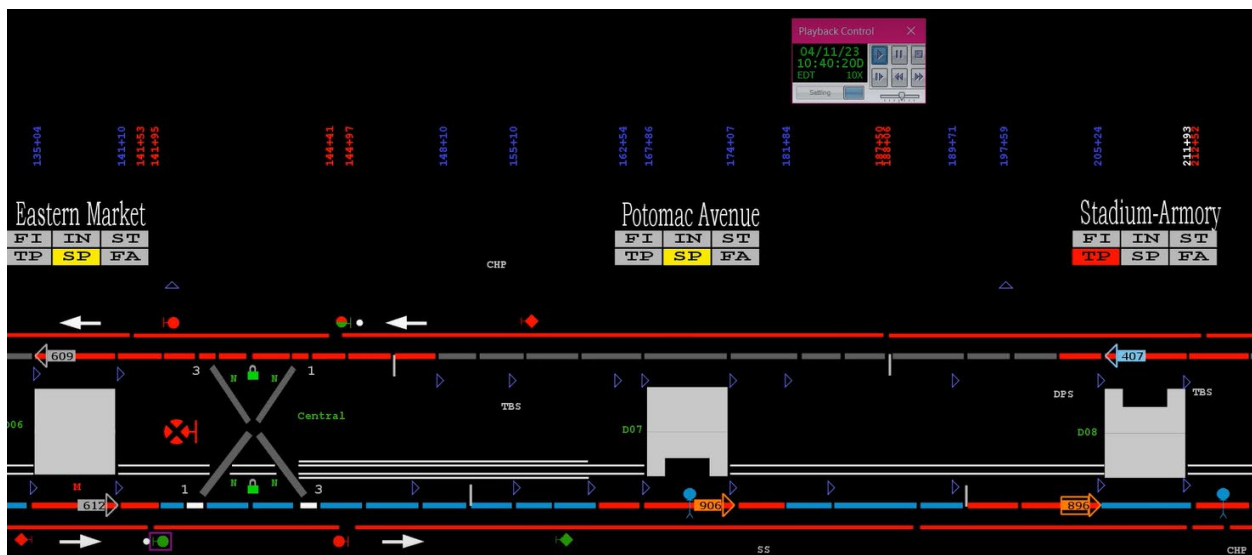


Figure 1 – AIMS depicting the position of Train ID's 896, 906 and 612 on track 1 at the time that the RWIC was instructed to allow 2 trains to pass at Stadium-Armory Station.

Train ID 869 (Train #1) arrived at Stadium-Armory Station and Train ID 906 (Train #2) departed Potomac Avenue Station, track 1 at 10:40 hours.

At 10:41 hours, Train ID 612 arrived at Potomac Avenue Station, track 1. The AMF did not brief the Train Operator that the Mobile Work Crew was on the roadway. At 10:42 hours, Train ID 612 departed Potomac Avenue Station and the AMF placed the amber lantern to begin AMF duties.

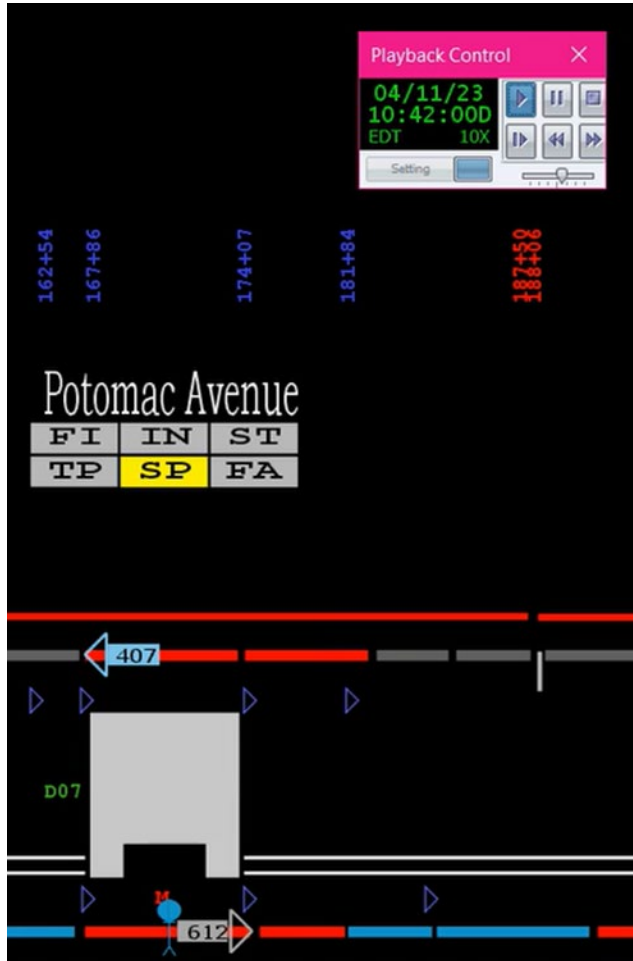


Figure 2 - Train ID 612 located at Potomac Avenue Station, track 1 at 10:42 hours.

At 10:43 hours, Train ID 906 (Train #2) arrived at Stadium-Armory Station and the Mobile Work Crew entered the roadway to begin the track inspection to Potomac Avenue Station.

At 10:46 hours, the Train Operator of Train ID 612, reported that they were located at Stadium-Armory Station, passed the Mobile Work Crew, and had not received a briefing from the AMF at Potomac Avenue Station.

At 10:50 hours, the Radio RTC requested the location of the Mobile Work Crew from the RWIC, the RWIC advised that they were located at Chain Marker (CM) D1 199+00. The Radio RTC instructed the RWIC to stand by for a train pick-up.

At 10:52 hours, the Radio RTC instructed Train ID 452 located at Potomac Avenue Station to pick up personnel at CM D1 199+00. At 10:55 hours, Train ID 452 advised that the Mobile Work Crew was aboard the train and clear from the roadway.

At 10:57 hours, the AOM notified the TRST Supervisor of the event. The TRST Supervisor advised that the AMF would be removed from service and the crew would continue the track inspection with a new AMF.

CCTV review confirmed that the AMF arrived on the platform at Potomac Avenue Station at 10:31 hours with a second person carrying a canvas tool bag.



Image 1 - AMF (black jacket) and coworker (blue sweatshirt) arriving on the platform by train at 10:31 hours.

The AMF took their place at the leading end, eight-car marker on track 1 but did not set up the amber light nor don the safety vest.

At 10:36 hours, the AMF donned the safety vest and retrieved the AMF flagging equipment from a bag. These actions aligned with the radio playback of their interaction with the RWIC at 10:38 hours.

The AMF was in position when Train IDs 896, 906 and 612 arrived at Potomac Avenue Station, but did not appear to brief the trains. At 10:40 hours, the doors closed on Train ID 906, then the train departed the station. The train's departure occurred within seconds of the Radio RTC's transmission to the RWIC to stand by for two trains to pass their location.

Train ID 612 departed Potomac Avenue Station at 10:42 hours without being briefed by the AMF. As the train was departing, the AMF activated the amber light and placed it in position on the platform. This action indicated tht they believed that Train ID 612 was the second train they were instructed to let pass before beginning AMF operations.

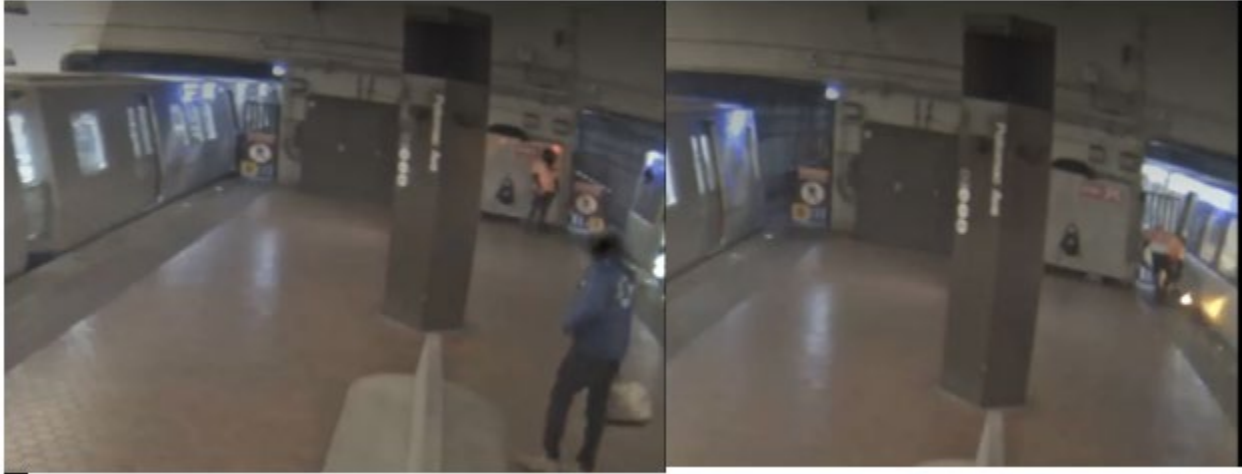


Image 2 - AMF standing by Train ID 612 and AMF placing the amber light as Train ID 612 departs the platform at 10:42 hours.

On April 19, 2022, TRST conducted a Safety Stand Down to review and discuss Improper RWP events.

Chronological Event Timeline

A review of ARS playback, i.e., phone and radio communications, revealed the following timeline:

| Time | Description |
|----------------|--|
| 10:31:00 hours | AMF arrived on the platform at Potomac Avenue Station. [CCTV] |
| 10:37:00 hours | AMF positioned at the 8-car marker. [CCTV] |
| 10:38:50 hours | Train ID 896 arrived at Potomac Avenue Station, track 1. [AIMS] |
| 10:38:52 hours | <p><u>TRST RWIC</u>: Requested access to the roadway for a walking track inspection from Stadium Armory to Smithsonian. Reported a safety brief was conducted, Hot Spots were identified, and proper PPE (Personal Protective Equipment) and AMF are located at Potomac Avenue, track 2.</p> <p><u>Radio RTC</u>: Acknowledged and repeated. Requested TRST RWIC to go direct with their AMF.</p> <p><u>TRST RWIC</u>: Inquired if the AMF was in place at Potomac Avenue Station on track 1.</p> <p><u>AMF</u>: Acknowledged and advised at the 8-car marker at Potomac Avenue Station on track 1.</p> <p><u>Radio RTC</u>: Announced to all trains that track walkers were on track 1, walking from Stadium Armory to Potomac Avenue, and follow all RWP protocol. [Radio Ops 2]</p> |
| 10:39:10 hours | Train ID 896 departed Potomac Avenue Station, track 1. [AIMS] |
| 10:40:23 hours | <p><u>Radio RTC</u>: Advised RWIC to allow two trains to pass their location, after the trains pass, they had permission to begin the track inspection. Advised that 3rd rail power was energized and to be aware of train movement in all directions.</p> <p><u>TRST RWIC</u>: Acknowledged and repeated. Advised that one train was berthed on the platform at Stadium-Armory. [Radio Ops 2]</p> |
| 10:40:30 hours | Train ID 896 arrived at Stadium-Armory Station, track 1 and Train ID 906 departed Potomac Avenue Station, track 1. [AIMS] |
| 10:41:50 hours | Train ID 612 arrived at Potomac Avenue Station, track 1. [AIMS] |

| Time | Description |
|----------------|--|
| 10:42:13 hours | AMF placed the amber light after Train ID 612 departed Potomac Avenue Station. [CCTV] |
| 10:42:20 hours | Train ID 612 departed Potomac Avenue Station, track 1. [AIMS] |
| 10:43:30 hours | Train ID 906 arrived at Stadium-Armory Station, track 1. [AIMS] |
| 10:43:59 hours | The Mobile Work Crew entered the roadway at Stadium-Armory Station on track 1. [CCTV] |
| 10:44:29 hours | <u>Train ID 612</u> : Contacted ROCC and advised no speed commands on approach to Stadium-Armory. <u>Radio RTC</u> : Advised there was a train ahead. <u>Train ID 612</u> : Acknowledged and advised located within a curve. [Radio Ops 2] |
| 10:46:10 hours | Train ID 612 arrived at Stadium-Armory Station, track 1. [AIMS] |
| 10:46:13 hours | <u>Train ID 612</u> : Reported they were not briefed by the AMF at Potomac Avenue. <u>Radio RTC</u> : Inquired that Train ID 612 reported not being briefed at Potomac Avenue. <u>Train ID 612</u> : Confirmed and advised that the Mobile Work Crew was advised to allow two trains to pass. <u>Radio RTC</u> : Advised they were unable to hear the transmission and to use the handheld radio. [Radio Ops 2] |
| 10:47:43 hours | <u>Radio RTC</u> : Requested Train ID 612 to repeat their message. <u>Train ID 612</u> : No response. [Radio Ops 2] |
| 10:48:49 hours | <u>Radio RTC</u> : Attempted to contact Train ID 612. <u>Train ID 612</u> : No response. [Radio Ops 2] |
| 10:49:08 hours | <u>Radio RTC</u> : Requested Train ID 612 to repeat their message. <u>Train ID 612</u> : No response. [Radio Ops 2] |
| 10:49:15 hours | <u>Train ID 612</u> : Inquired if ROCC could copy their transmission. <u>Radio RTC</u> : Requested Train ID 612 to repeat their message regarding not being briefed at Potomac Avenue. <u>Train ID 612</u> : Reported they were not briefed at Potomac Avenue; the Mobile Work Crew was advised to let two trains pass and they passed the Mobile Work Crew at 8 MPH. [Radio Ops 2] |
| 10:50:15 hours | <u>Radio RTC</u> : Requested the location of the Mobile Work Crew. <u>TRST RWIC</u> : Responded D1 199+00. [Radio Ops 2] |
| 10:50:30 hours | <u>RTRA Supervisor</u> : Advised ROCC they are responding to the incident at Potomac Avenue. [Phone Ops 2] |
| 10:50:59 hours | <u>TRST RWIC</u> : Requested to continue the track inspection. <u>Radio RTC</u> : Instructed to stand by. [Radio Ops 2] |
| 10:52:40 hours | <u>Radio RTC</u> : Instructed Train ID 452 to pick up personnel from the roadway. <u>Train ID 452</u> : Acknowledged and repeated. [Radio Ops 2] |
| 10:55:16 hours | <u>AOM</u> : Instructed to have the TRST RWIC contact via landline when they clear the roadway. <u>Button RTC</u> : Acknowledged. [Phone Ops 2] |
| 10:55:28 hours | <u>Train ID 452</u> : Contacted Radio RTC to say that TRST RWIC was on-board. <u>Radio RTC</u> : Advised TRST RWIC to contact via telephone. [Radio Ops 2] |
| 10:57:54 hours | <u>AOM</u> : Advised the TRST RWIC and TRST Supervisor that Train ID 612 was not briefed by the AMF. <u>TRST Supervisor</u> : Advised the AMF would be removed from service and replaced with a new AMF. [Phone Rail 2] |

****Note: Times above may vary from other systems' timelines based on clock settings and reporting sources.**

Incident Date: 04/11/2023 Time: 10:42 hours
Final Report – Improper RWP
E23244

Drafted By: SAFE 708 – 06/15/2023
Reviewed By: SAFE 707 – 06/19/2023
Approved By: SAFE 71 - 06/20/2023

Page 10

ROCS SPOTS Report

ROCS SPOTS REPORT

based on up-to-the-second operational performance data from the Rail Operations Control System

Current date/time: Wed Jun 14 19:23:08 2023

Select Platform: and/or Select ID: Leave blank to remove criteria
 and/or Select 4-digit car number: Leave blank to remove criteria
 Select Date: Select Times (0-24HRS): From To

Generate Report

| ID | Platform | length | dcode | Right door open | Right door close | dwll | Left door open | Left door close | dwll | Head Arrived | Tail cleared | cars | Headway door open to door open |
|-----|----------|--------|-------|-----------------|------------------|------|----------------|-----------------|------|--------------|--------------|---|--------------------------------|
| 408 | D07-1 | 8 | 72 | | | | 10:04:05 | 10:04:22 | 17 | 10:03:29 | 10:04:45 | 7478-7479.7523-7522.7744-7745.7747-7746 | - |
| 904 | D07-1 | 8 | 20 | | | | 10:07:47 | 10:08:03 | 16 | 10:07:04 | 10:08:28 | 7528-7529.7115-7114.7626-7627.7549-7548 | 3:42 |
| 810 | D07-1 | 6 | 51 | | | | 10:14:22 | 10:14:38 | 16 | 10:13:46 | 10:14:58 | 8079-8078.6162-6163.8082-8083 | 6:35 |
| 409 | D07-1 | 8 | 72 | | | | 10:16:15 | 10:16:25 | 10 | 10:15:34 | 10:16:51 | 7530-7531.7199-7198.7580-7581.7541-7540 | 1:53 |
| 460 | D07-1 | 6 | 19 | | | | 10:18:01 | 10:18:14 | 13 | 10:17:24 | 10:18:37 | unknown | 1:48 |
| 905 | D07-1 | 8 | 20 | | | | 10:20:55 | 10:21:15 | 20 | 10:20:16 | 10:21:40 | 7034-7035.7559-7558.7424-7425.7709-7708 | 2:54 |
| 811 | D07-1 | 2 | 51 | | | | 10:29:25 | 10:29:39 | 14 | 10:28:41 | 10:30:08 | 7152-7153.7337-7336.7494-7495.7151-7150 | 8:30 |
| 422 | D07-1 | 8 | 72 | | | | 10:34:09 | 10:34:27 | 18 | 10:33:37 | 10:34:53 | 6094-6095.6031-6030.8002-8003.6036-6039 | 4:44 |
| 451 | D07-1 | 6 | 19 | | | | 10:38:48 | 10:37:09 | 21 | 10:36:10 | 10:37:33 | 3210-3211.3255-3254.3149-3148 | 2:39 |
| 898 | D07-1 | 8 | 74 | 10:38:09 | 10:38:10 | 1 | | | | 10:37:56 | 10:39:05 | unknown | 1:21 |
| 906 | D07-1 | 2 | 20 | | | | 10:40:06 | 10:40:21 | 15 | 10:39:29 | 10:40:47 | 7072-7073.7535-7534.7564-7565.7471-7470 | 1:57 |
| 612 | D07-1 | 6 | 51 | | | | 10:41:48 | 10:42:03 | 15 | 10:41:17 | 10:42:26 | 6148-6149.6086-6087.8054-8055 | 1:42 |
| 410 | D07-1 | 6 | 72 | | | | 10:46:35 | 10:47:15 | 40 | 10:45:59 | 10:47:50 | 6040-6041.6071-6070.8025-8024 | 4:47 |
| 452 | D07-1 | 6 | 19 | | | | 10:51:34 | 10:51:57 | 23 | 10:50:44 | 10:53:12 | unknown | 4:59 |
| 907 | D07-1 | 8 | 20 | | | | 10:54:47 | 10:55:08 | 21 | 10:53:41 | 10:55:37 | 7586-7587.7045-7044.7110-7111.7309-7308 | 3:13 |
| 411 | D07-1 | 6 | 72 | | | | 10:57:03 | 10:57:24 | 21 | 10:56:03 | 10:58:06 | 6152-6153.6080-6081.6112-6113 | 2:16 |

Figure 3 – Trains passing Potomac Avenue Station, track 1 from 10:00 to 11:00 hours.

Interview Findings

As part of the investigation launched into the event, SAFE interviewed two people. The interview identified the following key findings associated with this event. Findings detailed below include reported information from involved personnel and may conflict with other data sources contained in the report.

TRST RWIC

- The RWIC stated that they had a four person work crew consisting of two AMF’s and a Track Inspector.
- The RWIC stated that they performed a Roadway Job Safety Briefing (RJSB) discussing the Hot Spots, and other safety related items. All personnel were present for the RJSB.
- The RWIC stated that they verified the AMF was at the 8-car marker at Potomac Avenue Station.
- The RWIC admitted that prior to Train ID 612 stating that it did not receive a job briefing from the AMF at Potomac Avenue Station, another train had passed their location and they did not report the train passing them to the Rail Operation Control Center (ROCC).

AMF

- The AMF stated that the RWIC and their crew met at the Potomac Avenue station.
- The AMF stated that they received a Roadway Job Safety Briefing (RJSB) with the RWIC and discussed how they were going to conduct the walking inspection.

- The AMF stated that while standing on the platform the RWIC and the track walkers departed.
- The AMF stated that a train entered the Potomac Avenue station on track 1 before they had set up flagging and departed.
- The AMF stated that the ROCC advised that work crew that two trains must pass through the work area before the track walkers can begin their work.
- The AMF stated that there was no communication issues, such as radio clarity while on duty.
- The AMF admitted that they did not have their amber light in place prior to conducting a job safety briefing with the two trains.

Office of Track and Structures (TRST)

TRST conducted a Safety Stand Down on April 19, 2023, reviewing and discussing recent events involving mobile work crews and Improper RWP.

Weather

On April 11, 2023, at the time of the incident, NOAA recorded the temperature as 74° F, with clear skies, winds at 16 mph, and 58% humidity. Weather was not a contributing factor in this incident (Weather source: NOAA – Location: Washington, DC)

Related Rules and Procedures

- MSRPH Operating Rule 3.87
- Rail Vehicle Operating Procedures During AMF “3”
- MSRPH AMF Script to Operators: *“There may be multiple work groups ahead. Proceed at half your regulated speed until you reach the next station. Continuously blow your horn. Reduce speed to 15 mph when observing and passing all work crews. Current AMF procedures govern you.”*
- MSRPH 5.13.6.3 - The AMF is required to follow PPE guidelines per the Minimum PPE Standard for On-Track Safety in the MSRPH Section 5 - RWP.

Human Factors

Fatigue

Evidence of Fatigue – Roadway Worker in Charge

RWIC

SAFE evaluated conditions at the time of the incident to distinguish whether evidence of fatigue was present. The RWIC reported feeling fully alert at the time of the incident. The RWIC reported no fatigue symptoms leading up to the incident.

AMF

SAFE evaluated conditions at the time of the incident to distinguish whether evidence of fatigue was present. The AMF reported feeling fully alert at the time of the incident. The AMF reported no fatigue symptoms leading up to the incident.

Fatigue Risk

RWIC

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

AMF

The incident data was evaluated for fatigue risk factors. Risk factors for fatigue were not present. 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

Post-Incident Toxicology Testing was not conducted for this event.

Findings

- The RWIC was instructed to stand by for two trains to pass their location before entering the roadway after being given permission to conduct their track inspection.
- The AMF did not brief Train ID 612, prior to the train departing Potomac Avenue Station.
- The behavior of the AMF as shown on CCTV, indicated that they believed they were to allow Train IDs 906 and 612 to pass before beginning AMF operations.

Immediate Mitigation to Prevent Recurrence

- The Mobile Work Crew was retrieved from the roadway.
- TRST conducted a Safety Stand Down on April 19, 2023, reviewing and discussing recent events involving mobile work crews and Improper RWP.

Probable Cause Statement

The probable cause of the Improper RWP event on April 11, 2023, at Potomac Avenue Station was a failure to brief the Train Operator of Train ID 612 by the AMF. A Contributing Factor to the event was a misunderstanding of instructions by the AMF when the RWIC was instructed to allow two trains to pass before entering the roadway. They understood that two trains were to pass the work crew after Train ID 896 departed the platform; however, Train ID 896 was the first of two trains to pass the work crew.

Recommended Corrective Actions

| Corrective Action Code | Description | Responsible Party | Estimated Completion Date |
|---------------------------------|---|--------------------------|----------------------------------|
| 107715_SAFE CAPS_TRST_ 01 | TRST to conduct a Safety Stand Down to address Improper RWP events. | TRST | Completed |

Appendices

Appendix A – Interview Summary

The below narratives summarize the incident and represent the statements made by the involved individual. As such, times and details may present a conflict with the data contained in systems of record.

TRST RWIC

The TRST RWIC is a WMATA employee with nine years of experience and one year of experience as an RWIC. The TRST RWIC holds a Roadway Worker Protection (RWP) Level 4 certification which expires in January 2024.

The TRST RWIC stated they were a work crew member assigned to conduct a track inspection to Smithsonian Station.

The TRST RWIC stated that after verifying that the AMF was in position and confirming with ROCC, they believed trains were being briefed on their location.

The TRST RWIC stated they did not notify the ROCC when a train passed their location prior to the RTC asking for their location.

AMF

The AMF is a contractor employee with 10 months of experience. The AMF holds a Roadway Worker Protection (RWP) Level 2 certification which expires July 2023.

The AMF stated that the RWIC and their crew met at the Potomac Avenue station. The AMF stated that they received a Roadway Job Safety Briefing (RJSB) with the RWIC and discussed how they were going to conduct the walking inspection. The AMF stated that while standing on the platform the RWIC and the track walkers departed. The AMF stated that a train entered the Potomac Avenue station on track 1 before they had set up flagging and departed. The AMF stated that the ROCC advised that work crew that two trains must pass through the work area before the track walkers can begin their work. The AMF stated that there were no communication issues, such as radio clarity while on duty. The AMF admitted that they did not have their amber light in place prior to conducting a job safety briefing with the two trains.

Appendix B – Roadway Safety Job Briefing Form

WMATA Roadway Job Safety Briefing Form

This form must be completed legibly and accurately and be retained and made available for inspection for a period of 90 days.

Part 1: General Job Briefing

| | | | |
|---|--|------------------|-------------------------------|
| 1 | Date: <u>04/11/2023</u> Time: <u>07:00</u> | RWIC: [REDACTED] | RWIC Cell Phone #: [REDACTED] |
| 2 | Safety Contact: <u>Recess Supervisor</u> | | |
| 3 | RWP Rule: <u>S.L.1</u> | | |
| 4 | Work Location: <u>DOB to DOZ</u> | | |
| 5 | Job Task(s): <u>Track Inspection</u> | | |
| 6 | Worksite, Electrical, Chemical, or Environmental Hazards: <u>NONE</u> | | |
| 7 | PPE Inspected: <input type="checkbox"/> Electronic Device Policy Reviewed: <input type="checkbox"/> Radio Certification Date Inspected: <input type="checkbox"/> RWP Stickers Inspected: <input type="checkbox"/> Tools and Equipment Inspected: <input type="checkbox"/> Radio Checks Performed: <input type="checkbox"/> What Specialized PPE Will Be Used? <u>NONE</u> | | |
| 8 | Emergency Response Plan: <u>Go Clear Track</u> | | |

Part 2: RWP Briefing: This section must be filled out before any Roadway Workers enter the roadway.

Track Time On/Off: 10:41-10:45, 11:02-11:45, 01:48

| | | | |
|----|---|----------------------------|---------------------------------|
| 9 | Rail Line: <u>Orange</u> | Track Number(s): <u>#2</u> | Track Access Guide (TAG) Speed: |
| 10 | Working Limits Chain Markers: <u>DOB to DOZ</u> | | |
| 11 | OPS Radio Channel: <u>#2</u> OPS Phone Number: [REDACTED] | | |
| 12 | Place of Safety: <u>Calwalk</u> Time Needed to Reach Place of Safety: <u>15 Sec</u> | | |
| 13 | Are There Red Hot Spots Within Your Working Limits? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | |
| 14 | Red Hot Spot Chain Markers: Red Hot Spot Hazard(s): | | |
| 15 | Form of RWP: IT <input type="checkbox"/> ETO Authority <input type="checkbox"/> Local Signal Control <input type="checkbox"/> AMF <input checked="" type="checkbox"/> FT <input type="checkbox"/> | | |
| 16 | RWP Notes: | | |
| 17 | Advanced Mobile Flagger Call #(s) or Last Name(s): [REDACTED] | | |
| 18 | Advanced Mobile Flagger Placement: <u>DOB to DOZ</u> | | |
| 19 | Watchman/Lookout Placement: <u>DOB to DOZ</u> | | |
| 20 | Required Site Distance: Watchman/Lookout Rotation Schedule: | | |
| 21 | Will There be a Speed Restriction on the Adjacent Track? Yes <input type="checkbox"/> No <input type="checkbox"/> | | |
| 22 | How Will the Speed Restriction be Implemented? | | |
| 23 | Will Class 2 Vehicles be Part of the Working Limits? Yes <input type="checkbox"/> No <input type="checkbox"/> | | |
| 24 | # of Class 2 Vehicles: Type of Class 2 Vehicles: | | |

Document 1 – Roadway Job Safety Briefing Form, Page 1 of 2

WMATA Roadway Job Safety Briefing Form



This form must be completed legibly and accurately and be retained and made available for inspection for a period of 90 days.

Part 2: RWP Briefing, continued:

| | | | | |
|----|---|------------------------------------|------------------------|------------------------|
| 12 | Power Outage: Red Tag <input type="checkbox"/> Supervisory <input type="checkbox"/> | Hot Sticking Chain Markers: | | |
| | Red/Supervisory Tag #: | | | |
| | Red/Supervisory Tag Holder: | | | |
| | Insulated Mat(s) Color Blue <input type="checkbox"/> Red <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Yellow <input type="checkbox"/> | | | |
| | WSAD Certification Due | WSAD Serial #/Asset ID | WSAD Certification Due | WSAD Serial #/Asset ID |
| | / / | / / | / / | / / |
| | / / | / / | / / | / / |
| 13 | Will a Piggyback Crew(s) be Working Within Your Working Limits? Yes <input type="checkbox"/> No <input type="checkbox"/> | | | |
| | Crew Leader/EIC Call #(s): | Piggyback Work Area Chain Markers: | | |
| | Piggyback Work Assignment(s): | | | |

Part 3: Good Faith Challenge: The following must be read aloud by the RWIC to the Roadway Workers.

"WMATA guarantees each Roadway Worker the right to challenge, in good faith, the effectiveness of the Roadway Worker Protection being provided. The Roadway Worker making the challenge, and those that are sympathetic to the challenge, shall remain clear of the roadway until the challenge has been resolved."

| | |
|--|-----------------|
| RWP Issues: | Worker Name(s): |
| | |
| Was the GFC Issue Resolved? Yes <input type="checkbox"/> No <input type="checkbox"/> | |

Part 4: Roadway Worker Acknowledgement

"I understand and agree with all aspects of the Roadway Job Safety Briefing I just received. I am adequately protected from any train movement or roadway hazards. I understand I have a responsibility to conduct myself in a safe manner at all times."

ROADWAY WORKERS HAVE THE RIGHT AND RESPONSIBILITY TO INITIATE A GOOD FAITH CHALLENGE WHEN NECESSARY

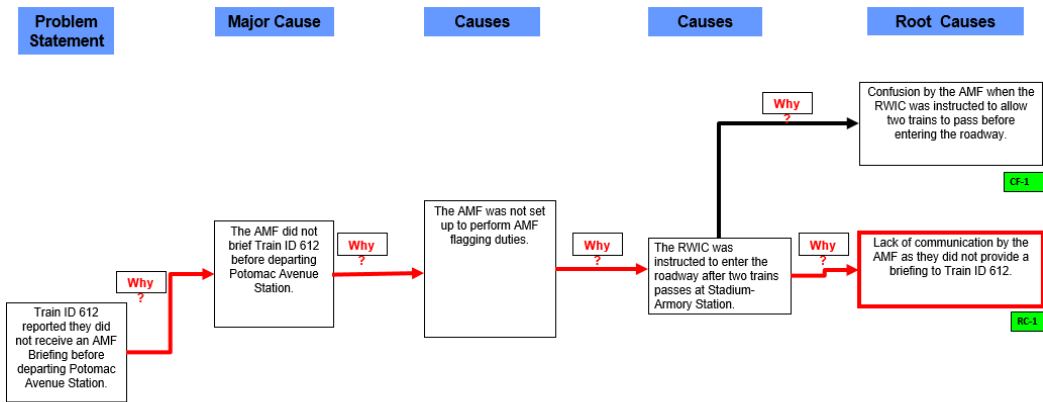
| Roadway Worker Signature | Employee ID # | Roadway Worker Signature | Employee ID # | Crew Leader/EIC Signature | Crew Leader/EIC Employee ID # |
|--------------------------|---------------|--------------------------|---------------|---------------------------|-------------------------------|
| [Signature] | [ID] | [Signature] | [ID] | | |
| [Signature] | [ID] | [Signature] | [ID] | | |
| [Signature] | [ID] | [Signature] | [ID] | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Part 5: RWIC Signature(s)

| | | |
|-----------------------------|-------------------------------|------------------|
| Additional RWIC Comments: | | |
| RWIC Signature: [Signature] | RWIC Employee ID #: [ID] | Date: 09/11/2025 |
| Relieving RWIC Name: | Relieving RWIC Employee ID #: | |
| Relieving RWIC Signature: | Date/Time: / / . . . | |
| Relieving RWIC Call #: | Relieving RWIC Cell Phone #: | |

Document 2 - Roadway Job Safety Briefing Form, Page 2 of 2

Appendix C – Root Cause Analysis



Root Cause Analysis





Washington Metropolitan Area Transit Authority
Department of Safety (SAFE)
Office of Safety Investigations (OSI)

FINAL REPORT OF INVESTIGATION A&I E23376

| | |
|---------------------------------------|--|
| Date of Event: | 06/05/2023 |
| Type of Event: | Improper Roadway Worker Protection (RWP) |
| Incident Time: | 10:26 hours |
| Location: | Ballston - MU Station, Track 2 |
| Time and How received by SAFE: | 12:07 hours via MAC |
| WMSC Notification Time: | 12:36 hours |
| Responding Safety Officers: | None |
| Rail Vehicle: | None |
| Injuries: | None |
| Damage: | None |
| Emergency Responders: | None |
| SMS I/A Incident Number: | 20230605#108974MX |

Ballston - MU Station – Improper Roadway Worker Protection (RWP)

June 5, 2023

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Abbreviations and Acronyms

| | |
|--------------|---|
| AMF | Advanced Mobile Flagger |
| ARS | Audio Recording System |
| CAP | Corrective Action Plan |
| CCTV | Closed-Circuit Television |
| CM | Chain Marker |
| I/A | Incidents/Accidents |
| MAC | Mission Assurance Coordinator |
| MSRPH | Metrorail Safety Rules and Procedures Handbook |
| NOAA | National Oceanic and Atmospheric Administration |
| OSI | Office of Safety Investigations |
| RJSB | Roadway Job Safety Briefing |
| RTC | Rail Traffic Controller |
| ROCC | Rail Operations Control Center |
| ROCS | Rail Operations Control System |
| RWIC | Roadway Worker In Charge |
| RWP | Roadway Worker Protection |
| SAFE | Department of Safety |
| SMS | Safety Measurement System |
| SRC | Safety Risk Coordinator |
| TRST | Office of Track and Structures |
| WMATA | Washington Metropolitan Area Transit Authority |
| WMSC | Washington Metrorail Safety Commission |

Washington Metropolitan Area Transit Authority
Department of Safety – Office of Safety Investigations

Executive Summary

**Note that all times listed are approximate and may contain minor variations due to differences between systems of record. **

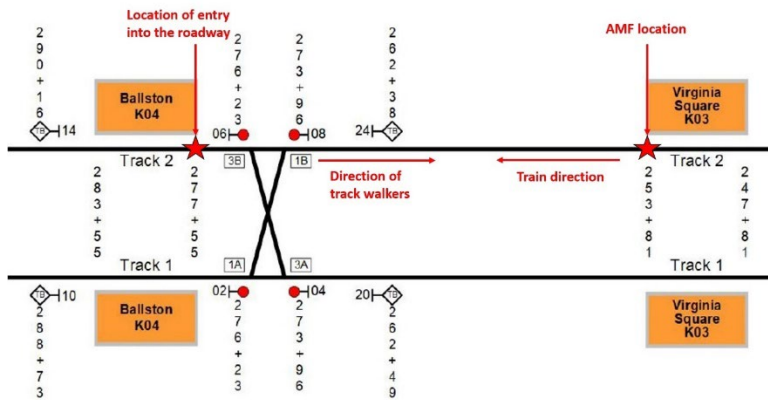
On Monday, June 5, 2023, at 10:26 hours, an Office of Track and Structures (TRST) employee entered the roadway at Ballston-MU Station on Track 2 to conduct a track inspection. The TRST employee was performing duties as the Roadway In Charge (RWIC) with a total work crew of four personnel, including a track inspector and two Advanced Mobile Flaggers (AMFs) stationed at Virginia Square – GMU and Clarendon Stations. The TRST RWIC contacted the Rail Operations Control Center (ROCC) via radio on Operations (Ops) Channel 4 and requested to conduct a track inspection from Virginia Square to Clarendon Station. The Radio Rail Traffic Controller (RTC) granted the TRST RWIC permission to perform the track inspection and the RWIC confirmed that their Advanced Mobile Flagger (AMF) was in place. Approximately 15 minutes later, the TRST RWIC contacted the ROCC and reported they were safely on the platform at Virginia Square. The TRST RWIC requested to continue their track inspection to Clarendon Station. The TRST RWIC was instructed to stand by while ROCC personnel investigated the discrepancy in reported location. TRST management removed the TRST employee from service for further investigation. No injuries or damages were reported as a result of this incident. While the work crew was walking from Ballston-MU Station to Virginia Square, one train passed their location. That train was briefed by the AMF at Virginia Square. No Near Miss was reported.

The probable cause of the Improper Roadway Worker Protection (RWP) event was a communication error from the TRST RWIC to the Radio RTC. The TRST RWIC errantly reported that they were entering the roadway at Virginia Square Station when they actually entered the roadway at Ballston – MU Station. This resulted in the work crew conducting an unauthorized track inspection up to Virginia Square – GMU Station without the correct permissions from ROCC.

Incident Site

This is a below-ground station with split platforms. Ballston - MU is a Direct Fixation Track governed by signals K04-06, 08 signals, and K04-02,04 signals. There is an interlocking at Chain Marker (CM) K2 & K1 276+23 – 273+96. There are two turnback locations at CM K2 262+38 and K1 262+49.

Field Sketch/Schematics



Locations are approximate. Not to scale.

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.

Investigative Methods

The investigative methodologies included the following:

- Site Assessment through documentation review
- Formal Interview – SAFE interviewed one individual as part of this investigation. Interviews include persons present at, during, and after the incident, those directly involved in the response process. Representatives from the Washington Metrorail Safety Commission (WMSC) were present during the interview. SAFE interviewed the following personnel:
 - TRST RWIC
- Documentation Review – A collection of relevant work history information and process documentation contained in Metro systems of record. These records include:
 - TRST RWIC Incident Statement
 - TRST RWIC 30-day Work History
 - WMATA Roadway Job Safety Briefing (RJSB) Form
 - Metrorail Safety Rules and Procedures Handbook (MSRPH)
 - National Oceanic and Atmospheric Administration (NOAA)
 - Rail Operation Control Center (ROCC) Incident Report
 - Rail Operation Control System (ROCS) Spots Report
- System Data Recording Review – A collection of information contained in Metro Data Recording Systems. This data includes:
 - Audio Recording System (ARS) playback
 - Closed-Circuit Television (CCTV)

Investigation

On Monday, June 5, 2023, at 10:26 hours, a TRST employee entered the roadway at Ballston Station on Track 2 to conduct a track inspection. The TRST employee was performing duties as the RWIC with a total work crew of four personnel, including a track inspector and two AMFs stationed at Virginia Square – GMU and Clarendon Stations. The TRST RWIC conducted the Roadway Job Safety Briefing while at Rosslyn Station at 10:00 hours. After the safety briefing, the work crew boarded Train ID 907 in the direction of Ballston – MU Station. The TRST RWIC exited the train at Ballston Station at 10:24 hours and contacted the ROCC via Ops Channel 4 to conduct a track inspection. They requested to inspect the track from Virginia Square to Clarendon Station. At 10:25 hours, the RTC instructed the TRST RWIC to go direct with their AMF at Clarendon Station. The radio recording was unintelligible to determine which AMF responded to the TRST RWIC. The TRST RWIC asked the RTC if they copied the response from the AMF. The RTC responded, “Loud and clear, and granted the TRST RWIC permission to perform the track inspection with TRST Unit [#1], to be on the lookout for train movement at all times from Virginia Square to Clarendon Station and that the third rail was energized. The TRST RWIC repeated and acknowledged the RTC’s directions.

At 10:26 hours, the RTC made announcements to train operators of personnel walking on the roadway from Virginia Square to Clarendon Station. At 10:38 hours, the TRST RWIC contacted the ROCC and reported they were safely on the platform at Virginia Square. The TRST RWIC requested to continue their track inspection to Clarendon Station. The ROCC RTC informed the TRST RWIC that they previously requested to inspect from Virginia Square to Clarendon Station. The TRST RWIC was instructed to stand by while ROCC personnel investigated the situation. TRST management removed the TRST TRIC from service for further investigation. No injuries or damage were reported as a result of this incident.

As confirmed by ARS playback, at 10:24:33 hours, the TRST RWIC requested to begin their track inspection at Virginia Square, and the AMF was in place at the Virginia Square Station 8-Car Marker. The RWIC performed a repeat back. At 10:38:22, the TRST RWIC reported they arrived at Virginia Square and wanted to continue their inspection to Clarendon Station. The ROCC RTC instructed the TRST RWIC to stand by.

A review of CCTV recordings at the station found that the TRST RWIC and the other TRST employee arrived at Virginia Square – GMU Station, Track 2, at 10:38:22 hours. They entered the station at the 8-Car Marker, arriving from the direction of Ballston – MU Station. One train (Train ID 605) passed the TRST RWIC while they walked from Ballston to Virginia Square Station on Track 2. This train was briefed by the AMF at Virginia Square Station, as verified by CCTV playback.

Rail Operations Control System (ROCS) Spots Report

ROCS SPOTS REPORT

based on up-to-the-second operational performance data from the Rail Operations Control System

Current date/time: Mon Jun 12 16:41:40 2023

Select Platform: and/or Select ID: Leave blank to remove criteria
 and/or Select 4-digit car number: Leave blank to remove criteria
 Select Date: Select Times (0-24HRS): From To

Generate Report

| ID | Platform | length | dcode | Right door open | Right door close | dwell | Left door open | Left door close | dwell | Head Arrived | Tail cleared | cars | Headway door open to door open |
|-----|----------|--------|-------|-----------------|------------------|-------|----------------|-----------------|-------|--------------|--------------|---|--------------------------------|
| 604 | K03-2 | 6 | 62 | 10:02:30 | 10:02:49 | 19 | | | | 10:02:02 | 10:03:11 | 6178-6179.6016-6017.6007-6006 | - |
| 921 | K03-2 | 6 | 17 | 10:11:21 | 10:11:49 | 28 | | | | 10:10:51 | 10:12:13 | 6048-6049.6084-6085.6074-6075 | 8:51 |
| 621 | K03-2 | 6 | 62 | 10:14:42 | 10:15:28 | 46 | | | | 10:14:31 | 10:15:49 | 6105-6104.6009-6008.6132-6133 | 3:21 |
| 907 | K03-2 | 8 | 17 | 10:23:15 | 10:23:35 | 20 | | | | 10:22:45 | 10:24:04 | 3179-3178.3125-3124.3028-3029.3126-3127 | 8:33 |
| 605 | K03-2 | 8 | 62 | 10:30:04 | 10:30:25 | 21 | | | | 10:29:29 | 10:31:05 | 7664-7665.7697-7696.7494-7495.7709-7708 | 6:49 |
| 901 | K03-2 | 6 | 17 | 10:38:42 | 10:39:03 | 21 | | | | 10:38:05 | 10:39:27 | 6079-6078.6021-6020.6166-6167 | 8:38 |
| 606 | K03-2 | 6 | 62 | 10:41:13 | 10:41:29 | 16 | | | | 10:40:47 | 10:41:53 | 6168-6169.6146-6147.6018-6019 | 2:31 |
| 902 | K03-2 | 8 | 17 | 10:54:37 | 10:54:53 | 16 | | | | 10:54:01 | 10:55:17 | 7700-7701.7737-7736.7652-7653.7089-7088 | 13:24 |

Figure 1 – ROCS Spots Report displaying Train ID 605 passed the TRST track inspectors as they traveled from Ballston – MU Station to Virginia – GMU Station on Track 2 at 10:31 hours.

Closed Circuit Television (CCTV)



Figure 2 – TRST RWIC was arriving at Virginia Square – GMU Station, Track 2 platform limits at approximately 10:38 hours.

Chronological Event Timeline

A review of ARS playback, i.e., phone and radio communications, revealed the following timeline:

| Time | Description |
|----------------|---|
| 10:00:00 hours | <u>TRST RWIC</u> : Performed the safety briefing at Rosslyn Station with four personnel. [RJSB] |
| 10:24:33 hours | <u>TRST RWIC</u> : Contacted ROCC and requested to conduct a track inspection from Track 2, Virginia Square, to Clarendon Station; one AMF stationed at the 8-Car Marker at Virginia Square, Track 2, entering the roadway with TRST unit [#1]. [Ops 4] |
| 10:25:20 hours | <u>Radio RTC</u> : RTC acknowledged and instructed TRST RWIC to go direct with their AMF at Clarendon. After going direct with the AMF, the ROCC RTC acknowledged a good transmission and granted the TRST RWIC permission to enter the roadway at Virginia Square to Clarendon Station, Track 2. [Ops 4] |

| Time | Description |
|----------------|--|
| 10:26:39 hours | <u>Radio RTC</u> : ROCC RTC made announcements to all train operators of personnel walking on the roadway from Virginia Square to Clarendon Stations. [Ops 4] |
| 10:39:24 hours | <u>TRST RWIC</u> : Contacted the ROCC and reported they are safely on the platform at Virginia Square, Track 2, and requested to continue their walk to Clarendon Station. [Ops 4] <u>Radio RTC</u> : RTC asked the TRST RWIC where they are located. The TRST RWIC stated Virginia Square. The RTC informed the RWIC that they had already requested to inspect Virginia Square to Clarendon Stations and to stand by. [Ops 4] |
| 12:08:26 hours | <u>ROCC</u> : ROCC managers confirmed that the TRST RWIC entered the roadway at Ballston Station after requesting Virginia Square Station. The TRST RWIC was removed from service. [Ops 4 Landline] |

***Note: Times above may vary from other systems' timelines based on clock settings and reporting sources.*

Interview Findings

As part of the investigation launched into the Improper RWP near Virginia Square – GMU Station, SAFE conducted one interview with the TRST RWIC. The interview was conducted via Microsoft Teams and identified the following key findings associated with this event. The findings detailed below include reported information from interviews and may conflict with other data sources contained in the report.

TRST RWIC

- Stated they requested permission to conduct a track inspection from Clarendon to Virginia Square Station. They reported they remembered hearing the Radio RTC repeat it back to them.
- Later in the interview they acknowledged that they would have heard the incorrect repeat-back for their actual location if they paid more attention.
- The TRST RWIC reported they were informed they were removed from service for going through a Red Hot Spot area due to the shutdown, and they did not request foul time.

Weather

On June 5, 2023, at the time of the incident, NOAA recorded the temperature as 71° F, sunny, winds 6 mph, and 51% humidity. This is a below-ground station. Weather was not a contributing factor in this incident (Weather source: NOAA – Location: Arlington, VA).

Human Factors

Evidence of Fatigue

SAFE evaluated conditions at the time of the incident to distinguish whether evidence of fatigue was present. Video of the incident was reviewed for behaviors suggesting fatigue. No indications of fatigue were evident from the video. The employee reported feeling fully alert at the time of the incident and reported experiencing no symptoms of fatigue in the time leading up to the incident.

Fatigue Risk

SAFE evaluated incident data for fatigue risk factors. There were no major risk factors for fatigue identified. The incident time of day (10:26 hours) does not suggest an increased risk of fatigue-related impairment. The employee worked day shifts in the days leading up to the incident. The employee reported a total of 7 hours of sleep in the last sleep period preceding the incident and was awake for 11.65 hours at the time of the incident. The off-duty period preceding the incident was 9 hours, which, taking into account the employee's reported commute, would have provided the opportunity for 7-8 hours of sleep. The employee reported usual workday sleep durations of 7 hours and no issues with sleep.

Post-Incident Toxicology Testing

WMATA's Drug and Alcohol Program determined that the TRST employee was not in violation of the Drug and Alcohol Policy and Testing Program 7.7.3/7.

Work History

The TRST employee is a WMATA employee with over eight years of total service: two years as a Track Walker, two years as a Track Laborer, and four years as a Track Repairman. The TRST employee is certified to the RWP-4 Level and expires in February 2024. This employee has no history of sleep issues to report.

Related Rules and Procedures

- MSRP Section 4 – Section Rules Ver. 2.1 – 4.168 – Employees shall not enter upon the roadway or cross the tracks except when absolutely necessary in the performance of their duties and permission has been granted by ROCC.
- MSRP Section 4 – Section Rules Ver. 2.1 – 4.183.b – Contact ROCC, prior to entering the track area, for mainline access and the appropriate tower for yard access, indicating the work area to include the beginning and ending station and track number or entry point and track number and the purpose of the work. Permission to enter the roadway is required from the control point (see rule 4.168).

Findings

- The TRST RWIC was performing a track inspection from Ballston to Virginia Square Station but requested permission from ROCC from Virginia Square to Clarendon Station.
- The Radio RTC repeated back the request from the TRST RWIC as it was stated to them.
- Two AMFs were utilized for the track inspection: one at Virginia Square Station and one at Clarendon Station.
- Only three employees signed the RJSB Form. The TRST track walker did not sign.

Immediate Mitigation to Prevent Recurrence

- TRST RWIC was removed from service.

Probable Cause Statement

The probable cause of the Improper Roadway Worker Protection (RWP) event was a communication error from the TRST RWIC to the Radio RTC. The TRST RWIC errantly reported that they were entering the roadway at Virginia Square Station when they actually entered the roadway at Ballston – MU Station. This resulted in the work crew conducting an unauthorized track inspection up to Virginia Square – GMU Station without the correct permissions from ROCC.

Recommended Corrective Actions

| Corrective Action Code | Description | Responsible Party | Estimated Completion Date |
|------------------------------------|---|--------------------------|----------------------------------|
| 108974MX_ SAFECAPS_ TRST_001 | (RC-1) TRST Management will ensure the TRST RWIC is scheduled and completes refresher RWP Training with emphasis on accurate location descriptions and properly completing the Roadway Job Safety Briefing Sheet. | TRST SRC | Completed |

Appendices

Appendix A – Interview Summary

The below narrative summarizes the incident 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.

TRST RWIC

The TRST RWIC is a WMATA employee with over eight years of total service: two years as a Track Walker, two years as a Track Laborer, and four years as a Track Repairman. The TRST RWIC is certified to the RWP-4 Level and expires in February 2024. This employee has no history of sleep issues to report.

During the interview, the TRST RWIC stated they were conducting a track inspection from Clarendon to Rosslyn Stations. They reported that they began this assignment by conducting the safety briefing at Rosslyn Station on Track 2. Afterward, the TRST RWIC reported that the crew of four boarded the train at Rosslyn in the direction of Court House Station, and the AMFs departed at their respective assignment locations. After the TRST RWIC arrived at Clarendon, they stated they contacted ROCC and requested to begin their track inspection to Virginia Square.

The TRST RWIC reported that after they arrived at Virginia Square Station, they requested to continue their walk and were told to stand by. They stated that ROCC informed them they had already requested to conduct the track inspection from Virginia Square. The RWIC reported they could not remember if they stated Clarendon Station during their original request to ROCC; however, their AMF was already at Virginia Square Station. The TRST RWIC stated that they may have heard the ROCC RTC repeat back the incorrect station if they had slowed down and listened. The TRST RWIC stated they could not think of anything that would have prevented this incident from occurring.

Appendix B – TRST RWIC and TRST Track Walker Incident Statements (Abridged)

| M Witness or Employee Statement Form | | TO BE COMPLETED AND DISTRIBUTED WITHIN 24 HOURS | |
|---|-----------------------------------|---|-----------------|
| WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY | | USE SEPARATE FORM FOR EACH PERSON | |
| | | Page | of |
| PERSONNEL INVOLVED (Use This Block For WMATA Employees and Contractors) | | | |
| Name | Age | Employee # or MTPD Badge # | |
| Phone Number | Job Title | Division/Section | |
| Last Day Worked (prior to) | Hours Worked (within last 24 hrs) | Overtime? | |
| INVOLVED PERSON OR WITNESS (Use This Block For Non-WMATA Involved Person or Witness) | | | |
| Name | Phone Number | E-Mail | |
| Address | | | |
| INCIDENT | | | |
| Date | Incident Time | Date/Time Reported | Location |
| 6/5/2023 | 10:26 AM | 6/5/2023 | VIRGINIA SQUARE |
| Incident ID# (From ROCC, BOCC, etc.) | | Worksafe Incident # | |
| What happened prior to the incident? I CALLED TO WALK BAUSTON TO VIRGINIA SQUARE. | | | |
| Describe the incident I REQUESTED TO WALK BAUSTON TO VIRGINIA SQUARE. WAS GIVEN PERMISSION TO GO DIRECT TO AMF. SHE () RESPONDED SAYING AMF () IN PLACE AT TRACK 2, VIRGINIA SQ READY TO FLAG. PERMISSION WAS GIVEN TO ENTER THE ROADWAY. ONCE ARRIVING AT THE VIRGINIA SQ. I WAS INFORMED THAT I DID NOT REQUEST BAUSTON TO VIRGINIA SQ. THEN WAS INFORMED THAT I WALKED THROUGH A FOUL TIME NOW THAT THE K LINE IS SHUT DOWN. FOUL TIME WAS IMPLEMENTED. WE (MANAGEMENT, SUPERVISOR) WAS NOT INFORMED THAT WE HAD TO CALL FOUL TIME BETWEEN BAUSTON TO VIRGINIA SQ. IN THE ROADWAY ACCESS GUIDE THERE IS NO FOUL TIME | | | |
| What happened after the incident? I HAD A CONVERSATION WITH OCC SUPERVISOR. HE SAID HE LISTENED TO RECORDINGS. TOLD ME THAT I DIDNT REQUEST BAUSTON - TO VIR SQ. AND I NEEDED TO CALL FOR FOUL TIME. I SAID I'M ALMOST SURE THAT I DID. DID NOT REQUEST ADD TO FOUL TIME NO KNOWING I HAD TO. | | | |
| Form Completed by (Print Name) | | Date | |
| Signature | | 6/6/2023 | |

Document 1 – TRST RWIC Incident Statement.

Incident Date: 06/05/2023 Time: 10:26 hours
 Final Report – Improper Roadway Worker Protection
 E23376

Drafted By: SAFE 702 – 07/26/2023
 Reviewed By: SAFE 704 – 08/02/2023
 Approved By: SAFE 71 – 08/04/2023



Incident Investigation Form
WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

| INCIDENT | | | | | |
|---|---------------|------------|----------|--------------|--|
| Incident # | | Risk Rank | | Today's Date | |
| | | | | 6-5-23 | |
| Incident Date | Incident Time | Department | Division | Work Area | |
| 6-5-23 | | TRST | Alex | K04-COST4K2 | |
| Location where Incident Occurred: | | | | | |
| K04 | | | | | |
| Is this the final report? If YES, is it within 7 days of the incident? | | | | | |
| If this is the Final Report, but it wasn't completed within 7 days, please explain why it wasn't completed within 7 days: | | | | | |

| DESCRIPTION OF THE INCIDENT. |
|---|
| Briefly describe the incident. |
| <p>RWIC [REDACTED] (6484) advised me that we were granted permission to start the inspection.</p> <p>[REDACTED]</p> <p>[REDACTED]</p> |

| KNOWN FACTS. |
|--|
| List in a logical order the known facts obtained during the investigation process. |
| |

50.690 1/3 02/10 Original: RISK Copy 1: Department Copy 2: SAFE Copy 3: LSC-I&I

Document 2 – TRST Track Walker Incident Statement.

Incident Date: 06/05/2023 Time: 10:26 hours
 Final Report – Improper Roadway Worker Protection
 E23376

Drafted By: SAFE 702 – 07/26/2023
 Reviewed By: SAFE 704 – 08/02/2023
 Approved By: SAFE 71 – 08/04/2023

Appendix C – Rail Operations Control Center (ROCC) Incident Report (Abridged)

View Approved Incident Report

INCIDENT ID: 2023156ORANGE2

| | | | |
|---|---|--------------------------|--|
| DATE 2023-06-05 | TIME 1026 | LINE Orange | ITEM 2 |
| LOCATION (STATION/YARD) Virginia Square-GMU (K03) | LOCATION/CHAIN MARKER (If Applicable) K03 to K02 Track #2 | | REPORTED BY Track Unit 6484 - [REDACTED] - C99 |
| TRAIN ID 000 | DIRECTION I/B | TRACK NUMBER 2 | DEPTS NOTIFIED Everbridge Alert/Messaging |
| CAR NUMBERS (XXXX-XXXX) Lead Car | | | |
| - | | | |
| Caused Issue <input type="checkbox"/> | | | |
| Caused Issue <input type="checkbox"/> | | | |
| Caused Issue <input type="checkbox"/> | | | |
| Caused Issue <input type="checkbox"/> | | | |
| TRBL CODE RWPV-RWP VIOLATION | RESP CODE TRK | | |

TYPE INCIDENT
Roadway Worker Protection Violation / RWPV

ACTION PLAN
Track Unit 6484 Removed From Service And Transported For A Post-Incident Analysis.

| DELAYS IN MINUTES | | | |
|-------------------|----------|-------|----------------|
| LINE | INCIDENT | TRAIN | TOTAL DURATION |
| 0 | 0 | 0 | 0 |

| TRIPS MODIFIED | | | | | |
|----------------|-----------|-----------------|----------|----------------|----------|
| PARTIAL | GAP TRAIN | LATE DISPATCHES | REROUTED | NOT DISPATCHED | OFFLOADS |
| 0 | 0 | 0 | 0 | 0 | 0 |

| FIVE PRIMARY CONSOLE INDICATIONS | | | | |
|----------------------------------|-----------------------|------------------------------|-------------------------|-----------------|
| BCP | BRAKES ON ILLUMINATED | ALL DOORS CLOSED ILLUMINATED | AUTO\MANUAL ILLUMINATED | BPP ILLUMINATED |
| | | | MANUAL | |

| INCIDENT CHRONOLOGY | |
|---------------------|---|
| TIME | DESCRIPTION |
| 1026 | Track Unit 6484, [REDACTED] requested to walk from Virginia-Square to Clarendon track two under AMF protection, but began his track inspection at Ballston Station to Virginia Square track two. ROCC Assistant Operations Manager, ROIC, SAFE, MOC, Track Department, and all other concerned personnel were notified. |

Document 3 – ROCC Incident Report page 1 of 2.

Incident Date: 06/05/2023 Time: 10:26 hours
 Final Report – Improper Roadway Worker Protection
 E23376

Drafted By: SAFE 702 – 07/26/2023
 Reviewed By: SAFE 704 – 08/02/2023
 Approved By: SAFE 71 – 08/04/2023

View Approved Incident Report

| | |
|------|--|
| 1027 | Track Unit 6484, [REDACTED] was granted permission to perform his track inspection from Virginia-Square to Clarendon track two under AMF protection. |
| 1042 | Track Unit 6484, [REDACTED] then made a second requested to walk from from Virginia-Square to Clarendon track two under AMF protection. Track Unit 6484 was informed that his original requested was from Virginia-Square to Clarendon track two. Track Unit 6484 reported he already walked from Ballston to Virginia-Square track two and was requesting to walk from Virginia-Square to Clarendon track two. Track Unit 6484 was instructed to stand by on the platform at Virginia-Square station and give central a landline. |
| 1215 | Track Unit 6484, [REDACTED] was removed from service for a Roadway Worker Protection violation (RWPV), and transported for post-incident analysis investigation. |

MAXIMO TICKET#
8674681

| REPORT PREPARED BY | NAME | CLICK TO SIGN |
|---------------------|------------|---------------|
| RADIO CONTROLLER 1 | [REDACTED] | ✓ |
| BUTTON CONTROLLER 1 | [REDACTED] | ✓ |
| RADIO CONTROLLER 2 | | |
| BUTTON CONTROLLER 2 | | |

SUPERINTENDENTS OR ASSISTANTS SECTION

ADDITIONAL FOLLOW-UP CORRECTIVE ACTIONS OR REMARKS

FOLLOW-UP INFORMATION OBTAINED FROM SUPPORT DEPARTMENTS

NOTIFICATIONS/PAGE GROUPS #1/CEO #2/DGM &BELOW

ADDITIONAL NOTIFICATIONS MADE BY PHONE

| APPROVED BY | NAME | CLICK TO SIGN |
|--|------------|---------------|
| REPORT APPROVED BY SUPT. OR ASST SUPT. | [REDACTED] | ✓ |

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Document 4 – ROCC Incident Report page 2 of 2.

Incident Date: 06/05/2023 Time: 10:26 hours
Final Report – Improper Roadway Worker Protection
E23376

Drafted By: SAFE 702 – 07/26/2023
Reviewed By: SAFE 704 – 08/02/2023
Approved By: SAFE 71 – 08/04/2023

Page 16

Appendix D – TRST RWIC Roadway Job Safety Briefing (RJSB) Form

WMATA Roadway Job Safety Briefing Form



This form must be completed legibly and accurately and be retained and made available for inspection for a period of 90 days.

Part 1: General Job Briefing

| | |
|---|--|
| 1 | Date: <u>5/5/2023</u> Time: <u>10:00</u> RWIC: [REDACTED] |
| | RWIC Call #: <u>6484</u> RWIC Cell Phone #: [REDACTED] |
| 2 | Safety Contact: <u>BE AWARE</u> RWP Rule: <u>TASK PLANNING</u> |
| 3 | Work Location: <u>ROSSLYN</u> Job Task(s): <u>TRACK INSPECTION</u> |
| 4 | Worksite, Electrical, Chemical, or Environmental Hazards: |
| 5 | PPE Inspected: <input checked="" type="checkbox"/> Electronic Device Policy Reviewed: <input type="checkbox"/> Radio Certification Date Inspected: <input type="checkbox"/> RWP Stickers Inspected: <input type="checkbox"/> Tools and Equipment Inspected: <input type="checkbox"/> Radio Checks Performed: <input type="checkbox"/> What Specialized PPE Will Be Used? <u>ALL</u> |
| 6 | Emergency Response Plan: <u>CALL Va. BODY COUNT, CALL POLICE</u> |

Part 2: RWP Briefing: This section must be filled out before any Roadway Workers enter the Roadway.

**Track Time On/Off: 10:26 : : 1:12, 24 1 : **

| | |
|----|---|
| 7 | Rail Line: <u>K04-C</u> Track Number(s): <u>2</u> Track Access Guide (TAG) Speed: <u>15 MPH</u> |
| | Working Limits Chain Markers: <u>K04-C05</u> |
| | OPS Radio Channel: <u>2</u> OPS Phone Number: [REDACTED] |
| | Place of Safety: <u>CATWALK</u> Time Needed to Reach Place of Safety: <u>15 SEC</u> |
| | Are There Red Hot Spots Within Your Working Limits? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| | Red Hot Spot Chain Markers: Red Hot Spot Hazard(s): |
| 8 | Form of RWP: IT <input type="checkbox"/> ETO Authority <input type="checkbox"/> Local Signal Control <input type="checkbox"/> AMF <input checked="" type="checkbox"/> FT <input type="checkbox"/> RWP Notes: |
| 9 | Advanced Mobile Flagger Call #(s) or Last Name(s): [REDACTED] Advanced Mobile Flagger Placement: <u>V. Sg. CALSDON, COURT HOUSE, ROSSLYN</u> Watchman/Lookout Placement: Required Site Distance: Watchman/Lookout Rotation Schedule: |
| 10 | Will There be a Speed Restriction on the Adjacent Track? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> How Will the Speed Restriction be Implemented? |
| 11 | Will Class 2 Vehicles be Part of the Working Limits? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> # of Class 2 Vehicles: Type of Class 2 Vehicles: |

Document 5 – TRST RWIC RJSB illustrates the job task of a track inspection. Page 1 of 2.

Incident Date: 06/05/2023 Time: 10:26 hours
Final Report – Improper Roadway Worker Protection
E23376

Drafted By: SAFE 702 – 07/26/2023
Reviewed By: SAFE 704 – 08/02/2023
Approved By: SAFE 71 – 08/04/2023

WMATA Roadway Job Safety Briefing Form



This form must be completed legibly and accurately and be retained and made available for inspection for a period of 90 days.

Part 2: RWP Briefing, continued:

| | | | | |
|--|---|------------------------|------------------------------------|------------------------|
| 12 | Power Outage: Red Tag <input type="checkbox"/> Supervisory <input type="checkbox"/> | | Hot Sticking Chain Markers: | |
| | Red/Supervisory Tag #: | | | |
| | Red/Supervisory Tag Holder: | | | |
| | Insulated Mat(s) Color Blue <input type="checkbox"/> Red <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Yellow <input type="checkbox"/> | | | |
| | WSAD Certification Due | WSAD Serial #/Asset ID | WSAD Certification Due | WSAD Serial #/Asset ID |
| / / | | / / | | |
| / / | | / / | | |
| Will a Piggyback Crew(s) be Working Within Your Working Limits? Yes <input type="checkbox"/> No <input type="checkbox"/> | | | | |
| 13 | Crew Leader/EIC Call #(s): | | Piggyback Work Area Chain Markers: | |
| | Piggyback Work Assignment(s): | | | |

Part 3: Good Faith Challenge: The following must be read aloud by the RWIC to the Roadway Workers.

"WMATA guarantees each Roadway Worker the right to challenge, in good faith, the effectiveness of the Roadway Worker Protection being provided. The Roadway Worker making the challenge, and those that are sympathetic to the challenge, shall remain clear of the roadway until the challenge has been resolved."

| | |
|-------------|--|
| RWP Issues: | Worker Name(s): |
| | |
| | Was the GFC Issue Resolved? Yes <input type="checkbox"/> No <input type="checkbox"/> |

Part 4: Roadway Worker Acknowledgement

"I understand and agree with all aspects of the Roadway Job Safety Briefing I just received. I am adequately protected from any train movement or roadway hazards. I understand I have a responsibility to conduct myself in a safe manner at all times."

ROADWAY WORKERS HAVE THE RIGHT AND RESPONSIBILITY TO INITIATE A GOOD FAITH CHALLENGE WHEN NECESSARY

| Roadway Worker Signature | Employee ID # | Roadway Worker Signature | Employee ID # | Crew Leader/EIC Signature | Crew Leader/EIC Employee ID # |
|--------------------------|---------------|--------------------------|---------------|---------------------------|-------------------------------|
| [Redacted] | [Redacted] | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Part 5: RWIC Signature(s)

| | | |
|----------------------------|--------------------------------|-------------------------------|
| Additional RWIC Comments: | | |
| | | |
| RWIC Signature: [Redacted] | RWIC Employee ID #: [Redacted] | Date: 6/5/2023 |
| Relieving RWIC Name: | | Relieving RWIC Employee ID #: |
| Relieving RWIC Signature: | | Date/Time: / / , : |
| Relieving RWIC Call #: | | Relieving RWIC Cell Phone #: |

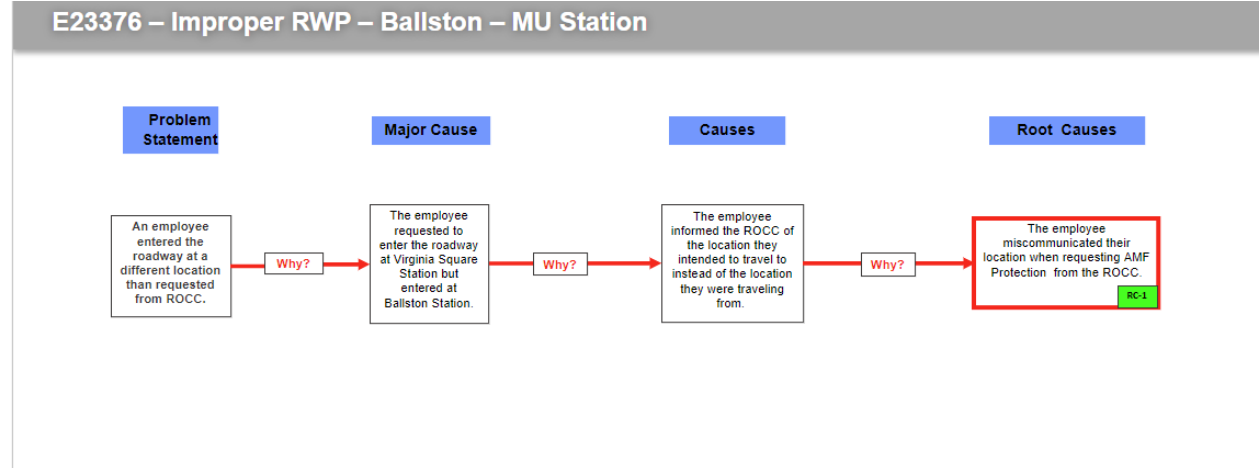
FORM-SAFE-SRV-001-00

Document 6 – TRST RWIC RJSB illustrates the job task of a track inspection. Page 2 of 2. (Only three employees signed the RJSB Form).

Incident Date: 06/05/2023 Time: 10:26 hours
Final Report – Improper Roadway Worker Protection
E23376

Drafted By: SAFE 702 – 07/26/2023
Reviewed By: SAFE 704 – 08/02/2023
Approved By: SAFE 71 – 08/04/2023

Appendix E – Root Cause Analysis





Washington Metropolitan Area Transit Authority
Department of Safety (SAFE)
Office of Safety Investigations (OSI)

FINAL REPORT OF INVESTIGATION A&I E23565

| | |
|---------------------------------------|---|
| Date of Event: | August 15, 2023 |
| Type of Event: | Train Passed Personnel at Excessive Speed |
| Incident Time: | 10:46 Hours |
| Location: | Wiehle-Reston East Station, track 1 CM N1 883+00 |
| Time and How received by SAFE: | 10:58 Hours – MAC Notification |
| WMSC Notification Time: | 11:51 Hours |
| Responding Safety Officers: | WMATA: N/A WMSC: N/A Other: N/A |
| Rail Vehicle: | Train ID 725 – L7036/37x7055/54T |
| Injuries: | None |
| Damage: | None |
| Emergency Responders: | None |
| SMS I/A Incident Number: | 20230815#110677MX |

**Between Wiehle-Reston East Station & Spring Hill Station (CM N1 883+00)
Train Passed Personnel at Excessive Speed**

August 15, 2023

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Abbreviations and Acronyms

| | |
|--------------|---|
| AIMS | Advanced Information Management System |
| AMF | Advanced Mobile Flagger |
| ARS | Audio Recording System |
| CCTV | Closed-Circuit Television |
| CMOR | Office of the Chief Mechanical Officer |
| IIT | Incident Investigation Team |
| MOR | Metrorail Operating Rulebook |
| NOAA | National Oceanic and Atmospheric Administration |
| OM | Operations Manager |
| RTRA | Office of Rail Transportation |
| ROCC | Rail Operations Control Center |
| RTC | Rail Traffic Controller |
| RWIC | Roadway Worker in Charge |
| SAFE | Department of Safety |
| SMS | Safety Measurement System |
| SPOTS | System Performance On-Time Summary |
| TRST | Office of Track and Structures |
| WMATA | Washington Metropolitan Area Transit Authority |
| WMSC | Washington Metrorail Safety Commission |

**Washington Metropolitan Area Transit Authority
Department of Safety – Office of Safety Investigations**

Executive Summary

**Note that all times listed are approximate and may contain minor variations due to differences between systems of record. **

On August 15, 2023, at 10:52 hours, an Office of Track and Structures (TRST) Roadway Worker In-Charge (RWIC) reported that Train ID 725 (L7036/37X7055/54T) passed their mobile work crew between Wiehle-Reston East and Spring Hill Stations, on track 1 without sounding their horn and at excessive speed. This report was made to the Rail Operations Control Center (ROCC) Button Rail Traffic Controller (RTC) on the Ops 4 Desk Phone.

The Button RTC advised the Radio RTC, who contacted the Train Operator of Train ID 725 to confirm that they had received a briefing from the Advanced Mobile Flagger (AMF) located at Wiehle-Reston East Station on track 1. The Train Operator replied that they had.

The Button RTC notified the Operations Manager (OM) of the event, then contacted an Office of Rail Transportation (RTRA) Rail Supervisor and instructed them to intercept Train ID 725 at Court House Station and to take over operating.

The Office of the Chief Mechanical Officer (CMOR) Incident Investigation Team (IIT) analysis indicated the incident occurred at 10:46 hours. The analysis revealed that the Train Operator activated the train horn consistently between Wiehle-Reston East and Spring Hill Stations, and the train speed was traveling at 25 MPH when it passed the work crew, which is above the prescribed speed of 15 MPH.

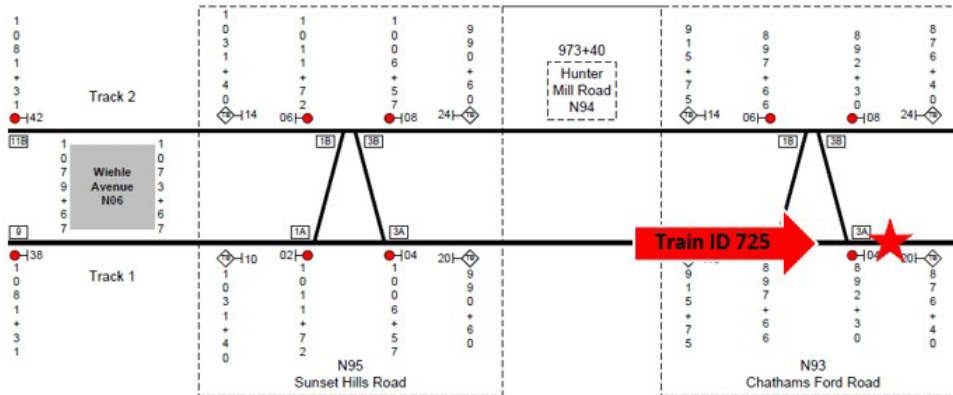
RTRA removed the Train Operator from service. Train ID 725 continued to Shady Grove Yard, where the post-incident inspection was conducted.

The probable cause of the Train Passed Personnel at Excessive Speed event on August 15, 2023, between Wiehle-Reston East and Spring Hill Stations was a human factors error by the Train Operator in failing to adhere to AMF procedures.

Incident Site

Wiehle-Reston East Station, Track 1
CM N1 883+00

Field Sketch/Schematics



The above depiction is not to scale.

Purpose and Scope

The purpose of this accident 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.

Investigative Methods

The investigative methodologies included the following:

- Site Assessment through document review
- Formal Interviews – SAFE interviewed three individuals as part of this investigation. The interviews included persons present at, during, and after the incident, those directly involved in the response process, and representatives from the Washington Metrorail Safety Commission (WMSC). SAFE interviewed the following individuals:
 - Train Operator (Train ID 725)
 - TRST RWIC
 - Track Inspector
- Informal Interviews – Collected through conversations with individuals during the investigation to provide background and supporting information. Written statements were reviewed from personnel present during the event.
- Documentation Review – Collection of relevant work history information and process documentation contained in WMATA systems of record. These records include:
 - Train Operator Training Records
 - Train Operator Certifications

- Train Operator 30-Day work history
 - Metrorail Safety Rules and Procedures Handbook (MSRPH)
 - Metrorail Operating Rulebook (MOR)
 - National Oceanic and Atmospheric Administration (NOAA)
 - Rail Operations Control Center (ROCC) Incident Report
 - Maximo Data
- System Data Recording Review – Collection of information contained in Metro Data Recording Systems. This data includes:
 - Audio Recording System (ARS) playback [Radio and Landline Communications]
 - The Office of Chief Mechanical Officer (CMOR) Incident Investigation Team (IIT) Vehicle Monitoring and Diagnostic System (VMDS)
 - Closed-Circuit Television (CCTV)
 - Advanced Information Management System (AIMS)
 - System Performance On-Time Summary (Spots)

Investigation

On August 15, 2023, at 10:08 hours, the Audio Recording System (ARS) determined that the TRST RWIC contacted ROCC and requested to perform a track inspection between Spring Hill and Wiehle-Reston East Stations, on track 1 with an AMF positioned at Wiehle-Reston East Station, track 1, ready to flag.

At 10:11 hours, the Radio RTC granted permission for the TRST RWIC to enter the roadway to perform the track inspection between Spring Hill and Wiehle-Reston East Stations on track 1, then announced that the mobile work crew was on the roadway.

At 10:21 hours, the Train Operator of Train ID 725, transporting a four-car consist to Shady Grove Yard, advised Ops 4 that they were departing Dulles Yard on track 1 and requested a wayside report. There was no response from Radio RTC. An unidentified party responded that there were track walkers all over track 1. At 10:26 hours, the Radio RTC announced that personnel were on the roadway between Spring Hill and Wiehle-Reston East Stations.

At 10:37 hours, Train ID 725 arrived at Wiehle-Reston Station, was briefed by the AMF, and then departed at 10:39 hours. The Office of the Chief Mechanical Officer (CMOR) Incident Investigation Team (IIT) analysis revealed that Train ID 725 encountered the work crew at 10:46 hours. At 10:52 hours, the TRST RWIC contacted ROCC via cellular phone and reported to the Button RTC that Train ID 725 passed their mobile work crew near CM N1 883+00 without sounding their horn and at excessive speed.

The Button RTC notified the AOM of the incident. The AOM instructed to have the Train Operator removed from service. The AOM instructed the Radio RTC to verify with the Train Operator that they had received a briefing from the AMF at Wiehle-Reston East Station. The Train Operator confirmed they had received the briefing before departing Wiehle-Reston East Station.



Image 1 – AMF equipment and Train ID 725 located at Wiehle-Reston East Station, track 1 at 10:38 hours.

At 11:03 hours, the Button RTC contacted the Rail Supervisor located at Court House Station, advised them of the incident, instructed them to intercept Train ID 725, and remove the Train Operator from service. Train ID 725 arrived at Court House Station at 11:16 hours, and the Rail Supervisor took over the operation of the train.

The Radio RTC instructed the mobile work crew to continue the track inspection towards Wiehle-Reston East Station and to contact them via landline upon arrival. At 12:05 hours, the TRST RWIC contacted the AOM reported located at Wiehle-Reston East Station and advised that the train passed their location at excessive speed and without blowing the train horn.

At 12:11 hours, Train ID 725 arrived and was secured in Shady Grove Yard.

Chronological Event Timeline

A review of ARS playback, i.e., phone and radio communications, revealed the following timeline:

| Time | Description |
|-------------|---|
| 08:23 hours | <p><u>TRST RWIC</u>: Requested to perform a track inspection between Spring Hill and Wiehle-Reston East Stations on track 1. Reported an AMF located at Wiehle-Reston East Station, track 1, ready to flag.</p> <p><u>Radio RTC</u>: Acknowledged and repeated. Instructed to go directly with the AMF.</p> <p><u>TRST RWIC</u>: Acknowledged. Requested if the AMF was in position at Wiehle- Reston East Station on track 1.</p> <p><u>TRST AMF</u>: Confirmed they were in position and ready to flag.</p> <p><u>TRST RWIC</u>: Acknowledged.</p> <p><u>Radio RTC</u>: Acknowledged. Announced that personnel were conducting a track inspection between Wiehle-Reston East and Spring Hill Stations on track 1. Advised the Train Operators to dim lights, tap the horn, and pass at no greater than 15 MPH. [Radio, OPS 4]</p> |

| Time | Description |
|----------------|---|
| 10:21:52 hours | <u>Train ID 725</u> : Departed Dulles Yard on track 1 and requested a wayside report. <u>Unknown</u> : Advised personnel were all over track 1. <u>Train ID 725</u> : Acknowledged. [Radio, OPS 4] |
| 10:26:25 hours | <u>Radio RTC</u> : Announced that personnel were on the roadway between Wiehle-Reston East and Spring Hill Stations, track 1. [Radio, OPS 4] |
| 10:37:55 hours | Train ID 725 arrived at Wiehle-Reston, track 1, received an AMF briefing. [SPOTS] |
| 10:39:20 hours | Train ID 725 departs Wiehle-Reston, track 1 [SPOTS] |
| 10:40:31 hours | <u>Radio RTC</u> : Announced that personnel were on the roadway between Wiehle-Reston East and Spring Hill Stations, track 1. Advised Train Operators to dim lights, tap horn, and pass at no greater than 15 MPH. [Radio, OPS 4] |
| 10:52:24 hours | The TRST RWIC reported that Train ID 725 had passed their work crew at a high rate of speed without sounding the train horn. The Button RTC instructed the RWIC to stand clear. [OPS 4 Phone] |
| 10:55:49 hours | <u>Button RTC</u> : Advised AOM of event. <u>AOM</u> : Acknowledged. Instructed to have the Train Operator relieved and removed from service. Instructed that the RWIC could continue to Wiehle-Reston East Station and call landline. [Radio, OPS 4] |
| 10:57:57 hours | <u>Button RTC</u> : Contacted an RTRA Rail Supervisor landline to intercept Train ID 725 at Court House Station to take over operating. [Phone, OPS 4] |
| 10:58:03 hours | <u>Radio RTC</u> : Announced that personnel were on the roadway between Wiehle-Reston East and Spring Hill Stations on track 1. Instructed the Train Operators to dim lights, tap the horn, and pass at no greater than 15 MPH.[Radio, OPS 4] |
| 10:58:49 hours | <u>AOM</u> : Instructed the Button RTC to verify with the Train Operator that they had received an AMF briefing at Wiehle-Reston East Station. [Phone, OPS 4] |
| 10:59:09 hours | <u>Radio RTC</u> : Inquired if Train ID 725 had received a briefing from AMF. <u>Train ID 725</u> : Responded, yes. [Radio, OPS 4] |
| 11:03:26 hours | The Button RTC advised the RTRA Rail Supervisor of the incident to remove the Train Operator from service. [Radio, OPS 4 Phone] |
| 11:16:57 hours | Train ID 725 arrived at Court House Square Station, track 1. [SPOTS] |
| 12:05:27 hours | <u>TRST RWIC</u> : Reported located at Wiehle-Reston East Station and advised that the train passed their location at excessive speed and without blowing the train horn. <u>AOM</u> : Acknowledged. Instructed to report the incident to their supervisor. [Phone Rail 2] |
| 12:06:56 hours | Train ID 725 cleared Rockville Station, track 1, towards Shady Grove Station. [SPOTS] |
| 12:11:27 hours | Train ID 725 arrived was and secured in Shady Grove Yard. [Radio, SG YD 2] |

Advanced Information Management System (AIMS)

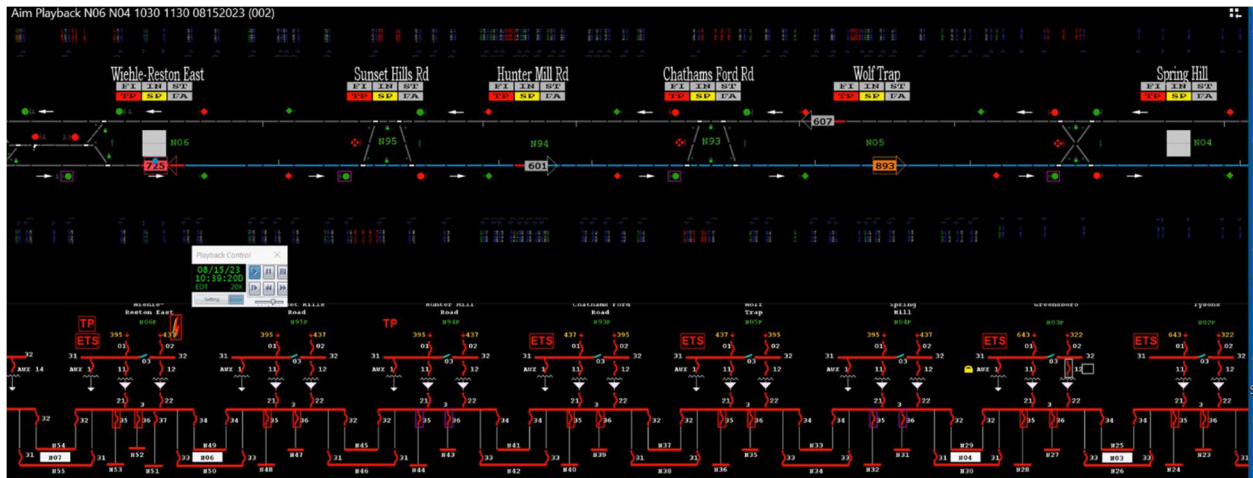


Figure 1 –Train ID 725 located at Wiehle-Reston East Station. Blue block and human forms in place to Spring Hill Station, track 1.

The Office of Chief Mechanical Officer (CMOR) / Vehicle Monitoring and Diagnostic System (VMDS)

Adopted from CMOR IIT report with minor formatting and grammatical edits:

“IIT has completed the analysis of this incident. Based on the ER Data, the road horn was activated at intervals of 10 to 15 seconds before, during, and after passing the roadway workers at CM 883+00 on track 1 from Wiehle-Reston East Station (N06) to Spring Hill Station (N04).

Train ID 725 traveled at speeds more than half the regulated speed about 5 times, as shown in the ER Data Sheet Table #1.

Based on VMS data, there were no faults observed with the train that would have contributed to the cause of this incident. The train performed as commanded.”

| Time | Description of Events | Distance from Wiehle Reston E (N06) Track 1 | Master Controller Position | Train Speed | ADU Regulated Speed | Limiting Speed |
|----------------------------|--|---|----------------------------|-------------|---------------------|----------------|
| 10:33:54 | Master controller in P1-P4 at Wiehle-Reston East (N06) 8 Car Marker on Track-1. Road horn activated twice | 00 Feet | P1-P4 | 0.67MPH | 40MPH | 40MPH |
| 10:39:04.11 10:39:28.66 | Master Controller cycled through Coast, P1-P4, Speed up to 18MPH, Distance 827 Feet, Road horn activated 4 times | 827 Feet | Coast P1=4 | 16MPH | 54MPH | 75MPH |
| 10:39:33.97 | Master Controller in Coast, Speed 24MPH, ADU Regulated Speed 54MPH, Limiting Speed 75MPH, Distance from Wiehle-Reston East Station 987 Feet, Road horn activated 5 times | 987 Feet | Coast | 24MPH | 54MPH | 75MPH |

| Time | Description of Events | Distance from Wiehle Reston E (N06) Track 1 | Master Controller Position | Train Speed | ADU Regulated Speed | Limiting Speed |
|-------------|---|---|----------------------------|-------------|---------------------|----------------|
| 10:39:47.26 | Master Controller in P1-P4, Speed 25MPH, Regulated Speed 54MPH, Limiting Speed 75MPH, Distance 1,480 Feet from Wiehle-Reston East 8 Car Marker, Road horn activated 7 times | 1,480 Feet | P1-P4 | 25MPH | 54MPH | 75MPH |
| 10:40:00.06 | Master Controller in B1-B3, Speed 30MPH, ADU Regulated Speed 54MPH, Limiting Speed 75MPH, Dist from Wiehle-Reston East, 2,020 Feet, Road horn activated 8 times | 2,020 Feet | B1-B3 | 30MPH | 54MPH | 75MPH |
| Time | Description of Events | Distance from Wiehle Reston E (N06) Track 1 | Master Controller Position | Train Speed | ADU Regulated Speed | Limiting Speed |

| | | | | | | |
|----------------------------|--|------------|--------------------|-------|-------|-------|
| 10:40:13.75 | Master Controller in Coast Speed 27MPH, ADU Regulated Speed 54MPH, Distance from Wiehle-Reston East, 2,599 Feet, Road horn activated 10 times | 2,599 Feet | Coast | 27MPH | 54MPH | 75MPH |
| 10:40:13.75 10:40:47.46 | Master Controller cycled in Coast, P1-P4, B1-B3, Speed 27MPH, Regulated Speed 54MPH, Limiting Speed 75MPH, Distance from Wiehle-Reston East Station 4,020 Feet | 4,020 Feet | P1-P4, Coast B1-B3 | 27MPH | 54MPH | 75MPH |

| Time | Description of Events | Distance from Wiehle Reston E (N06) Track 1 | Master Controller Position | Train Speed | ADU Regulated Speed | Limiting Speed |
|----------------------------|---|---|----------------------------|-------------|---------------------|----------------|
| 10:41:47.82 | Train picked up overspeed alarm, Master Controller in Coast, Speed 32MPH, ADU Regulated Speed 54MPH, Limiting Speed 0MPH, Distance from Wiehle-Reston East Station 6,655 Feet, Road horn activated 14 times | 6,655 Feet | Coast | 32MPH | 54MPH | 75MPH |
| 10:41:47.82 10:42:27.02 | Master controller cycled in P1-P4, Coast, B1-B3, Speed 27MPH, Regulated Speed 54MPH, Limiting Speed 75MPH, Distance from Wiehle-Reston East Station 9,213 Feet, Road horn activated 18 times | 8,213 Feet | P1=P4, Coast, B1-B3 | 27MPH | 54MPH | 75MPH |

| Time | Description of Events | Distance from Wiehle Reston E (N06) Track 1 | Master Controller Position | Train Speed | ADU Regulated Speed | Limiting Speed |
|----------------------------|--|---|----------------------------|-------------|---------------------|----------------|
| 10:42:27.02 10:44:18.13 | Master Controller cycled in Coast, B1-B3, Speed 29MPH, ADU Regulated Speed 54MPH, Limiting Speed 75MPH, Distance from Wiehle-Reston East Station 12,945 Feet | 12, 945 Feet | Coast B1-B3 | 29MPH | 54MPH | 75MPH |
| 10:44:18.13 10:46:11.31 | Master Controller cycled through Coast, B1-B3, P1-P4, Speed 29MPH, Regulated Speed 54MPH, limiting speed 55mph, Distance from Wiehle-Reston East Station 17,832 Feet, Road horn activated more than 33 times | 17,832 Feet | Coast B1-B3 P1-P4 | 29MPH | 54MPH | 55MPH |

| Time | Description of Events | Distance from Wiehle Reston E (N06) Track 1 | Master Controller Position | Train Speed | ADU Regulated Speed | Limiting Speed |
|-------------|---|---|----------------------------|-------------|---------------------|----------------|
| 10:46:18.96 | Train ID 725 IS 900 Feet away from CM 883+00, Speed 28MPH, Regulated Speed 54MPH, Limiting Speed 55MPH, Master Controller in Coast, Distance from Wiehle-Reston East Station 18,167 Feet | 18,167 Feet | Coast | 28MPH | 54MPH | 55MPH |
| 10:46:42.01 | Train ID 725 passed CM 883+00 Roadway Worker location at Speed 25MPH, Master Controller in Coast , ADU Regulated Speed 54MPH, Limiting Speed 55MPH, Distance from Wiehle-Reston East Station, 19,067 Feet | 19,067 Feet | Coast | 25MPH | 54MPH | 55MPH |

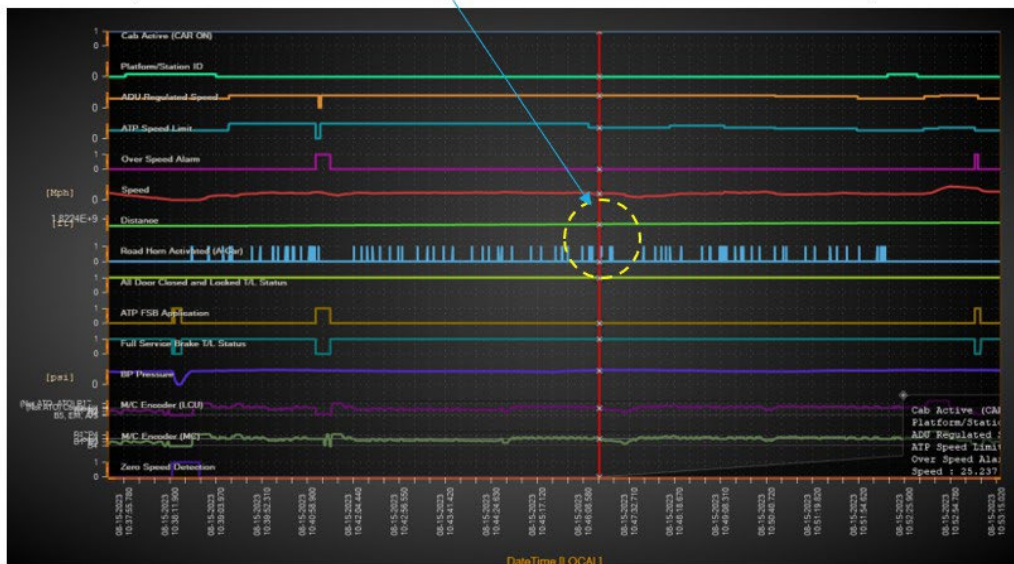
Incident Date: 08/15/2023 Time: 10:46 hours
Final Report – Train Passed Personnel at
Excessive Speed
E23565

Drafted By: SAFE 709 09/26/203
Reviewed By: SAFE 707 – 10/15/2023
Approved By: SAFE 71 – 10/16/2023

| Time | Description of Events | Distance from Wiehle Reston E (N06) Track 1 | Master Controller Position | Train Speed | ADU Regulated Speed | Limiting Speed |
|-------------|--|---|----------------------------|-------------|---------------------|----------------|
| 10:52:35.10 | Train ID 725 passed Spring Hill Station without stopping at speed 24MPH, Regulated Speed 40MPH, Limiting Speed 40MPH, Master Controller in Coast | 32,285 Feet | Coast | 24MPH | 40MPH | 40MPH |

Note: Times above may vary from other systems' timelines based on clock settings.

10:46:42.01 Train ID 725 passed CM 883+00 Roadway Worker location at Speed 25MPH, Master Controller in Coast, ADU Regulated Speed 54MPH, Limiting Speed 55MPH, Distance from Wiehle-Reston East Station, 19,067 Feet/Road horn activated multiple times



Graph 1 - Lead Car 7036 Analysis

Office of Rail Transportation (RTRA)

The Train Operator received administrative action after it was identified by console video that they were smoking while operating. RTRA redistributed the Operations Personnel Notice, Smoke-Free Workplace. The Train Operator received a verbal re-instruction on AMF Procedures for Rail Vehicle Operators.

Office of Systems Maintenance, Office of Radio Communications (COMR)

No reports of communications-related issues were observed in this incident.

Interview Findings

As part of the investigation launched into the event, SAFE interviewed three people. The interviews identified the following key findings associated with this event. Findings detailed below include reported information from involved personnel and may conflict with other data sources contained in the report.

Train Operator (Train ID 725)

- The Train Operator stated they were operating Train ID 725, a four car, non-revenue train from Dulles Yard to Shady Grove Yard.
- The Train Operator stated they received the briefing from the AMF at Wiehle-Reston East Station.
- The Train Operator stated their routine was to follow the regulated speed but given the distance between stations, the incline and decline on the track made it difficult to maintain a set speed while constantly scanning for the track workers.
- The Train Operator stated that they observed the crew, received, and acknowledged a proceed signal by sounding their horn twice.
- The Train Operator stated they reduced their speed to 15 mph as they passed the crew and returned to half regulated speed after clearing the work crew.
- The Train Operator stated that they were smoking a cigarette and drinking from a cup while operating the train.

TRST RWIC

- The TRST RWIC stated that they received permission to enter the roadway from the ROCC after confirming AMF was in place.
- The TRST RWIC stated that they heard and observed the train approaching, cleared the mobile work crew to a place of safety and gave the proceed signal to train.
- The TRST RWIC stated that the train continued but did not acknowledge the proceed signal using the train horn.
- The TRST RWIC stated that they could not estimate the train's speed, but it bothered them that the Train Operator had not acknowledged the proceed signal.
- The RWIC stated that they contacted ROCC via cell phone because they were concerned that other Train Operators would retaliate against them if they reported it over the radio.
- The RWIC stated that they spoke with the Train Operator after the incident and the Train Operator apologized.

Track Inspector

- The Track Inspector stated that the RWIC had alerted them that the train was approaching their location.
- The Track Inspector stated that they cleared the roadway to a place of safety, then returned to the roadway to continue the track inspection.
- The Track Inspector stated that they did not recall hearing the train horn nor had an estimate of speed for the train.

Weather

On August 15, 2023, at the time of the incident, NOAA recorded the average temperature as 90° F, with significant cloud cover, winds 5.6 mph, and 69% humidity. Weather was not a contributing factor in this incident (Weather source: NOAA – Location: Reston, VA)

Related Rules and Procedures

(Effective 09/01/2023, MOR 9.2.3 Protection of Rail Vehicles)

MSRPH Operating Rules 3.87:

“Upon receiving the appropriate proceed signal from the watchman/lookout on the roadway, and verifying that all personnel and equipment are clear of the roadway, the Rail Vehicle Operator shall:

- Acknowledge the proceed signal with two short mainline horn blasts (individuals on the roadway do not have to continually proceed trains after the Rail Vehicle Operator's acknowledgement.
- Stop and switch to Mode 2, Level 1 if not already in manual mode.
- Discontinue sounding train horn after acknowledgement, and;
- Continue at 15 MPH until clear of personnel on either track.”

Human Factors

Fatigue

RTRA

Train Operator

Signs and Symptoms of Fatigue

Conditions at the time of the incident were evaluated to distinguish whether evidence of fatigue was present. The video did not indicate behaviors suggesting fatigue. The employee reported feeling fully alert at the time of the incident and reported experiencing no symptoms of fatigue in the time leading up to the incident.

Fatigue Risk

Incident data was evaluated for fatigue risk factors. There were no major risk factors for fatigue identified. The incident time of day (10:46 hours) does not suggest an increased risk of fatigue-

related impairment. The employee worked day shifts (08:00 – 16:00 hours) in the days leading up to the incident. The employee reported 8.25 hours of sleep in the last sleep period preceding the incident and was awake for 4.15 hours at the time of the incident. The employee was off duty for a calculated total of 10.66 hours, which provided the opportunity for 7-9 hours of sleep. The employee reported usual workday sleep durations of 8 hours and no issues with sleep.

Post-Incident Toxicology Testing

WMATA's Drug and Alcohol Program determined that the Train Operator complied with the Drug and Alcohol Policy and Testing Program 7.7.3/6.

Findings

- The TRST RWIC advised the Button RTC of the incident via landline.
- CMOR-IIT analysis determined that the train was operating at 25 MPH when the train passed the mobile work crew and the horn was sounding at various intervals.
- CCTV revealed that the Train Operator was smoking and drinking from a cup while operating.

Immediate Mitigation to Prevent Recurrence

- A Rail Supervisor took over operating the train.
- The Train Operator was removed from service.
- The Train Operator received a verbal re-instruction on AMF Procedures for Rail Vehicle Operators.

Probable Cause Statement

The probable cause of the Train Passed Personnel at Excessive Speed event on August 15, 2023, between Wiehle-Reston East and Spring Hill Stations was a human factors error by the Train Operator in failing to fully adhere to AMF procedures.

Recommended Corrective Actions

| Corrective Action Code | Description | Responsible Party | Estimated Completion Date |
|--------------------------------|--|-------------------|---------------------------|
| 110677MX_SAFE CAPS_RTRA_001 | Re-distribute RTRA Operations Personnel Notice, Smoke-Free Workplace | RTRA | Completed |

Appendices

Appendix A – Interview Summaries

The below narratives summarize the incident and represent the statements made by the involved individual. As such, times and details may present a conflict with the data contained in systems of record.

RTRA

Train Operator

The Train Operator is a WMATA employee with 19 years of service and 10 years of experience as a Train Operator. The Train Operator holds a Roadway Worker Protection (RWP) Level 4 certification that expires in March 2024.

The Train Operator stated they were operating Train ID 725 a non-revenue transport train. The Train Operator stated they were working as a Yard Operator at Dulles Yard. They were assigned by the Interlocking Operator to transport four cars to Shady Grove Yard for PI Inspection. The Train Operator stated that they received a briefing from the AMF at Wiehle-Reston East Station.

The Train Operator stated they attempted to maintain half-regulated speed but the incline and decline of the track made it difficult while maintaining visual awareness of the track walkers. The Train Operator stated they observed the mobile work crew and reduced speed, observed their proceed signal and resumed at half the regulated speed after passing.

The Train Operator stated that they were smoking cigarettes and drinking coffee from a cup while operating the train.

TRST

Roadway Worker in Charge (RWIC)

The TRST RWIC is a WMATA employee with 4 years of service and 4 years of experience as a Track Inspector. The TRST RWIC holds a Roadway Worker Protection (RWP) Level 4 certification that expires in August 2024.

The TRST RWIC stated that they performed a Roadway Job Safety Briefing (RJSB) for the work crew. The TRST RWIC stated that they made radio contact with ROCC requesting permission to enter roadway and begin the inspection. The TRST RWIC stated that they the Radio RTC instructed to go direct with the AMF who confirmed they were ready and in place to perform AMF duties at Wiehle-Reston East Station. The TRST RWIC stated that they began the track inspection between Spring Hill Station towards Wiehle-Reston Station.

The TRST RWIC stated that they observed the train approaching around a curve towards the work crew. The TRST RWIC stated that they stated the Train Operator's view of the work crew may have been obscured by a fence. The TRST RWIC stated that they provided the proceed signal to the Train Operator and the train continued but did not blow the horn in acknowledgement.

The TRST RWIC stated that they could not estimate the train's speed, but it bothered them that the Train Operator had not acknowledged the proceed signal. The TRST RWIC stated that the train was a 3000-series¹ and they overheard that the horns may get stuck and not sound.

The TRST RWIC stated that the Train Operator had approached them after the incident and apologized. The TRST RWIC stated that they used a cell phone to report the incident to avoid retaliation from other Train Operators².

Track Inspector

The Track Inspector is a WMATA employee with 3.5 years of service and 3.5 years of experience as a Track Walker. The Track Inspector holds a Roadway Worker Protection (RWP) Level 4 certification that expires in March 2024.

The Track Inspector stated that they attended the RJSB and was provided the work prior to entering the roadway.

The Track Inspector stated that the RWIC advised that a train was approaching, and they cleared to a place of safety. The Track Inspector stated that the train visible 3,000 feet away and the Track Inspector was about 150 feet from the RWIC, who was closer to the train.

The Track Inspector resumed the track inspection once the train had cleared their location.

¹ This statement is inaccurate. Supporting evidence indicated that a 7000-series train passed the RWIC at the time in question.

² No evidence of retaliatory actions, such as excessive use of the train horn, were identified occurring with the RWIC after the event.

Appendix B – RTRA Statements

WMATA/RTRA Incident/Accident Report (Other than Motor Vehicle) Page ___ of ___

Incident Information: This page must be completed for all incidents

Date: 8/15/2023 Incident Time: 10:56 Time Reported: _____ Reported by: Customer Employee
 ROCC Other

Location

Station: N/A Mezzanine #: N/A Track #/Destination: 1/SHAD Chain Marker/Signal Number: _____

TYPE OF INCIDENT

Property Damage Smoke Fire Customer Complaint
 Customer injury Customer Illness Employee Injury Employee Illness
 Criminal Activity Elevator Entrapment Rail Vehicle Incident Other (Explain in description of incident)

WEATHER **LIGHT CONDITIONS (natural lighting)** **LIGHTING (artificial lighting)**

Clear Rain Dawn/Dusk Daylight Lights On Lights Off
 Snow Sleet/Ice Dark Tunnel/Underground Lights Not Working

STATION INCIDENTS: Always include equipment number you use for MOC/AFC/EOC

Elevator/Escalator #: N/A AFC #: _____ Room Number/Location: _____
 Failure Number(s): _____

Parking Lot Paid Area Free Area Garage Station Entrance Stairway # _____ Platform Ancillary Room
 Injury/Illness reported aboard Train Other

Name of Responding Supervisor: _____ Name/Department of PLNT/AFC or other WMATA responder: _____

TRAIN INCIDENTS

Train ID: 725 Destination: SHAD/GREEN Car Numbers (list all cars in consist): 2036/2055 Lead Car: 2036
 Name of Responding Supervisor: SUPERVISOR Name/Department of CMNT/TRST or other WMATA responder: _____

DESCRIBE THE INCIDENT: Include what you did to correct the problem and who you notified and when.
 Describe any property damage and the extent of any injuries.

AUG 15 PM 2:30

FOLLOWED AFE PROCEDURES LEAVING WHILE-RESTED
TR1. 1/2 REGULATED SPEED CONTINUOUSLY ~~BLEW~~ BLEW
HOLD IN INTERVALS. ONCE I GOT VISUAL OF CREW
BLEW HOLD. AFTER ACKNOWLEDGEMENT, BLEW HOLD
TWICE. UPON APPROACH SLOWED TO 15 MPH, CONTINUED
UNTIL CLEAR OF CREW. INCREASED TO 1/2 REGULATED,
BLUWING HOLD IN INTERVALS TO THE NEXT STATION.

Employee Completing Report

Employee Name: (print) _____ Employee Signature: (sign) _____ Employee #: 5762 Date: 8/15/23
 Division: DULLES Run #: 401 Block #: _____ Assigned Days: 3/3

To Be Completed By Reviewing Manager

Supervisor Name: (print) AP Supervisor Signature: _____ Employee #: _____ Date: 15 Aug 23
 Action taken/needed: 7/1/5d
 SMS Number: 20230815 # 110677mf


50.753A 04/12 White Copy: Division or Supervisor Yellow Copy: For any incident involving escalators or elevators; remains in kiosk for use of elevator/escalator inspectors

Document 1 - RTRA Train Operator Incident Statement

Incident Date: 08/15/2023 Time: 10:46 hours
 Final Report – Train Passed Personnel at
 Excessive Speed
 E23565

Drafted By: SAFE 709 09/26/203
 Reviewed By: SAFE 707 – 10/15/2023
 Approved By: SAFE 71 – 10/16/2023

Appendix C – RTRA Personnel Notice



RTRA OPERATIONS PERSONNEL NOTICE

Monday, August 28, 2023
RTRA-603-102-00

Smoke-Free Workplace

Thru an investigation following a recent safety-related incident, surveillance revealed that a train operator was smoking a cigarette while operating a train on mainline. Smoking while carrying out essential job functions not only serves as a distraction, but it is a violation of the Authority's Policy/Instruction (PI) 7.7.5/2 titled Smoke-Free Workplace.

This PI, which is partially displayed to the right, is applicable to all Metro employees and a violation of the policy is grounds for disciplinary action, up to and including termination.

While reviewing the policy, particular emphasis is to be placed on the following points:


- 5.01 Smoking is prohibited in any facility and within 25 feet of any facility.
- 5.02 Smoking is prohibited in all Metro revenue and non-revenue vehicles.
- 6.01 Employees who violate this policy may be subject to disciplinary action, up to and including termination.

To view the policy in entirety, visit [PI 7.7.5 Smoke Free Workplace FINAL_03.31.2021_secured.pdf](#)

Please see an RTRA Supervisor and/or RTRA Division Manager if you have any questions or concerns regarding the policy or the contents within this notice.

| M | POLICY/INSTRUCTION: 7.7.5/2 | Smoke Free Workplace |
|---|--------------------------------|------------------------------------|
| SUPERSEDES: PI 7.7.5/1 | | APPLICABLE TO: All Metro Employees |
| METRO RESERVES THE RIGHT TO ELIMINATE, CHANGE, OR MODIFY THIS POLICY AT ANYTIME. ADDITIONALLY, THE LANGUAGE USED IN THIS POLICY SHOULD NOT BE CONSIDERED AS CREATING A CONTRACT OF EMPLOYMENT BETWEEN METRO AND ANY OF ITS EMPLOYEES OR OTHERWISE ALTERING AN EMPLOYEE'S AT-WILL EMPLOYMENT RELATIONSHIP WITH METRO. | | |
| 1.00 PURPOSE | | |
| The Policy/Instruction (PI) establishes Washington Metropolitan Area Transit Authority's (Metro) commitment to smoke-free workplace. | | |
| 2.00 SCOPE | | |
| 2.01 This PI is applicable to all Metro employees. | | |
| 2.02 The requirements of this PI also apply to contractor personnel and are incorporated through contract provisions as described in section 4.03. | | |
| 3.00 DEFINITIONS | | |
| 3.01 Facility - a physical Metro building or structure, either temporary or permanent, where an employee performs any act in connection with job duties. | | |
| 3.02 Smoking - the act of lighting, burning, inhaling, or exhaling smokable tobacco or other material, such as cigars, pipes, electronic cigarette, and/or pipe. | | |
| 4.00 RESPONSIBILITY | | |
| 4.01 The Senior Vice President and Chief Human Capital Officer (SVP/CHCO) is responsible for ensuring all Metro employees are provided a copy of this policy during new hire orientation and informed of the availability of information to encourage smoking cessation. | | |
| 4.02 The Chief Operating Officer (COO) is responsible for ensuring that signage is conspicuously located in and around all Facilities in accordance with this policy. | | |
| 4.03 The Vice President and Chief Procurement Officer (VP/CEO) is responsible for including the requirements of this policy in contracts including that contractor personnel may be subject to revocation of Metro-based identification and/or removal from Metro property for violating smoke-free workplace requirements. | | |
| 4.04 Managers and Supervisors are responsible for addressing smoke-free workplace violations within their workgroups by culture or contractor personnel as provided in this policy. | | |
| 4.05 Employees are responsible for complying with the provisions of this policy. | | |
| APPROVED BY | DATE APPROVED | CLASS |
| Michael J. ... | 03/31/2021 | HC |
| LEAD | DATE OF LAST REVIEW | PAGE |
| DOP | 03/29/2021 | 1 of 2 |

| M | POLICY/INSTRUCTION: 7.7.5/2 | Smoke Free Workplace |
|--|--------------------------------|------------------------------------|
| SUPERSEDES: PI 7.7.5/1 | | APPLICABLE TO: All Metro Employees |
| 5.00 POLICIES AND PROCEDURES | | |
| 5.01 Smoking is prohibited in any facility and within 25 feet of any facility. | | |
| 5.02 Smoking is prohibited in all Metro revenue and non-revenue vehicles. | | |
| 6.00 ENFORCEMENT | | |
| 6.01 Employees who violate this policy may be subject to disciplinary action, up to and including termination. | | |
| 6.02 Contractor personnel who violate smoke free workplace requirements will be reported to their employer for appropriate action and may be subject to revocation of Metro-based identification and/or removal from Metro property. | | |



To report a potential safety risk, please scan the QR code or use this link: tinyurl.com/RTRARisk
Electronic devices shall only be used in designated areas and in accordance with the WMATA Electronic Device Policy.

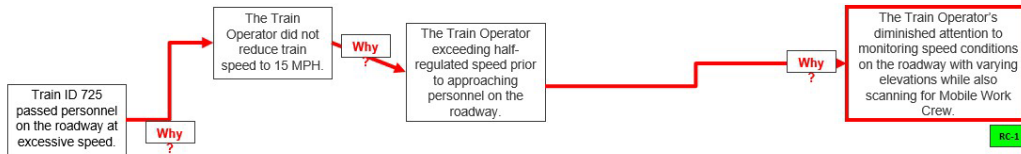
Document 2 – RTRA Operations Personnel Notice, Smoke-Free Workplace

Incident Date: 08/15/2023 Time: 10:46 hours
Final Report – Train Passed Personnel at Excessive Speed
E23565

Drafted By: SAFE 709 09/26/203
Reviewed By: SAFE 707 – 10/15/2023
Approved By: SAFE 71 – 10/16/2023

Appendix D – Why-Tree Analysis

| Problem Statement | Major Cause | Causes | Causes | Root Causes |
|-------------------|-------------|--------|--------|-------------|
|-------------------|-------------|--------|--------|-------------|



5 Root Cause Analysis

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY





Washington Metropolitan Area Transit Authority
Department of Safety (SAFE)
Office of Safety Investigations (OSI)

FINAL REPORT OF INVESTIGATION A&I E23688

| | |
|---------------------------------------|---------------------------------------|
| Date of Event: | October 2, 2023 |
| Type of Event: | Improper RWP |
| Incident Time: | 01:08 Hours |
| Location: | Metro Center Station, tracks 1 and 2 |
| Time and How received by SAFE: | 01:24 Hours – SAFE/MAC |
| WMSC Notification Time: | 02:26 Hours |
| Responding Safety Officers: | WMATA: N/A WMSC: N/A Other: N/A |
| Rail Vehicle: | N/A |
| Injuries: | None |
| Damage: | None |
| Emergency Responders: | None |
| SMS I/A Incident Number: | 20231002#111812MX |

Metro Center Station – Improper RWP

October 2, 2023

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Abbreviations and Acronyms

| | |
|--------------|--|
| AIMS | Advanced Information Management System |
| ARS | Audio Recording System |
| CCTV | Closed-Circuit Television |
| ETO | Exclusive Track Occupancy |
| IT | Office of Information Technology |
| MICC | Metro Integrated Command and Communications Center |
| MOR | Metrorail Operating Rulebook |
| NOAA | National Oceanic and Atmospheric Administration |
| RJSB | Roadway Job Safety Briefing |
| ROCC | Rail Operations Control Center |
| RTC | Rail Traffic Controller |
| RTRA | Office of Rail Transportation |
| RWIC | Roadway Worker in Charge |
| SAFE | Department of Safety |
| SMS | Safety Measurement System |
| SOP | Standard Operating Procedure |
| WMATA | Washington Metropolitan Area Transit Authority |
| WMSC | Washington Metrorail Safety Commission |

**Washington Metropolitan Area Transit Authority
Department of Safety – Office of Safety Investigations**

Executive Summary

**Note that all times listed are approximate and may contain minor variations due to differences between systems of record. **

On Monday, October 2, 2023, the Office of Information Technology (IT) Integrated Network personnel escorted contractors to complete Clearance Verification and Control Survey Work between Farragut North Station and Metro Center Station on tracks 1 and 2.

At 00:46 hours, the Roadway Worker in Charge (RWIC) contacted the Metro Integrated Command and Communications Center (MICC) and requested a Supervisory Power Outage between Chain Markers (CM) A1 & A2 051+00 and B1 & B2 008+00 using Exclusive Track Occupancy (ETO) protection. The Radio Rail Traffic Controller (RTC) instructed the RWIC to stand by and clear of the roadway and to contact the Power Desk. The RWIC contacted the Power Desk, was provided a Supervisory Tag Number, and was instructed to continue to stand by while third rail power was de-energized.

The RWIC instructed two members of their work crew to report to Metro Center Station to assist with the setup of the work area from that location after receiving permission from the MICC to enter the roadway.

At 01:09 hours, the track circuits at Metro Center Station on tracks 1 and 2 displayed occupancy on the roadway. The Radio RTC informed the RWIC that they did not have permission to enter the roadway. The RWIC reported that two members of their work crew were dispatched to Metro Center Station and entered the roadway without permission. At 01:15 hours, the track occupancy at Metro Center Station was cleared.

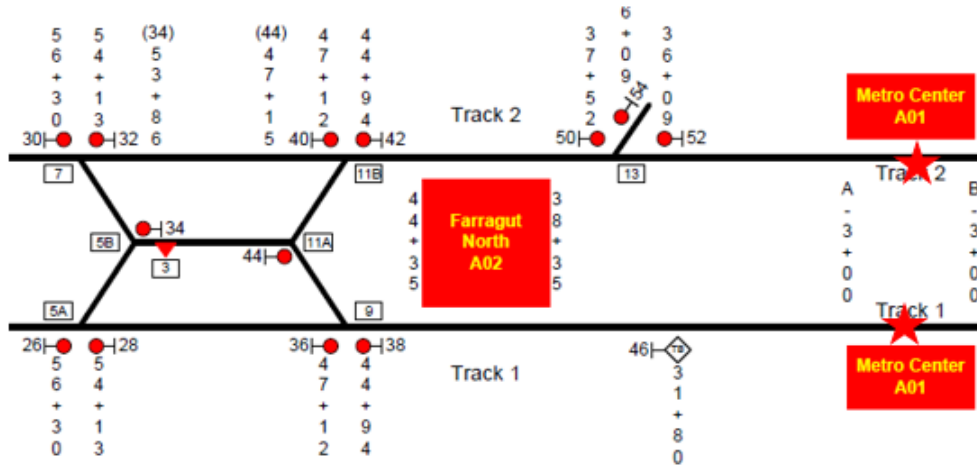
The IT Integrated Network personnel were removed from service. The RWIC advised that the work being performed would be canceled.

The probable cause of the Improper RWP event on October 2, 2023, at Metro Center Station was a misinterpretation of instructions between the work crew, which resulted in two IT Network Technicians entering the roadway after receiving instructions from the RWIC to report to the location to set up one end of the work zone.

Incident Site

Metro Center Station, tracks 1 and 2

Field Sketch/Schematics



The above depiction is not to scale.

Purpose and Scope

The purpose of this accident 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.

Investigative Methods

The investigative methodologies included the following:

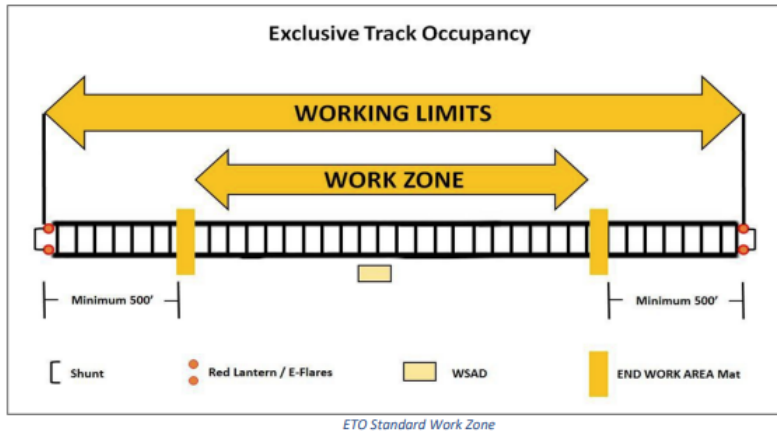
- Site Assessment through document review
- Formal Interviews – SAFE interviewed three individuals as part of this investigation. Interviews included persons present at, during, and after the incident, those directly involved in the response process, and representatives from the Washington Metrorail Safety Commission (WMSC). SAFE interviewed the following individuals:
 - Roadway Worker in Charge (RWIC)
 - IT Network Technician #1
 - IT Network Technician #2
- Informal Interviews – Collected through conversations with individuals during the investigation to provide background and supporting information. Written statements were reviewed from personnel present during the event.
- Documentation Review – Collection of relevant work history information and process documentation contained in WMATA systems of record. These records include:
 - Employee Training Records
 - Employee 30-Day work history review
 - Metrorail Operating Rulebook (MOR)
 - National Oceanic and Atmospheric Administration (NOAA)
 - Metro Integrated Command & Communications (MICC) Incident Report
 - Maximo Data
- System Data Recording Review – Collection of information contained in Metro Data Recording Systems. This data includes:

- Advanced Information Management System (AIMS)
- Audio Recording System (ARS) playback
- Closed-Circuit Television (CCTV)

Investigation

On Monday, October 2, 2023, the Office of IT Integrated Network personnel escorted contractors to complete Clearance Verification and Control Survey Work between Farragut North Station and Metro Center Station on tracks 1 and 2.

The Audio Recording System (ARS) revealed that at 00:46 hours, the RWIC contacted the MICC and requested a Supervisory Power Outage between CM A1 & A2 051+00 and B1 & B2 008+00 using ETO¹ protection.



The Radio RTC instructed the RWIC to stand by and clear of the roadway and to contact the Power Desk. At 00:51 hours, the RWIC contacted the Power Desk and at 00:58 hours, was provided a Supervisory Tag Number and was instructed to continue to stand by while third rail power was de-energized.

The RWIC reported that after performing a Roadway Job Safety Briefing (RJSB), they instructed IT Network Technicians #1 and #2 to report to Metro Center Station to assist with the setup of the work area from that location upon receiving permission from the MICC to enter the roadway.

While IT Network Technicians #1 and #2 were en route to Metro Center, the RWIC contacted IT Network Technician #1 and advised them that the contractors would not be performing any work past Farragut North Station and instructed them to shorten the work area set up to Metro Center Platform limits.

IT Network Technician #1 reported that they understood the request from the RWIC to mean they had permission to enter the roadway when they arrived at Metro Center Station.

¹ ETO working limits supplemental protection must be placed prior to beginning scheduled work. This supplemental protection includes the placement of shunts accompanied by two (2) red lanterns or e-flares placed a minimum of 500' beyond the outside of the work area to define the working limits, as well as "End Work Area" mats placed at both ends of the work area.

Closed-Circuit Television (CCTV) revealed that at 01:05 hours, IT Network Technicians #1 and #2 arrived at Metro Center Station, and at 01:08 hours, they entered the roadway to complete the set up of the work area.

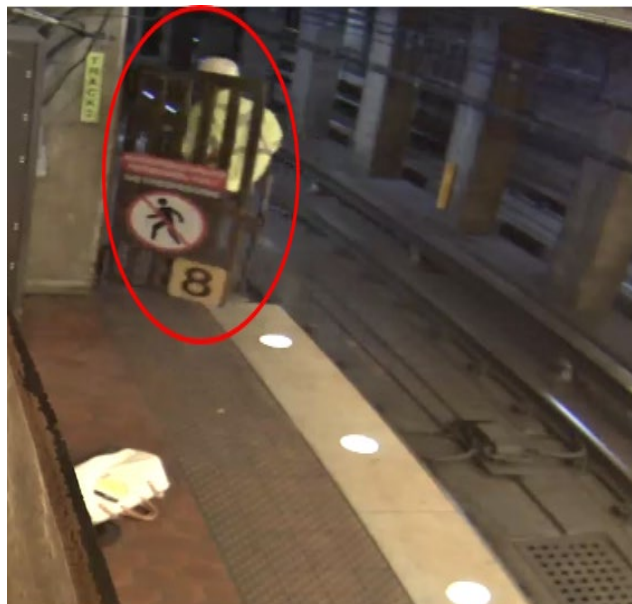


Image 1 – Image of IT Network Technicians entering the roadway at Metro Center Station at 01:08 hours.

At 01:08 hours, the Advanced Information Management System (AIMS) revealed that the track circuits at Metro Center Station on tracks 1 and 2 displayed occupancy on the roadway; this occurs when a shunt is placed on the running rail as part of the work zone setup.

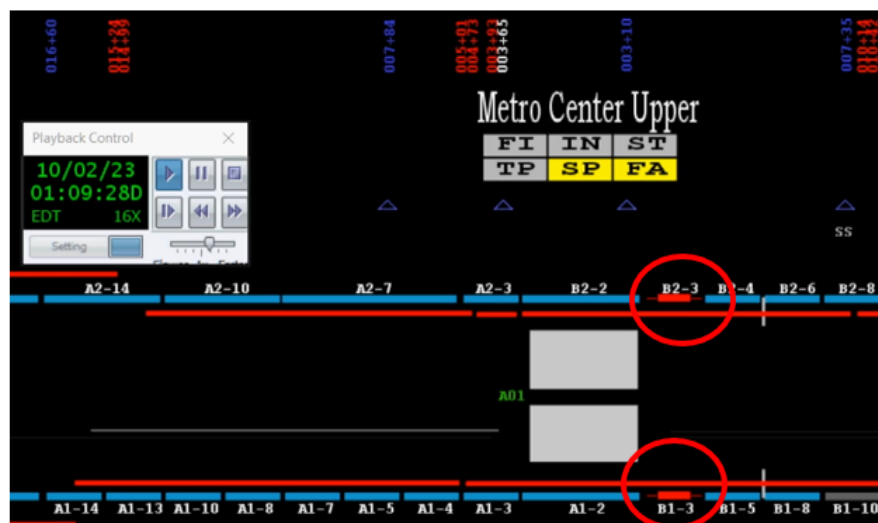


Figure 1 – AIMS Playback displaying track occupancy at CM B1 and B1 03+00 at 01:09 hours.

The Radio RTC informed the RWIC that they did not have permission to enter the roadway. The RWIC advised that they were waiting for permission to enter the roadway and they were not on the roadway. The Radio RTC requested the RWIC to give a landline.

At 01:13 hours, the RWIC contacted the MICC via landline and reported that IT Network Technicians #1 and #2 were dispatched to Metro Center Station to assist with setting up the work area and entered the roadway without permission. The RWIC instructed the IT Network Technicians to remove the shunts from the roadway.

At 01:15 hours, AIMS revealed that the track occupancy at Metro Center Station was cleared.

The Button RTC notified the AOM of the event, and the AOM instructed that IT Network Technicians #1 and #2 be removed from service.

At 01:16 hours, the Radio RTC confirmed with the RWIC that the IT Network Technicians were clear of the roadway.

At 01:20 hours, the RWIC requested permission to enter the roadway; the Radio RTC requested a landline. At 01:22 hours, the RWIC contacted the MICC via landline and advised that they were located at Farragut North Station and the IT Network Technicians were located at Metro Center Station when they entered the roadway without permission. The Button RTC informed the RWIC that the IT Network Technicians would be removed from service.

The RWIC determined that the work would be canceled due to the manpower shortage.

Chronological Event Timeline

A review of ARS playback, i.e., phone and radio communications, revealed the following timeline:

| Time | Description |
|----------------|---|
| 00:46:26 hours | <u>RWIC</u> : Requested a Supervisory Power Outage between CM B1 & B2 008+00 to A1 & A2 051+00 using ETO protection. <u>Radio RTC</u> : Acknowledged. Instructed to stand by and clear and contact the Power Desk. <u>RWIC</u> : Acknowledged and repeated. [Radio Ops 1] |
| 00:51:29 hours | <u>RWIC</u> : Requested a Supervisory Power Outage between CM B1 & B2 008+00 to A1 & A2 051+00 using ETO protection. <u>Power Desk</u> : Acknowledged. Instructed to stand by and clear. <u>RWIC</u> : Acknowledged and repeated. [Phone MOC PWR] |
| 00:58:32 hours | <u>Power Desk</u> : Provided Supervisory Tag Number 20232757055S. <u>Button RTC</u> : Acknowledged and repeated. [Phone Ops 1] |
| 01:05:33 hours | IT Network Technicians arrived at Metro Center Station. [CCTV] |
| 01:08:06 hours | IT Network Technicians entered the roadway at Metro Center Station. [CCTV] |
| 01:08:56 hours | Track occupied at Metro Center Station on tracks 1 and 2. [AIMS] |
| 01:09:47 hours | <u>Radio RTC</u> : Informed the RWIC that they do not have permission to enter the roadway. <u>RWIC</u> : Advised they were waiting for permission to enter the roadway and were not on the roadway. [Radio Ops 1] |
| 01:11:02 hours | <u>Radio RTC</u> : Instructed to contact the MICC via landline. <u>RWIC</u> : Acknowledged and repeated. [Radio Ops 1] |
| 01:13:56 hours | <u>RWIC</u> : Reported that units were located at Metro Center Station and that they were located at Farragut North Station. The units at Metro Center Station entered the roadway without permission. [Phone Ops 1] |
| 01:15:20 hours | Track occupancy cleared. [AIMS] |
| 01:15:45 hours | <u>Button RTC</u> : Notified the AOM of the incident. <u>AOM</u> : Instructed to have personnel removed from service. [Phone Ops 1] |
| 01:16:03 hours | <u>Radio RTC</u> : Instructed the RWIC to verify that the units were clear of the roadway. |

| Time | Description |
|----------------|--|
| | <u>RWIC</u> : Confirmed that they spoke with units, and they were clear of the roadway. [Radio Ops 1] |
| 01:20:39 hours | <u>RWIC</u> : Advised received Supervisory Tag Number and requested permission to enter the roadway. <u>Radio RTC</u> : Instructed to contact ROCC. [Radio Ops 1] |
| 01:22:43 hours | <u>RWIC</u> : Advised that they were located at Farragut North Station and other units were located at Metro Center Station when they entered the roadway without permission. <u>Button RTC</u> : Requested identification information of the personnel that entered the roadway. [Phone Ops 1] |
| 01:31:01 hours | <u>Button RTC</u> : Advised the personnel that entered the roadway would be removed from service. <u>RWIC</u> : Advised cancellation of work due to manpower shortage. [Phone Ops 1] |

Note: Times above may vary from other systems' timelines based on clock settings.

Office of Systems Maintenance, Office of Radio Communications (COMR)

Radio communication issues were not observed during this event.

Office of Information Technology Integrated Network (IT)

IT investigated the event and determined that IT Network Technicians #1 and #2 entered the roadway without permission. The employees received disciplinary action as a result of the violation.

Interview Findings

As part of the investigation launched into the event, SAFE interviewed three people. The interviews identified the following key findings associated with this event. Findings detailed below include reported information from involved personnel and may conflict with other data sources contained in the report.

Roadway Worker in Charge (RWIC)

- The RWIC said they conducted a safety briefing after contacting ROCC and the Power Desk for a Supervisory Outage for the work area between CM B1 and B2 008+00 to A1 and A2 051+00.
- The RWIC stated that they instructed IT Network Technicians #1 and #2 to go to Metro Center Station to set up the track when ROCC and Power give permission.
- The RWIC stated that the contractor they were escorting advised them that their work would not reach Metro Center Station.
- The RWIC stated that they contacted IT Network Technician #1 via cell phone and told them that when they arrived at Metro Center Station and received the track rights, they could set up at the platform since the contractors' work would not reach Metro Center Station.
- The RWIC stated that ROCC contacted them and said that two shunts were installed at Metro Center Station without permission to enter the roadway.
- The RWIC stated that they did not give permission to enter the roadway and that IT Network Technician #1 was not monitoring their radio since ROCC had not permitted to enter the roadway.

IT Network Technician #1

- The IT Network Technician stated that their assignment was to set up the work area for contractors past Metro Center Station.
- Initially, the IT Network Technician stated that they had received a job safety briefing at Farragut North Station and was instructed by the RWIC to go to Metro Center Station.
- The IT Network Technician stated that while in the vehicle with IT Network Technician #2, and on the way to Metro Center Station, the RWIC called and informed them that they did not have to set up the entire work area and to just set up at the end of the platform.
- The IT Network Technician stated that they set up the work area when they arrived at Metro Center Station.
- The IT Network Technician stated that the RWIC did not mention that they had permission to enter the roadway, only to set up the shunts at the end of the platform.
- The IT Network Technician stated that in the past, the RWIC would call when it was time to set up, and they assumed that was the call.
- The IT Network Technician stated that they did have a handheld radio and did not hear any communications because the radio was turned off while they were driving, and upon arriving at Metro Center Station, they did not turn on their handheld radio.

IT Network Technician #2

- The IT Network Technician stated after the safety briefing with the IT crew and the contractors at Farragut North Station, the RWIC instructed them and IT Network Technician #1 to go and set up the other end of the work area at Metro Center Station.
- The IT Network Technician stated that they heard IT Network Technician #1 on the phone with the RWIC, said they were driving and would call when they were finished, and then hung up. The IT Network Technician stated that IT Network Technician #1 said that the entire work area did not need to be set up, just at the end of the platform.
- The IT Network Technician stated that when they arrived at Metro Center Station, IT Network Technician #1 instructed them to start putting down the shunts and the mat.
- The IT Network Technician stated that a couple of minutes later, IT Network Technician #1 instructed them to pick up the shunts and the mat.

Weather

On October 2, 2023, at the time of the incident, NOAA recorded the temperature as 64°F, with clear skies. The event occurred within a tunneled section of the rail system. The weather did not contribute to this event (Weather source: NOAA – Location: Washington, D.C.).

Related Rules and Procedures

Metrorail Operating Rulebook (MOR) – Roadway Worker Protection
Standard Operating Procedure (SOP) - 28.5.8 Additional Requirements when more than One Crew is Working in a Single Work Area (Piggybacking)

Human Factors

Fatigue

Signs and Symptoms of Fatigue

IT Network Technician #1

We evaluated signs and symptoms of fatigue that may have been present during the incident. No signs or symptoms of fatigue were detected from the available data. The incident video was reviewed for signs of IT Network Technician #1's fatigue. No signs or symptoms of fatigue were evident from the video. IT Network Technician #1 reported feeling fully alert during the incident. IT Network Technician #1 reported experiencing no symptoms of fatigue in the time leading up to the incident.

IT Network Technician #2

We evaluated signs and symptoms of fatigue that may have been present during the incident. No signs or symptoms of fatigue were detected from the available data. The video of the incident was reviewed for signs of IT Network Technician #2's fatigue. No signs or symptoms of fatigue were evident from the video. IT Network Technician #2 reported feeling fully alert during the incident. IT Network Technician #2 reported experiencing no symptoms of fatigue in the time leading up to the incident.

Fatigue Risk

IT Network Technician #1

We evaluated incident data for fatigue risk factors. No significant risk was identified. The incident time of day did not suggest an increased risk of fatigue-related impairment. IT Network Technician #1 reported a regular sleep schedule in the days leading up to the incident. IT Network Technician #1 worked one shift in the days leading up to the incident. IT Network Technician #1 was awake for 3.38 hours at the time of the incident. IT Network Technician #1 reported 7 hours of sleep in the 24 hours preceding the incident. The off-duty period was 8 hours, which provided an opportunity for 6-7 hours of sleep. This was more than IT Network Technician #1's usual workday sleep durations. The employee reported no issues with sleep.

IT Network Technician #2

We evaluated incident data for fatigue risk factors. No significant risk was identified. The incident time of day did not suggest an increased risk of fatigue-related impairment. IT Network Technician #2 reported a regular sleep schedule in the days leading up to the incident. IT Network Technician #2 worked one shift in the days leading up to the incident. IT Network Technician #2 was awake for 3.63 hours at the time of the incident. IT Network Technician #2 reported 7 hours of sleep in the 24 hours preceding the incident. The off-duty period was 8 hours, which provided an opportunity for 6-7 hours of sleep. The employee reported no issues with sleep.

Post-Incident Toxicology Testing

WMATA's Drug and Alcohol Program determined that IT Network Technician #1 complied with and was not in violation of the Drug and Alcohol Policy and Testing Program 7.7.3/6.

WMATA's Drug and Alcohol Program determined that IT Network Technician #2 complied with and was not in violation of the Drug and Alcohol Policy and Testing Program 7.7.3/6.

Findings

- The RWIC instructed two IT Network Technicians to report to Metro Center Station to assist with setting up the work area while they remained at Farragut North Station to set up that end of the work area.
- The RWIC advised IT Network Technician #1 to shorten the work area to within the platform limits at Metro Center Station.

Immediate Mitigation to Prevent Recurrence

- Shunts were removed from the roadway.
- IT Network personnel were removed from service.

Probable Cause Statement

The probable cause of the Improper RWP event at Metro Center Station was a misinterpretation of instructions between the work crew, which resulted in two IT Network Technicians entering the roadway after receiving instructions from the RWIC to report to the location to set up one end of the work zone.

Recommended Corrective Actions

| Corrective Action Code | Description | Responsible Party | Estimated Completion Date |
|----------------------------|--|-------------------|---------------------------|
| 111812_SAFE CAPS_IT_001 | IT Integrated Network Technicians will attend 5-day refresher training on Roadway Worker Protection. | IT | Completed |

Appendices

Appendix A – Interview Summaries

The below narratives summarize the incident and represent the statements made by the involved individual. As such, times and details may present a conflict with the data contained in systems of record.

Roadway Worker in Charge (RWIC)

The RWIC is a WMATA employee with 29 years of service and 29 years of experience as an IT Network Technician. The RWIC holds a Roadway Worker Protection (RWP) Level 4 certification that expires in March 2024.

The RWIC stated that on October 1, 2023, and into October 2, 2023, they were assigned to Farragut North Station as the RWIC. The RWIC stated that they conducted a safety briefing after contacting ROCC and the Power Desk for a Supervisory Outage for the work area between CM B1 and B2 008+00 to A1 and A2 051+00. The RWIC stated that ROCC instructed them to stand by and stand clear. The RWIC stated that the Power Desk advised them that they would call back when the Supervisory Tag was ready.

The RWIC stated that they instructed IT Network Technicians #1 and #2 to go to Metro Center Station to set up the track when ROCC and Power give permission. The RWIC stated that the contractor they were escorting advised them that their work would not reach Metro Center Station. The RWIC stated that they contacted IT Network Technician #1 via cell phone and told them that when they arrived at Metro Center Station and received the track rights, they could set up at the platform since the contractors' work would not reach Metro Center Station.

The RWIC stated that ROCC contacted them and said that two shunts were installed at Metro Center Station without permission to enter the roadway. The RWIC said they contacted IT Network Technician #1 via cell phone and asked if they were on the roadway. The RWIC stated that IT Network Technician #1 responded that the RWIC told them to set up the track. The RWIC stated that they did not give permission to enter the roadway and that IT Network Technician #1 was not monitoring their radio since ROCC had not permitted to enter the roadway.

IT Network Technician #1

The IT Network Technician is a WMATA employee with 20 years of service and 19 years of experience as an IT Network Technician. The IT Network Technician holds a Roadway Worker Protection (RWP) Level 4 certification that expires in January 2024.

The IT Network Technician stated that their assignment was to set up the work area for contractors past Metro Center Station.

Initially, the IT Network Technician stated that they had received a job safety briefing at Metro Center Station and was instructed by the RWIC to go to Farragut North Station for a job safety briefing at Farragut North Station; they were then instructed by the RWIC to go to Metro Center Station.

The IT Network Technician stated that they headed to Metro Center Station with IT Network Technician #2.

The IT Network Technician stated that while in the vehicle on the way to Metro Center Station, the RWIC called and informed them that they did not have to set up the entire work area or just set up at the end of the platform. The IT Network Technician stated that they told the RWIC that they had not arrived at Metro Center Station.

The IT Network Technician stated that they advised the RWIC that when they arrived at Metro Center Station, they would set everything up and then give a call; the RWIC affirmatively responded. The IT Network Technician stated that they set up the work area when they arrived at Metro Center Station.

The IT Network Technician stated that the RWIC did not mention that they had permission to enter the roadway, only to set up the shunts at the end of the platform. The IT Network Technician stated that in the past, the RWIC would call when it was time to set up, and they assumed that was the call.

The IT Network Technician stated that they had a handheld radio and did not hear any communications because the radio was turned off while driving and had not arrived at the work location. The IT Network Technician stated that they did not turn on their handheld radio upon arriving at Metro Center Station.

The IT Network Technician stated that the RWIC contacted them after they went to the roadway.

IT Network Technician #2

The IT Network Technician is a WMATA employee with 19 years of service and 18 years of experience as an IT Network Technician. The IT Network Technician holds a Roadway Worker Protection (RWP) Level 4 certification that expires in November 2023.

The IT Network Technician stated that on Sunday, October 1, 2023, after the safety briefing with the IT crew and the contractors at Farragut North Station, the RWIC instructed them and IT Network Technician #1 to go and set up the other end of the work area at Metro Center Station. The IT Network Technician stated that as they drove the vehicle to Metro Center Station, the IT Network Technician #1 cellphone rang. At the end of the conversation, they heard IT Network Technician #1 say they were driving and would call when they were finished, then hung up. The IT Network Technician stated that they asked IT Network Technician #1 who was on the phone, and IT Network Technician #1 said that it was the RWIC, and they said that the entire work area did not need to be set up, just at the end of the platform.

The IT Network Technician stated that when they arrived at Metro Center Station, IT Network Technician #1 instructed them to start putting down the shunts and the mat. The IT Network Technician stated that a couple of minutes later, IT Network Technician #1 instructed them to pick up the shunts and the mat. The IT Network Technician stated that IT Network Technician #1 informed them that the RWIC called and said that ROCC instructed them to clear the work area.

Appendix B – Roadway Job Safety Briefing Form

WMATA Roadway Job Safety Briefing Form



This form must be completed legibly and accurately and be retained and made available for inspection for a period of 90 days.

Part 1: General Job Briefing

| | | |
|---|---|--|
| 1 | Date: 10/04/2023 Time: 00:01 | RWIC: [REDACTED] |
| | RWIC Call #: 5102 | RWIC Cell Phone #: [REDACTED] |
| 2 | Safety Contact: | |
| | RWP Rule: Always be aware of your surroundings | |
| 3 | Work Location: Always Assume the Third Rail is Energized | |
| | Job Task(s): Survey | |
| 4 | Worksite, Electrical, Chemical, or Environmental Hazards: N/A | |
| 5 | PPE Inspected: <input checked="" type="checkbox"/> | Electronic Device Policy Reviewed: <input checked="" type="checkbox"/> |
| | RWP Stickers Inspected: <input checked="" type="checkbox"/> | Tools and Equipment Inspected: <input checked="" type="checkbox"/> |
| | Radio Certification Date Inspected: <input checked="" type="checkbox"/> | Radio Checks Performed: <input checked="" type="checkbox"/> |
| | What Specialized PPE Will Be Used? NA | |
| 6 | Emergency Response Plan: The closest hospital GW Hospital | |

Part 2: RWP Briefing: This section must be filled out before any Roadway Workers enter the Roadway.

**Track Time On/Off: : 1 : , : 1 : , : 1 : ** NA

| | | | |
|----|---|--|---------------------------------|
| 7 | Rail Line: RED | Track Number(s): 1&2 | Track Access Guide (TAG) Speed: |
| | Working Limits Chain Markers: 800+00 - A051+00 B1/B2 - A1/A2 | | |
| | OPS Radio Channel: 1 | OPS Phone Number: [REDACTED] | |
| | Place of Safety: Platform | Time Needed to Reach Place of Safety: 10 min | |
| | Are There Red Hot Spots Within Your Working Limits? Yes <input type="checkbox"/> No <input type="checkbox"/> | | |
| | Red Hot Spot Chain Markers: A135+00 | Red Hot Spot Hazard(s): curve | |
| 8 | Form of RWP: IT <input type="checkbox"/> ETO Authority <input checked="" type="checkbox"/> Local Signal Control <input type="checkbox"/> AMF <input type="checkbox"/> FT <input type="checkbox"/> | | |
| | RWP Notes: Restricted view is a red hot spot. | | |
| 9 | Advanced Mobile Flagger Call #(s) or Last Name(s): NA | | |
| | Advanced Mobile Flagger Placement: NA | | |
| | Watchman/Lookout Placement: NA | | |
| | Required Site Distance: | Watchman/Lookout Rotation Schedule: NA | |
| 10 | Will There be a Speed Restriction on the Adjacent Track? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | |
| | How Will the Speed Restriction be Implemented? NA | | |
| 11 | Will Class 2 Vehicles be Part of the Working Limits? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | |
| | # of Class 2 Vehicles: | Type of Class 2 Vehicles: NA | |

FORM-SAFE-SRM-001-00

52.002 06/22

Document 1 – Roadway Job Safety Briefing Form, Page 1 of 2

Incident Date: 10/02/2023 Time: 01:08 hours
Final Report – Improper RWP
E23688

Drafted By: SAFE 707 – 11/29/2023
Reviewed By: SAFE 70 – 12/1/23
Approved By: SAFE 70 – 12/1/23

WMATA Roadway Job Safety Briefing Form



This form must be completed legibly and accurately and be retained and made available for inspection for a period of 90 days.

Part 2: RWP Briefing, continued:

| | | | | |
|--|---|------------------------|------------------------------------|------------------------|
| 12 | Power Outage: Red Tag <input type="checkbox"/> Supervisory <input checked="" type="checkbox"/> | | Hot Sticking Chain Markers: | |
| | Red/Supervisory Tag #: 23 275 755 | | NA | |
| | Red/Supervisory Tag Holder: [REDACTED] | | | |
| | Insulated Mat(s) Color Blue <input type="checkbox"/> Red <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Yellow <input checked="" type="checkbox"/> NA | | | |
| WSAD Certification Due | | WSAD Serial #/Asset ID | WSAD Certification Due | WSAD Serial #/Asset ID |
| / / NA | | | / / | NA |
| / / | | | / / | |
| Will a Piggyback Crew(s) be Working Within Your Working Limits? Yes <input type="checkbox"/> No <input type="checkbox"/> | | | | |
| 13 | Crew Leader/EIC Call #(s): | | Piggyback Work Area Chain Markers: | |
| | Piggyback Work Assignment(s): | | | |

Part 3: Good Faith Challenge: The following must be read aloud by the RWIC to the Roadway Workers.

"WMATA guarantees each Roadway Worker the right to challenge, in good faith, the effectiveness of the Roadway Worker Protection being provided. The Roadway Worker making the challenge, and those that are sympathetic to the challenge, shall remain clear of the roadway until the challenge has been resolved."

| | |
|---|-----------------|
| RWP Issues: | Worker Name(s): |
| NA | NA |
| Was the GFC Issue Resolved? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |

Part 4: Roadway Worker Acknowledgement

"I understand and agree with all aspects of the Roadway Job Safety Briefing I just received. I am adequately protected from any train movement or roadway hazards. I understand I have a responsibility to conduct myself in a safe manner at all times."

ROADWAY WORKERS HAVE THE RIGHT AND RESPONSIBILITY TO INITIATE A GOOD FAITH CHALLENGE WHEN NECESSARY

| Roadway Worker Signature | Employee ID # | Roadway Worker Signature | Employee ID # | Crew Leader/EIC Signature | Crew Leader/EIC Employee ID # |
|--------------------------|---------------|--------------------------|---------------|---------------------------|-------------------------------|
| [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Part 5: RWIC Signature(s)

| | | | |
|---------------------------|------------|-------------------------------|---------------------------|
| Additional RWIC Comments: | | | |
| [REDACTED] | | | |
| RWIC Signature: | [REDACTED] | RWIC Employee ID #: | [REDACTED] Date: 10/02/23 |
| Relieving RWIC Name: | [REDACTED] | Relieving RWIC Employee ID #: | |
| Relieving RWIC Signature: | NA | Date/Time: | / / : : |
| Relieving RWIC Call #: | NA | Relieving RWIC Cell Phone #: | NA |

Appendix C – Written Statements

From: [REDACTED]
To: [REDACTED]
Subject: FW: OT Assignment A02 10/02/23 statement [REDACTED]
Date: Thursday, October 5, 2023 11:55:00 AM

From: [REDACTED]
Sent: Tuesday, October 3, 2023 9:08 AM
To: [REDACTED]
Cc: [REDACTED]
Subject: OT Assignment A02 10/02/23

On October 1st into October 2nd I was assigned to A02 as the RWIC. We conducted our Safety Briefing after calling OCC and Power Desk for a Supervisory Outage for the work area, B008+00 B1/B2 to A051+00 A1/A2. OCC instructed me to standby and stand clear. Power Desk told me that they were going to call me when my Supervisory Tag was ready.

I instructed [REDACTED] to go to A01, Metro Center to setup track when OCC/Power give us permission.

The contractor advised that they were not going to reach Metro Center. I called [REDACTED] and told him that when we get track right they could setup at the Platform because the contractors were not going to reach A01.

OCC called me and said two shunts were installed at A01 without permission to enter the Roadway. I called [REDACTED] and asked him if they on the Roadway and told me that I told him setup track.

If they were monitoring the Radio, they would have known that OCC had not given me any permission to enter the Roadway.

Document 3 – Written Statement of the RWIC, Page 1 of 1

From: [REDACTED]
To: [REDACTED]
Subject: FW: Sunday night incident [REDACTED] statement
Date: Thursday, October 5, 2023 11:56:00 AM

From: [REDACTED]
Sent: Tuesday, October 3, 2023 7:28 AM
To: [REDACTED]
Subject: FW: Sunday night incident

From: [REDACTED]
Sent: Tuesday, October 3, 2023 7:28 AM
To: [REDACTED]
Subject: Sunday night incident

[REDACTED]

On the night of Sunday October 1st me and [REDACTED] reported to A02 for OT. We were instructed to go to A01 to setup that side of the work area. While in the car driving to A01 [REDACTED] (RWIC) contacted me and said, "Y'all don't have to setup the whole work area just to the platform because the contractors not coming down that far." I told [REDACTED] we haven't made it to the location yet we are still driving and once we get there I will contact him to let him know when we are finished. [REDACTED] replied "OK"

Document 4 - Written Statement of IT Network Technician #1, Page 1 of 1

From: [REDACTED]
To: [REDACTED]
Subject: FW: Sunday night incident [REDACTED]
Date: Thursday, October 5, 2023 11:57:00 AM

From: [REDACTED]
Sent: Tuesday, October 3, 2023 8:17 AM
To: [REDACTED]
Subject: Sunday night incident

[REDACTED] good morning ,

Sunday 10/1/23 after we had safety briefing with the IT crew and the contractors at A2 .
the Rwic [REDACTED] instructed us [REDACTED] and I to go set up the other end of our work area which is A01 .

while in our way to the location I was driving the vehicle , [REDACTED] phone ring and started talking at the end of his conversation ,

I heard him said we are driving now ;I will call you when we are finished and he hangup the phone and I asked him who that.

He told me [REDACTED] ; he told him we don't need the entire work area just set at end of the platform .

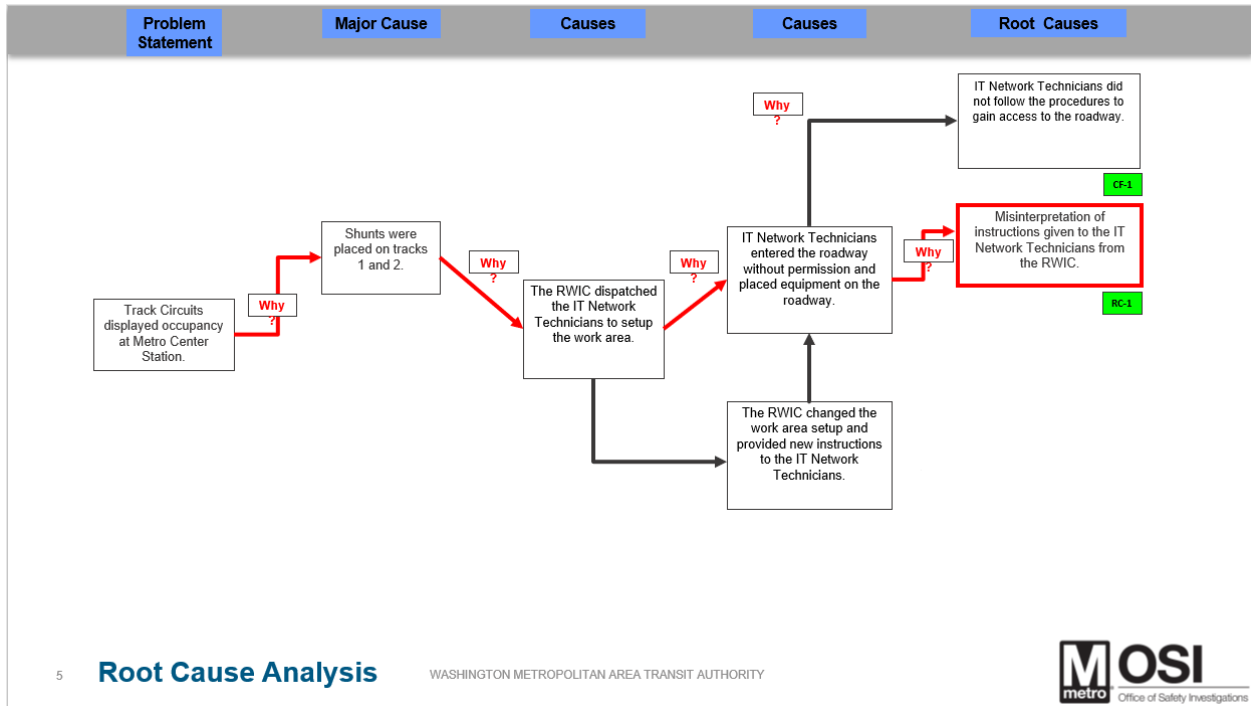
As soon as we got to the location, [REDACTED] told me lets started put the shunts and the mat couple minutes [REDACTED] told me.

To pick up the shunts and the mat , he said [REDACTED] call him said he received call from ROCC to clear the work area .

[REDACTED]

Document 5 - Written Statement of IT Network Technician #2, Page 1 of 1

Appendix D – Why-Tree Analysis





Washington Metropolitan Area Transit Authority
Department of Safety (SAFE)
Office of Safety Investigations (OSI)

FINAL REPORT OF INVESTIGATION A&I E23732

| | |
|---------------------------------------|--|
| Date of Event: | October 17, 2023 |
| Type of Event: | O-23: Improper Roadway Worker Protection (RWP) |
| Incident Time: | 10:27 hours |
| Location: | Morgan Boulevard Station, G1 520+00 |
| Time and How received by SAFE: | October 18, 2023 via Safety Hotline |
| WMSC Notification Time: | October 19, 2023 – 12:44 hours |
| Responding Safety Officers: | None |
| Rail Vehicle: | N/A |
| Injuries: | None |
| Damage: | None |
| Emergency Responders: | None |
| SMS I/A Number | 20231024#112329 |

Morgan Boulevard Station G1 520+00 – Improper Roadway Worker Protection

October 17, 2023

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Abbreviations and Acronyms

| | |
|--------------|--|
| AIMS | Advanced Information Management System |
| ARS | Audio Recording System |
| BDA | By Direction Amplifier |
| CCTV | Closed-Circuit Television |
| CM | Chain Marker |
| FT | Foul Time |
| GEM | General Equipment Mechanic |
| MICC | Metro Integrated Command and Communications Center |
| MOR | Metrorail Operating Rulebook |
| NOAA | National Oceanic and Atmospheric Administration |
| OSI | Office of Safety Investigations |
| RTC | Rail Traffic Controller |
| RTRA | Office of Rail Transportation |
| SAFE | Department of Safety |
| SMS | Safety Measurement System |
| WMATA | Washington Metropolitan Area Transit Authority |
| WMSC | Washington Metrorail Safety Commission |

**Washington Metropolitan Area Transit Authority
Department of Safety – Office of Safety Investigations**

Executive Summary

**Note that all times listed are approximate and may contain minor variations due to differences between systems of record. **

On October 18, 2023, the Office of Safety Investigations (OSI) received a safety hotline notification of a near miss event on the blue line at chain marker (CM) G1 520+00 – 518+00. The involved personnel reported that a train passed them while on the catwalk under Foul Time (FT) protection. The Office of Safety Investigations (OSI) launched a preliminary investigation to substantiate the near miss report. The initial data collection identified that the incident happened on October 17, 2023, and was not reported to the Metro Integrated Communications Center (MICC).

An investigation using the Audio Recording System (ARS) confirmed that at 10:27 hours, the General Equipment Mechanic (GEM) requested FT to enter the jet fan control room. The Radio Rail Traffic Controller (RTC) acknowledged the request, instructing them to stand by. Misinterpreting the communication, the GEM and Carpenter proceeded toward the jet fan control room. While walking to the jet fan control room, Train ID 613 passed the personnel and promptly informed the Radio RTC that personnel were in the roadway. The Radio RTC then contacted the GEM to request their location. The GEM transmitted to the Radio RTC that they were at the emergency egress door. The Radio RTC then granted them FT. The personnel completed their work and left the area under FT without further incident. The next day, the GEM reported the event to their supervisor, who then contacted the Safety Hotline.

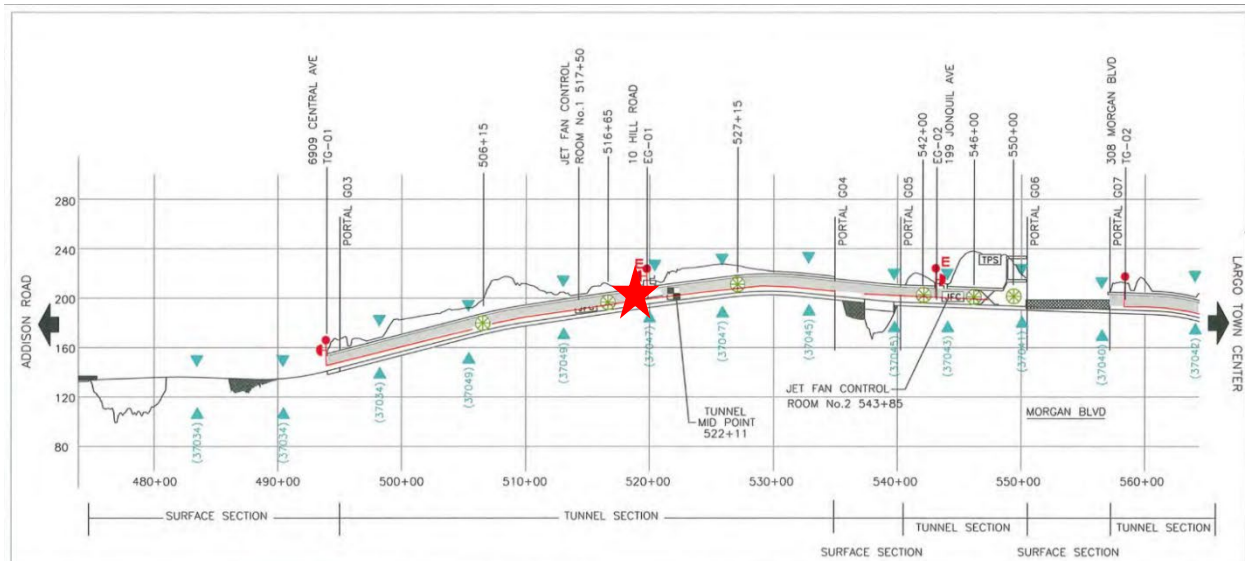
There were no injuries or damages resulting from this event.

The probable cause of the Improper RWP event on October 17, 2023, at CM G1 520+00 – 518+00 on the blue line was ineffective communication. The GEM misunderstood the radio transmission from the Radio RTC, interpreting the acknowledgment of their FT request as permission granted. This misinterpretation resulted in the personnel proceeding towards the jet fan control room under the false assumption of FT, leading to a near-miss incident with Train ID 613.

Incident Site

Tunneled section of track with no continuous handrails, between at CM G1 520+00 – 518+00.

Field Sketch/Schematics



The above depiction is not to scale.

Purpose and Scope

The purpose of this accident 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.

Investigative Methods

The investigative methodologies included the following:

- Physical Site assessment
- Formal Interviews – SAFE interviewed two individuals as part of this investigation. The interviews included persons present at, during, and after the incident, those directly involved in the response process, and representatives from the Washington Metrorail Safety Commission (WMSC). SAFE interviewed the following individuals:
 - GEM
 - Carpenter
- Informal Interviews – Collected through conversations with individuals during the investigation to provide background and supporting information. Written statements were reviewed from personnel present during the event.
- Documentation Review – A collection of relevant work history information and process documentation contained in Metro systems of record. These records include:
 - Metrorail Operating Rulebook (MOR)
 - National Oceanic and Atmospheric Administration (NOAA)
 - 30-Day Work History
 - Written Statements
 - Track Chart Map

- System Data Recording Review – A collection of information contained in Metro Data Recording Systems. This data includes:
 - Audio Recording System (ARS) playback, including OPS 2 Radio

Investigation

On October 17, 2023, at 10:27 hours, the GEM contacted the Radio RTC to request FT to enter the jet fan control room. A carpenter was accompanying them to check a lock on the room door. The ARS confirmed that the GEM initially requested FT to walk to the jet fan control room from an emergency egress entrance.



Figure 1: This shows the emergency egress door that was used to access the roadway.

The Radio RTC acknowledged their request but did not permit them to enter the roadway to enter the jet fan control room. The Radio RTC instructed the GEM to stand by. The GEM and Carpenter misunderstood the radio transmission and proceeded onto the catwalk toward the jet fan control room. While walking to the jet fan control room, Train ID 613 passed the personnel and informed the Radio RTC that personnel were in the roadway.



Figure 2: This shows the catwalk the personnel were on when Train ID 613 passed them.

The Radio RTC then contacted the GEM to request their location. The GEM informed the Radio RTC they were at the emergency egress door. The emergency egress door is six feet from the running rail.



Figure 3: This image shows the proximity of the emergency egress door to the roadway.

When the Radio RTC asked the GEM's location, they failed to inform the Radio RTC that a train passed their location while the Carpenter was on the catwalk. Once the GEM informed the Radio RTC, that they were at the emergency egress, the Radio RTC granted the GEM FT to access the jet fan control room.

At 10:49 hours, after they completed their work in the jet fan control room, the GEM contacted the Radio RTC to request FT to exit the room. The Radio RTC granted them FT to exit the jet fan control room. At 10:52 hours, the GEM contacted the Radio RTC to relinquish their FT.

Chronological Event Timeline

A review of ARS playback, i.e., phone and radio communications, revealed the following timeline:

| Time | Description |
|----------------|---|
| 10:27:49 hours | <u>GEM</u> : Contacted the Radio RTC to request FT to walk from CM G1 520+00 – 518+00 to the jet fan control room for an inspection with the Carpenter. [Radio Ops. 2] |
| 10:28:38 hours | <u>Radio RTC #1</u> : Responded that they copied the GEM's request for FT and gave a 100% repeat back. [Radio Ops. 2] |
| 10:29:44 hours | <u>Radio RTC #1</u> : Contacted the GEM and asked if they were accessing the roadway from an access gate or a fan shaft. <u>GEM</u> : Responded that they were using an emergency egress entrance. <u>Radio RTC #1</u> : Acknowledged their transmission and instructed them to stand by and stand clear. [Radio Ops. 2] |
| 10:30:19 hours | <u>Train Operator of Train ID 613</u> : Asked the Radio RTC if personnel were in the roadway from Addison Road to Morgan Boulevard Station. <u>Radio RTC #1</u> : Informed the Train Operator that no one was permitted to enter the roadway. <u>Train Operator</u> : Informed the Radio RTC that it was a person on the roadway, and they weren't sure if they came from an access room but on the roadway. [Radio Ops. 2] |
| 10:30:43 hours | <u>Radio RTC #1</u> : Contacted the GEM to inquire if they were on the roadway. <u>GEM</u> : Responded that they were at the entrance of the egress. [Radio Ops. 2] |
| 10:30:56 hours | <u>Radio RTC #1</u> : Granted the GEM FT to enter the roadway to access the jet fan control room and provided the time it was granted. <u>GEM</u> : Acknowledged and advised the Radio RTC that they will let them know when they relinquished the FT. [Radio Ops. 2] |
| 10:32:42 hours | <u>GEM</u> : Relinquished their FT. <u>Radio RTC #1</u> : Acknowledged and provided the relinquish time. Informed them to contact Central when they were ready to exit the room. [Radio Ops. 2] |
| 10:49:55 hour | <u>GEM</u> : Contacted the Radio RTC to request FT to exit the jet fan control at CM G1 518+00 – 520+00 <u>Radio RTC #2</u> : Granted the GEM FT to exit and instructed them to inform Central when they relinquished it. [Radio Ops. 2] |
| 10:52:26 hours | <u>GEM</u> : Contacted the Radio RTC to relinquish their FT. <u>Radio RTC #2</u> : Acknowledged the GEM's transmission and provided the relinquish time. [Radio Ops. 2] |

****Note:** Times above may vary from other systems' timelines based on clock settings and reporting sources.

Office of Systems Maintenance, Office of Radio Communications (COMR)

The Office of Radio Communications checked the headend by direction amplifier (BDA) at Capitol Heights Station, which was working and had +15dBm for both low and high bands. They also performed radio checks at the platform, kiosk, and mezzanine areas. In most areas, radio checks have overbleeding and no audio issues. Overbleeding is when the talk groups can hear other operations communications. They checked the headend BDA at Morgan Boulevard Station, which was working and had +13dBm for low and +14dBm for high bands. They also performed radio checks at Morgan Boulevard Station and Addison Road Station platforms, kiosks, and mezzanine areas. Most areas had overbleeding and no audio issues.

Interview Findings

As part of the investigation launched into the event, SAFE interviewed two people. The interviews identified the following key findings associated with this event. The findings detailed below include reported information from involved personnel and may conflict with other data sources contained in the report.

GEM

- The GEM is RWP Level 2 certified.
- The GEM's main responsibility is maintaining and repairing equipment, primarily tunnel fans.
- The GEM only needs to access the roadway twice a month to complete assigned work.
- The GEM has worked in this location before.
- The GEM escorted the Carpenter to the jet fan control room to check the door lock.
- A roadway job safety briefing was not conducted.
- The GEM mentioned there being radio transmission issues in this area.
- The GEM thought the Radio RTC granted them FT during their first radio transmissions but felt the air pressure of a train approaching and stepped back near the door.
- A train passed their location when they thought the Radio RTC granted them FT.
- The GEM said they did not report the incident to the Radio RTC because the Train Operator did.

Carpenter

- The Carpenter is RWP level 2 certified.
- The Carpenter's main responsibility is maintaining and repairing doors throughout the WMATA system.
- The Carpenter only needs to access the roadway roughly once a month to complete assigned work.
- The Carpenter is usually escorted by personnel from a department that submits the work order.
- The Carpenter does not carry a radio to conduct their work.
- The Carpenter was under the belief that FT was granted when they started walking towards the jet fan control room.
- The Carpenter was approximately 50-60 feet on the catwalk when the train passed their location.

Weather

On October 17, 2023, at the time of the incident, NOAA recorded the temperature as 57°F, with clear skies, winds were four mph, and 72.32% humidity. This was in a tunneled section of the track. The weather did not contribute to this incident (Weather source: NOAA) – Location: Landover, MD.

Related Rules and Procedures

Metrorail Operating Rules (MOR)

- 1.1.7: Employees shall immediately report hazardous and unsafe conditions to their supervisor, including all near misses.
- 1.1.10: Employees shall not enter upon the roadway or cross the tracks except when necessary in the performance of their duties and permission has been granted by the Rail Traffic Controller.
- 1.2.1: Employees involved in, witnessing, or informed of an accident or incident, to include near misses, on the Metrorail system shall inform their supervisor, Metro Transit Police Department, Rail Operations Control Center and/or other appropriate authority as soon as possible, and shall file a written report.
- 12.1.5: When it is necessary for employees to enter the roadway to walk or work on tracks around moving trains or track equipment, they shall carry a hand-held radio and monitor the appropriate radio frequency to remain aware of rail vehicle movements and other activities on the rail system.
- 12.4.3: 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, always, be repeated by the receiver so the transmitter can confirm the message was received completely and by the intended receiver.
- 12.4.4: 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.”
- 12.4.8: When an employee is communicating with Rail Operations Control, Central will close out a communication loop by saying “Central, out.”
- 17.7.7 RWP Level Four (4): Roadway-Worker-In-Charge (RWIC)
 - WMATA employees serving in the role as a Roadway Escort or Crew Leader are required to be RWP Level four (4) qualified.
- 17.17.4: Foul time may only be requested by personnel who hold a current Level two (2) or Level four (4) RWP qualification.
- 17.17.8.1: Permission to foul the track must include the following information:
 - Department, when applicable, and radio call number of the employee requesting foul time,
 - Track designation (Line & Track Number),
 - Track limits (between/at chain marker(s)),
 - Time limits, and
 - Time effective.

Human Factors

GEM: Evidence of Fatigue

We evaluated conditions at the time of the incident to distinguish whether evidence of fatigue was present. No video of the involved person was available to ascertain whether evidence of fatigue was present. The GEM reported feeling fully alert at the time of the incident. The GEM reported experiencing no symptoms of fatigue in the time leading up to the incident.

GEM: Fatigue Risk

We evaluated incident data for fatigue risk factors. No significant risk was identified. The incident time of day did not suggest an increased risk of fatigue-related impairment. The GEM reported keeping a regular sleep schedule in the days leading up to the incident. The GEM worked the day shift in the days leading up to the incident. The GEM was awake for six hours at the time of the incident. The GEM reported seven hours of sleep in the 24 hours preceding the incident. The off-duty period was 15.5 hours, providing an opportunity for 7-9 hours of sleep. This was more sleep than the GEM's usual workday sleep durations. The employee reported issues with staying asleep.

Carpenter: Evidence of Fatigue

We evaluated conditions at the time of the incident to distinguish whether evidence of fatigue was present. No video of the involved person was available to ascertain whether evidence of fatigue was present. The Carpenter reported feeling fully alert at the time of the incident. The Carpenter reported experiencing no symptoms of fatigue in the time leading up to the incident.

Carpenter: Fatigue Risk

We evaluated incident data for fatigue risk factors. No significant risk was identified. The incident time of day did not suggest an increased risk of fatigue-related impairment. The Carpenter reported a regular sleep schedule in the days leading up to the incident. The Carpenter worked the day shift in the days leading up to the incident. The Carpenter was awake for six hours at the time of the incident. The Carpenter reported seven hours of sleep in the 24 hours preceding the incident. The off-duty period was 15 hours, providing an opportunity for 7-9 hours of sleep. This was a comparable amount of sleep as the Carpenter's usual workday sleep durations. The employee reported no issues with sleep.

Post-Incident Toxicology Testing

Post-incident toxicology testing was not conducted for this event as it was not reported at the time it occurred and the violation was not identified until after the testing window had elapsed.

Findings

- During their interview, the GEM reported radio communication issues where the work crew was located. They did not report any radio issues on the day of the event.
- The GEM contacted the Radio RTC to request Foul Time and was instructed to stand by.
- The GEM thought the Radio RTC permitted them to go to the jet fan control room.
- Train ID 613 reported to the Radio RTC that Metro personnel were in the roadway.
- The GEM is RWP Level 2 certified and was escorting the Carpenter, who is also RWP Level 2.
- The Carpenter did not have a radio and did not believe they were required to carry one for this assignment.
- The GEM never informed the MICC that a train passed them while walking to the jet fan control room.

Immediate Mitigation to Prevent Recurrence

- The personnel were removed from any assigned work requiring roadway access.

Probable Cause Statement

The probable cause of the Improper RWP event on October 17, 2023, at CM G1 520+00 – 518+00 on the blue line was ineffective communication. The GEM misunderstood the radio transmission from the Radio RTC, interpreting the acknowledgment of their FT request as permission granted. This misinterpretation resulted in the personnel proceeding towards the jet fan control room under the false assumption of FT, leading to a near-miss incident with Train ID 613.

Recommended Corrective Actions

| Corrective Action Code | Description | Responsible Party | Estimated Completion Date |
|----------------------------------|--|-------------------|---------------------------|
| 112329_SAF ECAPS_PLNT _001 | The GEM and Carpenter need to complete RWP Level 2 refresher training with an emphasis on radio communication when requesting foul time. | PLNT SRC | Completed |
| 112329_SAFE CAPS_SAFE_ 001 | Review the RWP escorting policy. | OP SRC | Completed |

Appendices

Appendix A – Interview Summaries

The below narratives summarize the incident and represent the statements made by the involved individual. As such, times and details may present a conflict with the data contained in systems of record.

GEM

The GEM is a WMATA employee and has been a GEM for the past ten and a half years. The GEM is currently assigned to the New Carrollton region. The GEM is RWP Level 2 certified and must recertify in January 2024. The GEM mentioned feeling fully alert at the time of the incident. The week leading up to the incident, the GEM was working the daytime shift. The GEM mentioned having issues with staying asleep at night.

The GEM said their roles and responsibilities are maintaining and repairing equipment throughout the system. A typical workday for the GEM is preventative maintenance on tunnel fans. The GEM mentioned working in this area before. The GEM said at least two times a month; they must request FT to conduct their work assignment. The GEM acknowledged being familiar and comfortable with the FT process. On the day of the incident, the GEM was escorting a Carpenter to a jet fan control room on the Blue Line to repair the lock on the door. They had to use an emergency egress door to access the roadway to the jet fan control room. They did not complete a roadway job safety briefing before going to the jet fan control room. The GEM said there were radio communication issues where they were located. The GEM said they contacted the Radio RTC to request FT to access the jet fan control room. The GEM said they believed the Radio RTC permitted access to the jet fan control room, but while en route to the jet fan control room, they started to feel the air pressure and saw train lights coming towards their location. The GEM heard the Train Operator inform the Radio RTC that personnel were in the roadway. The GEM stated that when the Radio RTC asked about their location, they informed them they were at the emergency egress door. The Radio RTC then granted them FT to enter the jet fan control room. The GEM never informed the Radio RTC that they thought they had FT, and a train passed their location.

Carpenter

The Carpenter is a WMATA employee who has been an AA Carpenter Lead for six months. The Carpenter is currently assigned to the Carmen Turner Facility. The Carpenter is RWP Level 2 certified and must recertify in June 2024. The Carpenter mentioned feeling fully alert at the time of the incident. The Carpenter worked the daytime shift in the week leading up to the incident. The Carpenter mentioned no issues with getting good rest.

One of the primary jobs for the Carpenter is maintaining doors throughout the authority. Also, they maintain acoustical ceiling systems throughout the offices, flooring, and drywall. The Carpenter mentioned being somewhat comfortable with the FT process. They mentioned being RWP Level 2 most of their career, but they did not need roadway access the four years they were a Supervisor. The Carpenter said they request FT less than once a month to complete their assigned work. The Carpenter said they are typically escorted by personnel from the department that submitted the work order whenever they need to access the roadway because the requesting department is more familiar with the work location. The Carpenter said they are not required to have a radio to conduct their scheduled work. On the day of the incident, the GEM requested FT to access the jet fan control room. The Carpenter said they were about 50-60 feet from the emergency egress door when they felt the air pressure and saw the train lights approaching their

location. The Carpenter was on the catwalk and had to hold onto the cables on the wall as the train passed. The Carpenter then asked the GEM what happened because they thought they had FT. The GEM agreed, but then the Radio RTC granted them FT. They never informed the Radio RTC that they believed they had FT, and a train passed their location.

Appendix B – Work Order: Radio Check



Washington Metropolitan Area Transit Authority Maintenance and Material Management System Work Order Details

Work Order #: 18218301
Type: TST



Status: CLOSE
11/08/2023 02:20

Work Description: G03/G04 Safety request radio operational test, please cover CM520+00/ G518+00 both tracks00
Job Plan Description:

| Work Information | | |
|---|---|--------------------------------|
| Asset: COMMG04 COMM, COMMUNICATIONS SYSTEM, G04 | Owning Office: COMM TSSM | Parent: |
| Asset Tag: | Maintenance Office: COMM TSSM DFLD | Create Date: 11/02/2023 15:52 |
| Asset S/N: COMM G04 | Labor Group: COMMR3RADO | Actual Start: 11/08/2023 00:35 |
| Location: 10281 G04, MORGAN BOULEVARD, STATION, PLATFORM, ROOM 111, COMMUNICATIONS ROOM | Crew: | Actual Comp: 11/08/2023 00:35 |
| Work Location: | Lead: [REDACTED] | Item: R60000001 |
| Failure Class: COMR003 RADIO COMMUNICATIONS SYSTEMS | GL Account: WMATA-02-33540-50499280-042-*****_OPR** | Target Start: |
| Problem Code: 1760 ERRATIC OPERATION | Supervisor: [REDACTED] | Target Comp: |
| Requested By: 55385 | Requestor Phone: [REDACTED] | Scheduled Start: |
| Create-Mileage: 0.0 | Complete-Mileage: 0.0 | |

Task IDs

Task ID

10 We checked the headend BDA at G02, which is working and have +15dBm for both low and high band. We also performed radio check at the platform, Kiosk, Mezzanine areas Most areas radio checks have over bleeding and no audio issues.
- We checked the headend BDA at G04, which is working and have +13dBm for low and +14dBm for high band. We also performed radio check for G04 and G03 platform, Kiosk, Mezzanine areas. Most areas have over bleeding and no audio issues.

Component: Work Accom: Reason: Status: CLOSE Position: Warranty?: N
20 PREFOMED RADIO WITH 380 ON RADIO TEST #2 . ALL RADIO CHECKS LOUD & CLEAR AT THIS TIME

Component: 100 112 201 005 CRCS MOBILES Work Accom: CHECKED Reason: IMPROVED RELIABILITY Status: CLOSE Position: Warranty?: N

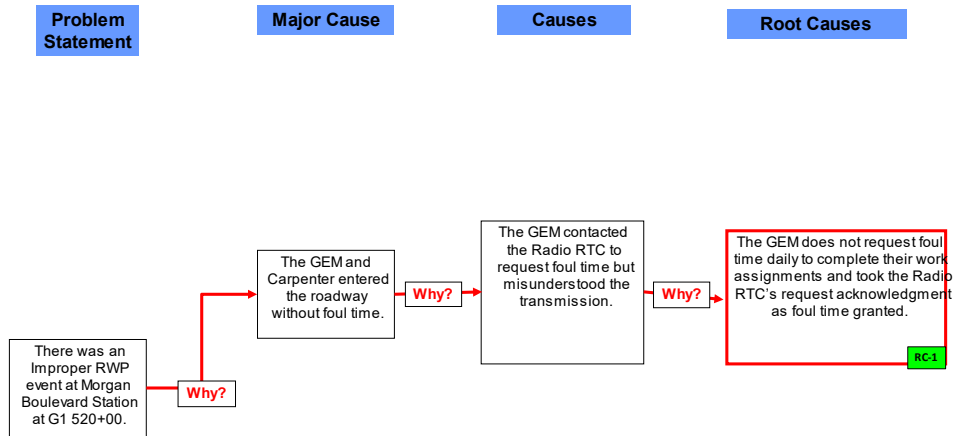
Actual Labor

| Task ID | Labor | Start Date | End Date | Start Time | End Time | Approved? | Regular Hours | Premium Hours | Line Cost |
|---------------------------------|------------|------------|------------|------------|----------|-----------|---------------|---------------|-----------|
| 10 | [REDACTED] | 11/04/2023 | 11/04/2023 | 06:00 | 08:00 | Y | 02:00 | 00:00 | \$98.00 |
| 10 | [REDACTED] | 11/04/2023 | 11/04/2023 | 06:00 | 08:00 | Y | 02:00 | 00:00 | \$97.52 |
| 20 | [REDACTED] | 11/08/2023 | 11/08/2023 | 04:00 | 06:00 | Y | 02:00 | 00:00 | \$89.41 |
| 20 | [REDACTED] | 11/08/2023 | 11/08/2023 | 04:00 | 06:00 | Y | 02:00 | 00:00 | \$101.37 |
| Total Actual Hour/Labor: | | | | | | | 08:00 | 00:00 | \$386.30 |

Incident Date: 10/17/2023 Time: 10:27 hours
Final Report – Improper RWP Rev.1
E23732

Drafted By: SAFE 703 – 12/08/2023
Reviewed By: SAFE 704 – 12/15/2023
Approved By: SAFE 707 – 12/18/2023
INATEI

Appendix C – Why-Tree Analysis



Root Cause Analysis





Washington Metropolitan Area Transit Authority
Department of Safety (SAFE)
Office of Safety Investigations (OSI)

FINAL REPORT OF INVESTIGATION A&I E23768

| | |
|---------------------------------------|--|
| Date of Event: | October 28, 2023 |
| Type of Event: | O-23: Improper Roadway Worker Protection (RWP) |
| Incident Time: | 01:48 hours |
| Location: | Southern Avenue Station, Track 2 |
| Time and How received by SAFE: | 02:12 hours via MAC |
| WMSC Notification Time: | 03:34 hours |
| Responding Safety Officers: | None |
| Rail Vehicle: | None |
| Injuries: | None |
| Damage: | None |
| Emergency Responders: | None |
| SMS I/A Incident Number: | 20231101#112527 |

Southern Avenue Station – Improper Roadway Worker Protection

October 28, 2023

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Abbreviations and Acronyms

| | |
|--------------|--|
| AIMS | Advanced Information Management System |
| AOM | Assistant Operations Manager |
| ARS | Audio Recording System |
| CAP | Corrective Action Plan |
| CCTV | Closed-Circuit Television |
| CM | Chain Marker |
| ETO | Exclusive Track Occupancy |
| GOTRS | General Orders and Track Rights System |
| I/A | Incidents/Accidents |
| MICC | Metro Integrated Command & Communications Center |
| MOC | Maintenance Operation Control |
| MOR | Metrorail Operating Rulebook |
| NOAA | National Oceanic and Atmospheric Administration |
| OSI | Office of Safety Investigations |
| ROCS | Rail Operations Control System |
| RTC | Rail Traffic Controller |
| RWIC | Roadway Worker In Charge |
| RWP | Roadway Worker Protection |
| SAFE | Department of Safety |
| SMS | Safety Measurement System |
| SPOTS | System Performance On-Time Summary |
| SRC | Safety Risk Coordinator |
| TRST | Office of Track and Structures |
| WMATA | Washington Metropolitan Area Transit Authority |
| WMSC | Washington Metrorail Safety Commission |

**Washington Metropolitan Area Transit Authority
Department of Safety – Office of Safety Investigations**

Executive Summary

**Note that all times listed are approximate and may contain minor variations due to differences between record systems. **

On Saturday, October 28, 2023, at 01:48 hours, a Branch Avenue Division, Office of Track and Structures (TRST) AA Track Repairer, performing duties as the Roadway Worker In Charge (RWIC), entered the roadway and setup their work area on an unauthorized track at Southern Avenue Station on Track 2.

The Train Operator of Train ID 701 contacted the Metro Integrated Command & Communications Center (MICC) Radio Rail Traffic Controller (RTC) and reported zero commands between Congress Heights Station and Southern Avenue Station on Track 2. The Radio RTC instructed the Train Operator of Train ID 701 to proceed toward Southern Avenue Station. On approach to Southern Avenue, the Train Operator contacted the Radio RTC and reported that a shunt was installed on Track 2. The Radio RTC directed the Train Operator to standby.

The Radio RTC attempted to contact the RWIC via radio and was unsuccessful. The Radio RTC then granted the Train Operator foul time for a ground walk-around inspection. The Train Operator performed the ground walk-around, observed and reported a shunt on the roadway, and was directed to remove the shunt. After the Radio RTC reestablished communications with the RWIC, the Radio RTC directed the Train Operator to proceed towards Southern Avenue Station on Track 2.

The RWIC was subsequently removed from service for post-incident testing. No injuries or damages were reported as a result of this incident.

The probable cause of the Improper Roadway Worker Protection (RWP) event at Southern Avenue Station on October 28, 2023, was incorrect procedures followed by the RWIC after permission was granted to set up their work zone. The Radio RTC authorized the RWIC to set up their work area and safety equipment on Track 1. However, the RWIC inadvertently entered the roadway on Track 2 to set up their work area.

Incident Site

Southern Avenue Station, Track 2

This is an above-ground station with a center platform. Southern Avenue Station is a Direct Fixation Track governed by signals F08-06, 08 signals, and F08-02, 04 signals and an interlocking at Chain Marker (CM) 301+71 to 304+85.

Field Sketch/Schematics

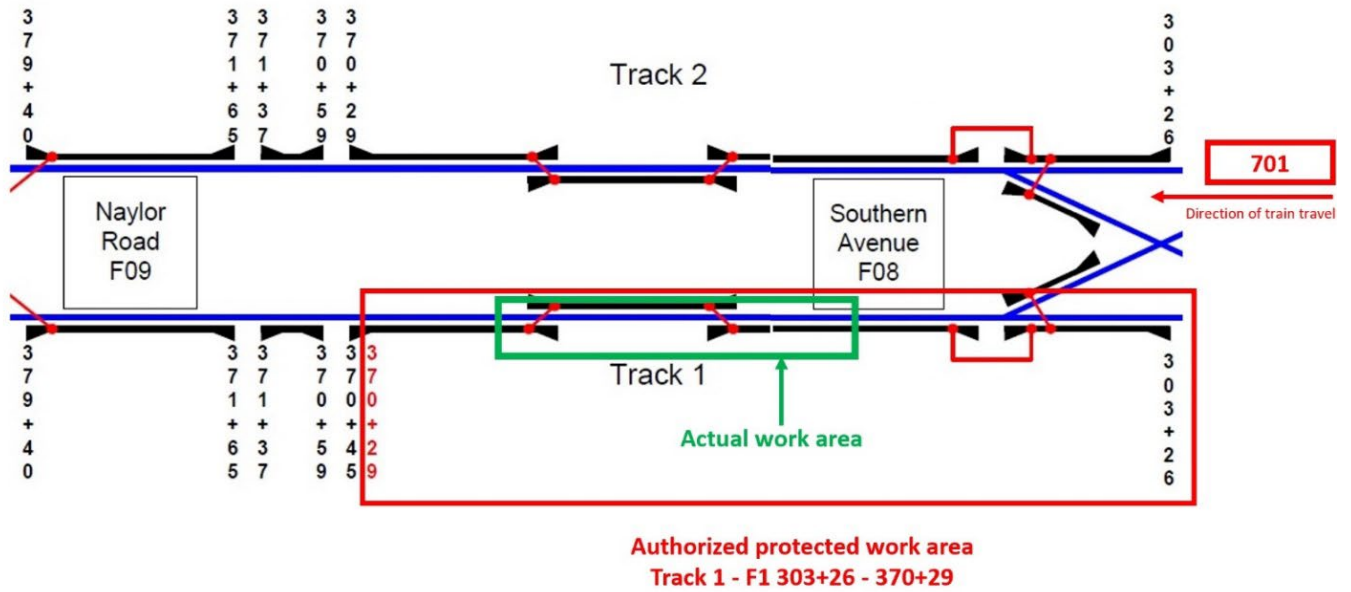


Figure 1 – Sketch illustrates the authorized work location on Track 1.

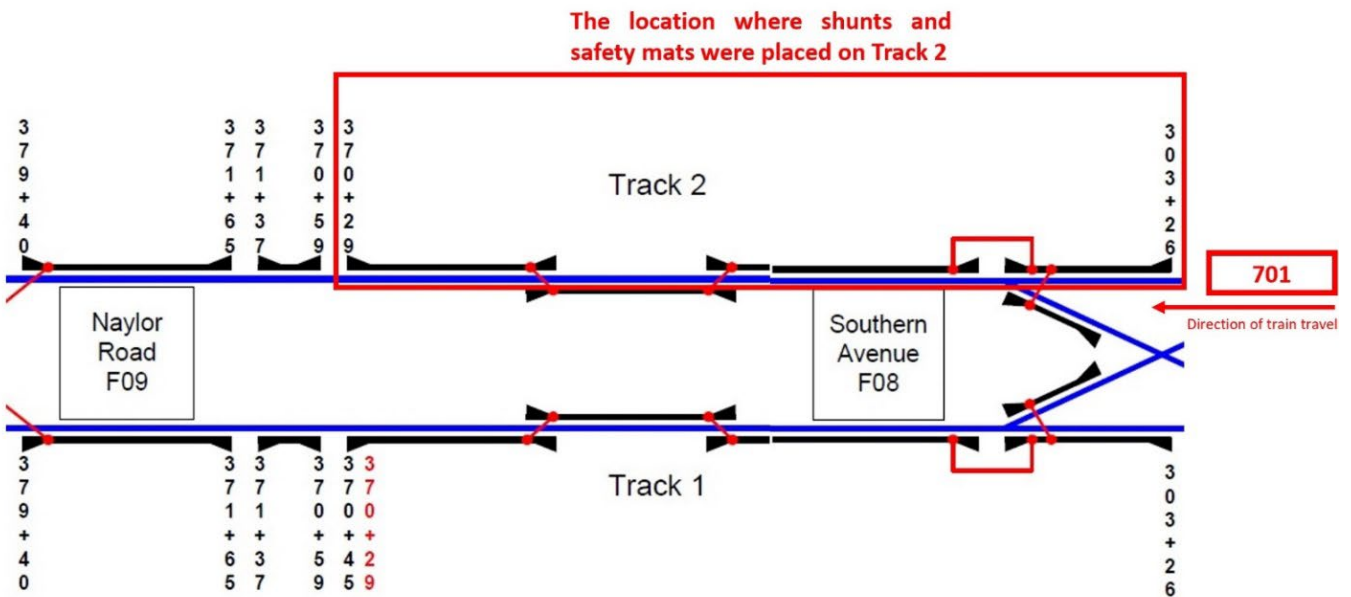


Figure 2 – Sketch illustrates the actual location where the RWIC set up their work area.

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.

Investigative Methods

The investigative methodologies included the following:

- Site Assessment through document review
- Formal Interview – SAFE interviewed one individual as part of this investigation. Representatives from the Washington Metrorail Safety Commission (WMSC) were present during the interview. SAFE interviewed the following personnel:
 - RWIC
- Documentation Review – A collection of relevant work history information and process documentation contained in Metro systems of record. These records include:
 - RWIC Incident Statement
 - RWIC Training Record
 - RWIC 30-day Work History
 - Metrorail Operating Rulebook (MOR)
 - SOP 2 – Third Rail Power Energization and De-energization Procedures
 - SOP 410-ROCC-ROC-04-01 – Roadway Worker Protection: Exclusive Track Occupancy (ETO)
 - National Oceanic and Atmospheric Administration (NOAA)
- System Data Recording Review – A collection of information contained in Metro Data Recording Systems. This data includes:
 - Advanced Information Management System (AIMS) playback
 - Audio Recording System (ARS) playback, including OPS 3 Radio
 - Closed-circuit television (CCTV)
 - Rail Operations Control System (ROCS) System Performance On-Time Summary (SPOTS) Report

Investigation

On Saturday, October 28, 2023, at 01:48 hours, a TRST AA Track Repairer was performing duties as the RWIC for a five member TRST work crew installing third rail cover boards within the work area. The RWIC was operating under Exclusive Track Occupancy (ETO) protection with a Red Tag power outage. Their protected work area was from chain marker (CM) F1 303+26 through F1 370+29. The actual work area was F1 309+00 to F1 330+00. Three different documents address exclusive track occupancy which can lead to interpretation issues.

The Audio Recording System (ARS) revealed that at 23:27 hours, the RWIC contacted the MICC and requested General Orders and Track Rights System (GOTRS) Rights with ETO protection and a Red Tag power outage at Southern Avenue on Track 1 from CM F1 303+26 to F1 370+29. The Radio RTC acknowledged the request and instructed the RWIC to stand by.

At 01:33 hours, the Radio RTC granted the RWIC permission to enter the roadway under ETO protection at Southern Avenue on Track 1. However, the Radio RTC recited the incorrect CMs at F1 030+26 to F1 370+29. The RWIC responded that they copied the instructions and would contact the MICC once the shunts were installed.

The Closed-Circuit Television (CCTV) revealed that at 01:47 hours, the RWIC passed the 8-car marker end gate at Southern Avenue Station on Track 2 and proceeded to install shunts, red lanterns, and other safety equipment on Track 2. At 01:52, the RWIC installed shunts and red lanterns at CM F2 303+26. The RWIC then proceeded to install safety equipment at CM F2 370+29.

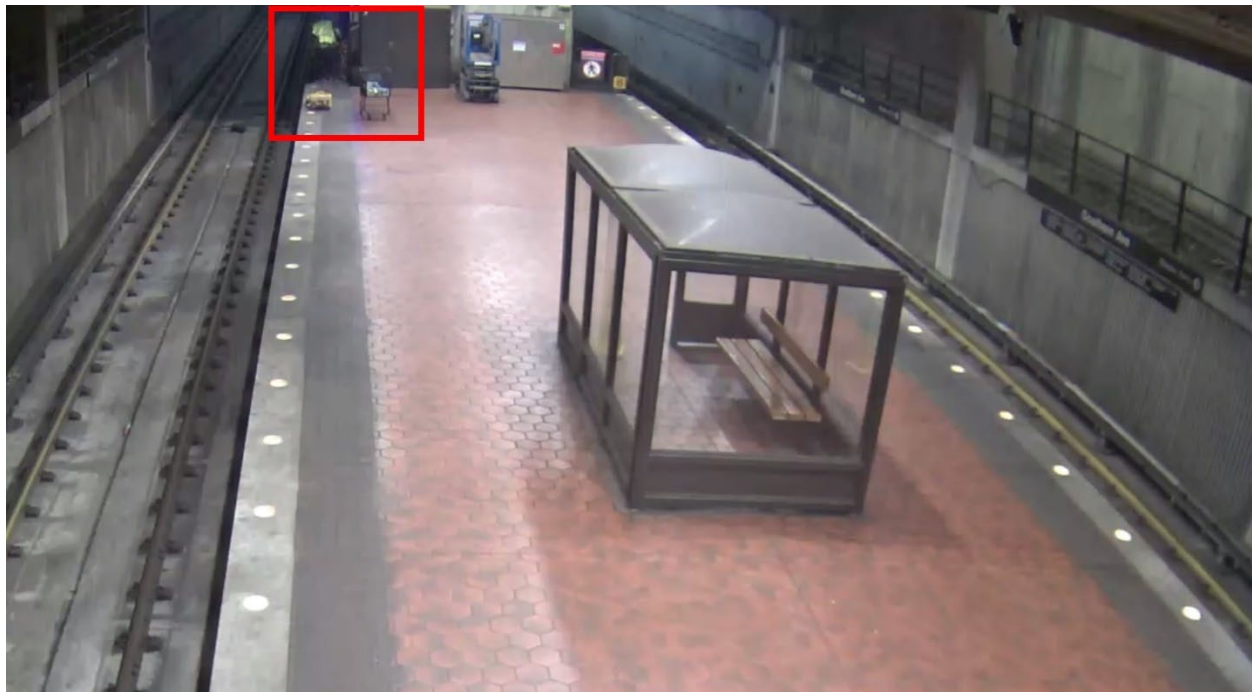


Image 1 - RWIC entered the 8-car Marker end gate on Track 2 at Southern Avenue Station at 01:47 hours.

At 02:08, ARS playback revealed the non-revenue Train Operator of Train ID 701 contacted the Radio RTC and reported they had zero speed commands at Congress Heights Station, on Track 2 in the direction of Southern Avenue Station. The Radio RTC granted the Train Operator a permissive block to Southern Avenue Station, Track 2.

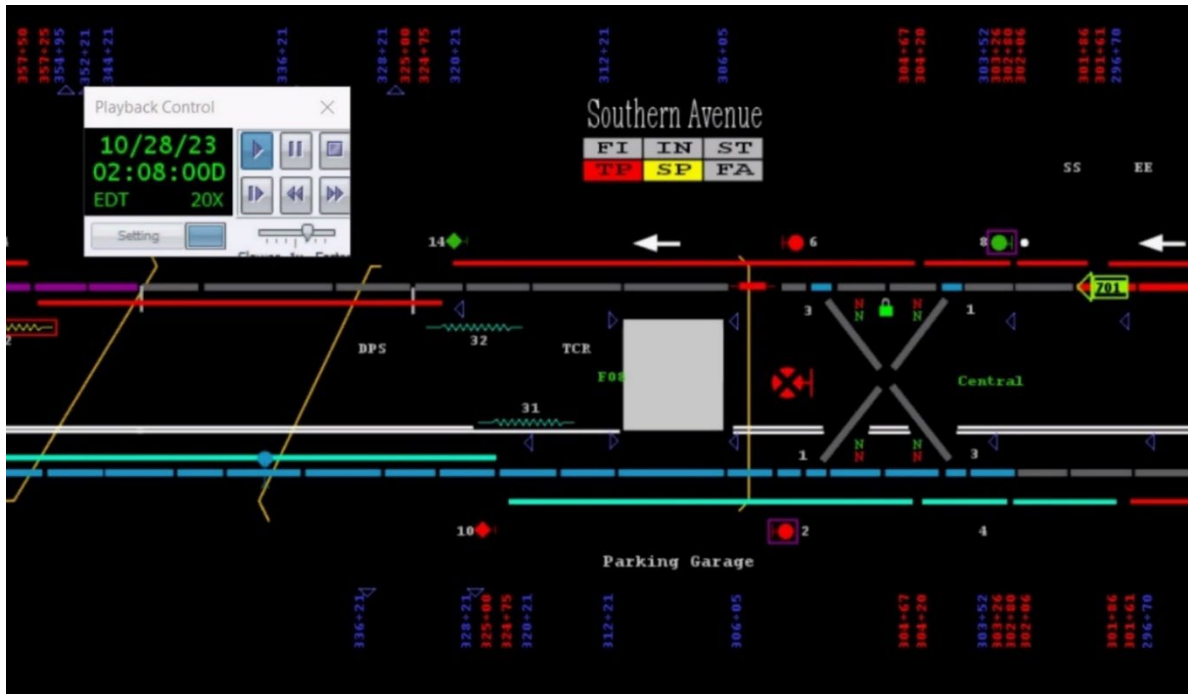


Figure 3 - Train ID 701 approaching Southern Avenue Station on Track 2 at 02:08 hours.

At 02:09 hours, the Train Operator of Train ID 701 non-revenue reported there was a shunt installed on Track 2 in approach to Southern Avenue Station. The Radio RTC instructed the Train Operator to stand by as they attempted to contact the RWIC. The Radio RTC was unsuccessful in contacting the RWIC via the radio. The Radio RTC granted the Train Operator foul time to perform a ground walk-around inspection. The Train Operator confirmed observing a shunt installed on Track 2. The Radio RTC instructed the Train Operator to remove the shunt.

At 02:14 hours, the Button RTC notified the Maintenance Operation Control (MOC) of the event. MOC notified the TRST Supervisor of the event. At 02:26 hours, the TRST Assistant Superintendent advised the Assistant Operations Manager (AOM) that the RIWC would be removed from service.

At 02:34 hours, the RWIC contacted the AOM and advised that all equipment was clear from the roadway, the AOM instructed the RWIC to contact Ops 3. At 02:38 hours, the RWIC contacted radio Ops 3 and reported that all personnel and equipment were clear from the roadway on tracks 1 and 2.

After the Radio RTC reestablished communications with the RWIC, the Radio RTC directed the Train Operator to proceed towards Southern Avenue Station on Track 2. The RWIC was subsequently removed from service for post-incident testing. No injuries or damages were reported as a result of this incident.

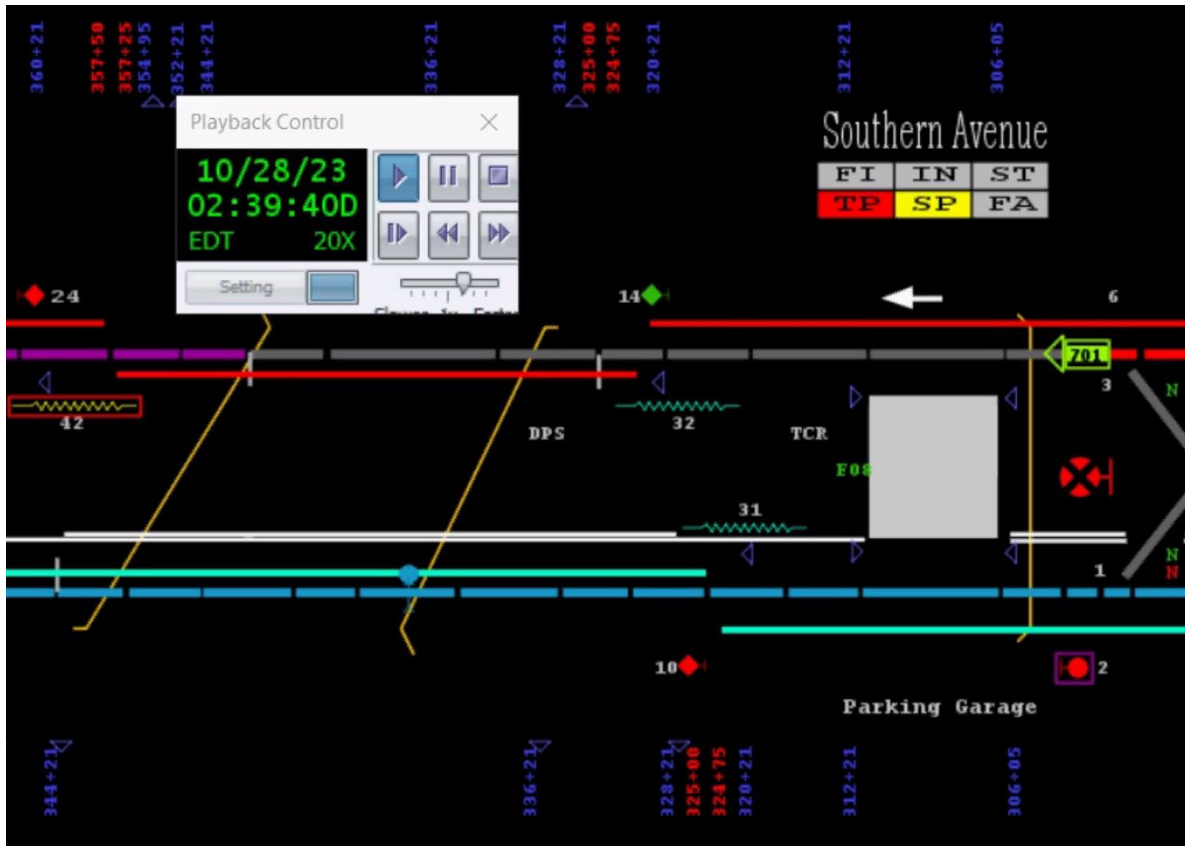


Figure 4 - Train ID 701 began to move in the direction of Southern Avenue Station, Track 2 at 02:39 hours.

ROCS SPOTS REPORT

based on up-to-the-second operational performance data from the Rail Operations Control System

Current date/time: Tue Nov 7 15:36:41 2023

Select Platform: and/or Select ID: Leave blank to remove criteria
 and/or Select 4-digit car number: Leave blank to remove criteria
 Select Date: Select Times (0-24HRS): From To

Generate Report

| ID | Platform | length | dcode | Right door open | Right door close | dwll | Left door open | Left door close | dwll | Head Arrived | Tail cleared | cars | Headway door open to door open |
|-----|----------|--------|-------|-----------------|------------------|------|----------------|-----------------|------|--------------|--------------|---|--------------------------------|
| 513 | F08-2 | 6 | 43 | | | | 01:05:14 | 01:05:32 | 18 | 01:04:36 | 01:05:56 | 6124-6125.6022-6023.6114-6115 | - |
| 592 | F08-2 | 6 | 43 | | | | 01:10:38 | 01:10:53 | 15 | 01:10:02 | 01:11:16 | 6102-6103.6154-6155.6092-6093 | 5:24 |
| 714 | F08-2 | 8 | 96 | | | | | | | 01:11:48 | 01:12:22 | 7720-7721.7285-7284.7644-7645.7083-7082 | - |
| 515 | F08-2 | 2 | 96 | | | | 01:35:03 | 01:35:18 | 15 | 01:34:18 | 01:35:44 | 7712-7713.7693-7692.7362-7363.7743-7742 | 24:25 |
| 701 | F08-2 | 8 | 96 | | | | | | | 02:39:45 | 02:40:21 | unknown | - |

Table 1 - ROCS SPOTS Report illustrating rail vehicle movement at Southern Avenue Station on Track 2 from 01:00 to 03:00 hours.

Advanced Information Management System (AIMS)

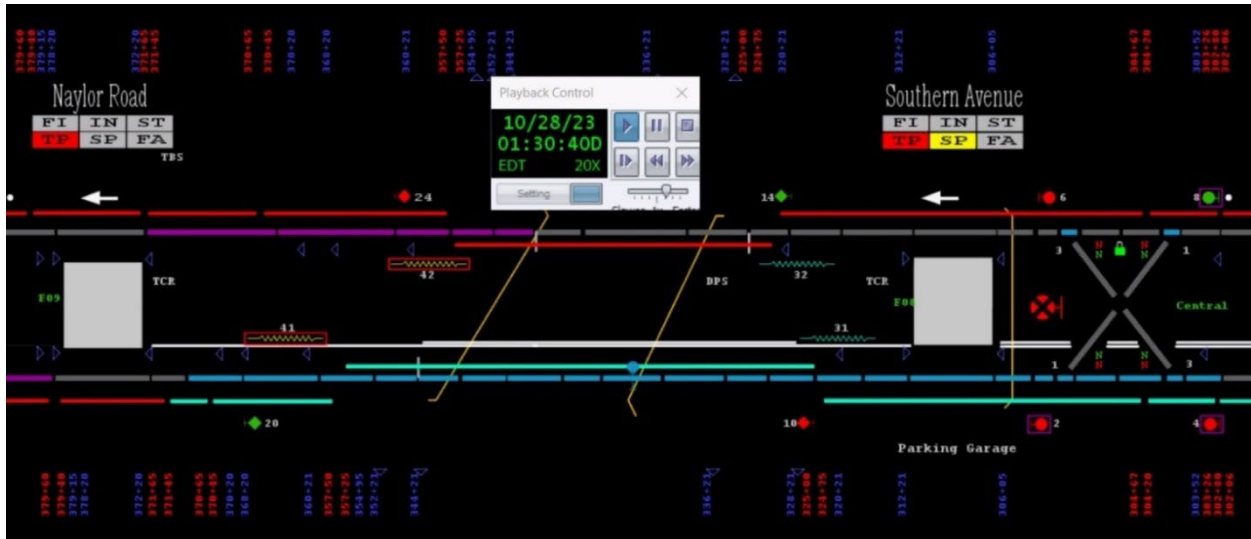


Figure 5 - Third rail power displaying as de-energized on Track 1, Southern Avenue Station at 01:30 hours via AIMS.

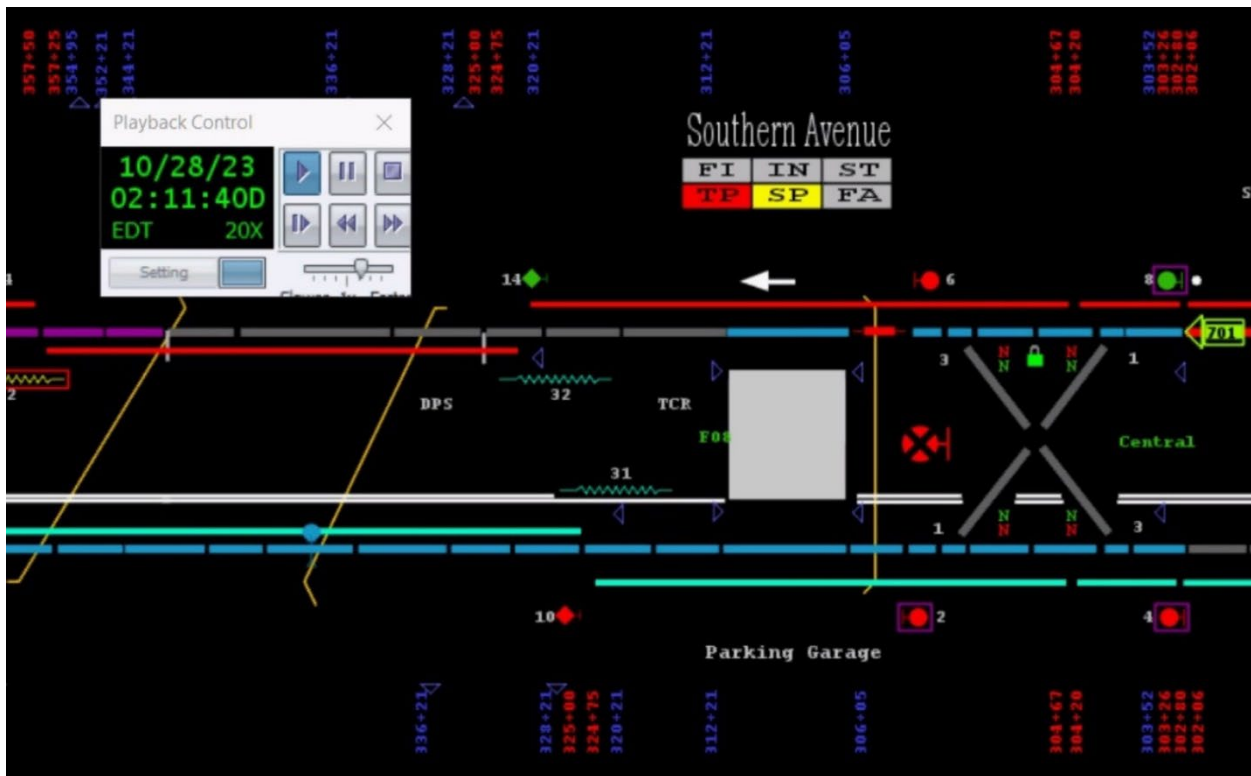


Figure 6 - Third rail power was still de-energized at 02:11 hours on Track 1 at Southern Avenue Station.

General Order and Track Rights System (GOTRS)

GOTRS - GENERAL ORDERS & TRACK RIGHTS SYSTEM

Track Rights Request

Request Summary

| | | | |
|--------------------------------|---|----------------------------|---------|
| Request Number: | 202324303700 | Track Access: | True |
| Dates Requested: | 10/28/2023 01:00 to: 10/28/2023 06:00 | Clear In Ten: | False |
| Request Status: | Closed | Equipment on Track: | 1 |
| Requestor: | [REDACTED] | Allow Piggybacks: | True |
| Requestor Organization: | TRST | In Piggyback: | No |
| Tag #: | Closed (2023301505-A) | Power Outage: | Red Tag |
| Lock Out / Tag Out: | No | Additional AC: | |
| Request Title: | TKMSE Third Rail Maintenance F08-F09, Track 1 | | |

Location, Work Type and Description

| | |
|-----------------------------------|-----------------------------------|
| Location: | Mainline |
| Non-Wayside Location Type: | |
| Request Type: | Regular |
| Charge Job Number: | |
| Contract Number: | |
| Maximo Work Order: | |
| Request Group: | No |
| Location Description: | |
| Request Description: | Weld Open Joint |
| Work Type: | Other |
| Meeting Location: | |
| PB Meeting Location: | |
| Tools and Equipment: | Hand Tools, PPE, Safety Equipment |
| Equipment on Track: | Prime Mover and Flat |

Track 1

| | | |
|-----------------------------|---------|---------|
| Actual Work Area: | F309+00 | F330+00 |
| Protected Work Area: | F303+26 | F370+29 |

Hot Stick Info. Third Rail Gaps:

| From | To | Track ID |
|---------|---------|----------|
| F303+26 | F370+29 | 1 |

Date & Time

| | | | |
|---------------|------------------|-------------|------------------|
| Start: | 10/28/2023 01:00 | End: | 10/28/2023 06:00 |
|---------------|------------------|-------------|------------------|

Contacts

| | |
|-------------------|------------------|
| Entered by | Requestor |
|-------------------|------------------|

As of 10/28/2023 11:56
1 of 7

GOTRS - GENERAL ORDERS & TRACK RIGHTS SYSTEM

Track Rights Request

Request Summary

| | | | |
|--------------------------------|---|----------------------------|---------|
| Request Number: | 202324303700 | Track Access: | True |
| Dates Requested: | 10/28/2023 01:00 to: 10/28/2023 06:00 | Clear In Ten: | False |
| Request Status: | Closed | Equipment on Track: | 1 |
| Requestor: | [REDACTED] | Allow Piggybacks: | True |
| Requestor Organization: | TRST | In Piggyback: | No |
| Tag #: | Closed (2023301505-A) | Power Outage: | Red Tag |
| Lock Out / Tag Out: | No | Additional AC: | |
| Request Title: | TKMSE Third Rail Maintenance F08-F09, Track 1 | | |

| | | | |
|--------------|------------------------------------|--------------|------------------------------------|
| Work: | [REDACTED] | Work: | [REDACTED] |
| Cell: | [REDACTED] Home: [REDACTED] | Cell: | [REDACTED] Home: [REDACTED] |

| | |
|------------------------------------|------------------------------------|
| WMATA Manager | Emergency Contact |
| [REDACTED] | [REDACTED] |
| Work: | Work: |
| [REDACTED] | [REDACTED] |
| Cell: | Cell: |
| [REDACTED] Home: [REDACTED] | [REDACTED] Home: [REDACTED] |

| Support | |
|---------------|-----------|
| SUPPORT GROUP | Crew Size |
| TRST/STRUC | 5 |

| Request Change History | |
|------------------------|---|
| Date | Event |
| 08/31/2023 17:30 | Request was created. |
| 08/31/2023 17:32 | Request was edited. Field(s) changed: Start Date/Time, End Date/Time. Start Date/Time: 10/3/2023 4:30:00 AM to 10/10/2023 4:30:00 AM. End Date/Time: 10/3/2023 8:30:00 AM to 10/10/2023 8:30:00 AM. |
| 09/15/2023 14:24 | Request was edited. Field(s) changed: Start Date/Time, End Date/Time. Start Date/Time: 10/10/2023 4:30:00 AM to 10/18/2023 4:30:00 AM. End Date/Time: 10/10/2023 8:30:00 AM to 10/18/2023 8:30:00 AM. |
| 09/22/2023 17:25 | Request was edited. Field(s) changed: Start Date/Time, End Date/Time. Start Date/Time: 10/18/2023 4:30:00 AM to 10/28/2023 5:00:00 AM. End Date/Time: 10/18/2023 8:30:00 AM to 10/28/2023 10:30:00 AM. |
| 09/29/2023 12:43 | Request was edited. Field(s) changed: Start Date/Time, End Date/Time. Start Date/Time: 10/28/2023 5:00:00 AM to 11/3/2023 4:30:00 AM. End Date/Time: 10/28/2023 10:30:00 AM to 11/3/2023 8:30:00 AM. |

As of 10/28/2023 11:56
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GOTRS - GENERAL ORDERS & TRACK RIGHTS SYSTEM

Track Rights Request

Request Summary

| | | | |
|--------------------------------|---|----------------------------|---------|
| Request Number: | 202324303700 | Track Access: | True |
| Dates Requested: | 10/28/2023 01:00 to: 10/28/2023 06:00 | Clear In Ten: | False |
| Request Status: | Closed | Equipment on Track: | 1 |
| Requestor: | ██████████ | Allow Piggybacks: | True |
| Requestor Organization: | TRST | In Piggyback: | No |
| Tag #: | Closed (2023301505-A) | Power Outage: | Red Tag |
| Lock Out / Tag Out: | No | Additional AC: | |
| Request Title: | TKMSE Third Rail Maintenance F08-F09, Track 1 | | |

Request Change History

| Date | Event |
|------------------|--|
| 09/29/2023 13:21 | Request was edited. Field(s) changed: Start Date/Time, End Date/Time. Start Date/Time: 11/3/2023 4:30:00 AM to 11/10/2023 5:30:00 AM. End Date/Time: 11/3/2023 8:30:00 AM to 11/10/2023 9:30:00 AM. |
| 10/06/2023 15:15 | Request was edited. Field(s) changed: Location. Location: Track 1 Actual: F312+00 F319+00 Protected: F307+00 F324+00 to Track 1 Actual: F312+00 F319+00 Protected: F307+00 F326+00. |
| 10/06/2023 15:57 | Request was edited. Field(s) changed: Start Date/Time, End Date/Time, Request Title, Support Crews, Projected Crew Size. Start Date/Time: 11/10/2023 5:30:00 AM to 10/28/2023 5:00:00 AM. End Date/Time: 11/10/2023 9:30:00 AM to 10/28/2023 10:30:00 AM. |
| 10/06/2023 16:03 | Request was edited. Field(s) changed: Power Outage, Location. Power Outage: Supervisory to Red Tag. Location: Track 1 Actual: F312+00 F319+00 Protected: F307+00 F326+00 to Track 1 Actual: F309+00 F330+00 Protected: F303+26 F370+29. |
| 10/16/2023 15:25 | Request status was changed to Approved |
| 10/17/2023 10:31 | Switch order 2023301500 unlinked. |
| 10/17/2023 10:31 | Request status was changed to Pending Justification: REVERSED TO ADJUST CLEARING TIME |
| 10/17/2023 10:31 | Request was edited. Field(s) changed: End Date/Time. End Date/Time: 10/28/2023 10:30:00 AM to 10/28/2023 10:00:00 AM. |
| 10/17/2023 10:32 | Request status was changed to Approved |
| 10/28/2023 02:38 | Work Prep was completed. |
| 10/28/2023 03:27 | Request status was changed to Opened |
| 10/28/2023 08:39 | Request status was changed to Closed |

Request Group

| Request Number | Description |
|----------------|-------------|
|----------------|-------------|

Piggyback

No active piggybacks found

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GOTRS - GENERAL ORDERS & TRACK RIGHTS SYSTEM

Track Rights Request

Request Summary

| | | | |
|--------------------------------|---|----------------------------|---------|
| Request Number: | 202324303700 | Track Access: | True |
| Dates Requested: | 10/28/2023 01:00 to: 10/28/2023 06:00 | Clear In Ten: | False |
| Request Status: | Closed | Equipment on Track: | 1 |
| Requestor: | ██████████ | Allow Piggybacks: | True |
| Requestor Organization: | TRST | In Piggyback: | No |
| Tag #: | Closed (2023301505-A) | Power Outage: | Red Tag |
| Lock Out / Tag Out: | No | Additional AC: | |
| Request Title: | TKMSE Third Rail Maintenance F08-F09, Track 1 | | |

Switch Order

SO #: 2023301505
SO Status: Closed
Lock Out/ Tag Out: No

Location & Equipment Requested
 F08TP (F309+00) F09TB (F330+00) TRK 1
Remarks:

De-Energization

| Equipment Location | Equipment |
|--------------------|-----------|
| F08TP | 33 |
| F09TB | 43 |

Energization

| Equipment Location | Equipment |
|--------------------|-----------|
| F08TP | 33 |
| F09TB | 43 |

Close-Out Summary

| | |
|--|------------------|
| Final Status: | Closed |
| RWIC has contacted RTC to establish working limits: | 10/27/2023 23:27 |
| Authorize Power Outage Order: | 10/28/2023 01:16 |
| De-Energization Completed/RWIC notified: | step not done |
| Hot Sticking: | step not done |
| Permission is given to setup worksite: | step not done |
| RTC authorization to start work is given to RWIC: | step not done |
| PDC confirmed working limits are clear: | step not done |
| RTC confirmed working limits are clear: | 10/28/2023 04:39 |

As of 10/28/2023 11:56
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GOTRS - GENERAL ORDERS & TRACK RIGHTS SYSTEM

Track Rights Request

Request Summary

| | | | |
|--------------------------------|---|----------------------------|---------|
| Request Number: | 202324303700 | Track Access: | True |
| Dates Requested: | 10/28/2023 01:00 to: 10/28/2023 06:00 | Clear In Ten: | False |
| Request Status: | Closed | Equipment on Track: | 1 |
| Requestor: | ██████████ | Allow Piggybacks: | True |
| Requestor Organization: | TRST | In Piggyback: | No |
| Tag #: | Closed (2023301505-A) | Power Outage: | Red Tag |
| Lock Out / Tag Out: | No | Additional AC: | |
| Request Title: | TKMSE Third Rail Maintenance F08-F09, Track 1 | | |

As of 10/28/2023 11:56
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GOTRS - GENERAL ORDERS & TRACK RIGHTS SYSTEM

Track Rights Request

Request Summary

| | | | |
|--------------------------------|---|----------------------------|---------|
| Request Number: | 202324303700 | Track Access: | True |
| Dates Requested: | 10/28/2023 01:00 to: 10/28/2023 06:00 | Clear In Ten: | False |
| Request Status: | Closed | Equipment on Track: | 1 |
| Requestor: | ██████████ | Allow Piggybacks: | True |
| Requestor Organization: | TRST | In Piggyback: | No |
| Tag #: | Closed (2023301505-A) | Power Outage: | Red Tag |
| Lock Out / Tag Out: | No | Additional AC: | |
| Request Title: | TKMSE Third Rail Maintenance F08-F09, Track 1 | | |

Energization by PDC completed: 10/28/2023 04:56
Work Stopped by RTC: 10/28/2023 08:39
Reason: Poor radio communications
Rail Traffic Controller Comment:
Assistant Operations Manager Comment:
RWIC Comment:
Requestor Comment:
Delays

As of 10/28/2023 11:56
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GOTRS - GENERAL ORDERS & TRACK RIGHTS SYSTEM

Track Rights Request

Request Summary

| | | | |
|--------------------------------|---|----------------------------|---------|
| Request Number: | 202324303700 | Track Access: | True |
| Dates Requested: | 10/28/2023 01:00 to: 10/28/2023 06:00 | Clear In Ten: | False |
| Request Status: | Closed | Equipment on Track: | 1 |
| Requestor: | ██████████ | Allow Piggybacks: | True |
| Requestor Organization: | TRST | In Piggyback: | No |
| Tag #: | Closed (2023301505-A) | Power Outage: | Red Tag |
| Lock Out / Tag Out: | No | Additional AC: | |
| Request Title: | TKMSE Third Rail Maintenance F08-F09, Track 1 | | |

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Closed-Circuit Television (CCTV)

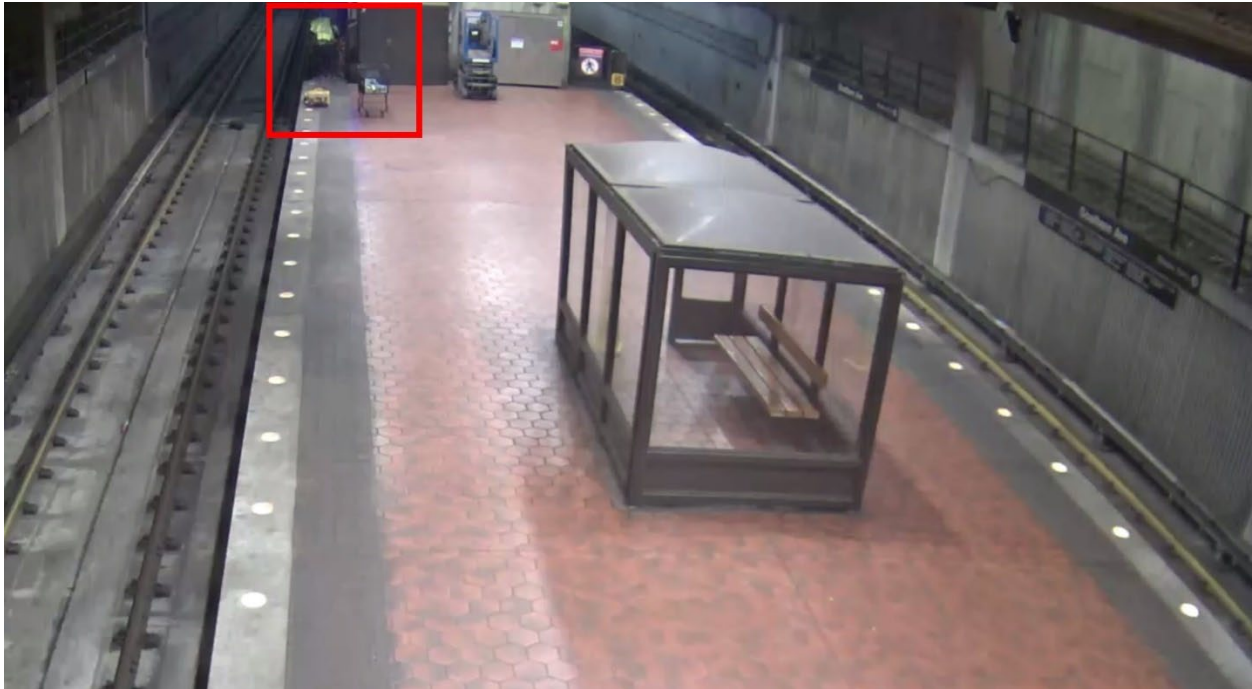


Image 2 - RWIC entered the 8-car Marker end gate on Track 2 at Southern Avenue Station at 01:47 hours.

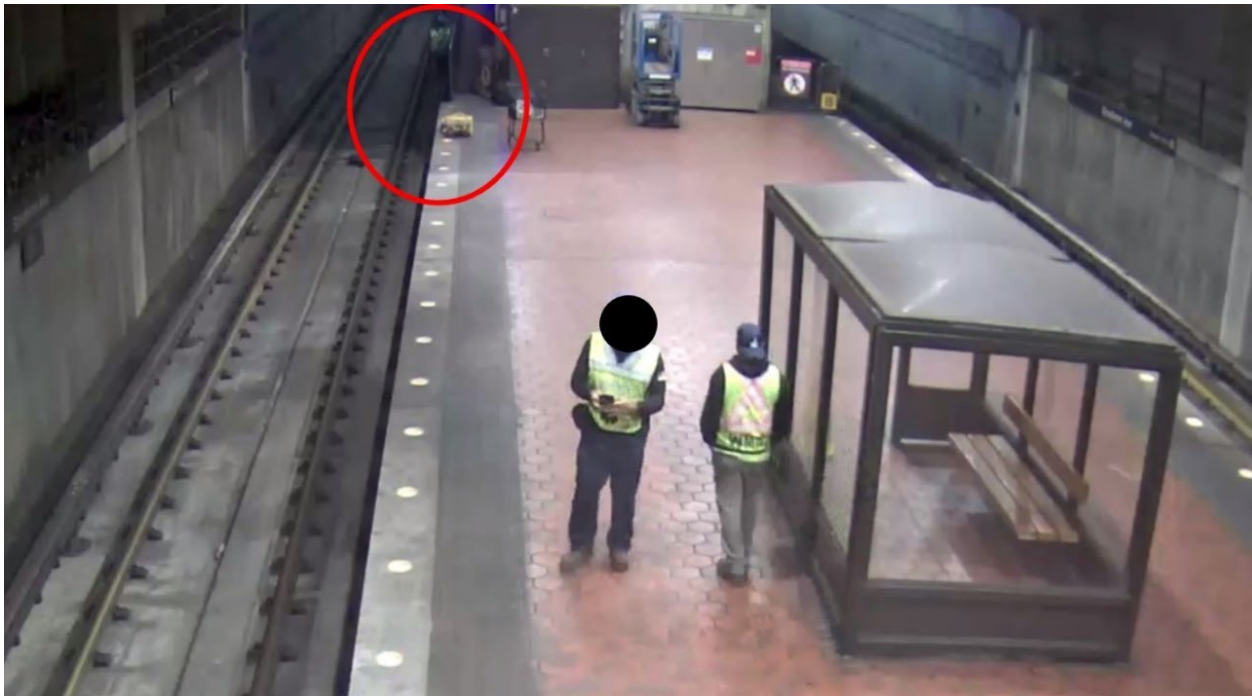


Image 3 - RWIC walking back towards the platform limits at Southern Avenue Station on Track 2 at 01:48 hours.

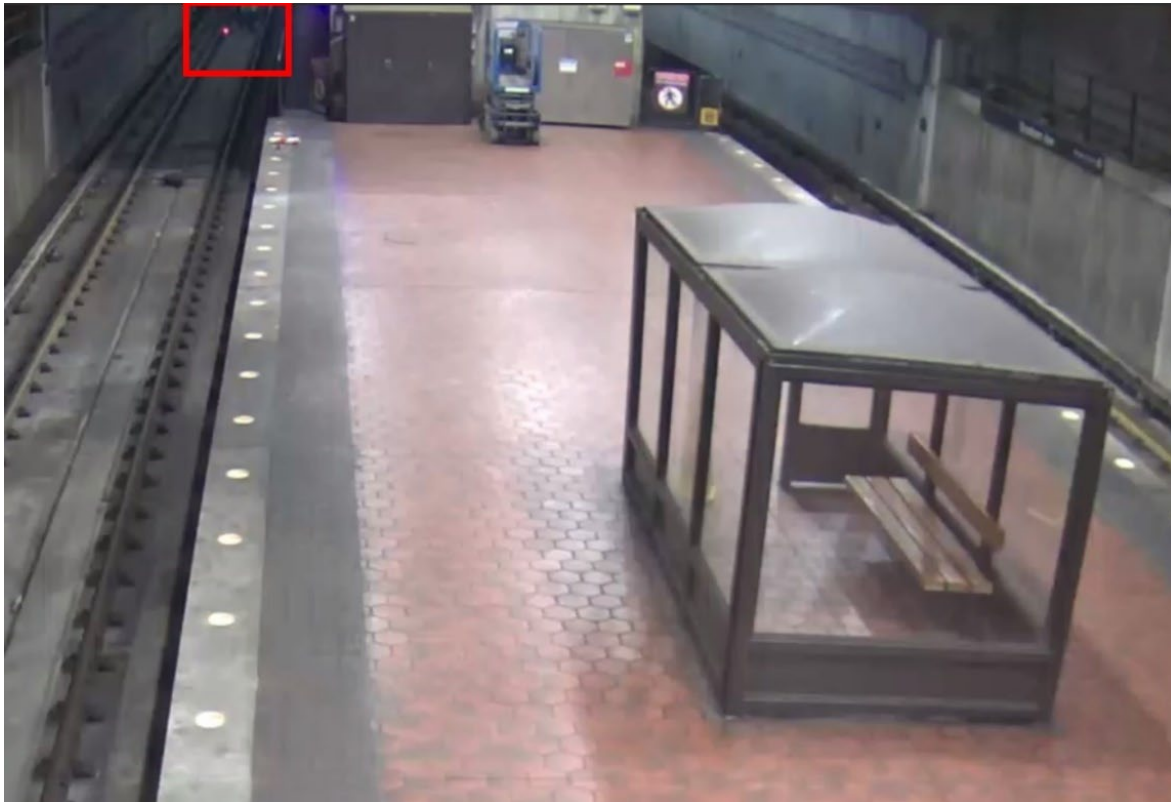


Image 4 - The RWIC installed shunts and red lanterns at 01:52 hours on Southern Avenue Station, Track 2.



Image 5 - The RWIC removed the shunts and red lanterns at 02:14 hours on Southern Avenue Station, Track 2.



Image 6 - Train ID 701 entered Southern Avenue Station platform limits on Track 2 at 02:39 hours.

Chronological Event Timeline

A review of ARS playback, i.e., phone and radio communications, revealed the following timeline:

| Time | Description |
|-------------|---|
| 23:24 hours | <u>RWIC</u> : Contacted the Power desk to request their red tag power outage at F08, track 1. [Ops. 3 Power Desk Phone] |
| 23:27 hours | <u>RWIC</u> : RWIC 6322 requested GOTRS Rights with ETO protection and a Red Tag power outage at Southern Avenue on Track 1 from CM F1 303+26 to F1 370+29. <u>Radio RTC</u> : RWIC to stand by, stand clear. <u>RWIC</u> : Acknowledged. <u>Radio RTC</u> : Asked the RWIC to identify their means for protection. <u>RWIC</u> : Informed the Radio RTC that ETO would be their form of protection. <u>Radio RTC</u> : Acknowledged the RWIC's request. <u>RWIC</u> : Acknowledged the Radio RTC's transmission and indicated they would stand by and clear. [Radio OPS 3] |
| 01:19 hours | <u>PDC</u> : Contacted the PDAS to execute the red tag. [Power Desk Phone] |
| 01:31 hours | <u>PDC</u> : Contacted the RWIC to grant them permission to contact Ops. 3 to organize hot sticking. [Power Desk Phone] |
| 01:32 hours | <u>RWIC</u> : Attempted to contact the Radio RTC. <u>Radio RTC</u> : Advised the RWIC to go ahead with the message. <u>RWIC</u> : Informed the Radio RTC that power inquired when they would set up their ETO. <u>Radio RTC</u> : Instructed the RWIC to stand by [Radio OPS 3] |

| Time | Description |
|----------------|---|
| 01:33 hours | <u>Radio RTC:</u> Granted the RWIC ETO protection at Southern Avenue on Track 1 from CM F1 303+26 to F1 370+29 and permitted the RWIC to install shunts in the work area. <u>RWIC:</u> Acknowledged and told the Radio RTC that they would notify when shunts were installed. [Radio OPS3] |
| 02:08 hours | <u>Train ID 701:</u> Reported no speed commands between Congress Heights and Southern Avenue Station. <u>Radio RTC:</u> Granted a permissive block to Train ID 701 to continue towards Southern Avenue. <u>Train ID 701:</u> Acknowledged the Radio RTC's instructions. [Radio OPS 3] |
| 02:09 hours | <u>Train ID 701:</u> Reported to the Radio RTC that Train ID 701 lost speed commands on track 2 in approach to Southern Avenue, and it appeared there was a shunt on the ground ahead of the train. <u>Radio RTC:</u> Requested that Train ID 701 repeat their message. <u>Train ID 701:</u> Reported that a shunt was installed on Track 2. [Radio OPS 3] |
| 02:10 hours | <u>Radio RTC:</u> Instructed Train ID 701 not to move the train. [Radio OPS 3] |
| 02:10 hours | <u>Radio RTC:</u> Attempted several times to make contact with the RWIC. [Radio OPS 3] |
| 02:11 hours | <u>Radio RTC:</u> Directed Train ID 701 to tap their horn. <u>Radio RTC:</u> Informed Train Operator of Train ID 701 operator that signal F08-08 would turn red and to prepare for foul time to perform a ground walk-around. <u>Train ID 701:</u> Acknowledged the Radio RTC's transmission. [Radio OPS 3] |
| 02:13 hours | <u>Radio RTC:</u> Asked the Train Operator if they were ready to go out to the roadway. <u>Radio RTC:</u> Granted the Train Operator foul time on track two to perform a ground walk-around. <u>Train ID 701:</u> Acknowledged the Radio RTC's transmission. [Radio OPS 3] |
| 02:14 hours | <u>Radio RTC:</u> Instructed the Train Operator to remove the shunt from the roadway and stand by until radio communication could be established with the RWIC. <u>Train ID 701:</u> Confirmed to the Radio RTC that the shunt was removed from the roadway. [Radio OPS 3] |
| 02:14:18 hours | RTC notified MOC of the Improper RWP violation. [Phone MOC] |
| 02:16:43 hours | MOC notified the TRST Supervisor of the Improper RWP violation. [Phone MOC] |
| 02:18:29 hours | AOM advised the TRST Supervisor of the details of the event. [Phone Rail 2] |
| 02:26:22 hours | TRST Assistant Superintendent advised the AOM that the RIWC would be removed from service. [Phone Rail 2] |
| 02:27 hours | Power was restored on Track 2 at Southern Avenue Station. [AIMS] |
| 02:34:02 hours | <u>RWIC:</u> Advised that all equipment was clear from the roadway. [Phone Rail 2] |
| 02:38:15 hours | <u>RWIC:</u> Reported that all personnel and equipment were clear from the roadway on tracks 1 and 2. [Radio Ops 3] |
| 02:38 hours | Train 701 began to move in the direction of Southern Avenue Station, Track 2. [AIMS] |

***Note: Times above may vary from other systems' timelines based on clock settings and reporting sources.*

Interview Findings

As part of the investigation launched into the event, SAFE interviewed one employee. The interview identified the following key findings associated with this event. Findings detailed below include reported information from involved personnel and may conflict with other data sources contained in the report.

RWIC

- Stated they mistakenly entered the incorrect track to set up their work area.
- Reported the radio communications were nonexistent and had difficulty receiving radio transmissions in the area.

Weather

On October 28, 2023, at the time of the incident, NOAA recorded the temperature as 64°F, passing clouds, winds five mph, visibility 10 miles, and 87% humidity. This is an above-ground station. The weather was not a contributing factor in this incident (Weather source: NOAA – Location: Hillcrest Heights, MD).

Related Rules and Procedures

- Metrorail Operating Rulebook – 17.1 – General Roadway Worker Protection Rules
- SOP 2 – Third Rail Power Energization and De-energization Procedures
- SOP 410-ROCC-ROC-04-01 – Roadway Worker Protection: Exclusive Track Occupancy

Human Factors

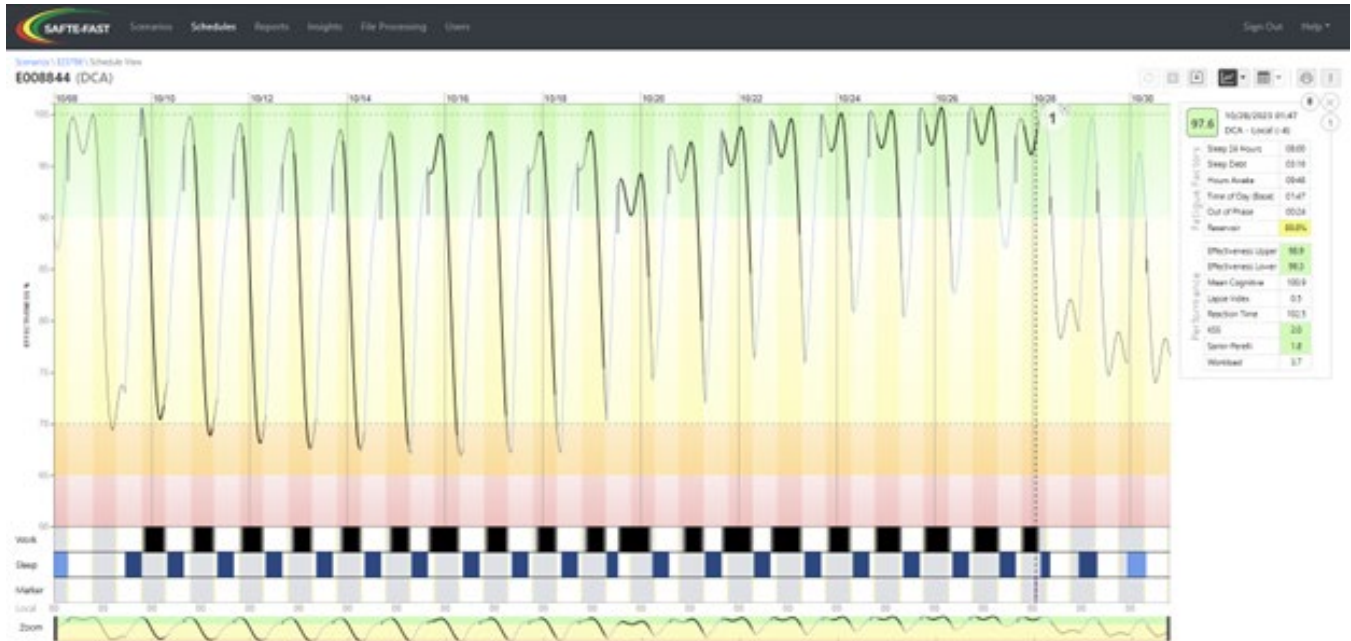
Evidence of Fatigue

Conditions at the time of the incident were evaluated to distinguish whether evidence of fatigue was present. Video of the incident was reviewed for behaviors suggesting fatigue. No signs or symptoms of fatigue were evident from the video. The employee reported feeling fully alert at the time of the incident. The employee reported experiencing no symptoms of fatigue leading up to the incident.

Fatigue Risk

Incident data was evaluated for fatigue risk factors. The incident time of day (1:48 hours) does not suggest an increased risk of fatigue-related impairment. The employee worked overnight shifts for 18 consecutive days leading up to the incident. The employee reported a total of 8 hours of sleep in the last sleep period preceding the incident and was awake for 9.8 hours at the time of the incident. The off-duty period preceding the incident was 13 hours, which provided the opportunity for 7-8 hours of sleep. The employee reported usual workday sleep durations of 8 hours and no issues with sleep.

A biomathematical fatigue modelling application (SAFTE-FAST WebSFC) was used to further evaluate fatigue risk factors that may have been present in the Track Walker's schedule. The analysis was based on the RWIC's work schedule, reported sleep from the day before the incident, and reported habitual sleep durations. The estimated performance effectiveness at the time of the incident was 97.6%. There were no major risk factors for fatigue identified.



Graph 1 - Modeling analysis output shows estimated performance effectiveness during the incident work shift and for the 18 days leading up to the work shift, based on the employee work and reported sleep schedule. Estimates were based on the Track Walker's work schedule, reported sleep from the day preceding the incident, and reported habitual sleep durations (8 hours a day). Bold portions of the modeled curve show work (in black) and sleep times (in blue). Effectiveness is shown on the vertical axis, with colored fields in the chart background signifying ranges of effectiveness scores, including high effectiveness (>90%) in green and low effectiveness (<65%) in red. Time is shown on the horizontal axis. Markers for work and sleep times are shown in the lanes above the time of day on the horizontal axis.

Post-Incident Toxicology Testing

WMATA's Drug and Alcohol Program determined that the TRST RWIC complied with the Drug and Alcohol Policy and Testing Program 7.7.3/7.

Work History

The RWIC is a WMATA employee with over 16 years of total service: three years as a Track Repairer AA. Other positions held with WMATA included Track Repairer B, C, and D, Laborer, and Cleaner. The Train Operator is certified to the RWP-4 Level and expires on April 30, 2024. This employee has no history of sleep issues to report.

Related Rules and Procedures

- Metrorail Operating Rulebook – 17.1 – General Roadway Worker Protection Rules
- SOP 2 – Third Rail Power Energization and De-energization Procedures
- SOP 410-ROCC-ROC-04-01 – Roadway Worker Protection: Exclusive Track Occupancy

Findings

- The RWIC was granted permission to set up their work zone on Track 1.
- The RWIC entered the roadway on Track 2 and set up their work area.
- Track identification markings were present throughout Southern Avenue Station, including the end gate at the 8-car Marker.
- Current ETO procedures require procedures and guidance from three documents (ROCC 410, SOP 2, and the MOR) that permit the risk of unclear interpretation by the executors.

Immediate Mitigation to Prevent Recurrence

- Work equipment and crew were removed from the roadway.
- SAFE provided a summary of the event to TRST and ROCC. TRST work crews reviewed the event for the next overnight shift as part of their Roadway Job Safety Briefings.
- To prevent recurrence, SAFE developed a Safety Bulletin summarizing the event, the immediate causes, and short-term mitigations.
- TRST developed a Lessons Learned document about this event.

Probable Cause Statement

The probable cause of the Improper RWP event at Southern Avenue Station on October 28, 2023, was incorrect procedures followed by the RWIC after permission was granted to set up their work zone. The RTC authorized the RWIC to set up their work area and safety equipment on Track 1. However, the RWIC inadvertently entered the roadway on Track 2 to set up their work area.

Recommended Corrective Actions

| Corrective Action Code | Description | Responsible Party | Estimated Completion Date |
|----------------------------------|--|--------------------------|----------------------------------|
| 112527_SAFE CAPS_SAFE_ 001 | SAFE Management will develop a Safety Bulletin summarizing the incident, immediate causes, and short-term mitigations. | SAFE SRC | Completed |

Appendices

Appendix A – Interview Summary

The below narratives summarize the incident and represent 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 RWIC is a WMATA employee with over 16 years of total service: three years as a Track Repairer AA. Other positions held with WMATA included Track Repairer B, C, and D, Laborer, and Cleaner. The Train Operator is certified to the RWP-4 Level and expires on April 30, 2024. This employee has no history of sleep issues to report.

During the interview, the RWIC stated their job assignment was to install third rail cover boards and repair a rocker arm. They stated they had a GOTRS Red Tag authorization to perform the work Track 1 near Southern Avenue Station and were instructed that the work was off the platform. The RWIC stated they did not verify which track they entered before installing shunts on the roadway. After they installed the first shunt, the RWIC reported they proceeded to the other end of the work area to install the second shunt and work mat. The RWIC reported the radio communications were intermittent and did not know the RTC was attempting to contact them. The RWIC reported as they were walking back to the platform, they heard the radio transmissions going in and out before finally hearing the RTC state they had set up on the wrong track. The RWIC stated that after they cleared the roadway onto the Southern Avenue platform, they verified that roadway signage was present for track identification.

The RWIC stated they had made a mistake by not verifying the track number before entering the roadway to install the shunts. They stated this incident could have been prevented if they had used extra time for track identification before accessing the roadway. The RWIC reported that their current ETO procedures require them to carry all safety equipment to the roadway for installation without hot sticking to confirm the status of third rail power. The RWIC did not report any issues with sleep.

Appendix B – RWIC and TRST Personnel Incident Statements (Abridged)

| | | | |
|---|----------------|--|------------------|
| M Witness or Employee Statement Form | | TO BE COMPLETED AND DISTRIBUTED WITHIN 24 HOURS | |
| WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY | | USE SEPARATE FORM FOR EACH PERSON | |
| | | Page 1 of 1 | |
| PERSONNEL INVOLVED (Use This Block For WMATA Employees and Contractors) | | | |
| Name | [Redacted] | Age | [Redacted] |
| Employee # or MTPD Badge # | [Redacted] | Phone Number | [Redacted] |
| Job Title | Track Rep. #AA | Department | TRST |
| Division/Section | Branch | Last Day Worked (prior to) | 10/26/23 |
| Hours Worked (within last 24 hrs) | 11 | Overtime? | 3 |
| INVOLVED PERSON OR WITNESS (Use This Block For Non-WMATA Involved Person or Witness) | | | |
| Name | [Redacted] | Phone Number | [Redacted] |
| E-Mail | [Redacted] | Address | [Redacted] |
| INCIDENT | | | |
| Date | 10/28/23 | Incident Time | 02:15 |
| Date/Time Reported | 10/28/23 | Location | F08 Southlea Ave |
| Incident ID# (From ROCC, BOCC, etc.) | | Worksafe Incident # | |
| What happened prior to the incident? | | | |
| Received permission to set up ETO Track 1 | | | |
| Describe the incident | | | |
| Set-up wrong Track (Track 2) | | | |
| What happened after the incident? | | | |
| Taken for Drug/Alcohol test | | | |
| Form Completed by: (Print Name) | | | Date |
| [Redacted] | | | 10/28/23 |
| Signature | | | [Redacted] |

50.689 10/09 Original: RISK Copy 1: Department Copy 2: SAFE Copy 3: Employee File Photocopy to Employee

Document 1 – RWIC Incident Report.



Witness or Employee Statement Form
WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
USE SEPARATE FORM FOR EACH PERSON

**TO BE COMPLETED AND
 DISTRIBUTED WITHIN 24 HOURS**

Page **1** of **1**

| PERSONNEL INVOLVED (Use This Block For WMATA Employees and Contractors) | | | |
|--|-----------------------------------|---------------------|----------------------------|
| Name | [Redacted] | Age | Employee # or MTPD Badge # |
| Phone Number | Job Title | Department | Division/Section |
| [Redacted] | LAB | Brand Track Branch | 1 |
| Last Day Worked (prior to) | Hours Worked (within last 24 hrs) | Overtime? | |
| 10-26-23 | 10:00 - 6:00 | | |
| INVOLVED PERSON OR WITNESS (Use This Block For Non-WMATA Involved Person or Witness) | | | |
| Name | Phone Number | E-Mail | |
| Address | | | |
| | | | |
| INCIDENT | | | |
| Date | Incident Time | Date/Time Reported | Location |
| Incident ID# (From ROCC, BOCC, etc.) | | Worksafe Incident # | |
| What happened prior to the incident? | | | |
| I WAS standing byE | | | |
| Describe the incident | | | |
| I [Redacted] I did no what was going on | | | |
| What happened after the incident? | | | |
| Roc told us to clear up | | | |
| Form Completed by: (Print Name) | | | Date |
| Signature | | | [Redacted] |

50.689 10/09 Original: RISK Copy 1: Department Copy 2: SAFE Copy 3: Employee File Photocopy to Employee

Document 2 – TRST Laborer Incident Statement.

Incident Date: 10/28/2023 Time: 01:48 hours
 Final Report – Improper Roadway Worker Protection
 E23768

Drafted By: SAFE 702 – 12/18/2023
 Reviewed By: SAFE 707 – 12/26/2023
 Approved By: SAFE



Witness or Employee Statement Form
WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
USE SEPARATE FORM FOR EACH PERSON

**TO BE COMPLETED AND
 DISTRIBUTED WITHIN 24 HOURS**

Page of

| PERSONNEL INVOLVED (Use This Block For WMATA Employees and Contractors) | | | |
|--|---|--|----------------------------|
| Name [REDACTED] | Age [REDACTED] | Employee # or MTPD Badge # [REDACTED] | |
| Phone Number [REDACTED] | Job Title Track repair/D | Department Track | Division/Section Branch |
| Last Day Worked (prior to) 10/26/23 | Hours Worked (within last 24 hrs) 8 hrs 8 hrs | | Overtime? NO |
| INVOLVED PERSON OR WITNESS (Use This Block For Non-WMATA Involved Person or Witness) | | | |
| Name | Phone Number | E-Mail | |
| Address | | | |
| INCIDENT | | | |
| Date 10/27/23 | Incident Time 10A | Date/Time Reported 10/28/23 | Location Southier AVE |
| Incident ID# (From ROCC, BOCC, etc.) | | Worksafe Incident # | |
| What happened prior to the incident? Getting materials for Job out of Truck | | | |
| Describe the incident Standing by (S) (int) Train came on platform, Don't know what happened. | | | |
| What happened after the incident? Central said clear up. | | | |
| Form Completed by: (Print Name) [REDACTED] | | | Date 10/28/23 |
| Signature [REDACTED] | | | Date 10/28/23 |

50.689 10/09 Original: RISK Copy 1: Department Copy 2: SAFE Copy 3: Employee File Photocopy to Employee

Document 3 – TRST Repairer Incident Statement.

Incident Date: 10/28/2023 Time: 01:48 hours
 Final Report – Improper Roadway Worker Protection
 E23768

Drafted By: SAFE 702 – 12/18/2023
 Reviewed By: SAFE 707 – 12/26/2023
 Approved By: SAFE



Witness or Employee Statement Form
WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
USE SEPARATE FORM FOR EACH PERSON

TO BE COMPLETED AND
DISTRIBUTED WITHIN 24 HOURS
 Page of

| PERSONNEL INVOLVED (Use This Block For WMATA Employees and Contractors) | | | | |
|--|---------------|-----------------------------------|----------------------------|------------------|
| Name | | Age | Employee # or MTPD Badge # | |
| Phone Number | | Job Title | Department | Division/Section |
| Last Day Worked (prior to) | | Hours Worked (within last 24 hrs) | | Overtime? |
| INVOLVED PERSON OR WITNESS (Use This Block For Non-WMATA Involved Person or Witness) | | | | |
| Name | | Phone Number | E-Mail | |
| Address | | | | |
| INCIDENT | | | | |
| Date | Incident Time | Date/Time Reported | Location | |
| Incident ID# (From ROCC, BOCC, etc.) | | Worksafe Incident # | | |
| What happened prior to the incident? | | | | |
| We were standing by. | | | | |
| Describe the incident. | | | | |
| I did not know what was going on. | | | | |
| What happened after the incident? | | | | |
| Central say clear up. | | | | |
| Form Completed by: (Print Name) | | | | Date |
| Signature | | | | 10-26-23 |

50.689 10/09 Original RISK Copy 1: Department Copy 2: SAFE Copy 3: Employee File Photocopy to Employee

Document 4 – TRST Repairer Incident Statement.

Incident Date: 10/28/2023 Time: 01:48 hours
 Final Report – Improper Roadway Worker Protection
 E23768

Drafted By: SAFE 702 – 12/18/2023
 Reviewed By: SAFE 707 – 12/26/2023
 Approved By: SAFE



Witness or Employee Statement Form
WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
USE SEPARATE FORM FOR EACH PERSON

**TO BE COMPLETED AND
 DISTRIBUTED WITHIN 24 HOURS**
 Page of

| PERSONNEL INVOLVED (Use This Block For WMATA Employees and Contractors) | | | | |
|--|-----------------------------------|----------------------------|------------------|------|
| Name | Age | Employee # or MTPD Badge # | | |
| Phone Number | Job Title | Department | Division/Section | |
| Last Day Worked (prior to) | Hours Worked (within last 24 hrs) | Overtime? | | |
| INVOLVED PERSON OR WITNESS (Use This Block For Non-WMATA Involved Person or Witness) | | | | |
| Name | Phone Number | E-Mail | | |
| Address | | | | |
| INCIDENT | | | | |
| Date | Incident Time | Date/Time Reported | Location | |
| Incident ID# (From ROCC, BOCC, etc.) | Worksafe Incident # | | | |
| What happened prior to the incident? | | | | |
| Describe the incident | | | | |
| What happened after the incident? | | | | |
| Form Completed by: (Print Name) | | | | |
| Signature | | | | Date |

50.689 10/09 Original: RISK Copy 1: Department Copy 2: SAFE Copy 3: Employee File Photocopy to Employee

Document 5 – TRST Repairer Incident Statement.

Appendix C – Roadway Job Safety Briefing (RJSB)

Part 1: General Job Briefing

1 Date: 10/27/23 Time: 10:00pm RWIC: [Redacted]
 RWIC Call #: 6322 RWIC Cell Phone #: [Redacted]

2 Safety Contact: Always wear your PPE
 RWP Rule: Never clear to another track

3 Work Location: Southern Ave F-08
 Job Task(s): Third Rail maintenance

4 Worksite, Electrical, Chemical, or Environmental Hazards:

5 PPE Inspected: Electronic Device Policy Reviewed: Radio Certification Date Inspected:
 RWP Stickers Inspected: Tools and Equipment Inspected: Radio Checks Performed:
 What Specialized PPE Will Be Used?

6 Emergency Response Plan:
 Clear to platform / Assess situation Southern MD
 Hosp

Part 2: RWP Briefing: This section must be filled out before any Roadway Workers enter the Roadway.
 **Track Time On/Off: 01:17 : : : : : **

7 Rail Line: F Green Track Number(s): 1 Track Access Guide (TAG) Speed: 45
 Working Limits Chain Markers: F1303+26 - F370+29
 OPS Radio Channel: 3 OPS Phone Number: 202 962-1562
 Place of Safety: Platform / catwalk Time Needed to Reach Place of Safety: 2min
 Are There Red Hot Spots Within Your Working Limits? Yes No
 Red Hot Spot Chain Markers: 344
 306-312 Platform
 325+00-323 Restricted View Curve
 325-325 Portal
 344-325 Restricted View Curve

8 Form of RWP: IT ETO Authority Local Signal Control AMF FT
 RWP Notes: Pwr Req 23:25 - permission 01:17
 CC re 23:27 to set up ETO

9 Advanced Mobile Flagger Call #(s) or Last Name(s):
 Advanced Mobile Flagger Placement:
 Watchman/Lookout Placement:
 Required Site Distance: Watchman/Lookout Rotation Schedule:

10 Will There be a Speed Restriction on the Adjacent Track? Yes No
 How Will the Speed Restriction be Implemented?

11 Will Class 2 Vehicles be Part of the Working Limits? Yes No
 # of Class 2 Vehicles: Type of Class 2 Vehicles:

Document 6 – RJSB page 1 of 2.

WMATA Roadway Job Safety Briefing Form

This form must be completed legibly and accurately and be retained and made available for inspection for a period of 90 days.



Part 2: RWP Briefing, continued:

| | | | |
|--|------------------------|------------------------------------|------------------------|
| Power Outage: Red Tag <input checked="" type="checkbox"/> Supervisory <input type="checkbox"/> | | Hot Sticking Chain Markers: | |
| Red/Supervisory Tag #: 2023 301505 A | | F1303+26 | |
| Red/Supervisory Tag Holder: [REDACTED] | | F1370+29 | |
| 12 Insulated Mat(s) Color Blue <input type="checkbox"/> Red <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Yellow <input type="checkbox"/> | | | |
| WSAD Certification Due | WSAD Serial #/Asset ID | WSAD Certification Due | WSAD Serial #/Asset ID |
| 09/10/24 | T0003X8J | / / | / / |
| Will a Piggyback Crew(s) be Working Within Your Working Limits? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | | | |
| 13 Crew Leader/EIC Call #(s): | | Piggyback Work Area Chain Markers: | |
| Piggyback Work Assignment(s): | | | |

Part 3: Good Faith Challenge: The following must be read aloud by the RWIC to the Roadway Workers.

"WMATA guarantees each Roadway Worker the right to challenge, in good faith, the effectiveness of the Roadway Worker Protection being provided. The Roadway Worker making the challenge, and those that are sympathetic to the challenge, shall remain clear of the roadway until the challenge has been resolved."

| | |
|--|-----------------|
| RWP Issues: | Worker Name(s): |
| | |
| Was the GFC Issue Resolved? Yes <input type="checkbox"/> No <input type="checkbox"/> | |

Part 4: Roadway Worker Acknowledgement

"I understand and agree with all aspects of the Roadway Job Safety Briefing I just received. I am adequately protected from any train movement or roadway hazards. I understand I have a responsibility to conduct myself in a safe manner at all times."

ROADWAY WORKERS HAVE THE RIGHT AND RESPONSIBILITY TO INITIATE A GOOD FAITH CHALLENGE WHEN NECESSARY

| Roadway Worker Signature | Employee ID # | Roadway Worker Signature | Employee ID # | Crew Leader/EIC Signature | Crew Leader/EIC Employee ID # |
|--------------------------|---------------|--------------------------|---------------|---------------------------|-------------------------------|
| [REDACTED] | [REDACTED] | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Part 5: RWIC Signature(s)

Additional RWIC Comments:

RWIC Signature: [REDACTED] RWIC Employee ID #: [REDACTED] Date: 10/27/23

Relieving RWIC Name: [REDACTED] Relieving RWIC Employee ID #:

Relieving RWIC Signature: Date/Time: / / : :

Relieving RWIC Call #: Relieving RWIC Cell Phone #:

Document 7 – RJSB page 2 of 2.

Appendix D – FT/ETO/IT Roadway Access Form



FT/ETO/IT Roadway Access

Rail Operations Control

Page 1 of 4
 Day Saturday Date 10/26/23

| Radio Call # | Location (track, chain markers) | Type of work / Support Restrictions | Type of Protection (FT, ETO, IT) | Pwr Out (Y/N) | Request time | Ensure area protected by RED SIGNALS Signal(s) Cancelled | Prohibited signal(s) | Train ID(s) of Operators told to hold | Confirm to RWIC all protections have been established and which signals cancelled | RTC initials | OM / AOM initials | Start time | End time |
|--------------|---------------------------------|-------------------------------------|----------------------------------|---------------|--------------|---|----------------------|---------------------------------------|---|--------------|-------------------|------------|----------|
| 1222 | C10 | GOTRS | ETO | Y | 0044 | C11-02 C08-06 | C11-04 C08-06 | NA | <input checked="" type="checkbox"/> | | | 0320 | 0515 |
| 1088 | J01-02 | GOTRS | ETO | Y | 2321 | J01-08 | J01-06 | NA | <input checked="" type="checkbox"/> | | | 0248 | 0317 |
| 1197 | C97 | GOTRS #R 3008 | ETO | Y | 2337 | J02-02 C97-06 | J02-04 C97-06 | NA | <input checked="" type="checkbox"/> | | | 0315 | 0458 |
| 2216 | C14-C13 | GOTRS #R 27521 PM40 | ETO | Y | 0037 | C15-02 | C15-04 | NA | <input checked="" type="checkbox"/> | | | 0318 | 0517 |
| 1256 | C11 | GOTRS | ETO | Y | 2323 | C12-02 C10-52 C10-54 | C12-04 C10-30 | NA | <input checked="" type="checkbox"/> | | | 0320 | 0543 |
| 1254 | E'315-314 E'315-314 | Switching | FT | N | 0559 | E06-02 E06-02 | E06-04 | NA | <input checked="" type="checkbox"/> | | | 0542 | 0554 |
| 1216 | F11 | GOTRS | ETO | Y | 0035 | F11-32 F11-08 | F11-34 F11-06 | NA | <input checked="" type="checkbox"/> | | | 0226 | 0501 |
| 10322 | F09-F08 | GOTRS | ETO | Y | 2327 | F09-02 | F09-04 | NA | <input checked="" type="checkbox"/> | | | 0138 | 0437 |
| 1249 | F04 | PM29 GOTRS | ETO | Y | 0017 | F05-08 | F05-06 | NA | <input checked="" type="checkbox"/> | | | 0244 | 0500 |
| 1262 | F02-F01 | GOTRS | ETO | Y | 0108 | F03-02 E01-08 | F03-04 E01-06 | NA | <input checked="" type="checkbox"/> | | | 0243 | 0420 |

Document 8 – ROCC Roadway Access Form detailing which personnel requested roadway access on October 28, 2023.

Roadway Worker Protection Near Miss

OVERVIEW

Roadway Worker Protection (RWP) provides personnel with a uniform method of establishing on-track protection, minimizing hazards associated with working on the roadway. It is vitally important that all personnel involved in RWP, including Roadway Workers, Rail Vehicle Operators (RVO), and Rail Traffic Controllers (RTC), understand and safely implement the various forms of RWP.

Near Miss Incident: Southern Avenue, Saturday, October 28, 2023

In the early hours of Saturday morning, a crew had track rights, under Exclusive Track Occupancy (ETO), with power down on Track 1. After receiving permission from the Metro Integrated Command and Communications Center, the crew mistakenly set up their work zone on Track 2 without permission while the power was up, placing shunts at several locations. Although the shunts were displayed on the AIMS screen, they were only noticed when an outbound train reported the loss of speed commands and saw the shunts after a ground walk around. The crew were at risk of contacting an energized third rail and being struck by a train without any roadway worker protection.

DETAILS AND ACTIONS FOR PREVENTION

Roadway Workers

- Ensure instructions are clearly stated and understood by all crew members.
- Verify you are entering the correct track by verifying the track number sign near the 8-car marker and cover board track designations.
 - Immediately confirm that each shunt is correctly placed by contacting the MICC and providing the track number and chain marker over the radio. Do not wait until the entire work zone is established.

MICC Personnel

- Maintain situational awareness when track rights are being requested.
- Stay alert for any anomalous conditions where wayside workers are present. Contact the RWIC immediately to verify the conditions.



For questions regarding this Safety Bulletin or other safety-related issues, contact the Safety Hotline at 202-249-SAFE (7233).



Appendix F – Why-Tree Analysis

E23768 – Improper RWP – Southern Avenue Station

