



WMSC Commissioner Brief: W-0288 – W-0291 Improper Roadway Worker Protection Events – May 2023

Prepared for Washington Metrorail Safety Commission meeting on May 14, 2024

Metrorail's Roadway Worker Protection Program is designed to protect employees, contractors and, in emergencies, first responders and customers while they are on and around the tracks.

In 2023, Metrorail reported 51 improper roadway worker protection (RWP) safety events to the WMSC. These events included personnel entering the roadway without permission and without the proper protection, and improper use of watchmen/lookouts. The investigation reports attached are four final reports related to some of the events that occurred in May 2023, each of which are now ready for consideration by the Commissioners.

The WMSC is finalizing the draft report of our audit on Metrorail's Roadway Worker Protection Program that began in 2023 and continued into early 2024.

Metrorail currently has related open CAP C-0181 addressing the finding that elements of Metrorail have a culture that accepts noncompliance with written operational rules, instructions, and manuals. (Expected completion date October 2024). Metrorail has revised its Safety Management System related to Rail Operations. This has included implementing new methods of hazard and risk reporting, training of personnel on reporting and implementation of a new data collection system for those issues so they can be properly evaluated and addressed. The WMSC is currently reviewing this CAP to ensure the deliverables and intended outcomes of this CAP have been met.

Investigations W-0278-W-0292 being considered at the May 14, 2024, meeting led to specific corrective actions including:

- Metrorail is conducting an ongoing safety campaign that requires Rail supervisors to conduct job briefings and train operation check rides with Train Operators, specifically related to RWP adherence, which must be documented.
- A safety bulletin issued on January 13, 2023, regarding improper RWP events, advanced mobile flagging procedures, and foul time requirements.
- Another safety bulletin issued on February 8, 2023, in relation to events on January 16 ([W-0264](#)) and January 29, 2023 (below), communicating the differences between direction from Power Desk Controllers and Rail Traffic Controllers, and associated adjustments to Power Desk Controller communications that emphasize the need for protection to be requested from and granted by the Rail Traffic Controller.
- Safety briefings for personnel on the importance of RWP awareness
- Metrorail reinforced the importance of reviewing the site conditions during the Job Safety Briefing to include track access right with work crews.
- A safety bulletin issued highlighting the proper method to retrieve items in close proximity of the third rail and the required PPE.
- Retraining on radio communications procedures and RWP requirements.

Safety event summaries:



W-0288 – Entering Roadway Without Permission/Protection – Medical Center Station – May 9, 2023 (WMATA ID: E23322)

On May 9, 2023, a Senior Safety Manager contractor accessed the roadway without required permission or protection against collision. After being instructed by the site foreman to meet a work crew at Medical Center Station, the contractor entered through a vent shaft and accessed the roadway, crossing from Track 2 to Track 1, without a WMATA escort. The contractor did not request permission from the Rail Operations Control Center as required by Metrorail policy. The work crew was not on the roadway, had no track rights and was working behind a safety barrier on Track 1 that did not require protection against train movement. This work area could be accessed using an overhead catwalk that would not require the contractor to foul the track. Other contractor staff identified the improper RWP, and notified the contractor. A WMATA escort and inspector were also notified, and the contractor was removed from the work site. In an investigative interview, the contractor stated they assumed that third rail power was deenergized and permission was not needed due to previous work experience on other projects that were a part of a larger shutdown. This event was not reported to the ROCC until approximately five hours later and therefore was not reported to the WMSC within the required 2-hour period. During an investigative interview, the contractor reported working varying shifts in the days leading up to the safety event and that they had been awake for over 16 hours at the time of the event, increasing the likelihood of fatigue.

- **Related Open Corrective Action Plan:**

- C-0131 addresses the recommendation that Metrorail is not providing medical oversight of contractors and does not include any requirement in contracts that contractors meet WMATA medical, fatigue or hours of service standards. This CAP is currently in progress with the next expected compliance evidence to show the process functioning is due to the WMSC in November 2023. The expected completion date of this CAP is December 2025.

Probable Cause:

The probable cause of this event is non-compliance with established safety procedures and a lack of supervisory oversight to ensure compliance with such procedures.

W-0289 – Braddock Road Station – Entering Roadway Without Permission/Protection – May 15, 2023 (WMATA ID: E23329)

On May 15, 2023, an Office of Track and Structures Roadway Worker in Charge (RWIC) and another track inspector accessed a section of the roadway without permission or protection against vehicle movement. At 11:54 p.m. on May 14, 2023, the RWIC, requested and was granted permission to enter the roadway under Advance Mobile Flag Protection from the Rail Traffic Controller located in the Rail Operations Control Center (ROCC) to enter the roadway to conduct a track inspection between Ronald Reagan National Airport and Braddock Road stations on Track 1. At 12:22 a.m. on May 15, 2023, after reaching Ronald Reagan National Airport Station, the RWIC requested Foul Time from chain marker 430+00 to 515+00. That area of track contains a blind spot, two portals and a turbulent air vortex. The RWIC was advised by the Controller to standby and clear of vehicle movement. After allowing Prime Mover 42 (PM 42) to travel through the Braddock Road Portal, the Controller attempted to contact the RWIC to confirm PM 42



had cleared their location, but did not receive a response. At 1:22 a.m., an hour after the initial request, the RWIC made their request for Foul time again. The Controller instructed the RWIC to provide a chain marker for their current location. The RWIC did not respond. The Controller contacted the Equipment Operator of Prime Mover 42, who confirmed that they had passed the crew on Track 1 after the unit departed Braddock Road Station. The Equipment Operator stated to the Assistant Operations Manager in the ROCC that the Advanced Mobile Flagger briefed them that the crew was on the roadway, not under Foul Time Protection. The Controller granted the RWIC Foul Time in order to clear their crew from the roadway at Braddock Road Station. The RWIC was removed from service for post-event toxicology testing.

Probable Cause:

The probable cause of this event is non-compliance with established safety procedures and a lack of supervisory oversight to ensure compliance with such procedures.

W-0290 – Georgia Ave-Petworth Station – Entering Roadway Without Proper Protection – May 23, 2023 (WMATA ID: E23344)

On May 23, 2023, a Rail Supervisor removed an object that was located close to the energized third rail at Georgia Ave-Petworth Station without the proper personal protective equipment and other required equipment, risking serious injury including electrocution and death. A Rail Traffic Controller in the Rail Operations Control Center instructed the Rail Supervisor to retrieve a wet floor sign from the roadway at Georgia Ave-Petworth Station after a station manager reported observing a customer throw it onto Tracks 1 on closed-circuit television. The Controller directed trains to single track on Track 2 and asked the Rail Supervisor if they could safely retrieve the sign and the Rail Supervisor confirmed that they could. A later review of video footage by Metrorail's Safety Department showed that the sign was against or beneath the third rail. According to Metrorail procedures, removing an object that has the potential for incidental contact with the third rail requires additional protective measures, such as an electrical blanket, high voltage electrical gloves and a supervisory power outage. At the time of retrieval, the Rail Supervisor was only wearing standard work gloves. The Rail Supervisor was removed from service for post-event toxicology testing. No injuries were reported.

Probable Cause:

The probable cause of this event is non-compliance with established safety procedures.

W-0291 – Georgia Ave. - Petworth Station – May 24, 2023 (WMATA ID: E23349)

On May 24, 2023, an Advanced Mobile Flagger (AMF) was not positioned at the 8-car marker as required by Metrorail procedure and did not brief a Train Operator operating Train 512 at Georgia Ave-Petworth Station that personnel were on the roadway ahead, risking collision with roadway workers. An Office of Track and Structures Roadway Worker in Charge (RWIC) requested permission to perform a track inspection from a Rail Traffic Controller in the Rail Operations Control Center (ROCC) from Fort Totten to U Street Station on Track 1 under AMF protection. After the RWIC attempted to contact the AMF several times to confirm they were in position at the 8-car marker at Georgia Ave-Petworth Station and receiving no response, the AMF confirmed they were in position and the ROCC Controller granted the work crew permission to enter the roadway. Closed-circuit Television showed that the AMF was not in place and instead was descending an escalator at the station as Train 512 departed the station heading toward the work crew. The Train Operator had not received the required briefing from the AMF and was unaware of the personnel ahead. The AMF



announced that a train was leaving the station via radio, but did not inform the RWIC or the ROCC that they had not briefed the Train Operator. While approaching Fort Totten Station, the Train Operator contacted a Rail Traffic Controller to inquire if there were personnel on the roadway and stated that there was no AMF at Georgia Ave-Petworth Station. During an investigative interview the RWIC stated that they heard the train approaching and the crew climbed onto the catwalk for safety as the train passed. Vehicle Monitoring System data showed that the Train Operator activated their road horn and full-service braking. After inquiring twice, the AMF confirmed to the Controller that they had not briefed the Train Operator of Train 512. The RWIC and the work crew returned to the platform at Fort Totten, the remainder of the track inspection was cancelled, and the AMF was removed from service for post-event toxicology testing.

Probable Cause:

The probable cause of this event was the Advanced Mobile Flagger's noncompliance with established rules and procedures for roadway worker protection.



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

FINAL REPORT OF INVESTIGATION A&I

Date of Event:	May 9, 2023
Type of Event:	O-23: Improper Road Worker Protection (RWP)
Incident Time:	03:15 hours
Location:	Medical Center Station, Chain Marker (CM) A2 484 +75
Time and How received by SAFE:	09:20 hours – Mission Assurance Coordinator (MAC)
WMSC Notification Time:	09:20 hours
Responding Safety Officers:	None
Rail Vehicle:	None
Injuries:	None
Damage:	None
Emergency Responders:	None
SMS I/A Incident Number:	20230509#108368MX

Medical Center Station, CM A2 484+00 – Improper RWP

May 9, 2023

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Abbreviations and Acronyms

AIMS	Advanced Information Management System
ARS	Audio Recording System
CAP	Corrective Action Plan
DPS	Drainage Pumping Station
MSRPH	Metrorail Safety Rules and Procedures Handbook
NOAA	National Oceanic and Atmospheric Administration
RTRA	Office of Rail Transportation
ROCC	Rail Operations Control Center
RWIC	Roadway Worker In Charge
RWP	Roadway Worker Protection
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 May 9, 2023, at 03:10 hours, a Senior Safety Manager Contractor (Contractor) for M & M Welding entered the vent shaft at Medical Center Station through a Drainage Pumping Station (DPS) on track 2 to meet with a work crew.

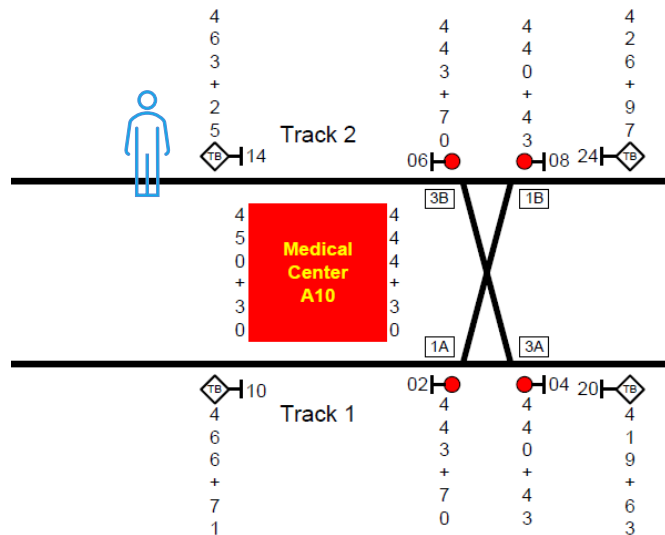
The Contractor observed the personnel they were to meet was on track 2 and then fouled the roadway by crossing over Tracks 2 and 1 without an escort or requesting permission from Rail Operations Control Center (ROCC). The work crew was working behind a safety barrier on track 1, were not in the roadway, and had no track rights. M & M Welding staff confronted the Contractor and notified them that they inappropriately fouled the roadway. The WMATA escort and inspector were notified and escorted the Contractor from the work site.

The probable cause of the Improper Roadway Worker Protection (RWP) event was a Human Factor error in adhering to established procedures for roadway access by contractors. Contributing Factors to the Improper Roadway Worker Protection event were complacency based on experience on previous job sites, such as Authorized Construction Sites (ACS); and the failure to review the non-roadway escort checklist, requiring an escort to meet with them before entering the DPS.

Incident Site

Medical Center Station, CM A2 484+00

Field Sketch/Schematics



The above depiction is not to scale.

Purpose and Scope

Incident Date: 05/09/2023 Time:03:15 hours
Final Report – Improper RWP
E23322

Drafted By: SAFE 710 – 06/17/2023
Reviewed By: SAFE 71 – 07/10/2023
Approved By: SAFE 71 – 07/10/2023

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 through document review.

- Formal Interviews – SAFE interviewed one 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 individual:
 - M&M Senior Safety Manager (contractor)

- 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 the following:
 - Metrorail Safety Rules and Procedures Handbook (MSRPH)
 - National Oceanic and Atmospheric Administration (NOAA)

- System Data Recording Review – Collection of information contained in Metro Data Recording Systems. This data includes:
 - Audio Recording System (ARS) playback
 - Automated Information Management System (AIMS)

Investigation

On May 9, 2023, at 03:10 hours, A contractor from M&M Welding received a phone call to meet with a work crew at Medical Center Station and entered the vent shaft through a DPS on track 1.

According to the incident report, at 03:15 hours, the Contractor stepped from the catwalk onto Track 2 and fouled the roadway, crossing from Track 2 to Track 1 to meet the crew on the Track 1 side. The work crew were replacing Drainage Pumping Stations and Discharge Line Piping. The work was behind a safety barrier, not in the roadway, and had no track rights.

There was no vehicle movement at Medical Center Station according to the Advance Information Management System (AIMS). Workers were on the roadway at Bethesda Station with blue blocking and prohibited exits in place.

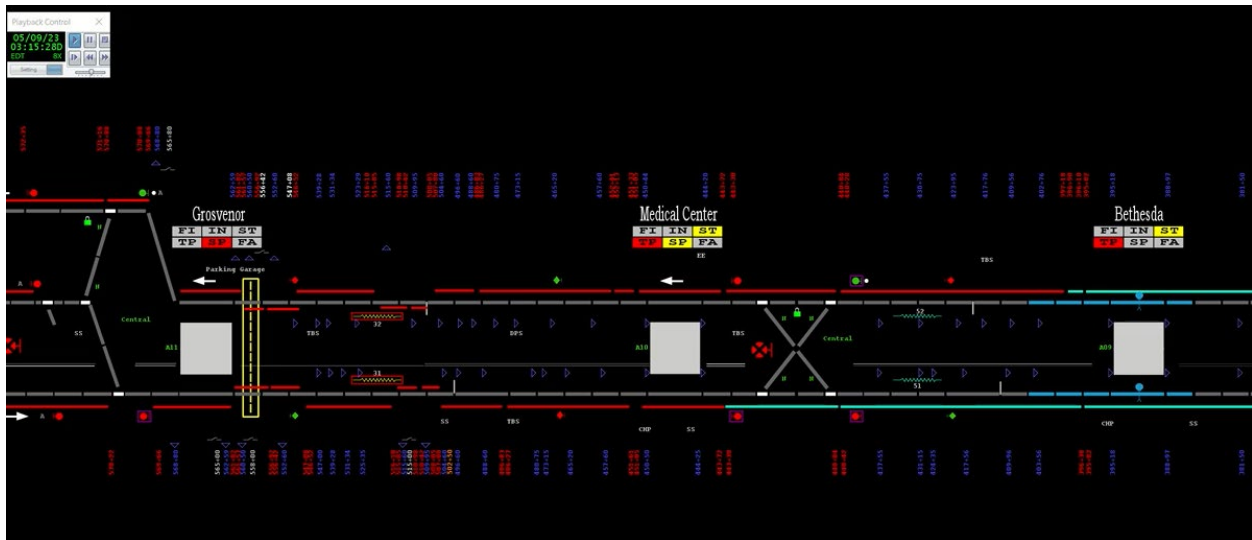


Figure 1 - AIMS screen depicts no vehicles present, blue blocking, and prohibited exits.

M & M staff confronted the Contractor and notified them that they fouled the roadway.

Due to the remote entry point of DPS, there was no camera recording of this event, and the audio recording could not be recovered because calls were made outside the WMATA network. There were no radio transmissions made related to this event.

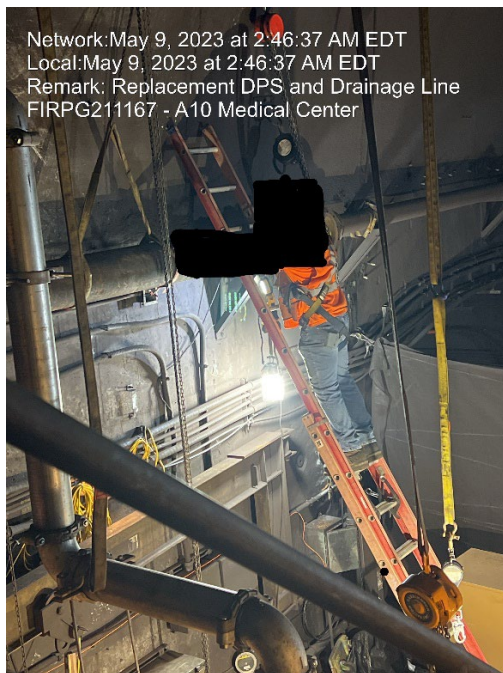


Image 1 – Depicts the remote work area that does not foul the roadway at Medical Center Station.

At 03:18 hours, WMATA personnel were notified of the Improper RWP violation. At 03:25 hours, The WMATA escort and inspector escorted the Contractor from the work site and confiscated their WMATA credentials.

Chronological Event Timeline

Incident Date: 05/09/2023 Time:03:15 hours
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SAFE reviewed ARS playback and video but was unable to identify audio or video recordings supporting this investigative report. All time points are adopted from the associated incident report.

Time	Description
03:10 hours	Contractor arrived on site via the vent shaft.
03:15 hours	Contractor fouled tracks 2 and 1 to reach work crew on track 1.
03:18 hours	Contractor advised personnel that they were on-site.
03:25 hours	Violation was identified and Contractor advised.
03:31 hours	Contractor's supervision notified.

Office of Rail & Bus Infrastructure Rehabilitation Programs (RBIR)

According to the incident report, at 03:15 hours, the Contractor entered the shaft at A10-1 and proceeded down to the DPS. The M&M crew worked behind the safety barrier and within the A10-1 DPS. Instead of utilizing the catwalk above track 1 to get to the DPS, the Contractor entered the roadway and fouled the tracks.¹ The M&M crew informed the Contractor that they had fouled the tracks and notified the WMATA Escort & Inspector. The Contractor was escorted off of the work site.

Interview Findings

As part of the investigation launched into the event, SAFE interviewed one individual. 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.

Senior Safety Manager (Contractor)

- The Contractor stated that the site foreman requested them to meet them at the base of the vent shaft.
- The Contractor stated that their last work location power was de-energized and assumed third rail power was de-energized at Medical Center.
- The Contractor stated they crossed tracks 1 & 2 to access the catwalk on track 1 side of the tunnel.

Weather

On May 9, 2023, at the time of the incident, NOAA recorded the temperature as 59° F. The event occurred within a tunneled section of the rail system. Weather was not a contributing factor in this incident (Weather source: NOAA) – Location: Bethesda, MD.

Related Rules and Procedures

- MSRPH RULE 5.4.3 – Fouling the Roadway
- MSRPH RULE 5.10.2 – Roadway Worker In Charge (*RWIC*) *duties and oversight of the working limits*. Must receive permission from ROCC before entering the Roadway and will not enter the Roadway until permission is granted by ROCC.

¹ A10-1 Medial Center work site did not have track rights as their work location was isolated from the roadway.

- MSRPH RULE 5.10.8 – Contractors SHALL ONLY enter the Roadway when accompanied by an RWP Level 4 qualified roadway worker.
- MSRPH RULE 5.18 –
 3. All contractors shall participate and comply with the Roadway Job Safety Briefing (RJSB) and must obtain this briefing BEFORE entering the Roadway.
 6. In accordance with SOP 28, non-WMATA personnel shall never enter the Roadway while the third rail is energized without a sufficient number of RWP Level 4 RWIC qualified Crew Leader(s) or Escort (s).
- MSRPH SOP 41.5.1.4.8 Provide the crew with safe and timely access to the Work Area.

Human Factors

Fatigue

Signs and Symptoms of Fatigue

We evaluated conditions at the time of the incident to distinguish whether evidence of fatigue was present. The available data indicated no sign of fatigue. No indications 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 in the time leading up to the incident.

Fatigue Risk

We evaluated incident data for fatigue risk factors. Risk factors for fatigue were present. The incident time of day did not suggest an increased risk of fatigue-related impairment. The employee reported some variation in the sleep schedule in the days leading up to the incident. The employee performed day and night work in the days leading up to the incident. The employee was awake for over 16 hours during the incident, which can increase the likelihood of impairment due to fatigue. The employee reported no issues with sleep.

Post-Incident Toxicology Testing

The contractor was removed from the property, WMATA credentials were confiscated, and Post-Incident Toxicology Testing was not conducted for this event.

Findings

- The Contractor's work area was behind a safety barrier with no track rights.
- The work area was on the track 1 side of the tunnel and could be accessed by way of an overhead catwalk without fouling the roadway.
- The Contractor was not permitted to foul the roadway.
- The Contractor was not escorted to the work location.
- The Contractor assumed that third rail power was de-energized and permission was not needed due to previous work experience on other projects that were part of a larger shutdown.

Immediate Mitigation to Prevent Recurrence

- The Contractor was removed from the job site and their WMATA credentials were confiscated.
- The importance of reviewing the site conditions and track access rights was highlighted during Job Site Safety Briefings.

Probable Cause Statement

The probable cause of the Improper Roadway Worker Protection (RWP) event was a Human Factor error in adhering to established procedures for roadway access by contractors. Contributing Factors to the Improper Roadway Worker Protection event were complacency based on experience on previous job sites, such as Authorized Construction Sites (ACS); and the failure to review the non-roadway escort checklist, requiring an escort to meet with them before entering the DPS.

Recommended Corrective Actions

Corrective Action Code	Description	Responsible Party	Estimated Completion Date
108368_SAFE CAPS_RBIR_ 001	Work crews will be reformed of the importance of reviewing the site conditions during the Job Safety Briefing to include track access rights.	RBIR	Completed
108368_SAFE CAPS_RBIR_ 002	The contractor will retake RWP Level 1 training before being reinstated with WMATA.	RBIR	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.

Senior Safety Manager (Contractor)

The Contractor has been a Contractor with WMATA for two years. The Contractor is RWP Level 1 certified, expiring December 31, 2023.

The Contractor stated they contacted the foreman supervisor upon arriving at Medical Center Station vent shaft stairs and were requested to meet at the base of the vent shaft. When they came to the bottom of the shaft, they heard machinery noise but did not see anyone. They followed the noise, trying to locate the work crew. Equipment was blocking their view of the work area. They crossed tracks 1 & 2 and exited the roadway onto the catwalk on track 2 side of the tunnel.

The Contractor stated they recently concluded work on another WMATA worksite that was completely shut down and mistakenly entered the roadway without permission from ROCC, assuming third rail power was de-energized.

Appendix B – Incident Report

M Incident Investigation Form WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

INCIDENT				
Incident #		Risk Rank		Today's Date 05/09/2023
Incident Date 05/09/2023	Incident Time 03:15	Department RBIR	Division FIRPG	Work Area A10-1 DPS
Location where Incident Occurred: Track 1 Between Shaft and DPS				
Is this the final report? Yes If YES, is it within 7 days of the incident? Yes				
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.
At approximately 0315, Mr. Wong (badge #062230) entered the shaft at A10-1 and proceeded down to the DPS. The M & M crew was working behind the safety barrier and within the A10-1 DPS. Instead of utilizing the catwalk above Track 1 to get to the DPS, Mr. Wong entered the roadway and Fouled the Track. Note: This site did not have approved track rights on this night. The M & M crew confronted Mr. Wong and notified him that he had just Fouled the Track. They then notified the WMATA escort and inspector. The WMATA personnel escorted Mr. Wong off of the site.

KNOWN FACTS.
List in a logical order the known facts obtained during the investigation process.
All times are approximate
0310 - Mr. Wong entered the site
0315 - Mr. Wong fouled the track 0318 - Notified WMATA personell on-site
0325 - WMATA personnel spoke with Mr. Wong and then escorted him off the site 0331 - M & M Crew notified management

50.690 1/3 10/09 Original: RISK Copy 1: Department Copy 2: SAFE Copy 3: LSC-I&II

Figure 2 - Incident report page 1 of 3.

Incident Date: 05/09/2023 Time:03:15 hours
Final Report – Improper RWP
E23322

Drafted By: SAFE 710 – 06/17/2023
Reviewed By: SAFE 71 – 07/10/2023
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INJURY CAUSING AGENT (MARK ONLY ONE)		
<input type="checkbox"/> Absorbed Hazardous Substance	<input type="checkbox"/> Cut/Puncture	<input type="checkbox"/> Repetitive Motions
<input type="checkbox"/> Asphyxiation	<input type="checkbox"/> Exposure	<input type="checkbox"/> Slip, Trip or Fall
<input type="checkbox"/> Awkward Positions/Static Posture	<input type="checkbox"/> Foreign Object in Eye	<input type="checkbox"/> Strike against
<input type="checkbox"/> Bite	<input type="checkbox"/> Illness	<input type="checkbox"/> Struck by
<input type="checkbox"/> Caught In/On/Between Object	<input type="checkbox"/> Inhaling Hazardous Substance	<input type="checkbox"/> Swallow hazardous Substance
<input type="checkbox"/> Contacted Electric Current	<input type="checkbox"/> Noise	<input type="checkbox"/> Other
<input type="checkbox"/> Contacted Extreme Temperature	<input type="checkbox"/> Over Exertion	
EQUIPMENT (MARK ALL WMATA EQUIPMENT DIRECTLY INVOLVED IN INCIDENT)		
<input type="checkbox"/> Access Platforms	<input type="checkbox"/> Diesel	<input type="checkbox"/> HVAC
<input type="checkbox"/> Automobile	<input type="checkbox"/> Drain Machine	<input type="checkbox"/> Ladders
<input type="checkbox"/> Ballast Car	<input type="checkbox"/> Elevator	<input type="checkbox"/> Lighting
<input type="checkbox"/> Ballast Regulator	<input type="checkbox"/> Escalator	<input type="checkbox"/> Microwaves
<input type="checkbox"/> Bath or Toilet Facilities	<input type="checkbox"/> Exchangers	<input type="checkbox"/> Motor Controllers
<input type="checkbox"/> Blowdowns	<input type="checkbox"/> Filtration	<input type="checkbox"/> Motors
<input type="checkbox"/> Blowers or Fans	<input type="checkbox"/> Flat Car	<input type="checkbox"/> PA System
<input type="checkbox"/> Boom Truck	<input type="checkbox"/> Forklift	<input type="checkbox"/> Power Tools
<input type="checkbox"/> Buildings	<input type="checkbox"/> Generator	<input type="checkbox"/> Prime Mover
<input type="checkbox"/> Bus	<input type="checkbox"/> Giesmer	<input type="checkbox"/> Pumps
<input type="checkbox"/> Compressors	<input type="checkbox"/> Guards Or Barriers	<input type="checkbox"/> Radios
<input type="checkbox"/> Control Hardware or Software	<input type="checkbox"/> Hand Rails	<input type="checkbox"/> Rigging
<input type="checkbox"/> Crane	<input type="checkbox"/> Hand Tools	<input type="checkbox"/> Riser Guard
<input type="checkbox"/> DC Systems	<input type="checkbox"/> Heaters	<input type="checkbox"/> Scaffolds
<input type="checkbox"/> Detection Systems (i.e. Fire, Gas)	<input type="checkbox"/> High Pressure Washdown	<input type="checkbox"/> Separators
		<input type="checkbox"/> Speed Swing
		<input type="checkbox"/> Stairs or Ladders
		<input type="checkbox"/> Surface Grinder
		<input type="checkbox"/> Switch Gear
		<input type="checkbox"/> Tamper
		<input type="checkbox"/> Tanks
		<input type="checkbox"/> Telephones
		<input type="checkbox"/> Tie Inserter
		<input type="checkbox"/> Towers
		<input type="checkbox"/> Transformers
		<input type="checkbox"/> Truck
		<input type="checkbox"/> Utility Air
		<input type="checkbox"/> Walls or Fences
		<input type="checkbox"/> Winch, Hoist, Chain Fall
		<input type="checkbox"/> Other
EMPLOYEE INJURY (MARK ONLY ONE)		
<input type="checkbox"/> Amputation	<input type="checkbox"/> Concussion	<input type="checkbox"/> Internal
<input type="checkbox"/> Bruise	<input type="checkbox"/> Fracture	<input type="checkbox"/> Loss of Sense
<input type="checkbox"/> Burn	<input type="checkbox"/> Illness	<input type="checkbox"/> Sprain
<input type="checkbox"/> Other		
BODY PART (MARK PRIMARY BODY PART)		
<input type="checkbox"/> Arms	<input type="checkbox"/> Hands	<input type="checkbox"/> Legs
<input type="checkbox"/> Back	<input type="checkbox"/> Head	<input type="checkbox"/> Lungs
<input type="checkbox"/> Eyes	<input type="checkbox"/> Internal	<input type="checkbox"/> Multiple
<input type="checkbox"/> Feet	<input type="checkbox"/> Knees	<input type="checkbox"/> Other
BASIC CAUSES SPECIFY ALL THE UNDERLYING CAUSES CONTRIBUTING TO THE INCIDENT		
Design Failures	Maintenance Inadequate	Tools & Equipment
<input type="checkbox"/> Design Management of Change Inadequate	<input type="checkbox"/> Adjustment, Assembly or Installation Inadequate	<input type="checkbox"/> Personal Protective Equipment Defective
<input type="checkbox"/> Ergonomic Design Inadequate	<input type="checkbox"/> Housekeeping Inadequate	<input type="checkbox"/> Personal Protective Equipment Not Available
<input type="checkbox"/> Guards/Barriers or Safety Devices Inadequate	<input type="checkbox"/> Preventive Maintenance Inadequate	<input type="checkbox"/> Personal Protective Equipment Not Used or Used Improperly
<input type="checkbox"/> Technical Design Inadequate	<input type="checkbox"/> Replacement Parts Used Were Inappropriate	<input checked="" type="checkbox"/> Tools and Equipment Defective
Human Factors	<input type="checkbox"/> Safety Devices Defective	<input type="checkbox"/> Tools and Equipment Not Available
<input type="checkbox"/> Diminished Capacity Due to Medication	<input type="checkbox"/> Servicing Schedule Not Followed	<input type="checkbox"/> Tools and Equipment Used Improperly
<input type="checkbox"/> Fatigue	<input type="checkbox"/> Wear and Tear Excessive	<input type="checkbox"/> Tools and Equipment Wrong for the Job
<input type="checkbox"/> Hearing Deficiency	Procedures Failure	Training
<input type="checkbox"/> Impaired Due to Drugs or Alcohol	<input checked="" type="checkbox"/> Failure to Warn	<input type="checkbox"/> Assessment of Required Skills Inadequate
<input checked="" type="checkbox"/> Improper Position	<input type="checkbox"/> Operating Without Authority	<input type="checkbox"/> Skills Development Inadequate
<input type="checkbox"/> Operating at Improper Speed	<input type="checkbox"/> Prestartup Safety Review Inadequate	<input type="checkbox"/> Training Inadequate
<input type="checkbox"/> Restricted Range of Motion	<input type="checkbox"/> Procedure Inadequate	<input type="checkbox"/> Training Not Provided
<input checked="" type="checkbox"/> Vision Deficiency	<input type="checkbox"/> Procedure Not Followed	<input type="checkbox"/> Training Updates Inadequate
Planning Failure	<input type="checkbox"/> Procedure Not In Place	Leadership
<input type="checkbox"/> Appropriate Human Resources Not Available	<input type="checkbox"/> Procedure Not Known or Understood	<input type="checkbox"/> Correction of Worksite or Job Hazards Inadequate
<input type="checkbox"/> Assessment of Hazards & Safe Guards Inadequate	<input type="checkbox"/> Procedure, Instructions or Signage Not Followed	<input type="checkbox"/> Enforcement of Procedures Inadequate
<input type="checkbox"/> Documentation Inadequate	<input type="checkbox"/> Procedures Not Updated	<input type="checkbox"/> Incident Investigation Inadequate
<input type="checkbox"/> Isolation of Energy Source (LOTO) Inadequate	<input type="checkbox"/> Taking Short Cut	<input type="checkbox"/> Management of Change System Inadequate
<input type="checkbox"/> Materials Inadequate	Communication	
<input type="checkbox"/> Roles and Responsibilities Not Understood	<input type="checkbox"/> Communication Method Not Available or Inadequate	
<input type="checkbox"/> Safe Guards Not In Place (i.e. barricades, signs)	<input type="checkbox"/> Communication Between Shifts Inadequate	
<input type="checkbox"/> Scheduling Inadequate	<input checked="" type="checkbox"/> Communication Between Work Groups Inadequate	
<input type="checkbox"/> Supervision Inadequate	<input type="checkbox"/> Horizontal Communication Inadequate	
	<input type="checkbox"/> Instructions Incorrect	
	<input type="checkbox"/> Vertical Communication Inadequate	

50.690 2/3 10/09 Original: RISK Copy 1: Department Copy 2: SAFE Copy 3: LSC-I&II

Figure 3 - Incident report page 2 of 3.

Incident Date: 05/09/2023 Time:03:15 hours
 Final Report – Improper RWP
 E23322

Drafted By: SAFE 710 – 06/17/2023
 Reviewed By: SAFE 71 – 07/10/2023
 Approved By: SAFE 71 – 07/10/2023

EXPLANATION FOR CONCLUSIONS				
Provide an explanation and basis for the conclusions reached.				
Since this was Mr. Wong's first time at this site, there should have been better communications between all personnel on site. The pathway between the shaft and the DPS should have been a more direct conversion between Mr. Wong and the on site personnel. Also, Mr. Wong should have referred to his RWP Training when he approached the track.				
RECOMMENDATIONS TO PREVENT RECURRENCE	MS (SEE BELOW)	RESPONSIBLE PERSON	TARGET COMPLETION DATE	DATE ACTION WAS COMPLETED
1. Retake WMATA RWP Training	3, 17	Benjamin Wong	05/30/2023	
2. Stress the importance of reviewing the site conditions during the Job Site Safety Briefing	5, 16	Mike Puchalski	05/09/2023	
3.				
MANAGEMENT SYSTEMS				
1. Asset & Operating Integrity	6. Emergency Preparedness	10. Metrics	14. Risk Analysis	
2. Audit	7. Incident Management	11. Management Review	15. Rules and Procedures	
3. Communication	8. Leadership	12. Objectives and Targets	16. Roles & Responsibilities	
4. Contractors	9. Management of Change	13. Occupational Health	17. Training	
5. Documents				
Investigated by (Signature) Patrick Lebling			Date	05/09/2023
Print name Patrick Lebling			Phone Number	(240) 793-3509
Reviewed by Manager (Signature)			Date	
Print name			Phone Number	

50.690 3/3 10/09 Original: RISK Copy 1: Department Copy 2: SAFE Copy 3: LSC-I&II

Figure 4 - Incident report page 3 of 3.

Appendix C – ROCC Incident Report

View Approved Incident Report

INCIDENT ID: 2023129RED2					
DATE 2023-05-09	TIME 0827	LINE Red	ITEM 2		
LOCATION (STATION/YARD) Medical Center (A10)	LOCATION/CHAIN MARKER (If Applicable) A2-484+75		REPORTED BY PLNT Unit [REDACTED]		
TRAIN ID 0000	DIRECTION O/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 CON				
TYPE INCIDENT RWP Violation.					
ACTION PLAN Contractor Removed from Service, SAFE Notified.					
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	
			AUTO		
INCIDENT CHRONOLOGY					
TIME	DESCRIPTION				
0827	PLNT Unit [REDACTED] contacted ROCC via landline to report an RWP violation by a contractor that occurred at 0313. PLNT [REDACTED] stated the contractor fouled the tracks at A2-484+75 without authorization or notification. No further information was provided. An investigation is ongoing. AOM, ROIC, PLNT, SAFE, and all other concerned departments were notified.				

Figure 5 - ROCC Incident report page 1 of 2.

View Approved Incident Report

MAXIMO TICKET#
8669446

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

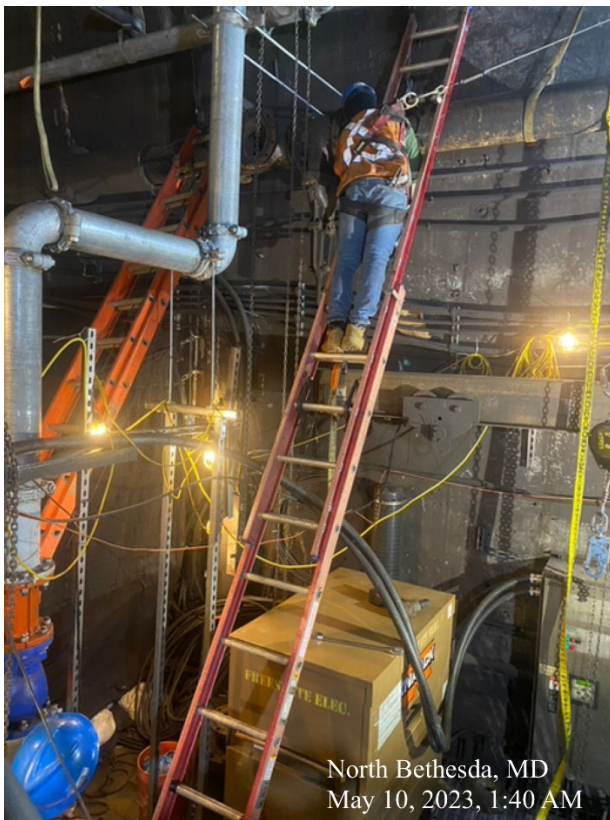
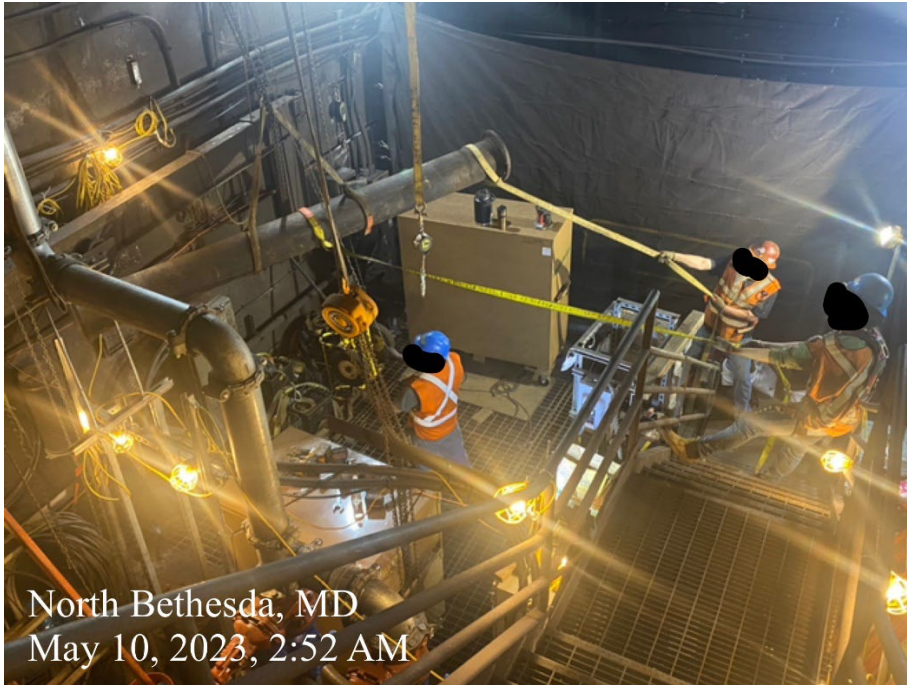
**ADDITIONAL NOTIFICATIONS MADE BY
PHONE** MAC

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

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Figure 6 - ROCC Incident report page 2 of 2.

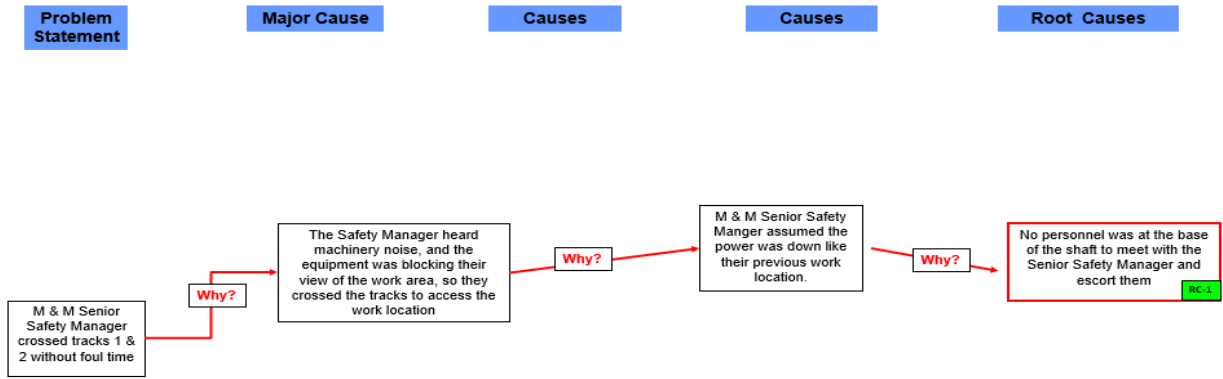
Appendix D – Scene Photographs





North Bethesda, MD
May 10, 2023, 3:03 AM

Appendix E – 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 E23329

Date of Event:	May 15, 2023
Type of Event:	Improper RWP
Incident Time:	01:20 hours
Location:	Braddock Road Station Portal – CM C1 508+00
Time and How received by SAFE:	01:36 hours SAFE/MAC
WMSC Notification Time:	03:25 hours
Responding Safety Officers:	WMATA: None WMSC: None Other: None
Rail Vehicle:	Prime Mover (PM-42)
Injuries:	None
Damage:	None
Emergency Responders:	None
SMS I/A Incident Number:	20230515#108496

Braddock Road Station – Improper RWP Event

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Abbreviations and Acronyms

AIM	Advanced Information Management System
AOM	Assistant Operations Manager
ARS	Audio Recording Systems
CAP	Corrective Action Plan
CCTV	Closed-Circuit Television
CM	Chain Marker
MAC	Mission Assurance Coordinator
MSRPH	Metrorail Safety Rules and Procedures Handbook
NOAA	National Oceanic and Atmospheric Administration
PM	Prime Mover
RTC	Rail Traffic Controller
RTRA	Office of Rail Transportation
ROCC	Rail Operations Control Center
RWIC	Roadway Worker in Charge
RWP	Roadway Worker Protection
SAFE	Department of Safety
SMS	Safety Measurement System
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 Monday, May 15, 2023, at 00:22 hours, an Office of Track and Structures (TRST) Roadway Worker in Charge (RWIC) contacted the Rail Operations Control Center (ROCC) and requested Foul Time between Chain Markers (CM) C1 430+00 to 515+00. The Radio Rail Traffic Controller (RTC) acknowledged the request and instructed the RWIC to stand by and clear.

At 01:22 hours, the Radio RTC requested the location of the Mobile Work Crew; the RWIC advised that they were located at CM C1 428+00. At 01:23 hours, the Radio RTC contacted the Equipment Operator operating Prime Move 42 (PM-42) and inquired if they observed the Mobile Work Crew at CM C1 428+00. The Equipment Operator reported passing the Mobile Work Crew on the roadway near the Braddock Road Station Portal, located within the Foul Time area, after they departed Braddock Road Station on track 1.

At 01:31 hours, the RWIC was granted Foul Time to Braddock Road Station and instructed to clear up their work crew and contact ROCC via a landline.

The ROCC Assistant Operations Manager (AOM) notified the Rail Operations Information Center (ROIC) and TRST Management of the event.

TRST removed the RWIC was removed from service for post-incident testing.

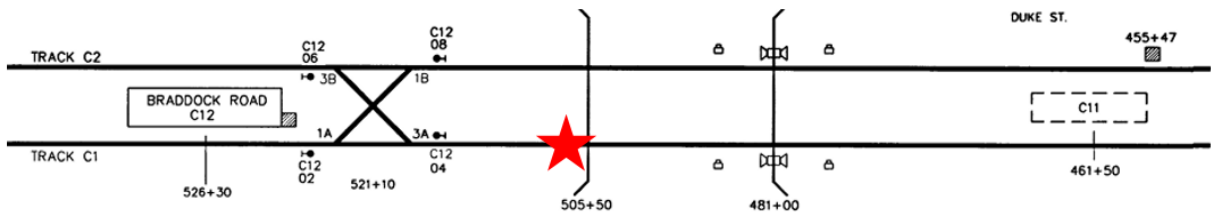
There were no injuries or damage resulting from this event.

The probable cause of the Improper Roadway Worker Protection (RWP) event on May 15, 2023, was the RWIC disregarding the instructions from ROCC to stand by and clear. A contributing factor to the event was the RWIC standing by for approximately one hour, awaiting permission to continue the track inspection.

Incident Site

Braddock Road Station Portal – CM C1 508+00

Field Sketch/Schematics



The above depiction is not to scale.

Purpose and Scope

This incident investigation and candid self-evaluation aim to collect and analyze available facts, determine the incident's probable cause(s), identify contributing factors, and make recommendations to prevent a recurrence.

Investigation Methods

Upon receiving notification of the Improper RWP event at Braddock Road Station on May 15, 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.
- Formal Interviews – SAFE interviewed two 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:
 - Equipment Operator (PM-42)
 - Roadway Worker in Charge (RWIC)
- Informal Interviews – Collected through conversations with individuals during the investigation to provide background and supporting information. Written statements were reviewed by personnel present during the event.
- Documentation Review – A collection of relevant work history information and process documentation in Metro record systems. These records include the following:
 - Employee Training Records
 - Employee 30-Day work history
 - Metrorail Safety Rules and Procedures Handbook (MSRPH)
 - National Oceanic and Atmospheric Administration (NOAA)
 - Maximo Data
- System Data Recording Review – A collection of information in Metro Data Recording Systems. This data includes:
 - Audio Recording System (ARS) playback
 - Advanced Information Management System (AIMS)

Investigation

On Sunday, May 14, 2023, at 23:18 hours, a TRST RWIC contacted ROCC and requested permission to perform a track inspection between Pentagon City and King Street Stations on track 1 under AMF Protection. The Radio RTC announced on Radio Ops 3 that personnel were on the roadway and granted permission to conduct the track inspection from Pentagon City to Crystal City stations on track number one (1).

The Audio Recording System (ARS) revealed that from 11:37 hours to 11:54 hours, the TRST RWIC, reported each time they safely reached a platform and their request to continue their walk to the next station.

The ARS then revealed that at 23:54 hours, after reporting they were safely at Ronald Regan National Airport Station, the RWIC requested permission to continue their track inspection between National Airport and Braddock Road Stations on track 1. The Radio RTC announced that personnel were on the roadway and granted permission to conduct the track inspection.

On Monday, May 15, 2023, at 00:22 hours, the RWIC contacted ROCC and requested Foul Time between CM C1 430+00 to 515+00. The Radio RTC acknowledged the request and instructed the RWIC to stand by and clear.

C-Line Track 1 – Metro Center to Huntington						
Restricted View: Curve	C-08	C-09	297+00	324+00	55	
Clear View	C-08	C-09	324+00	331+00	55	
Crystal City Station	C-09	C-09	331+00	337+00	50	
Restricted View: Curve	C-09	C-10	337+00	344+00	40	
Portal	C-09	C-10	344+00	347+00	40	
Clear View: Curve	C-09	C-10	347+00	349+00	40	
Clear View: Aerial	C-09	C-10	349+00	359+00	40	
Clear View: Turnout Switch #9/#11A	C-09	C-10	359+00	362+00	40	
Reagan National Airport Station	C-10	C-10	362+00	368+00	40	
Turnout Switch #5B Trk 3/#5A	C-10	C-12	368+00	370+00	40	
Restricted View: Curve	C-10	C-12	370+00	385+00	40	
Clear View	C-10	C-12	385+00	398+00	45	
Blind Spot	C-10	C-12	398+00	408+00	45	
Clear View	C-10	C-12	408+00	425+00	55	
Blind Spot	C-10	C-12	425+00	445+00	75	
Clear View	C-10	C-12	445+00	450+00	75	
Restricted View: Curve	C-10	C-12	450+00	455+00	75	
Clear View	C-10	C-12	455+00	475+00	75	
Portal	C-10	C-12	475+00	483+00	75	
Turbulent Air Vortex	C-10	C-12	483+00	505+00	55	
Portal	C-10	C-12	505+00	508+00	55	
Restricted View: Curve	C-10	C-12	508+00	519+00	55	
Clear View: Interlocking	C-10	C-12	519+00	523+00	55	
Braddock Road Station	C-12	C-12	523+00	529+00	50	

Table 1 – Track Access Guide detailing the area between Reagan National Airport and Braddock Road Stations on track 1.

At 00:28 hours, the RWIC requested a status on their foul time request. The Radio RTC inquired whether Foul Time was requested between Potomac Yard and Braddock Road Station. The RWIC responded that they were requesting to CM C1 515+00. The Radio RTC acknowledged and repeated the CM, then instructed the RWIC to stand by.

At 00:50 hours, the RWIC requested a status on their foul time request. The Radio RTC responded, “I didn’t forget.”

At 01:10 hours, the Radio RTC granted PM-42 an absolute block to Braddock Road Station, track 1, and instructed them to receive a briefing from the Advanced Mobile Flagger (AMF).

The Advanced Information Management System (AIMS) Playback revealed that at 01:16 hours, PM-42 arrived at Braddock Road Station on track 1.

At 01:18 hours, the RWIC requested a status on their Foul Time request and acknowledged to stand by. The Radio RTC granted PM-42 an absolute block to Potomac Yard Station. The Equipment Operator inquired if personnel were on the roadway. The Radio RTC advised that the Mobile Work Crew was standing by and clear.

At 01:19 hours, PM-42 departed Braddock Road Station.

At 01:20 hours, PM-42 traversed the Braddock Road Portal, and the Radio RTC instructed the RWIC to advise when PM-42 cleared their location. The RWIC did not respond. The Equipment Operator reported PM-42 was clear of the personnel on the roadway. The Radio RTC attempted to contact the RWIC, but no response was given.

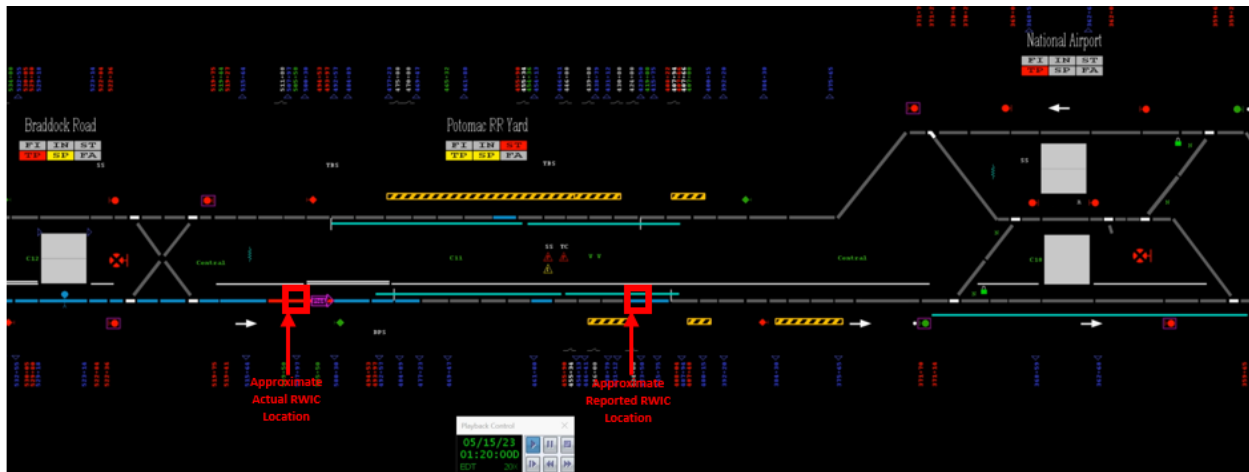


Figure 1 – AIMS Playback displaying the location of PM-42 when they reported passing the Mobile Work Crew near the Braddock Road Station Portal with depictions of approximate locations where the RWIC initially requested foul time and where they were observed near Braddock Road Station.

At 01:21 hours, the Radio RTC requested that the RWIC provide a CM. The RWIC asked for Foul Time between National Airport and Braddock Stations. The Radio RTC again requested that the RWIC provide a CM, but there was still no response given.

At 01:22 hours, the Radio RTC again requested that the RWIC provide a CM. The RWIC responded CM C1 428+00.

At 01:23 hours, the Radio RTC contacted the Equipment Operator operating PM-42 and inquired if they observed the Mobile Work Crew at CM C1 428+00. The Equipment Operator reported that they passed the Mobile Work Crew on the roadway near the Braddock Road Station Portal after they departed Braddock Road Station on track 1.

At 01:31 hours, the RWIC was granted Foul Time to Braddock Road Station and instructed to clear up their work crew and contact ROCC via a landline. At 01:32 hours, the Radio RTC instructed the Equipment Operator of PM-42 to contact ROCC via landline.

At 01:33 hours, the Equipment Operator contacted the AOM via landline and reported that they received a briefing from the AMF and were advised that personnel were on the roadway and not under Foul Time. Upon observing the personnel, they were not walking and were located at the portal near Braddock Road Station.

At 01:36 hours, the AOM notified ROIC of the event.

At 01:43 hours, the RWIC reported that they were located at Braddock Road Station, relinquished Foul Time, reported a good track inspection, and that their crew was clear of the roadway. The Radio RTC instructed the RWIC to landline ROCC.

The RWIC contacted the AOM via landline and acknowledged that they were aware that they violated the procedures.

At 01:51 hours, the AOM notified TRST Management of the event.

During the interview, the RWIC revealed that they continued their inspection without permission and disregarded established safety protocols.

Chronological ARS Timeline

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

Time	Description
May 14, 2023	
23:18:01 hours	<p><u>TRST RWIC</u>: Requested permission to perform a track inspection between Pentagon City and King Street Stations, track 1.</p> <p><u>ROCC Radio RTC</u>: Announced personnel on the roadway and granted permission to begin their inspection from Pentagon City to Crystal City and to contact them once they're safely at Crystal City station.</p> <p><u>TRST RWIC</u>: Acknowledged and repeated the instructions back to the Radio RTC. [Radio Ops 3]</p>
23:37:04 hours	<p><u>TRST RWIC</u>: Informed Radio RTC they were safely at Crystal City station and requested permission to continue their walk to Ronald Regan National Airport station.</p> <p><u>Radio RTC</u>: Acknowledged and instructed the TRST RWIC to go direct to their AMF.</p> <p><u>TRST RWIC</u>: AMF let them know you're in place at Ronald Regan National Airport station.</p> <p><u>TRST AMF</u>: Reported they were in place at Ronald Regan National Airport station track number 1 and ready to flag.</p> <p><u>TRST RWIC</u>: Reported to Radio RTC my AMF announced they're in place.</p> <p><u>Radio RTC</u>: Acknowledged and instructed the TRST RWIC to standby while they setup protection. Radio RTC then made announcements of personnel on the roadway between Crystal City and Ronald Regan National Airport stations track number 1. [OPS 3]</p>
23:38:05 hours	<p><u>Radio RTC</u>: Informed TRST RWIC they had permission to continue their walk under AMF protection:</p> <p><u>TRST RWIC</u>: Acknowledged and repeated back the Radio RTCs instructions. [OPS 3]</p>
23:39:36 hours	<p><u>TRST RWIC</u>: Requested Foul Time between chain markers C1 340+00 to C1 355.</p> <p><u>Radio RTC</u>: Acknowledged and instructed TRST RWIC to standby and stand clear. [OPS 3]</p>

Time	Description
23:40:40	<p><u>Radio RTC</u>: Asked TRST RWIC to repeat Foul Time chain markers. <u>TRST RWIC</u>: Repeated chain markers to Radio RTC 340+00 to 355 C1 <u>Radio RTC</u>: Asked TRST RWIC how long will you need Foul Time. <u>TRST RWIC</u>: Informed Radio RTC not long, 90 seconds. <u>Radio RTC</u>: Acknowledged, granted Foul Time from C1 340 to C1 355, and instructed TRST RWIC to inform them when Foul Time is relinquished. <u>TRST RWIC</u>: Acknowledged Radio RTCs instructions and repeated them back. [OPS 3]</p>
23:43:16	<p><u>TRST RWIC</u>: Informed Radio RTC they relinquished their Foul Time and would continue their inspection under AMF. <u>Radio RTC</u>: Acknowledged Foul Time relinquished and back under AMF. [OPS 3]</p>
23:49:35	<p><u>TRST RWIC</u>: Informed Radio RTC they were at Ronald Regan National Airport station and that they would notify them once their AMF was in place. <u>Radio RTC</u>: Acknowledge and repeated the wrong location stating they were at Crystal City station. <u>TRST RWIC</u>: Informed the Radio RTC that they were not at Crystal City station and that they were at Ronald Regan National Airport station waiting for their AMF to get in place at Braddock Road station. <u>Radio RTC</u>: Acknowledge and repeated the correct location and information provided by the TRST RWIC. [OPS 3]</p>
23:54:24 hours	<p><u>TRST AMF</u>: Reported to TRST RWIC they were in place at Braddock Road station track number 1 ready to flag. <u>TRST RWIC</u>: Acknowledged. [OPS 3]</p>
23:54:34 hours	<p><u>TRST RWIC</u>: Requested permission to perform a track inspection between National Airport and Braddock Road Stations, track 1. <u>ROCC Radio RTC</u>: Announced personnel on the roadway and granted permission. [Radio Ops 3]</p>
May 15, 2023	
00:00:29 hours	<p><u>TRST RWIC</u>: Requested foul time between CM C1 380+00 to 408+00. <u>ROCC Radio RTC</u>: Acknowledged and instructed to stand by. [Radio Ops 3]</p>
00:02:40 hours	<p><u>ROCC Radio RTC</u>: Granted foul time. <u>TRST RWIC</u>: Acknowledged and repeated. [Radio Ops 3]</p>
00:08:13 hours	<p><u>TRST RWIC</u>: Relinquished foul time. <u>ROCC Radio RTC</u>: Acknowledged and repeated. [Radio Ops 3]</p>
00:22:16 hours	<p><u>TRST RWIC</u>: Requested foul time between CM C1 430+00 to 515+00. <u>ROCC Radio RTC</u>: Acknowledged and requested the CM again. <u>TRST RWIC</u>: Responded CM 428+00 to 515+00. <u>ROCC Radio RTC</u>: Acknowledged and repeated, then instructed to stand by. <u>TRST RWIC</u>: Acknowledged and repeated. [Radio Ops 3]</p>
00:28:18 hours	<p><u>TRST RWIC</u>: Requested status of foul time request. <u>ROCC Radio RTC</u>: Inquired if foul time was from Potomac Yard to Braddock Road. <u>TRST RWIC</u>: Responded to CM 515+00. <u>ROCC Radio RTC</u>: Inquired what the CM was, then instructed to stand by. <u>TRST RWIC</u>: Responded to CM 428+00 to 515+00. <u>ROCC Radio RTC</u>: Acknowledged and repeated, then instructed to stand by. <u>TRST RWIC</u>: Acknowledged and repeated. [Radio Ops 3]</p>

Time	Description
00:50:54 hours	<u>TRST RWIC</u> : Requested status of foul time request. <u>ROCC Radio RTC</u> : Responded, "I didn't forget." [Radio Ops 3]
01:10:11 hours	<u>ROCC Radio RTC</u> : Granted PM-42 an absolute block to Braddock Road Station and instructed to speak to the AMF. <u>PM-42</u> : Acknowledged and repeated. [Radio Ops 3]
01:16:20 hours	<u>PM-42</u> arrived at Braddock Road Station. [AIMS]
01:18:03 hours	<u>TRST RWIC</u> : Requested status of foul time request. Acknowledged to stand by. [Radio Ops 3]
01:18:28 hours	<u>ROCC Radio RTC</u> : Granted PM-42 an absolute block to Potomac Yard Station. <u>PM-42</u> : Acknowledged and repeated and inquired if personnel were on the roadway. <u>ROCC Radio RTC</u> : Responded, standing by and clear. [Radio Ops 3]
01:19:20 hours	<u>PM-42</u> departed Braddock Road Station. [AIMS]
01:20:00 hours	<u>PM-42</u> traversed the area where the Mobile Work Crew was located. [AIMS]
01:20:09 hours	<u>ROCC Radio RTC</u> : Instructed <u>TRST RWIC</u> , "Let me know when the Unit clears your location." <u>TRST RWIC</u> : No Response. [Radio Ops 3]
01:20:22 hours	<u>PM-42</u> : Reported clear of personnel. <u>ROCC Radio RTC</u> : Attempts to contact <u>TRST RWIC</u> . <u>TRST RWIC</u> : No response. [Radio Ops 3]
01:21:08 hours	<u>ROCC Radio RTC</u> : Requested CM from <u>TRST RWIC</u> . <u>TRST RWIC</u> : Requested foul time from National Airport to Braddock Stations. <u>ROCC Radio RTC</u> : Requested their current location by CM. <u>TRST RWIC</u> : No response. [Radio Ops 3]
01:22:04 hours	<u>ROCC Radio RTC</u> : Requested CM from <u>TRST RWIC</u> . <u>TRST RWIC</u> : Responded 428. <u>ROCC Radio RTC</u> : Inquired, C1 428+00. [Radio Ops 3]
01:23:56 hours	<u>ROCC Radio RTC</u> : Contacted <u>PM-42</u> and inquired if personnel were at CM 428+00. <u>PM-42</u> : Responded, passing the personnel at the Braddock Road portal. Confirmed speaking with the AMF at Braddock Road Station. [Radio Ops 3]
01:31:02 hours	<u>ROCC Radio RTC</u> : Granted foul time to Braddock Road Station. Instructed to clear up, stand by, and give a landline. <u>TRST RWIC</u> : Acknowledged and repeated. [Radio Ops 3]
01:32:07 hours	<u>ROCC Radio RTC</u> : Instructed <u>PM-42</u> to contact <u>ROCC</u> via landline upon arrival at Potomac Yard Station. <u>PM-42</u> : Acknowledged and repeated. [Radio Ops 3]
01:33:31 hours	<u>PM-42</u> : Contacted <u>ROCC</u> via landline and reported the AMF advised that personnel were on the roadway and not under foul time. Upon observing the personnel, they were not walking and were located at the portal near Braddock Road Station. <u>AOM</u> : Acknowledged. [Phone ROCC Rail 2]
01:36:55 hours	<u>AOM</u> : Notification to <u>ROIC</u> . [Phone ROCC Rail 2]
01:43:01 hours	<u>TRST RWIC</u> : Reported located at Braddock Road Station, relinquished foul time, reported a good track inspection, and clear of the roadway. <u>ROCC Radio RTC</u> : Instructed to contact <u>ROCC</u> via landline. [Radio Ops 3]

Incident Date: 05/15/2023 Time: 01:20 hours
Final Report – Improper RWP
E23329

Drafted By: SAFE 711 – 07/06/2023
Reviewed By: SAFE71 – 07/14/2023
Approved By: SAFE71 – 07/14/2023

Page 10

Time	Description
01:43:50 hours	TRST RWIC: Contacted ROCC via landline and acknowledged that they were aware that they violated the procedures. AOM: Acknowledged. [Phone ROCC Rail 2]
01:51:09 hours	AOM: Notification to TRST Management. [Phone ROCC Rail 2]

***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 two 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 in the report.

Roadway Worker in Charge (RWIC)

- The RWIC stated that the Mobile Work Crew was assigned to inspect the tracks from Pentagon City to King Street and that the event occurred while they were inspecting between Reagan National Airport to Braddock Road Stations.
- The RWIC stated that they requested foul time from CM C1 428+00 to 515+00. ROCC instructed them to stand by at CM C1 428+00 until the foul time was granted.
- The RWIC stated that they waited at CM C1 428+00 for 20 minutes, then decided to continue the track inspection without permission from ROCC.

Equipment Operator

- The Equipment Operator said they spoke with the AMF at Braddock Road Station and received a briefing.
- The Equipment Operator stated that they confirmed with ROCC where the personnel were located and was advised that they were clear.
- The Equipment Operator said they departed Braddock Road Station and observed the personnel on the roadway shortly after.

Weather

On May 15, 2023, at the time of the incident, NOAA recorded the temperature as 57°F, with clear skies, winds 4.7mph, and 40% humidity. The weather did not contribute to this incident (Weather source: NOAA – Location: Alexandria, VA.)

Human Factors

Evidence of Fatigue

Conditions were evaluated 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 experiencing no symptoms of fatigue in the time leading up to the incident.

Fatigue Risk

The incident data was evaluated for fatigue risk factors for the RWIC. Risk factors for fatigue were not present for the RWIC. Since fatigue evidence and risk factors were absent, 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 RWIC complied with and was not in violation of the Drug and Alcohol Policy and Testing Program 7.7.3/6.

Training and Work History

The Track Walker has not had any safety violations within the last three years. The 30-Day work history did not reflect any indications of fatigue risk. The Track Walker holds a Roadway Worker Protection (RWP) Level 4 certification that expires in January 2024.

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

The Office of Radio Communications conducted comprehensive radio checks (TX/RX) at Braddock Road Station on tracks one and two. No trouble was found.

Related Rules and Procedures

MSRPH Section 4 – 4.183. When it is necessary for employees to walk beyond the platform end gate where the walkway is not protected by a handrail or to walk or work on tracks around moving trains or track equipment, they shall: Expect rail vehicle movement at any time, in either direction, on either track. All personnel entering the roadway MUST be knowledgeable of and follow all RWP Rules and Procedures outlined in Section 5 – “Roadway Worker Protection” of the MSRPH.

MSRPH Section 5 – Roadway Worker Protection, 5.13.5 Foul Time (FT)

Findings

- The RWIC requested foul time between CM C1 430+00 to 515+00. According to the Track Access Guide, the red hot spot began at CM C1 425+00.
- The RWIC requested foul time and was instructed to stand by and clear the roadway in a place of safety for approximately 1 hour. The RWIC stated that they waited approximately 20 minutes before continuing on with their inspection.
- The RWIC and Track Inspector traversed the area between CM C1 425+00 to 508+00, to include red hot spots between C1 425+00 445+00 and C1 475+00 508+00 without foul time protection.
- The Equipment Operator of PM-42 reported observing the Mobile Work Crew near the portal after departing Braddock Road Station.
- The Track Inspector reported they did not have a handheld radio during the track inspection (not required) and did not hear any transmission of the event.

Immediate Mitigation to Prevent Recurrence

- ROCC instructed the Mobile Work Crew to clear the roadway.
- The RWIC was removed from service.

Probable Cause Statement

The probable cause of the Improper Roadway Worker Protection (RWP) event on May 15, 2023, was a disregard of instructions given to the RWIC to stand by and clear by the Radio RTC. A preliminary contributing factor to the event was an extended wait time of approximately one hour endured by the RWIC while waiting for permission to continue their track inspection.

Recommended Corrective Actions

Corrective Action Code	Description	Responsible Party	Estimated Completion Date
108496_SAFE CAPS_TRST_0 01	RWIC to attend refresher training with an emphasis on MSRPH Section 5 – RWP, 5.13.6 AMF – <i>Mobile Work Crew and Rail Vehicle Operator Procedures</i> .	TRST	Completed
108496_SAFE CAPS_TRST_0 02	RWIC to attend refresher training emphasizing MSRPH Section 4 – 4.183. When it is necessary for employees to walk beyond the platform end gate where the walkway is not protected by a handrail or to walk or work on tracks around moving trains or track equipment, they shall: Expect rail vehicle movement at any time, in either direction, on either track. All personnel entering the roadway MUST be knowledgeable of and follow all RWP Rules and Procedures outlined in Section 5 – “Roadway Worker Protection” of the MSRPH	TRST	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.

TRST

Roadway Worker in Charge (RWIC)

The Track Walker is a WMATA employee with eight years of service and was performing the duties of a RWIC during this event. The RWIC holds a Roadway Worker Protection (RWP) Level 4 certification that expires in January 2024.

During the formal interview, the RWIC stated that the Mobile Work Crew was assigned to inspect the tracks from Pentagon City to King Street. The event occurred while they were inspecting between Reagan National Airport to Braddock Road Stations.

The RWIC stated that they requested foul time from CM C1 428+00 to 515+00. ROCC instructed them to stand by at CM C1 428+00 until the foul time was granted.

The RWIC stated that they waited at CM C1 428+00 for 20 minutes, then decided to continue the track inspection without permission from ROCC.

Track Inspector – Written Statement

The Track Inspector provided a written statement, “Started my inspection from C08-C13. At C10, I followed my RWIC onto the roadway. I proceeded to follow until C12 while looking/inspecting rails. I was not carrying a radio¹ and am unaware of any transmissions that occurred. We reached C12 and cleared the roadway.”

Equipment Operator

The Equipment Operator is a WMATA employee with two years of service and was performing the duties of Equipment Operator on PM-42 during this event. The Equipment Operator holds a Roadway Worker Protection (RWP) Level 2 certification that expires in December 2023.

During the formal interview, the Equipment Operator said they spoke with the AMF at Braddock Road Station. The Equipment Operator stated that they received a briefing which included that the personnel were on the roadway. The Equipment Operator stated that they confirmed with ROCC where the personnel was located and was advised that the personnel were clear.

The Equipment Operator stated that they departed Braddock Road Station and shortly after observed the personnel on the roadway and notified the ROCC.

¹ Track Inspectors are not required to carry a handheld radio. Only the RWIC is required.

Appendix B – Maximo Incident Report



Washington Metropolitan Area Transit Authority Maintenance and Material Management System Incident Details

Incident #: 8670610

Status: PENDING

Incident Summary: PM42 reported passing personnel on the roadway at CM C1-507+00. Track unit [REDACTED] reported standing by for foul time at CM C1-428+00. Personnel removed from the roadway. Incident Start: 05/15/23 01:21:00

Incident Details

Detail:

Asset:		Rail Line:	YEL	Line Delay:	0
Location:		Jurisdiction:		Passenger Delay:	0
Train ID:	1:21:00 AM	Injuries??:	N	Train / Bus Delay:	0
Direction:		#9#??:	N	Partial:	0
Report Location:		Mode of Operation:		Offload:	0
Station Location:	C12 BRADDOCK ROAD STATION	# of Cars in Consist:		Late Dispatch:	0
Regional ID:		Originating OCC:	ROCC	No Dispatch:	0
Trouble Code:	RWPV RWP VIOLATION	Created By:	[REDACTED]	Trips Lost:	0
Responsibility Code:	TRK TRACK DEPT	Created Date:	05/15/23 03:25:47	Reroutes:	0
Mileage:		Status Date:	05/15/23 03:36:50	Abandoned:	0

Operator Miscellaneous

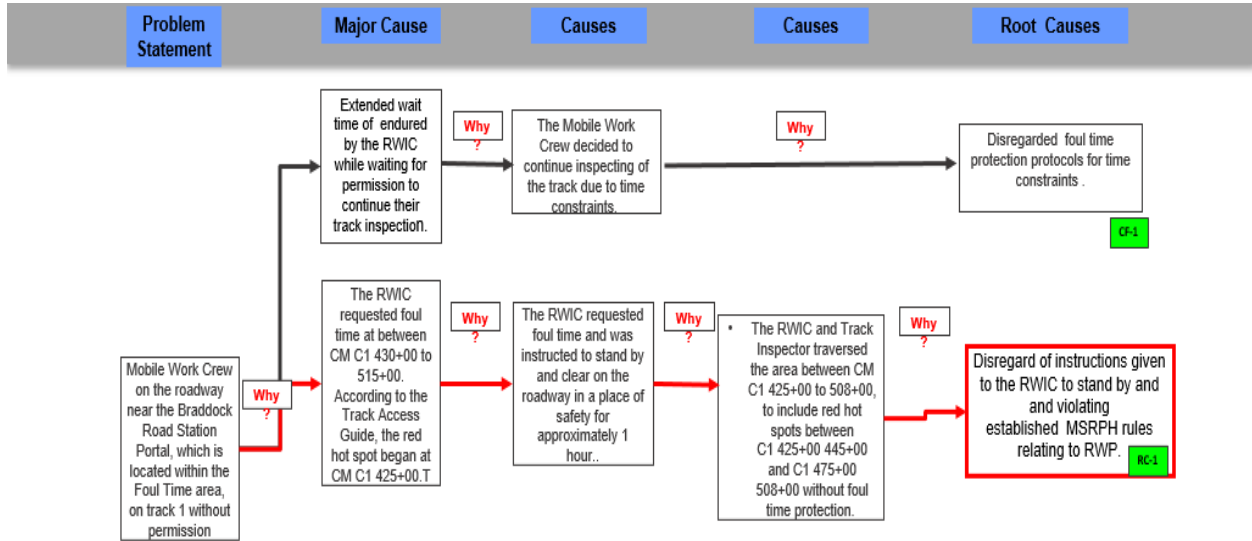
Operator:	[REDACTED]	Block #:		Route:		Road Call??:	N
Division:		Run:		Destination:		Change Off??:	N

Attachment 1 – Maximo Incident Report #8670610, Page 1 of 1

Incident Date: 05/15/2023 Time: 01:20 hours
Final Report – Improper RWP
E23329

Drafted By: SAFE 711 – 07/06/2023
Reviewed By: SAFE71 – 07/14/2023
Approved By: SAFE71 – 07/14/2023

Appendix C – Why-Tree Analysis



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 E23344

Date of Event:	05/23/2023
Type of Event:	Improper Roadway Worker Protection (RWP)
Incident Time:	12:55 hours
Location:	Georgia Avenue – Petworth Station, Track 1
Time and How received by SAFE:	12:55 hours via MAC
WMSC Notification Time:	14:23 hours
Responding Safety Officers:	None
Rail Vehicle:	None
Injuries:	None
Damage:	None
Emergency Responders:	None
SMS I/A Incident Number:	20230606#109000

Georgia Avenue – Petworth Station – Improper Roadway Worker Protection (RWP)

May 23, 2023

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Abbreviations and Acronyms

ARS	Audio Recording System
CAP	Corrective Action Plan
CCTV	Closed-Circuit Television
I/A	Incidents/Accidents
MAC	Mission Assurance Coordinator
MSRPH	Metrorail Safety Rules and Procedures Handbook
NOAA	National Oceanic and Atmospheric Administration
OOP	Office of Operating Practices
OSI	Office of Safety Investigations
RTRA	Office of Rail Transportation
RTC	Rail Traffic Controller
ROCC	Rail Operations Control Center
ROCS	Rail Operations Control System
RWP	Roadway Worker Protection
SAFE	Department of Safety
SMS	Safety Measurement System
SRC	Safety Risk Coordinator
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, May 23, 2023, at 12:55 hours, an Office of Rail Transportation (RTRA) Supervisor retrieved a yellow, pyramid-style, plastic “Wet Floor” sign from the roadway, which was in close proximity to the energized third rail at Georgia Avenue – Petworth Station, Track 1. A customer was observed tossing the Wet Floor sign onto the roadway via Closed Circuit Television (CCTV). The Station Manager at Georgia Avenue – Petworth Station promptly contacted the Rail Operations Control Center (ROCC) Radio Rail Traffic Controller (RTC) to report the incident. The ROCC dispatched a Rail Supervisor to provide assistance. The Radio Rail Traffic Controller (RTC) asked the Rail Supervisor whether they could safely retrieve the sign and they responded that they could. The Rail Supervisor was wearing standard work gloves during the retrieval of the Wet Floor sign.

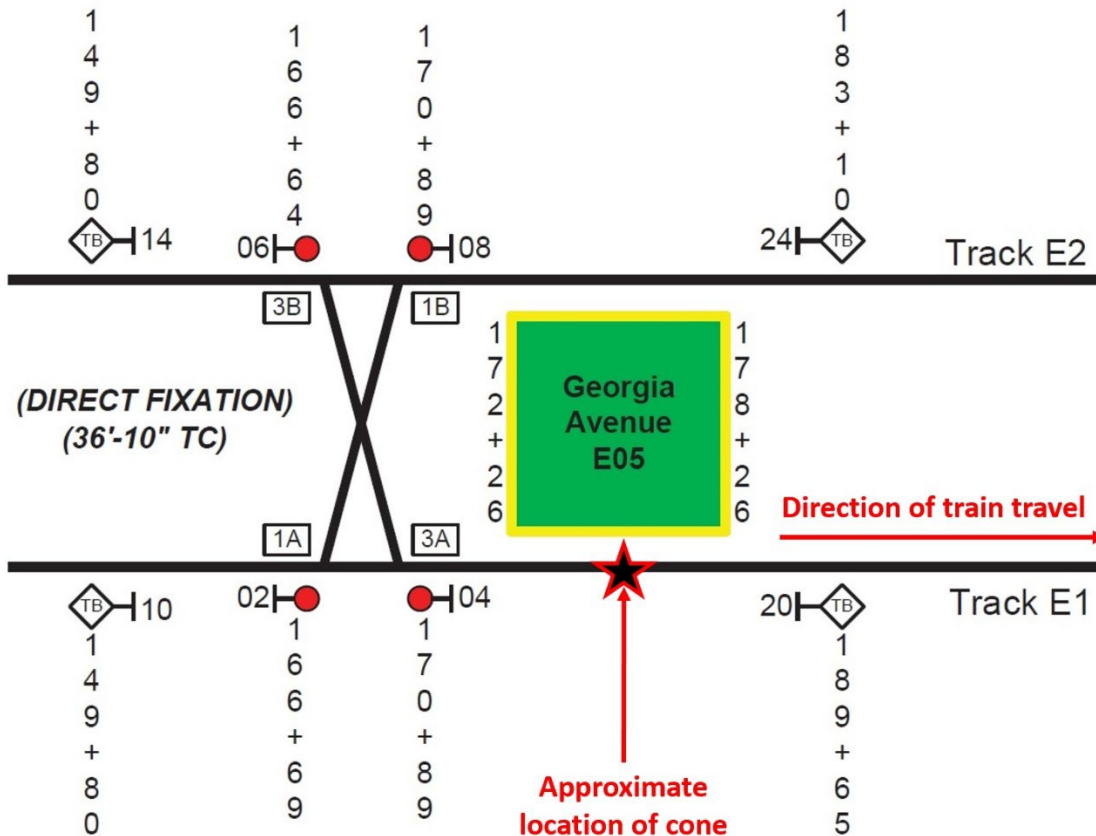
Following the retrieval of the Wet Floor sign from the roadway, SAFE reviewed the event via CCTV playback and observed the Wet Floor sign laying against or beneath the third rail, outside of the running rails. After consulting Standard Operating Procedure 2 and the Office of Operating Practices (OOP), it was determined that removing an object with the potential for incidental contact with the third rail requires additional protective measures, such as an electrical blanket or a supervisory power outage. RTRA removed the Rail Supervisor from service per Standard Operating Procedure (SOP) 102-01, *Removing An Employee From Service*. No injuries or damages were reported as a result of this incident.

The probable cause of the Improper Roadway Worker Protection (RWP) event was a misapplication of established rules and procedures. The Rail Supervisor retrieved the Wet Floor sign while it was in close proximity to the energized third rail, which was a violation of established procedure. The possibility of incidental contact existed, and to minimize this risk, the third rail power should have been de-energized or other preventive measures enacted.

Incident Site

This is a below-ground station with a center platform. Georgia Avenue – Petworth is a Direct Fixation Track governed by signals E05-06, 08 signals, and E05-02,04 signals. There is an interlocking at CM E2 & E1 166+64 – 170+89.

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 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. SAFE interviewed the following personnel:
 - Rail Supervisor
- Informal Interviews – Collected through conversations with individuals during the investigation to provide background and supporting information. Written statements were reviewed by 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 Safety Rules and Procedures Handbook (MSRPH)
 - National Oceanic and Atmospheric Administration (NOAA)
 - Rail Supervisor Report
 - 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 Tuesday, May 23, 2023, at 12:55 hours, a Rail Supervisor retrieved a Wet Floor sign from the roadway, while near the energized third rail, at Georgia Avenue – Petworth Station, Track 1. At 12:25 hours, a customer was observed tossing the Wet Floor sign onto the roadway via CCTV. The Station Manager at Georgia Avenue – Petworth Station contacted the ROCC to report the event. The ROCC dispatched a Rail Supervisor and implemented single tracking at the station around Track 1. After the Rail Supervisor retrieved the Wet Floor sign from the roadway, the RTRA was subsequently removed from service. No injuries or damages were reported as a result of this incident.

A review of CCTV recordings at the station found that the customer intentionally tossed the Wet Floor sign onto the roadway at 12:25 hours. At 12:26 hours, Train ID 507 entered the platform limits and serviced the station. After servicing, Train ID 507 departed and the Wet Floor sign remained on the roadway, in close proximity of the third rail. The Rail Supervisor was observed at 12:55 hours walking towards the Wet Floor sign. The Rail Supervisor was wearing standard safety work gloves only during the retrieval of the Wet Floor sign.

There were no violations of RWP rules or procedures related to accessing the roadway via Foul Time.

Rail Operations Control System (ROCS) Spots Report

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
820	E05-1	6	92							12:00:34	12:01:02	3071-3070.3143-3142.3137-3136	-
505	E05-1	8	44				12:12:08	12:12:31	23	12:11:44	12:12:55	3020-3021.3287-3286.3176-3177.3010-3011	-
506	E05-1	2	44				12:19:53	12:20:15	22	12:19:14	12:20:40	7684-7685.7543-7542.7606-7607.7253-7252	7:45
741	E05-1	8	92							12:22:14	12:22:56	3234-3235.3241-3240.3203-3202.3275-3274	-
507	E05-1	8	44							12:25:24	12:26:33	3150-3151.3138-3139.3097-3096.3181-3180	-
510	E05-1	6	44				13:00:13	13:00:28	15	12:59:42	13:00:54	3159-3158.3153-3152.3114-3115	40:20
511	E05-1	6	44				13:02:52	13:03:33	41	13:02:19	13:03:53	3174-3175.3026-3027.3014-3015	2:39
512	E05-1	6	44				13:08:51	13:09:12	21	13:08:16	13:09:56	3060-3061.3105-3104.3182-3183	5:59
513	E05-1	6	44							13:16:57	13:18:09	3075-3074.3291-3290.3033-3032	-
514	E05-1	6	44				13:23:34	13:23:52	18	13:23:09	13:24:10	3271-3270.3130-3131.3022-3023	14:43
515	E05-1	8	44				13:30:19	13:30:36	17	13:29:44	13:31:05	3013-3012.3031-3030.3002-3003.3251-3250	6:45
501	E05-1	8	44				13:38:31	13:38:47	16	13:38:01	13:39:12	3161-3160.3145-3144.3062-3063.3103-3102	8:12
811	E05-1	4	92							13:40:01	13:40:34	3169-3168.6099-6098	-
502	E05-1	8	44				13:45:29	13:45:51	22	13:45:01	13:46:19	3164-3165.3134-3135.3119-3118.3066-3067	6:58
503	E05-1	8	44				13:54:16	13:54:33	17	13:53:36	13:55:01	3044-3045.3200-3201.3268-3269.3279-3278	8:47

Figure 1 – ROCS Spots Report displaying trains single tracking around Track 1 at Georgia Avenue – Petworth Station, from 12:26 to 12:59 hours.

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
514	E05-2	6	43				12:03:52	12:04:10	18	12:03:27	12:04:32	3023-3022.3131-3130.3270-3271	-
515	E05-2	8	43				12:08:38	12:08:56	18	12:08:06	12:09:24	3250-3251.3003-3002.3030-3031.3012-3013	4:46
501	E05-2	8	43				12:18:03	12:18:49	46	12:17:36	12:19:15	3102-3103.3063-3062.3144-3145.3160-3161	9:25
502	E05-2	8	43				12:23:44	12:24:05	21	12:23:16	12:24:30	3067-3066.3118-3119.3135-3134.3165-3164	5:41
503	E05-2	8	43				12:34:15	12:34:33	18	12:33:38	12:34:59	3278-3279.3269-3268.3201-3200.3045-3044	10:31
508	E05-2	8	44	12:37:09	12:37:26	17				12:36:21	12:38:54	3100-3101.3056-3057.3017-3016.3117-3116	2:54
509	E05-2	6	44	12:39:59	12:40:19	20				12:39:26	12:40:38	3054-3055.3065-3064.3092-3093	2:50
504	E05-2	8	43				12:49:59	12:50:15	16	12:49:28	12:50:41	6121-6120.6166-6167.6138-6139.6142-6143	10:00
505	E05-2	8	43				12:52:02	12:52:24	22	12:51:34	12:52:47	3011-3010.3177-3176.3286-3287.3021-3020	2:03
506	E05-2	8	43				12:59:51	13:00:07	16	12:59:15	13:00:30	7252-7253.7607-7606.7542-7543.7685-7684	7:49
507	E05-2	8	43				13:05:47	13:06:06	19	13:05:20	13:06:30	3180-3181.3096-3097.3139-3138.3151-3150	5:56
508	E05-2	8	43				13:14:42	13:14:56	14	13:14:10	13:15:21	3116-3117.3016-3017.3057-3056.3101-3100	8:55
509	E05-2	6	43				13:21:55	13:22:12	17	13:21:25	13:22:37	3093-3092.3064-3065.3055-3054	7:13
510	E05-2	6	43				13:35:09	13:35:27	18	13:34:39	13:35:49	3115-3114.3152-3153.3158-3159	13:14
511	E05-2	6	43				13:40:23	13:40:45	22	13:39:54	13:41:05	3015-3014.3027-3026.3175-3174	5:14
512	E05-2	6	43				13:43:25	13:43:43	18	13:42:59	13:44:09	3183-3182.3104-3105.3061-3060	3:02
513	E05-2	0	43							13:51:02	13:52:12	3032-3033.3290-3291.3074-3075	-
514	E05-2	6	43				13:57:55	13:58:14	19	13:57:23	13:58:37	3023-3022.3131-3130.3270-3271	14:30

Figure 2 – ROCS Spots Report displaying trains single tracking and utilizing Track 2 to service Georgia Avenue – Petworth Station from 12:33 to 12:52 hours.

Closed Circuit Television (CCTV)



Figure 3 – Rail Supervisor retrieving the Wet Floor sign, in close proximity to the third rail, within the platform limits at Georgia Avenue – Petworth, Track 1 at approximately 12:55 hours.

Chronological Event Timeline

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

Time	Description
12:25:31 hours	A customer was observed intentionally throwing the Wet Floor sign onto the roadway on Track 1, Georgia Avenue Station. The sign landed directly against/adjacent to the third rail. [CCTV]
12:28:29 hours	<u>Station Manager</u> : Contacted ROCC and reported there was a “cone” on the third rail at Georgia Avenue Station on Track 1. They requested a supervisor to assist. ROCC acknowledged. [OPS 3]
12:23:01 hours	<u>Radio RTC</u> : RTC requested if any supervisors were near Georgia Avenue Station. Rail Supervisor Unit 20 responded, and reported they were en route to assist. <u>Radio RTC</u> : Asked Station Manager if the cone was on the coverboard or under the third rail. <u>Station Manager</u> : Reported the cone was under the third rail. [OPS 3]

Time	Description
12:36:21 hours	<u>Radio RTC</u> : Single tracking operations implemented. Train ID 508 first train single track on Track 2. [ROCS Report]
12:51:00 hours	<u>Rail Supervisor</u> : Arrived on scene to assess the situation. [OPS 3]
12:53:04 hours	<u>Rail Supervisor</u> : Contacted ROCC and reported that third rail power does not need to be de-energized in order to retrieve the cone. RTC granted the Rail Supervisor foul time to remove the cone. Rail Supervisor acknowledged. [OPS 3]
12:55:00 hours	<u>Rail Supervisor</u> : Rail Supervisor removed the Wet Floor sign from Track 1 at Georgia Avenue Station. [CCTV]
12:57:00 hours	<u>Rail Supervisor</u> : Contacted ROCC to relinquish their foul time. They reported the Wet Floor sign was successfully retrieved. [OPS 3]

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

Interview Findings

As part of the investigation launched into the Improper RWP near Georgia Avenue - Petworth Station, SAFE conducted one interview with the Rail Supervisor. 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.

Rail Supervisor

- The Rail Supervisor received a request to remove a wet floor sign from the roadway at Georgia Avenue Station.
- The Rail Supervisor contacted ROCC to inform them about the task.
- The Rail Supervisor confirmed they could remove the safety sign even with the energized third rail.
- During the retrieval process, the Rail Supervisor wore cloth safety gloves for protection.

Weather

On May 23, 2023, at the time of the incident, NOAA recorded the temperature as 73°F, with high level clouds, winds 13 mph, and 48% humidity. This is a below ground station. Weather was not a contributing factor in this incident (Weather source: NOAA – Location: Washington, DC).

Human Factors

Evidence of Fatigue

The biomathematical fatigue modeling application (SAFTE-FAST Web SFC) was not applied for this event. Signs of fatigue were not observed during video review.

Fatigue Risk

The biomathematical fatigue modeling application (SAFTE-FAST Web SFC) was not applied for this event. No significant risk was identified.

Post-Incident Toxicology Testing

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

Work History

The Rail Supervisor is a WMATA employee with over 12.5 years of total service: seven years as a Supervisor. The Rail Supervisor last certified as a Train Operator and Road Supervisor on September 30, 2021. The Rail Supervisor is certified at RWP- 2 Level and expires in November of 2023.

Certifications

The Rail Supervisor completed their Interlocking and Terminal Supervisor re-certification on September 8, 2022, with 96% on the Terminal Procedures Exam. The Rail Supervisor successfully completed the practical application portion on September 7, 2022.

Related Rules and Procedures

- SOP #2 Rev. 6.0 - Section 6.1.2 – A supervisory power outage is required for all activities on the Roadway not covered by Section 6.1.1 of the procedure. When incidental contact with the third rail is possible, Safety Department approved rubber mats shall be used to protect affected employees.

Findings

- The Wet Floor sign was deliberately thrown by a customer in close proximity to the energized third rail.
- The Rail Supervisor promptly responded to the incident and successfully removed the sign from the roadway.
- The Rail Supervisor advised the Radio RTC that they could remove the sign without a Supervisory Power Outage.
- The Rail Supervisor carried out the removal of the Wet Floor sign using standard cloth work gloves without any additional protective gear.
- SOP 2 6.1.2 requires additional layers of protection when performing tasks that may result in incidental contact with the third rail.

Immediate Mitigation to Prevent Recurrence

- ROCC dispatched a Rail Supervisor to provide assistance on-site.
- In order to address the situation effectively, ROCC implemented single tracking operations, ensuring the safe movement of trains and minimizing potential hazards.
- SAFE issued a Safety Bulletin SB 23-05-E, reviewing the event and emphasizing the importance of staying focused at work (See Appendix D).

Probable Cause Statement

The probable cause of the Improper Roadway Worker Protection (RWP) event was a misapplication of established rules and procedures. The Rail Supervisor retrieved the Wet Floor sign while it was in close proximity to the energized third rail, which was a violation of established procedure. The possibility of incidental contact existed, and to minimize this risk, the third rail power should have been de-energized or other preventive measures enacted.

Recommended Corrective Actions

Corrective Action Code	Description	Responsible Party	Estimated Completion Date
109000MX_ SAFECAPS_ SAFE_001	(RC-1) SAFE department will develop a and distribute a Safety Bulletin highlighting the proper methods to retrieve items in close proximity of the third rail and the required PPE.	SAFE SRC	Completed

Appendices

Appendix A – Interview Summary

The below narrative summarizes 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 Rail Supervisor is a WMATA employee with over 12.5 years of total service: seven years as a Supervisor. The Rail Supervisor last certified as a Train Operator and Road Supervisor on September 30, 2021. This employee has no history of sleep issues to report. The Rail Supervisor is certified at RWP- 2 Level and expires in November of 2023.

During the interview, the Rail Supervisor reported they were at Greenbelt Station when they heard the Station Manager at Georgia Avenue Station call in the incident. They stated ROCC contacted them and requested they assist the Station Manager with removing a wet floor sign from the roadway at Georgia Avenue. The Rail Supervisor stated after they assessed the area, they informed ROCC third rail power did not need to be de-energized. The Rail Supervisor reported they could get to the sign without interfering with the third rail and it was removed without incident. The Rail Supervisor stated they were not familiar with the requirement for a Supervisory Power Outage procedure in SOP #2 if incidental contact was a factor.

Appendix B – Rail Supervisor Report (Abridged)



RTRA Supervisor's Report

DEPARTMENT OF OPERATIONS-RAIL SERVICE

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

Office of Rail Transportation

Date: <i>5/23/2023</i>	Incident Time <i>12:50 PM</i>	Incident Location (Station Mezzanine#) <i>EOS Georgia Ave</i>	Track/Mezzanine# <i>Trk #1</i>
Equipment Number (Train ID & Car Numbers; Escalator/Elevator #, Room #)			

Incident Description
Removing Wet Floor Sign from Roadway

WMATA Personnel Involved	Employee #	Rule Violation?	Home Division	Post Incident

Name	Address	Injury?
Name	Address	Injury?
Name	Address	Injury?

Arrival Time	Unit Number	Person in Charge	Remarks

Chronological Account of Incident
Note time for each entry; Include statement of Employee or Witness at conclusion

Your Arrival Time
ROCC was informed by the station manager at Georgia Ave of a wet floor sign on Track #1 near the third rail. ROCC told me assess the scene and inform them if third rail power needed to be removed. Upon my arrival I assessed that the wet floor sign could be removed without removing third rail power. I informed ROCC that power did not need to be removed and requested Cow-time on track #1.

Supervisor Submitting Report (include payroll #)	Date	Report Reviewed by	Date
	<i>5/23/2023</i>		

RTRA Supervisor's Report

Page 2 of 2

Details (continued from front)

50.437 09/10

REPORT MUST BE FAXED TO ROCC 202-962-2808 at end of tour

Document 1 – Rail Supervisor Report page 1 of 2.

Incident Date: 05/23/2023 Time: 12:55 hours
Final Report – Improper Roadway Worker Protection
E23344

Drafted By: SAFE 702 – 07/24/2023
Reviewed By: SAFE 71 – 07/25/2023
Approved By: SAFE 71 – 07/25/2023

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I removed the sign and relinquish my foul time. The bottom of the sign was sticking out so therefore no power needed to be removed.

Key Findings (Detail below)

Supervisor Submitting Report (Initials)

Report Reviewed By (Initials)

50.437 09/10

REPORT MUST BE FAXED TO ROCC 202-462-2808 at end of tour

Document 2 – Rail Supervisor Report page 2 of 2.

Incident Date: 05/23/2023 Time: 12:55 hours
Final Report – Improper Roadway Worker Protection
E23344

Drafted By: SAFE 702 – 07/24/2023
Reviewed By: SAFE 71 – 07/25/2023
Approved By: SAFE 71 – 07/25/2023

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

View Approved Incident Report

INCIDENT ID: 2023143GREEN5

DATE 2023-05-23	TIME 1242	LINE Green	ITEM 5
LOCATION (STATION/YARD) Georgia Ave-Petworth (E05)		LOCATION/CHAIN MARKER (If Applicable)	REPORTED BY Georgia Avenue Station Manager [REDACTED]
TRAIN ID 510	DIRECTION O/B	TRACK NUMBER 1	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 MISC	RESP CODE PUB		

TYPE INCIDENT
Obstruction on the Roadway.

ACTION PLAN
Dispatch RTRA Supervisor to Remove Obstruction from the Roadway.

DELAYS IN MINUTES			
LINE	INCIDENT	TRAIN	TOTAL DURATION
15	15	15	27

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
			AUTO	

INCIDENT CHRONOLOGY	
TIME	DESCRIPTION
1230	Station Manager [REDACTED] at Georgia Avenue reported there was a plastic wet floor sign cone lying on the roadway near the third rail at Georgia Avenue track one. Trains were held on track one for safety. RTRA Supervisor [REDACTED] (Unit 21) was dispatched to assist. AOM, ROIC, and all other concerned personnel were notified.
1235	Single tracking operations were initiated. Train 508 was the first train to single track between Georgia Avenue and Fort Totten via track two.

Document 3 – ROCC Incident Report page 1 of 2.

Incident Date: 05/23/2023 Time: 12:55 hours
Final Report – Improper Roadway Worker Protection
E23344

Drafted By: SAFE 702 – 07/24/2023
Reviewed By: SAFE 71 – 07/25/2023
Approved By: SAFE 71 – 07/25/2023

View Approved Incident Report

1241	Train 510 was instructed to hold at Columbia Heights track one for single-tracking.
1251	Supervisor [REDACTED] arrived on-scene at Georgia Avenue to assist.
1253	Supervisor [REDACTED] reported he did not need third rail power de-energized in order to retrieve the plastic cone. Supervisor [REDACTED] was granted foul-time protection in order to retrieve the cone from the roadway.
1257	Supervisor [REDACTED] reported that he had returned to the platform of Georgia Ave relinquished his foul time and had retrieved the cone. Train 510 was instructed to continue on normal service resumed.

MAXIMO TICKET#
8672361

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 and MAC notified

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: 05/23/2023 Time: 12:55 hours
Final Report – Improper Roadway Worker Protection
E23344

Drafted By: SAFE 702 – 07/24/2023
Reviewed By: SAFE 71 – 07/25/2023
Approved By: SAFE 71 – 07/25/2023

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Safely Staying Focused

OVERVIEW

Memorial Day weekend is a busy time for Metro staff – at home and at work. But it's our duty while at work, as the region's transit provider, to remain focused, professional, and safe at all times. This week there were several safety lapses where contributing factors included not following the steps detailed in a procedure or rushing a procedure. They include:

- 1) A customer injury due to a bus hard braking event
- 2) A train tripped the Automatic Train Protection breaker without ROCC's permission or a block
- 3) A train operated without speed commands
- 4) A near-miss cyclist strike when a bus did not yield
- 5) An Advanced Mobile Flagger set up on the wrong track
- 6) An item was retrieved in close proximity to the third rail without power being de-energized

It's important for everyone to stay focused, not get distracted, and concentrate on the task at hand. The risk posed by the hazards listed below can be significantly reduced if the right precautions are taken.

DISTRACTION TYPES & TIPS

- **Stay Focused:** While we often face numerous distractions, it is imperative that we maintain our focus at work. This is particularly crucial when performing high-risk tasks. Take proactive steps to keep yourself and your co-workers engaged and attentive to the task at hand. Initiate conversations with your colleagues to ensure they comprehend the significance of avoiding mental distractions during their day-to-day work.
- **Manage Stress:** Stress can be caused by any of the hazards outlined above. Workers and operators may feel stress and pressure to meet deadlines or headways, or they might feel anxious about something happening at home. Such stress can lead to frustration and a loss of focus. Create an open environment for co-workers to talk about stress and, if a co-worker appears overly stressed, ensure their supervisor is aware of the situation. Metro's Employee Assistance Program is available to all employees and their immediate family members and provides free and confidential supportive services that promote mental, emotional, and physical well-being (202-636-7181 or EAP@wmata.com).
- **Avoid Rushing:** There are two primary causes of rushing: 1) When workers compromise quality by cutting corners or rushing to complete a task, and 2) the pressures imposed by project deadlines or schedule headways. Each project and headway entails specific time constraints that directly affect the staff and customers involved. Regardless of the underlying reasons, it is crucial to prioritize safety. Both you and your co-workers must not compromise safety by rushing a route or task.
- **Reduce Fatigue:** Getting sufficient sleep on a daily basis is crucial for ensuring your safety. When we lack sleep for days in a row without making up the lost hours, we accumulate 'sleep debt', which contributes to fatigue and puts you and your co-workers at risk. Fatigue can result in decreases in attention, memory, concentration, and other critical factors that impact our safety. There is no substitute for proper sleep. While coffee or energy drinks may provide a temporary boost, they cannot replace the fundamental need for an adequate amount of sleep.

Keep these tips in mind and be on the lookout for hazards from stress, fatigue, and rushing. Focus on the task at hand. Doing so could help prevent accidents and injuries.

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



Document 5 – WMATA Safety Bulletin reminding employees to stay focused and follow correct procedures.

Using PPE the Right Way on the Roadway


OVERVIEW

Personal Protective Equipment (PPE) is essential to Metro's Roadway Worker Protection (RWP) program. The requirements for PPE on the roadway exemplify how the RWP program helps address common roadway hazards by increasing roadway worker visibility and providing a layer of protection from physical injuries.

DETAILS AND ACTIONS

Personal Protective Equipment (PPE) is utilized by individuals to minimize exposure to hazards that may cause serious workplace injuries and/or illnesses. The Department of Safety is responsible for vetting all PPE to ensure compliance with federal standards. Unapproved items pose a safety risk by potentially exposing the user to inferior products, non-compliant products, or products that do not adequately protect against the hazards being faced.

For roadway workers, the requirements are included in sections 17.11 and 18.7 of the [Metrorail Operating Rulebook](#). The following PPE is required while on the roadway:



Hard Hat/Helmet: Hard Hats protect employees' heads from falling objects as well as minor bumps, bruises, and scrapes. WMATA-approved hard hats are designed to provide impact and penetration resistance along with limited voltage protection.

Safety Glasses: Safety Glasses and other forms of eye protection protect employees' eyes against moderate impacts from flying particles and debris, especially when performing grinding, sanding, drilling, chipping, or hammering operations. Eye protection is required for all tasks on the roadway.

High Visibility Yellow Safety Apparel: High Visibility Yellow Safety Apparel, adds visibility to protect employees from struck-by accidents. WMATA employees shall wear a Department of Safety approved Class 2 yellow safety vest or other approved garment.

Safety Footwear: Safety Footwear protects employees' feet against impact, compression, slips, and falls. Footwear should include a safety toe and be slip resistant to prevent injuries.

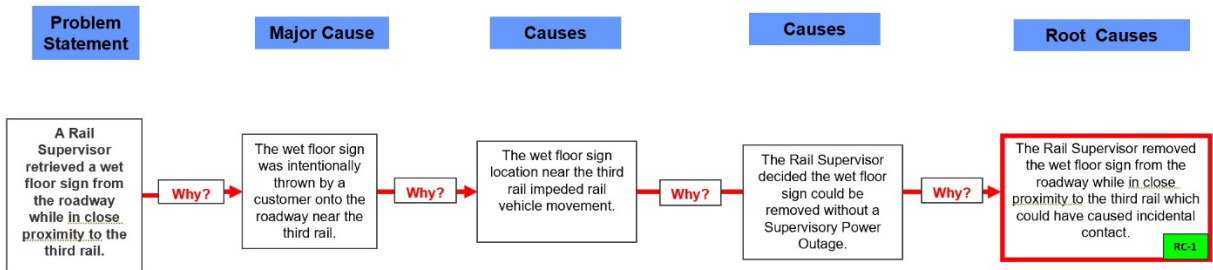
For questions regarding this Safety Bulletin or other safety-related issues, contact the Safety Hotline at 202-249-SAFE (7233).



Document 6: WMATA Safety Bulletin addressing using the correct PPE Right Way on the Roadway.

Appendix F – Root Cause Analysis

E23344 – Improper RWP – Georgia Avenue – Petworth Station





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

FINAL REPORT OF INVESTIGATION A&I E23349

Date of Event:	May 24, 2023
Type of Event:	Improper RWP
Incident Time:	19:06 Hours
Location:	Georgia Avenue-Petworth Station, track 1
Time and How received by SAFE:	May 24, 2023, 19:46 hours – SAFE/MAC
WMSC Notification Time:	May 24, 2023, 20:40 Hours
Responding Safety Officers:	None
Rail Vehicle:	Train ID 512 (L3180/81.3096/97.3138/39.3150/3151)
Injuries:	None
Damage:	None
Emergency Responders:	None
SMS I/A Incident Number:	20230525#108752MX

Georgia Avenue-Petworth Station – Improper RWP

May 24, 2023

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Abbreviations and Acronyms

AIMS	Advanced Information Management System
AMF	Advanced Mobile Flagger
AOM	Assistant Operations Manager
ARS	Audio Recording System
CCTV	Closed-Circuit Television
CMOR	Office of Chief Mechanical Officer
IIT	Incident Investigation Team
MSRPH	Metrorail Safety Rules and Procedures Handbook
NOAA	National Oceanic and Atmospheric Administration
RTRA	Office of Rail Transportation
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
SPOTS	System Performance On-Time Summary
SRC	Safety Risk Coordinator
TRST	Office of Track and Structures
VMS	Vehicle Monitoring System
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 Wednesday, May 24, 2023, at 19:10 hours, the Train Operator of Train ID 512 (L3180/81.3096/97.3138/39.3150/3151) reported to the Rail Operations Control Center (ROCC) that the train was approaching Fort Totten Station on track 1 and inquired if personnel were on the roadway. The Train Operator then advised the ROCC that there was no AMF at Georgia Avenue Station before their departure. The Advanced Mobile Flagger (AMF) reported they were located at Georgia Avenue Station at the 8-car marker on track 1 but did not brief the previous train before it departed.

At 19:13 hours, the Roadway Worker in Charge (RWIC) advised the Radio Rail Traffic Controller (RTC) that they were off the platform and near the Fort Totten Station vent area. The Radio RTC instructed the RWIC to return to the platform. The Mobile Work Crew was instructed to clear the roadway.

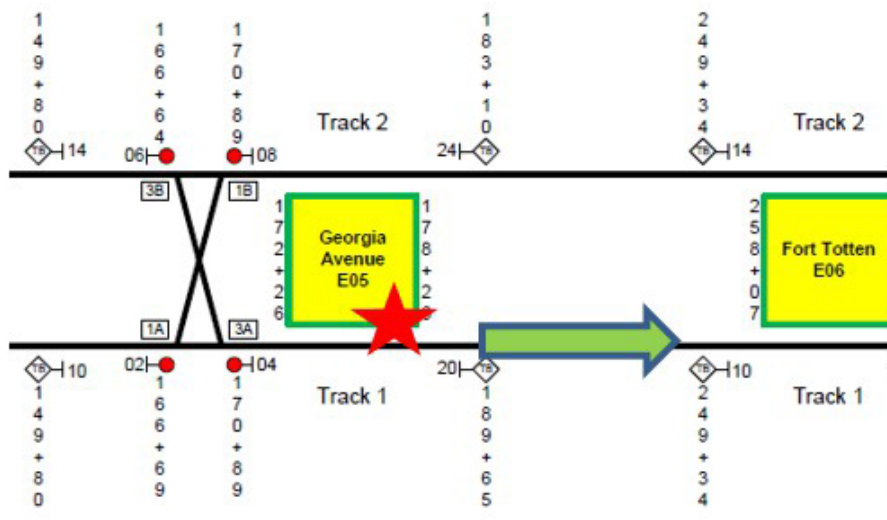
The Office of Track and Structures (TRST) removed the AMF from service for post-incident testing. The train consist was removed from service for post-incident inspection.

The probable cause of the Improper RWP event on May 24, 2023, at Georgia Avenue Station, was that the AMF was not in place for flagging duties when the train arrived and departed the station and the failure of the AMF to perform their duties per established RWP procedures.

Incident Site

Georgia Avenue Station, Track 1

Field Sketch/Schematics



The above depiction is not to scale.

Purpose and Scope

This accident investigation and candid self-evaluation aims 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 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 individuals:
 - Roadway Worker in Charge (RWIC)
 - Advanced Mobile Flagger (AMF)

- Documentation Review – Collection of relevant work history information and process documentation contained in WMATA record systems. These records include:
 - Metrorail Safety Rules and Procedures Handbook (MSRPH)
 - National Oceanic and Atmospheric Administration (NOAA)
 - Employee 30-Day Work History
 - Train Operator's Training Records
 - Train Operator's Certifications
 - Supervisor Incident Report
 - Roadway Job Safety Briefing

- System Data Recording Review – Collection of information contained in Metro Data Recording Systems. This data includes:
 - ARS (Audio Recording System) 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)
 - System Performance On-Time Summary (SPOTS)

Investigation

On Wednesday, May 24, 2023, at 19:00 hours, a TRST RWIC contacted ROCC and requested to perform a track inspection between Fort Totten Station and U Street Station on track 1. The crew was set to begin at Fort Totten Station toward Georgia Avenue Station with an AMF in place. The Radio RTC instructed the RWIC to confirm that the AMF was in place before permission was granted. At 19:00 hours, a blue block was placed at Georgia Avenue Station, track 1.

The Audio Recording System (ARS) revealed that the RWIC attempted to contact the AMF two times within a minute, but there was no response. At 19:02 hours, the Radio RTC again instructed the RWIC to confirm that the AMF was in place. The RWIC advised that they were attempting to contact the AMF.

At 19:06 hours, the AMF reported they were located at the 8-car marker at Georgia Avenue Station, track 1 and was ready to flag.



Image 1 – AMF arriving to flag as Train ID 512 departs Georgia Avenue Station.

Closed-Circuit Television (CCTV) revealed that at 19:06 hours, the AMF descended an escalator from the mezzanine to the platform as Train ID 512 arrived at Georgia Avenue Station. The AMF appeared to grasp the shoulder microphone while walking.

At 19:07 hours, the Radio RTC permitted the track inspection between Fort Totten and Georgia Avenue Stations. At 19:08 hours, Train ID 512 departed Georgia Avenue Station and was not briefed by the AMF. The AMF announced on Radio Ops 3 that a train was leaving the platform.

ROCS SPOTS REPORT

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

Current date/time: Sun Jul 16 16:06:05 2023

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

Select took 0.004237

ID	Platform	length	dcode	Right door open	Right door close	dwell	Left door open	Left door close	dwell	Scheduled time	Deviation from schedule
511	E05-1	8	44	-	-	0	19:01:26	19:01:49	23	18:54:00	469 s late
512	E05-1	8	44	-	-	0	19:07:27	19:07:46	19	19:02:00	346 s late
513	E05-1	6	44	-	-	0	19:11:40	19:17:00	320	19:10:00	420 s late

Table 1 - SPOTS Report Train 512 and 513

At 19:10 hours, Train ID 512 reported to the ROCC that the train was approaching Fort Totten Station on track 1 inquired if personnel were on the roadway and advised that there was no AMF at Georgia Avenue Station. The Radio RTC instructed Train ID 513 to report if they see the AMF when they arrive at Georgia Avenue Station. At 19:11 hours, Train ID 513 arrived at Georgia Avenue Station, track 1.

At 19:11 hours, the AMF advised that they were in place and were briefing a train. The Radio RTC inquired if the AMF had briefed the previous train, but there was no response. The Radio RTC again inquired if the AMF had briefed the previous train, and the AMF responded no. The Radio RTC requested the location of the RWIC.

At 19:13 hours, the RWIC advised that they were at Chain Marker (CM) E1 254+00, right outside of the platform near the vent area, and advised that they could walk back onto the platform. The Radio RTC instructed the RWIC to report when they were on the platform and instructed Train ID 513 and the AMF to hold at Georgia Avenue Station.

At 19:14 hours, the Button RTC notified the AOM of the event. The RWIC said they were back on the platform at Fort Totten Station. The RWIC was instructed to contact ROCC via landline.

At 19:16 hours, the Button RTC advised the RWIC of the event and instructed them to stand by. At 19:43 hours, a TRST Supervisor reported that the remainder of the track inspection would be canceled.

During the formal interview, the AMF stated that they had attended the RJSB at Branch Avenue Station and traveled with the crew to Georgia Avenue Station, where the AMF exited the train. The AMF said they went upstairs to retrieve a radio battery in the kiosk. The AMF stated that they said yes when asked by RWIC via radio if they were in place at the 8-car marker and ready to flag. The AMF stated that they were on the escalator headed to the platform at the time, and Train ID 512 departed the station on his approach.

Chronological Event Timeline

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

Time	Description
19:00:08 hours	<u>RWIC</u> : Requested to perform a track inspection between Fort Totten Station and U Street Station on track 1. Beginning Fort Totten Station to Georgia Avenue Station with an AMF in place. <u>Radio RTC</u> : Acknowledged and repeated. Advised to stand by and acknowledge that the AMF was in place. [Radio Ops 3]
19:00:40 hours	Blue Blocks added at Georgia Avenue Station, Track 1 [AIMS]
19:00:52 hours	<u>RWIC</u> : Attempted to contact the AMF. <u>AMF</u> : No response. [Radio Ops 3]
19:01:04 hours	<u>RWIC</u> : Attempted to contact the AMF. <u>AMF</u> : No response. [Radio Ops 3]
19:02:53 hours	<u>Radio RTC</u> : Instructed the RWIC to verify that the AMF was in place. <u>RWIC</u> : Advised trying to contact the AMF. [Radio Ops 3]
19:06:26 hours	<u>AMF</u> : Reported at the 8-car marker at Georgia Avenue Station, ready to flag. <u>RWIC</u> : Advised ROCC that AMF was in place. [Radio Ops 3]

Time	Description
19:06:51 hours	The AMF was descending an escalator from the mezzanine to the platform as Train ID 512 arrived at Georgia Avenue Station. The AMF appeared to grasp the shoulder mic while walking. [CCTV]
19:06:56 hours	Train ID 512 arrived at Georgia Avenue Station. [Spots]
19:07:11 hours	<u>Radio RTC</u> : Acknowledged and granted permission for the track inspection between Fort Totten and Georgia Avenue Stations. <u>RWIC</u> : Acknowledged and repeated [Radio Ops 3]
19:07:39 hours	<u>RWIC</u> and crew enter Fort Totten tunnel, track 1 [CCTV]
19:08:13 hours	Train ID 512 departed at Georgia Avenue Station. [Spots]
19:08:23 hours	<u>AMF</u> : Announced a train was leaving the platform. [Radio Ops 3]
19:10:01 hours	<u>Train ID 512</u> : Reported approaching Fort Totten Station and inquired if personnel were on the roadway. Advised that there was no AMF at Georgia Avenue Station. <u>Radio RTC</u> : Inquired that the report was that there was no AMF at Georgia Avenue Station. <u>Train ID 512</u> : Confirmed the report. [Radio Ops3]
19:10:48 hours	<u>Radio RTC</u> : Instructed Train ID 513 to advise if they see the AMF when they arrive at Georgia Avenue Station. <u>Train ID 513</u> : Acknowledged. [Radio Ops 3]
19:11:22 hours	<u>Radio RTC</u> : Requested the location of the <u>RWIC</u> . <u>RWIC</u> : Advised to hold on for one second. [Radio Ops 3]
19:11:40 hours	Train ID 513 arrived Georgia Avenue Station, track 1 [SPOTS]
19:11:43 hours	<u>AMF</u> : Advised they were in place. <u>Radio RTC</u> : Inquired at what location. <u>AMF</u> : Responded Georgia Avenue on track 1 ready to flag currently briefing a train. <u>Radio RTC</u> : Inquired if the AMF briefed the previous train. <u>AMF</u> : No response. <u>Radio RTC</u> : Inquired if the AMF briefed the previous train. <u>AMF</u> : Responded no, the train left <u>Radio RTC</u> : Advised that the train was not allowed to leave if they see the <u>AMF</u> . Inquired if the AMF spoke with the Train Operator. <u>AMF</u> : No response. [Radio Ops3]
19:13:02 hours	<u>RWIC</u> : Advised located at CM E1 254+00, "right outside of the platform." <u>Radio RTC</u> : Acknowledged and inquired if they needed a train to pick up or were able to walk to the platform. <u>RWIC</u> : Advised just walked off the platform at the vent area. <u>Radio RTC</u> : Acknowledged and inquired time it will take to get to the platform. <u>RWIC</u> : Advised 30 seconds. <u>Radio RTC</u> : Acknowledged and instructed the <u>RWIC</u> to advise when they were on the platform. Instructed Train ID 513 and the AMF to hold at Georgia Avenue Station. [Radio Ops3]
19:14:12 hours	<u>Button RTC</u> : Notified the AOM of the event. [Phone Ops 3]
19:14:41 hours	<u>RWIC</u> : Advised they were back on the platform. <u>Radio RTC</u> : Acknowledged and requested a landline [Radio OPS3]

Time	Description
19:15:08 hours	RWIC and crew returned to Fort Totten platform via track 1 [CCTV]
19:16:17 hours	<u>RWIC</u> : Contacted ROCC and was advised that the train reported the AMF was not in place at Georgia Avenue Station and to stand by. [Phone Ops 3]
19:25:21 hours	<u>Button RTC</u> : Advised the TRST Supervisor of the event. [Phone Ops 3]
19:43:16 hours	<u>AOM</u> : Contacted the TRST Supervisor and advised the results of the investigation. <u>TRST Supervisor</u> : Advised the remainder of the track inspection would be canceled. [Phone Rail 3]

***Note: Times above may vary from other system's timelines based on clock settings and reporting source.*

Automated Information Management System (AIMS)

AIMS Playback affirmed that at 19:07 hours, Train ID 512 departed Georgia Avenue Station on track 1. There was a blue block in place on track 1.

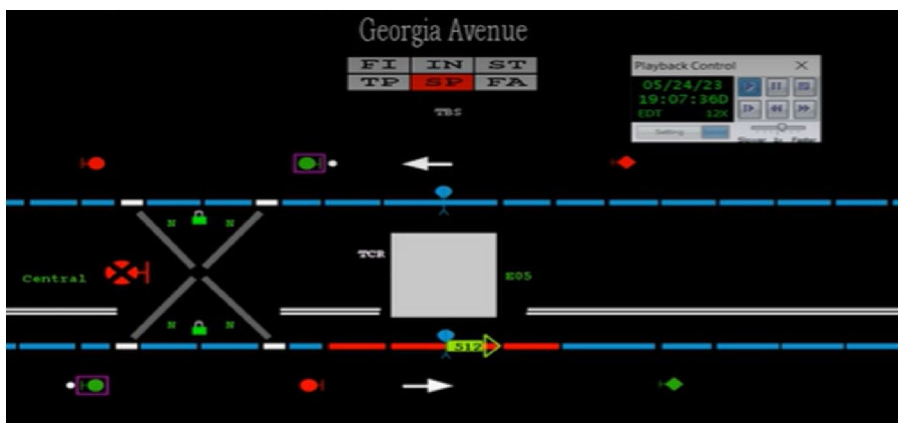


Figure 1 – Train ID 512 Departs Georgia Avenue Station

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 completed an analysis of the data retrieved from Train ID 512, cars (L3180/81X3096/97X3138/39X3150/3151) reported for an Improper RWP. Based on the VMS data, Train ID 512 with lead car 3180 traveled outbound on track 1.

At 19:05:49.6, Train ID 512 came to a complete stop at Georgia Avenue Station 8-car marker. The left side doors were opened to service the station and then closed. At 19:06:21.9 Train ID 512 departed Georgia Avenue Station toward Fort Totten Station.

The road horn was activated multiple times when the train traveled between 38 Mph and 60 Mph. The speed commands dropped to 0 MPH. Full-Service Braking was energized, bringing the train to a complete stop 7916 feet after departing Georgia Avenue Station (11 feet into Fort Totten platform limits).

The stop and proceed mode were initiated, the master controller was placed in P5, and the train began moving without speed commands within Fort Totten platform limits. The train received speed commands after traveling 512 feet and continued moving an additional 26 feet to Fort Totten Station 8-car marker.

Based on VMS data, no fault was found with the train that may have contributed to the cause of this incident.

Sequence of events:

TIME	SEQUENCE OF EVENTS	MC Position	Actual Train Speed	Speed Limits	Speed Regulated	Distance After Georgia Ave 8-Car Marker.
19:05:49.6	Train ID 512 came to a complete stop at Georgia-Avenue 8 th car marker Track #1	B5	0 Mph	40 Mph	40 Mph	0 ft.
19:05:53.5	Left-side door open pushbutton activated and left-side doors opened	B4	0 Mph	40 Mph	40 Mph	0 ft.
19:06:05.1	Left-side door close pushbutton activated and left-side doors closed.	B4	0 Mph	40 Mph	40 Mph	0 ft.
19:06:22.2	The Master Controller was placed in a P5 Power Position. And train began to move in the direction of Fort Totten.	P5	2 Mph	40 Mph	40 Mph	1 ft.
19:06:36.3	The Master Controller placed P5, Train speed reached speed limits 40 Mph, 473 feet after departing Georgia-Avenue .	P5	40 Mph	40 Mph	40 Mph	473 ft.
19:06:37.8	Master Controller moved to B4 braking. Train Speed goes above speed commands 41 Mph, 562 feet after departing Georgia-Avenue	B4	41 Mph	40 Mph	40 Mph	562 ft.
19:06:38.5	Speed Commands drops to 0 MPH, train speed was 41 MPH, B4 Braking applied, 605 feet after departing Georgia-Avenue.	B4	41 Mph	0 Mph	0 Mph	605 ft.
19:06:39.2	Speed Commands increased to 40 MPH, train speed was 40 MPH, 648 feet after departing Georgia-Avenue .	B4	40 Mph	40 Mph	40 Mph	648 ft.
19:06:41.6	Speed Commands increased to 65 MPH, train speed was 34 MPH, 776 feet after departing Georgia-Avenue .	P5	34 Mph	65 Mph	65 Mph	776 ft.
19:06:43.7	Road Horn activated once.	P5	33 Mph	65 Mph	65 Mph	878 ft.
19:07:17.5	Road Horn activated twice.	COAST	60 Mph	65 Mph	65 Mph	3509 ft.
19:07:57.0	Road Horn activated five times	B5	52 Mph	55 Mph	55 Mph	6934 ft.
19:08:37.6	Speed Commands drops to 0 MPH, train speed was 10 MPH, B4 Braking applied, 7874 feet after departing Georgia-Avenue. (11 feet into Fort Totten platform limits)	B4	10 Mph	0 Mph	0 Mph	7874 ft.
19:08:43.9	Train comes to a complete stop 7916 feet after Georgia-Avenue 8 th car marker. (62 feet into Fort Totten platform limits)	B4	0 Mph	0 Mph	0 Mph	7916 ft.
19:08:43.9	Stop and Proceed Mode was initiated.	B5	0 Mph	1 Mph	0 Mph	7916 ft.
19:09:45.6	Train began to move under stop and proceed within Fort Totten platform limits.	P4	2 Mph	1 Mph	0 Mph	7917 ft.
19:10:20.8	Speed Commands increased to 40 MPH, train speed was 7 MPH, 26 feet before Fort Totten 8 th car marker.	B1	7 Mph	40 Mph	40 Mph	8428 ft.
19:10:26.2	Train comes to a complete stop at Fort Totten 8 th car marker.	B5	0 Mph	40 Mph	40 Mph	8454 ft.

Table 2 – CMOR Report Train ID 512 - Times above may vary from other systems' timelines based on clock settings

Car 3180 VMS Graph:

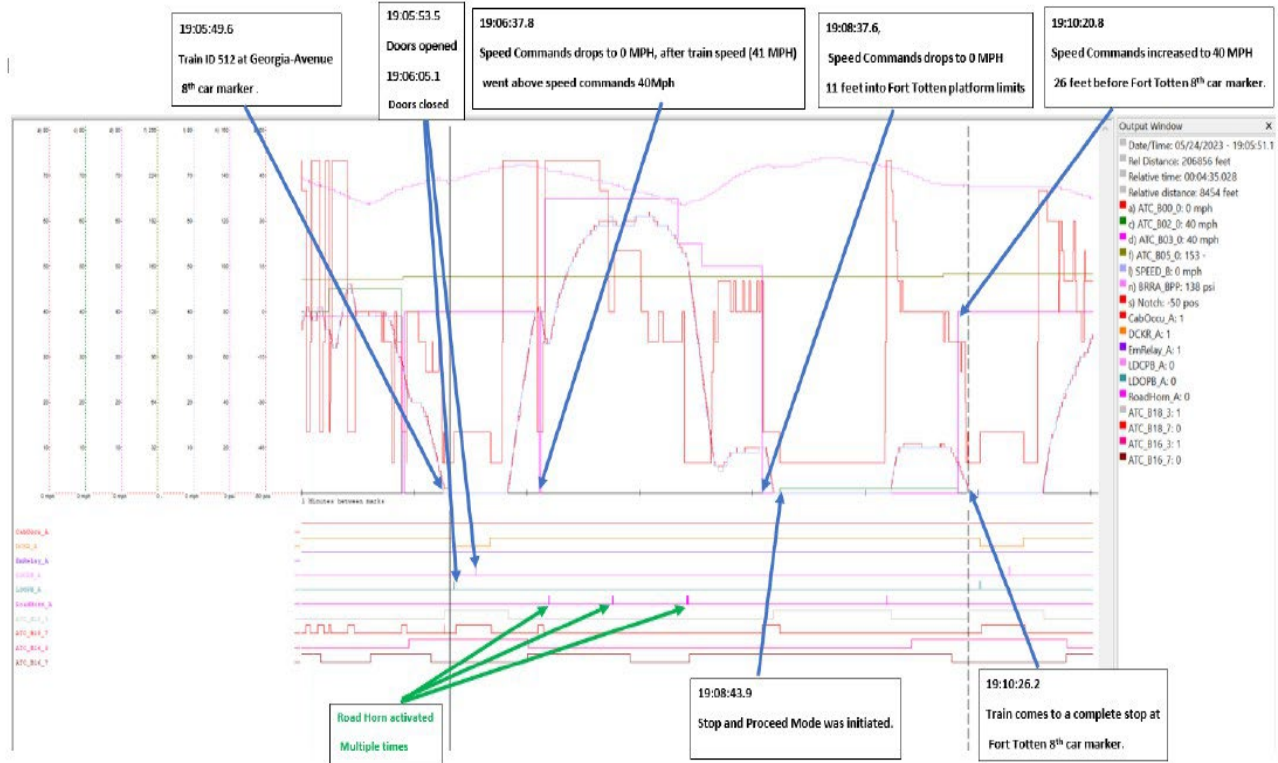


Table 3 – VMS Graph Train ID 512

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

COMR performed radio testing at Georgia Avenue Station and provided the following: "Testing determined no issues with communications equipment."

Office of Track and Structures (TRST)

The investigation determined that the AMF was not in place to perform AMF duties, although the AMF reported they were located at the 8-car marker at Georgia Avenue Station. The AMF received disciplinary action in relation to this event, will attend refresher training, and was advised to follow the safety protocols when a rail vehicle is approaching a work crew on the roadway.

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. Findings detailed below include reported information from involved personnel and may conflict with other data sources contained in the report.

RWIC

- The RWIC requested permission to perform a track inspection from Fort Totten Station to Georgia Avenue Station.
- The RWIC stated that they contacted the AMF and was advised that they were in place ready to flag.- The RWIC said that ROCC granted permission.
- The RWIC stated they were approximately 12-15 feet into the tunnel when they heard the train approaching.- The RWIC said they climbed onto the catwalk for safety, and the train passed.
- The RWIC stated that the Train Operator reported no AMF briefing.
- The RWIC stated that they offered to have a train pick them up, and they declined since it would only a 30-second to walk to Fort Totten Station platform.

AMF

- The AMF stated that they acknowledged the RWIC's message and said they were in place at Georgia Avenue Station, track 1 at the 8-car marker as they got off the escalator.
- The AMF stated that a train had arrived and departed before they reached the 8-car marker to brief the train operator, but the Train Operator had seen them.
- The AMF stated that they had assumed their position.

Weather

At the time of the incident, NOAA recorded the temperature at 61°F. Weather was not a contributing factor in this incident as Georgia Avenue Station is an underground station and is not exposed to outside elements. (Weather source: NOAA – Location: Washington, DC).

Related Rules and Procedures

- MSRPH Operating Rule 3.87
- Rail Vehicle Operating Procedures During AMF
- 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	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 also be reported to ROCC, at the first available opportunity, and an investigation by SAFE shall be completed.

Human Factors

Fatigue

RWIC

Signs and Symptoms of Fatigue

We 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 experiencing no symptoms of fatigue in the time leading up to the incident.

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 RWIC reported keeping a regular sleep schedule in the days leading up to the incident.- The RWIC worked one day in the days leading up to the incident. The employee was awake for 13 hours at the time of the incident.- The RWIC reported 7.5 hours of sleep in the 24 hours preceding the incident. The off-duty period was 13 hours, providing an opportunity for 7-9 hours of sleep. This was a comparable amount to the employee's usual workday sleep durations. The employee reported no issues with sleep. The employee worked day shifts in the days leading up to the incident.

AMF

Signs and Symptoms of Fatigue

We 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 experiencing no symptoms of fatigue in the time leading up to the incident.

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 AMF reported keeping a regular sleep schedule in the days leading up to the incident.- The AMF worked day in the days leading up to the incident. The employee was awake for 5 hours at the time of the incident.- The AMF reported 7 hours of sleep in the 24 hours preceding the incident. The off-duty period was 10 hours, providing an opportunity for 7-9 hours of sleep. This was a comparable amount to the employee's usual workday sleep durations. The employee reported no issues with sleep. The employee worked day shifts in the days leading up to the incident.

Post-Incident Toxicology Testing

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

Findings

- Radio RTC did not announce that a crew was on the roadway between Fort Totten Station and Georgia Avenue Station, track 1.
- The AMF left the platform to go to the mezzanine and retrieve a radio battery charger from the kiosk.
- The AMF reported that they were in place and ready to perform flagging when they were not.

Immediate Mitigation to Prevent Recurrence

- Train ID 513 was instructed to hold at Georgia Avenue Station.
- The Mobile Work Crew was instructed to clear the roadway.
- The AMF was removed from service.

Probable Cause Statement

The probable cause of the Improper RWP event on May 24, 2023, at Georgia Avenue Station, was that the AMF was not in place for flagging duties when the train arrived and departed the station and the failure of the AMF to perform their duties in accordance with established RWP procedures. The lack of radio announcements by the Radio RTC also contributed to the event.

Recommended Corrective Actions

Corrective Action Code	Description	Responsible Party	Estimated Completion Date
108752_SAFE CAPS_TRST_ 001	AMF to receive refresher training on AMF Procedures on return to duty.	TRST	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.

RWIC

The RWIC is a WMATA employee with eleven years of service. The RWIC holds an RWP Level 4, which expires in October 2023.

The RWIC stated that they performed a safety briefing, and the AMF was in attendance and was prepared for flagging. The RWIC stated that they had previously worked with the AMF.

The RWIC requested permission to perform a track inspection from Fort Totten Station to Georgia Avenue Station.- The RWIC stated that they made contact with the AMF, and they advised that they were in place ready to flag. The RWIC stated that ROCC granted permission.

The RWIC stated they were approximately 12-15 feet into the tunnel when they heard the train approaching. The RWIC stated they climbed onto the catwalk for safety, and the train passed. The train began braking and stopped about 11 feet into the platform area of Fort Totten.

The RWIC stated that the Train Operator reported no AMF briefing. The RWIC stated that ROCC offered to have a train pick them up and they declined since it would only take 30- seconds to walk to Fort Totten Station platform.

The RWIC said they returned to the platform, called ROCC, and were instructed to contact-the supervisor.

AMF

The AMF is a WMATA employee with 26 years of service as a Laborer. The AMF holds a Roadway Worker Protection (RWP) Level 2 certification expiring in May 2024.

The AMF stated they were on duty at Branch Avenue Division and attended the safety briefing. The crew traveled by train towards Fort Totten Station and exited at Georgia Avenue Station. The AMF said they went upstairs to use a battery charger at the kiosk. (The handset radio was working properly. A post-incident inspection of the handset radio by COMM on June 5, 2023, found it to be in working order.)


The AMF stated that they acknowledged the RWIC's message and said they were in place at Georgia Avenue Station, track 1 at 8-car marker as they got off the escalator. The AMF stated that a train had arrived and departed before they reached the 8-car marker to brief the train operator, but the Train Operator had seen them.

The AMF stated that they attempted to alert the train operator visually. The AMF stated that the train operator should have known that the crew was on the roadway because of the radio communications between the Radio RTC, RWIC and AMF. (No additional Radio RTC

announcements occurred.)

The AMF stated that they assumed their position at the 8-car marker, then heard the Train Operator advise that personnel were on the roadway and not having been briefed. The AMF stated that they held the next train as instructed by ROCC. The AMF stated that they were transported for post-incident testing.

Appendix B – TRST Written Statements/Reports (Redacted)

 Incident Investigation Form WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY					Page 1 of 3
INCIDENT					
Incident #		Risk Rank		Today's Date	
Incident Date		Incident Time	Department	Division	Work Area
5/24/23		7:00pm	TRST	Blanch Ave	E05
Location where Incident Occurred:					
E05					
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>I had the briefing at Ell parking lot around 6pm. Then we went to the work location. (E05)</p> <p>I call on at 7pm for me and [REDACTED]</p> <p>I went direct to [REDACTED] and he said he was in place at E05 track 1 in place.</p> <p>I started walking and a train came by and said over the radio the AMF didn't brief him at Georgia Ave track 1. Central control told us to clear up so we walked back to the platform at E05.</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&II					

Document 1 – TRST RWIC Written Statement, Page 1 of 1

M Incident Investigation Form
metro WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

INCIDENT				
Incident #		Risk Rank	Today's Date	
Incident Date		Incident Time	Department	Division
5/24/23		7: PM	TRST	BRANCH AVE
Location where Incident Occurred:		Work Area		
EOS		EOS		
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:				
It's completed				

DESCRIPTION OF THE INCIDENT.
 Briefly describe the incident.

I HAD MY BRIEFING AT FH PARKING LOT AROUND 6pm. THEN WE WENT TO OUR WORK LOCATION FOR TODAY. I WENT TO LOCATION EOS. [REDACTED] WENT OVER THE AIR TO ME TO SEE IF I WAS IN PLACE AND I SAID YEAH I WAS IN PLACE BUT I WAS ON MY WAY TO THE 8 CAR MARKER. AND I SIGNALING TO THE OPERATOR TO WAKE BUT HE WAS GOING FAST SO I DIDNT MAKE IT TO THE 8 CAR MARKER IN TIME AND THAT'S WHAT HAPPEN. SO I TAKE FULL RESPONSIBILITY FOR ANY ACTION AT THE TIME! THANK YOU [REDACTED]

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

1. FACT IS TO BE IN PLACE WHEN YOUR RIC. CALL YOU OVER THE AIR AND THAT IS A MUST. AT ALL TIMES!

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

Document 2 – AMF Written Statement, Page 1 of 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 1: General Job Briefing

1	Date: <u>5/24/23</u> Time: <u>7:00</u>	RWIC: [REDACTED]
	RWIC Call #: [REDACTED]	RWIC Cell Phone #: [REDACTED]
2	Safety Contact: <u>Food Allergies</u>	
	RWP Rule:	
3	Work Location: <u>E06-E03</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 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?	
6	Emergency Response Plan:	

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

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

	Rail Line: <u>E</u>	Track Number(s): <u>1</u>	Track Access Guide (TAG) Speed:
	Working Limits Chain Markers:		
	OPS Radio Channel: <u>3</u>	OPS Phone Number:	
7	Place of Safety: <u>cat walk</u>	Time Needed to Reach Place of Safety:	
	Are There Red Hot Spots Within Your Working Limits? Yes <input type="checkbox"/> No <input 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:		
	Advanced Mobile Flagger Call #(s) or Last Name(s):		
9	Advanced Mobile Flagger Placement: <u>E05-E03</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:	

FORM SAFE-SRM-001-00

52.002 06/22

Document 3 – Roadway Job Safety Briefing, 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 checked="" 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.

"WMAIA 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 #

Part 5: RWIC Signature(s)

Additional RWIC Comments:		
RWIC Signature:	RWIC Employee ID:	Date: 5/24/23
Relieving RWIC Name:	Relieving RWIC Employee ID #:	
Relieving RWIC Signature:	Date/Time: / /	
Relieving RWIC Call #:	Relieving RWIC Cell Phone #:	

**OCCUPATIONAL HEALTH AND WELLNESS'
DRUG AND ALCOHOL COMPLIANCE PROGRAM
POST-ACCIDENT/POST-INCIDENT DETERMINATION REFERRAL FORM**

Federal Transit Administration (FTA) regulations and WMATA's drug and alcohol policy require employees involved in an accident/incident to submit to testing for prohibited drugs and alcohol as soon as possible following the occurrence. FTA regulations and WMATA's policy also require the testing of any other individual whose performance may have contributed to the accident/incident.

EMPLOYEES MUST BE ESCORTED
(Testing will not commence without supervisory escort.)

GENERAL INFORMATION (Please Print)

Employee Name	Employee ID Number	Track	Job Title
[REDACTED]	[REDACTED]	LaBore	
Superintendent	Supervisor	Phone #	Dept./Location
[REDACTED]	[REDACTED]	[REDACTED]	TEST / [REDACTED]

ACCIDENT / INCIDENT INFORMATION

Accident / Incident Date	5/24/23	Accident / Incident Time	7:18 pm
Reported to Supervisor Date	5/24/23	Reported to Supervisor Time	7:25 pm

Please provide a brief description of what happened: *AMT violation. Train operator reported no one boarded her on the Platform. They claimed [REDACTED] was not at the B car marker on the Platform.*

DECISION MAKER QUESTIONNAIRE

Select One:	DOT Safety Sensitive	Non-Safety Sensitive (Non-DOT test ONLY)
1. Did the occurrence involve the <u>operation of a revenue service vehicle</u> ?	YES <input type="radio"/>	NO <input checked="" type="radio"/>
2. Was there a fatality?	YES <input type="radio"/>	NO <input checked="" type="radio"/>
3. Has any individual suffered bodily injury and immediately received medical treatment away from the scene of the accident/incident?	YES <input type="radio"/>	NO <input checked="" type="radio"/>
4. If the vehicle involved was a bus, van, or automobile was there disabling damage as a result of the occurrence and any vehicle removed from the scene by a tow truck or other vehicle?	YES <input type="radio"/>	NO <input checked="" type="radio"/>
5. If the vehicle was a railcar, was the vehicle removed from revenue service as a result of the occurrence?	YES <input type="radio"/>	NO <input checked="" type="radio"/>

If you responded "NO" to question number one, please proceed with Non-DOT testing as appropriate.

Escorting Supervisor (Print Clearly)	ID Number	Phone Number
[REDACTED]	[REDACTED]	[REDACTED]

Please Continue to Next Page

Document 5 – AMF Post-Incident Referral Form, Page 1 of 2

TESTING INFORMATION

FTA regulations and WMATA policy require alcohol testing as soon as possible following an accident/incident. If alcohol testing is not conducted within 2 hours after the accident/incident, you **MUST** document the reason for the delay on this form. If the alcohol test is not administered within 8 hours, and the drug test within 32 hours, you **MUST CEASE** all efforts to administer these tests and document the reason(s) why the tests were not administered within the FTA and WMATA policy prescribed time frames.

Was the alcohol test completed within 2 hours of the accident/incident? YES NO
 If no, please explain: _____

Was the alcohol test completed within 8 hours of the accident/incident? YES NO
 If no, please explain: _____

Was the drug test completed within 32 hours of the accident/incident? YES NO
 If no, please explain: _____

Could any other employee's performance have contributed to this accident/incident? YES NO
 If yes, were they tested? YES NO
 If no, please explain: _____

If you determine, using the best information available at the time of this decision, that the employee's performance can be completely discounted as a contributing factor to the accident/incident **TESTING IS PROHIBITED**. If a fatality occurred as a result of the accident/incident you **MUST NOT** discount the employee as a contributing factor.

Based on the information available at this time, can the employee's performance be **COMPLETELY** discounted as a contributing factor? YES NO
 Please explain: _____

Additional Comments: AMF Violation, Train Operator
reported no one briefed her on the Platform
They claimed [redacted] was not at the B car
marker on the Platform

Printed Name of Supervisor Completing Form: _____
 Official Dept. Signature: _____ Date: 5/24/2023

Document 6 - AMF Post-Incident Referral Form, Page 2 of 2

Appendix C – Maximo Reports



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

Page 1 of 1
MX76PROD

Work Order #: 17925015
Type: CM



Status: CLOSE
06/06/2023 01:04

Work Description: E05, Safety request a Comprehensive Radio Operational test on Platform limit, Tracks 1&2
Job Plan Description:

Work Information		
Asset: COMME05 COMM, COMMUNICATIONS SYSTEM, E05	Owning Office: COMM-TSSM	Parent:
Asset Tag:	Maintenance Office: COMM-TSSM-BFLD	Create Date: 06/04/2023 12:55
Asset S/N: COMM E05	Labor Group: COMMR3RADO	Actual Start: 06/05/2023 12:55
Location: 7205 E05, GEORGIA AVE-PETWORTH, STATION, MEZZANINE, 076, ROOM 225, COMMUNICATIONS ROOM	Crew:	Actual Comp: 06/05/2023 12:55
Work Location:	Lead: [REDACTED]	Item: R6000001
Failure Class: SAMS004 HANDHELD RADIO EQUIPMENT	GL Account: WMATA-02-33540-50499280-042-*****-OPR**	Target Start:
Problem Code: 2500 NO PROBLEM FOUND	Supervisor: [REDACTED]	Target Comp:
Requested By: 55395	Requestor Phone: [REDACTED]	Scheduled Start:
Chain Mark Start:	Chain Mark End:	
Create-Mileage: 0.0	Complete-Mileage: 0.0	

Task ID
10 perform radio checks with ctrl throughout station and all checks were 90%L/C

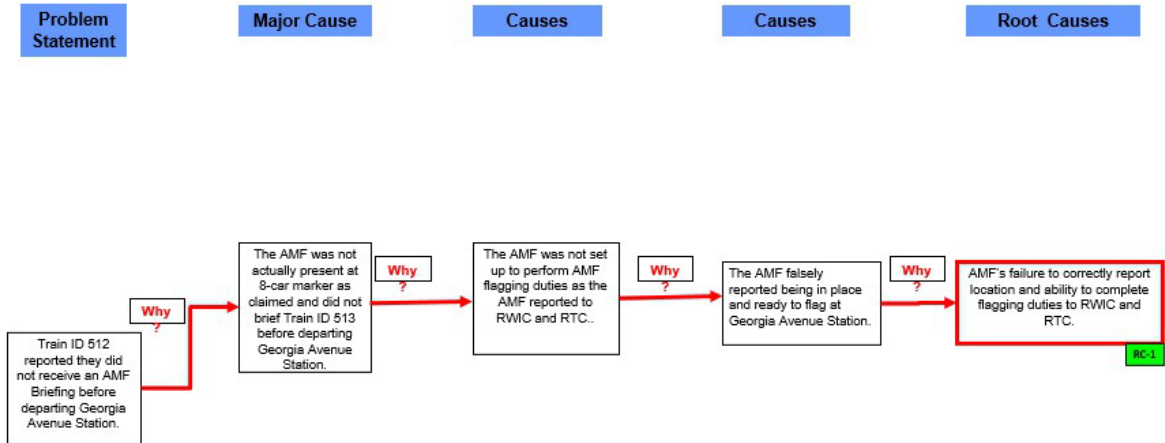
Component:	Work Accomp:	Reason:	Status: CLOSE	Position:	Warranty?: N
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Actual Labor										
Task ID	Labor	Start Date	End Date	Start Time	End Time	Approved?	Regular Hours	Premium Hours	Line Cost	
10	[REDACTED]	06/05/2023	06/05/2023	11:00	14:00	Y	03:00	00:00	\$139.80	
10	[REDACTED]	06/05/2023	06/05/2023	11:00	14:00	Y	03:00	00:00	\$144.62	
Total Actual Hour/Labor:							06:00	00:00	\$284.42	

Failure Reporting				
Cause	Remedy	Supervisor	Remark	Date
2450 NO DEFECT	3190 TESTED	[REDACTED]		06/05/2023
Remarks: perform radio checks with ctrl throughout station and all checks were 90%L/C				

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Appendix D – Why-Tree Analysis



Root Cause Analysis

