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Improper Roadway Worker Protection

At or Near Smithsonian, Spring Hill, Rhode Island Ave-Brentwood, College Park-UMD and Glenmont stations

March 14, 2023 – January 26, 2024 – February 27, 2024 – July 4, 2023 – January 18, 2024

Document Purpose:

This WMSC written report on WMATA Metrorail's safety event investigations and review of Metrorail's findings in accordance with the WMSC Program Standard, in conjunction with the attached Metrorail investigation reports that have undergone WMSC staff review and, if necessary, feedback and revision, describes the investigation activities, identifies factors causing or contributing to the safety events, and sets forth ongoing, additional, or upcoming corrective actions and further oversight work (such as inspections and audits) as necessary or appropriate. The WMSC's ongoing oversight during the investigative process, including safety event reporting and verification, participation in investigative interviews, data review, consistent communication with the Metrorail investigations team, and feedback on Metrorail's reports leads to further improvements prior to consideration of the reports by WMSC Commissioners for adoption. The WMSC's safety event investigation oversight assures the sufficiency and thoroughness of Metrorail's investigations. The WMSC Commissioners are considering these documents (the WMSC review and Metrorail's investigation reports) as a unified item for adoption at the Washington Metrorail Safety Commission meeting on September 17, 2024.

WMSC staff recommend adoption of these investigations.

Roadway Worker Protection

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

Metrorail has developed and the WMSC is reviewing proposed corrective action plans created in accordance with the Program Standard to address the 13 findings of the RWP Audit issues in July 2024. These build on immediate mitigations and initial steps to correct outdated materials and communicate the importance of safety rules that Metrorail took based on the WMSC's communication of safety issues as those issues were observed and validated during the audit process.

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

- Non-compliance with written operational rules and procedures

- Insufficient supervisory oversight including oversight to ensure compliance with safety rules and procedures
- Loss of/lack of focus and situational awareness, including on the part of instructors responsible for safeguarding against mistakes by students who lacked the practical experience necessary to properly carry out the duties they were being trained on
- A lack of training and supervisory oversight to ensure:
    - compliance with safety rules and procedures
    - personnel are comfortable and competent to perform the work assigned to them
    - personnel understood instructions
- Poor radio communication transmission quality
- Ineffective communication between personnel

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

- Personnel received retraining and refresher training, related to Roadway Worker Protection, terminal supervision and train operations
- Metrorail conducted a safety standdown regarding procedures for granting permission to enter the roadway from any ancillary building or location
- Metrorail distributed a safety Bulletin regarding RWP awareness
- Metrorail developed a Personnel Notice reminding employees of proper work zone setup
- Metrorail updated AMF flagging policy to ensure work crews are under AMF protection once enroute to a work zone

Safety event summaries:

W-0332 – Improper Vehicle Movement and Flagging within a Work Zone – Smithsonian Station – March 14, 2023 (WMATA ID: E23168)

At 3:25 a.m., Prime Mover (PM 38), pushing Flatcar 531, collided with a Warning Strobe and Alarm Device (WSAD) at Smithsonian Station while moving within an improperly setup piggyback work zone. Personnel aboard the unit had just finished repairing a frog at the interlocking outside the station and the Equipment Operator was instructed by the Crew Leader to push the unit back to the station's platform when the attached flatcar struck a WSAD installed on track 2. At the time of the collision a Flagman, whose job responsibilities include identifying obstructions in and around the roadway, was in the Flagman's booth. The booth is positioned on the side of the flatcar that is opposite the third rail where the WSAD was installed. During an investigative interview the Flagman stated that they were unaware of the WSAD and admitted they had not focused their attention on the roadway. The Assistant Operations Manager in the Rail Operations Control Center was notified of the incident by the Roadway Worker In Charge (RWIC) approximately 24 minutes after the collision occurred. All personnel were instructed to clear the roadway.

During an investigative interview the Crew Leader stated they were unaware of the location of the WSAD and had no knowledge that another work crew was working in the work zone. A review of the Roadway Job Safety Briefing form completed for the work that occurred during this event showed there was no information included in the Piggyback Crew section.

There were no injuries or damage to the vehicle, however the WSAD was damaged.

A review of Closed-circuit Television footage as a part of this investigation showed that the piggyback work area was not set up using the required equipment, including work mats, lanterns, and shunts.

The Equipment Operator was removed from service for post-incident toxicology testing.

W-0333 – Excessive Speed Past Roadway Workers – Spring Hill Station – January 26, 2024 (WMATA ID: E24083)

A Roadway Worker In Charge (RWIC) who along with a Track Inspector, was conducting a track inspection between Spring Hill and Wiehle-Reston East stations on track 2, reported to a Rail Traffic Controller in the Metro Intergrated Command and Communications Center (MICC) via phone that a train (Train ID 604) passed them at an excessive speed. At the time of the event, the RWIC was on the roadway under Foul Time protection, therefore the Advanced Mobile Flagger (AMF), a contractor, should have held the train at the Spring Hill Station platform until the RWIC relinquished Foul Time.

The AMF was positioned 10 feet from the 8-car marker, did not have their lantern illuminated and did not have their flag as required by Metrorail flagging procedure. Audio reviewed as part of this investigation verified that the AMF received and acknowledged the transmission informing them that the crew was under Foul Time protection. However, the AMF then stated, “Got one on the platform that just left.” A review of Closed-circuit Television footage showed Train 604 on the platform with its doors open as the AMF appears to be speaking into their radio. The AMF did not receive a response from the RWIC to confirm the transmission was received and noted in an interview that there was train noise and multiple radio transmissions during that time. The AMF did not instruct the Train Operator to hold the train on the platform as required during Foul Time. During an investigative interview the RWIC admitted they heard the transmission from the AMF, but then forgot the train was coming when they entered the roadway.

The Radio Rail Traffic Controller announced on Radio Ops 4 that personnel were walking on track 2 between Wiehle-Reston East and Spring Hill stations. The Train Operator stated in an investigative interview that they did not hear the transmission.

Less than a minute after the Track Inspector and RWIC entered the Roadway, the RWIC relinquished Foul Time and advised they were under AMF protection. Review of data showed that Train 604 reached speeds up to 62 mph and passed personnel at 45 mph after the operator initiated emergency braking. The Train Operator did not sound their horn upon seeing the work crew or report the occurrence to the MICC as required by Metrorail procedure. The RWIC immediately reported the event to the Radio Rail Traffic Controller, and the crew was picked up by another train.

The AMF was removed from service for post-event toxicology testing.

W-0334 – Train not briefed by AMF – Rhode Island Ave-Brentwood Station – February 27, 2024 (WMATA ID: E24156)

Out of service Train 805 passed an Advance Mobile Flagger (AMF) at Rhode Island Ave-Brentwood Station without stopping to be briefed regarding personnel working on the roadway ahead. At the time of the event there were two AMFs positioned on that segment of the Red Line, one responsible for an Automatic Train Control (ATC) crew and the other responsible for an Office of Track and Structures (TRST) crew. The ATC AMF, a contractor, was positioned at the 8-car marker but did not have a flag in their hand and did not use the correct hand signals required by Metrorail policy. As the AMF realized Train 805 was not going to stop, the AMF waved their hands to get the Train Operator to stop and reported the emergency via radio. The Train Operator applied braking, and the train came to a stop 194 feet beyond the platform. The train did not encounter any roadway personnel. The train was allowed to continue on to Brentwood Yard. An investigative review of the event determined deficiencies on the part of the Train Operator, who did not sound their horn when entering platform limits as required of out of service trains, and the AMF, who did not have their lantern illuminated and did not have their flag in hand in accordance with Metrorail flagging procedures. During an interview with the Train Operator, who had been certified as a Train Operator for approximately six months, they stated they did not realize there were two AMFs on the platform and misunderstood radio communications between the AMF and the Rail Traffic Controller in the Metro Integrated Command and Communications Center. The Train Operator was unaware that there were two crews on the roadway. When the Train Operator heard that the ATC crew was being picked up, they believed the roadway was clear. Review of audio showed the Rail Traffic Controller did not announce the TRST crew being on the roadway.

The Train was removed from service for post-event inspection and the Train Operator was removed from service for post-event toxicology testing.

W-0335 – Unauthorized Roadway Entry – near College Park-UMD Station – July 4, 2023 (WMATA ID: E23452)

Two Power Department Low Voltage Technicians entered the roadway near College Park-UMD Station on track 1 without permission or protection against roadway vehicle collision. An Office of Rail Transportation Supervisor who was operating Train 502, identified the personnel on the roadway and transmitted an emergency communication via radio notifying a Rail Traffic Controller in the Rail Operations Control Center of the personnel on the roadway. The Technicians had been granted Foul Time on track 2 to conduct tunnel light inspections by the Rail Traffic Controller. The Technicians accessed the roadway through a fan shaft, without the required permission from both the Maintenance Operations Control Center Power Desk and the Rail Traffic Controller. When questioned by the Rail Traffic Controller about their location after receiving the report from the Rail Supervisor, the Technician, who was acting as the Roadway Worker In Charge, asserted that the crew was not on track 1 but had extended their heads through the breezeway cutout that separates track 1 and track 2 to look onto track 1 as they were completing their visual inspection. This action constituted fouling a track the technicians were not given permission or protection to access. The Rail Traffic Controller instructed the two technicians to move to an area of safety and then told them to clear the roadway. After the work crew confirmed being clear of the roadway the Rail Supervisor operating Train 502 was allowed to continue at restricted speeds to the next station.

The Rail Supervisor stated to the Assistant Operations Manager in the ROCC that the crew was standing on the catwalk on track 1 holding onto cables on the wall as the train the Supervisor was operating approached them. The Supervisor

stated they sounded their horn, stopped the train and reported the near-miss event to the Rail Traffic Controller. Both technicians were removed from service for post-event toxicology testing.

During an investigative interview the Low Voltage Technicians reported experiencing intermittent radio communications transmission issue throughout the night. Subsequent radio checks conducted by Office of Radio Communication personnel could not duplicate the issues described.

W-0336 – Train not briefed by AMF – Glenmont Station – January 18, 2024 (WMATA ID E24049)

This event at Glenmont station identified RWP violations concerning Advanced Mobile Flagging. One identified deficiency was ineffective communication from the RWIC with advanced mobile flaggers and the other is regarding a Student Train Operator's failure to stop for an AMF briefing.

Train not briefed by AMF

A Student Train Operator, operating Train 891, while being instructed by a Train Operator Instructor, failed to stop at Glenmont Station, track 1, for an Advanced Mobile Flagger (AMF) briefing. This was the Student Train Operator's first time operating on the mainline. The Student Train Operator was given a permissive block by a Student Terminal supervisor, who was being instructed by a Terminal Supervisor Instructor, to cross over from track 1 to track 2 at the interlocking after the station platform. At the time of the event an Office of Track and Structures Roadway Worker In Charge was conducting an interlocking inspection at Wheaton Station under AMF Protection, with AMFs positioned at both Wheaton and Glenmont stations. An investigative review of Closed-circuit Television footage showed that the AMF at Glenmont Station had all required equipment set up on both the track 1 and track 2 sides of the platform at the 8-car markers, including flashing amber lanterns. The AMF can be seen speaking with the Train Operator of Train 118, which was berthed on track 2, as the Student Train Operator of Train 891 passed the station without stopping on track 1. The AMF notified the RWIC to standby and stand clear for a train (Train 118) approaching their location.

The Glenmont Terminal Supervisor identified that Train 891 had not stopped on the Platform and had their student notify a Rail Traffic Controller after confirming with the AMF that the train did not stop to receive a briefing. The Student Terminal Supervisor stated they forgot to advise the Student Train Operator to stop for the AMF briefing. The AMF stated they did not see the train and the Student Train Operator stated that they did not see the AMF, who was briefing the Train Operator on the opposite side of the platform. During investigative interviews, the Student Train Operator and Train Operator Instructor said that the orientation of Train 119 and its lights, which faced them on track 1 before the train crossed over to track 2, along with a flashing lunar (proceed) signal, prevented them from seeing the flashing lantern at the 8-car marker.

It was initially thought that the Train Operator Instructor was operating Train 891 at the time of the incident, and they were therefore removed from service for post-event toxicology testing. It was later determined that the Student Train Operator was operating the train at the time of the incident. The student did not undergo toxicology testing due to this mistake in identifying the operator.

Ineffective Communication between RWIC and AMF

After the RWIC advised the Rail Traffic Controller that Train 118 passed their location, they were granted foul time to conduct the interlocking inspection. During this time, the RWIC did not instruct the AMF to begin flagging or advise the

AMF when Foul Time was relinquished as required by Metrorail procedure. The RWIC stated in an investigative interview that they had relinquished Foul Time prior to Train 891 passing their location.

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

FINAL REPORT OF INVESTIGATION A&I E23168

Date of Event:	March 14, 2023
Type of Event:	Improper Rail Vehicle Movement
Incident Time:	03:25 hours
Location:	Smithsonian Station, track 2
Time and How received by SAFE:	03:59 – SAFE/MAC
WMSC Notification Time:	05:00 hours
Responding Safety Officers:	WMATA: N/A WMSC: N/A Other: N/A
Rail Vehicle:	Prime Mover - 38 and Flatcar - 531
Injuries:	None
Damage:	Warning Strobe and Alarm Device (WSAD)
Emergency Responders:	None
SMS I/A Incident Number:	20230314#106858

Table of Contents

Abbreviations and Acronyms

AOM	Assistant Operations Manager
CAP	Corrective Action Plan
CCTV	Closed-Circuit Television
CM	Chain Marker
GOTRS	General Orders and Track Rights System
MAC	Mission Assurance Coordinator
MSRPH	Metrorail Safety Rules and Procedures Handbook
NOAA	National Oceanic and Atmospheric Administration
PM	Prime Mover
RTRA	Office of Rail Transportation
ROCC	Rail Operations Control Center
RWIC	Roadway Worker in Charge
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
WSAD	Warning Strobe and Alarm Device

Executive Summary

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

On March 14, 2023, at 03:25 hours, Prime Mover (PM) 38, pushing Flatcar 531, collided with a Warning Strobe and Alarm Device (WSAD) at Smithsonian Station, track 2. The PM Unit was operated by an Office of Track and Structures (TRST) Equipment Operator with a Flagman located on Flatcar 531. It was being utilized to replace a frog at the interlocking outside of Smithsonian Station prior to the event.

The Equipment Operator was part of a piggyback crew, moving PM-38 within a piggyback work zone between Chain Markers (CM) D2 10+00 and 35+00. At the conclusion of their task, the unit was moving outbound, under the direction of the Crew Leader, when the flat car collided with a WSAD located near the platform limits of Smithsonian Station (CM D2 33+52). The WSAD was damaged but the Flatcar was not. The Flagman reported the event to the Crew Leader. The Crew Leader then notified the Roadway Worker in Charge (RWIC), who reported the event to the Rail Operations Control Center (ROCC) Assistant Operations Manager (AOM). All other required personnel were notified of the event.

A review of Closed-Circuit Television (CCTV) and the General Orders and Track Rights (GOTRS) system identified a lack of piggyback work zone equipment, including Work Mats, Lanterns, and shunts in the piggyback work area. At the time of the collision, the Flagman was positioned in the Flagman's booth, which is located on the side opposite the third rail where the WSAD was positioned.

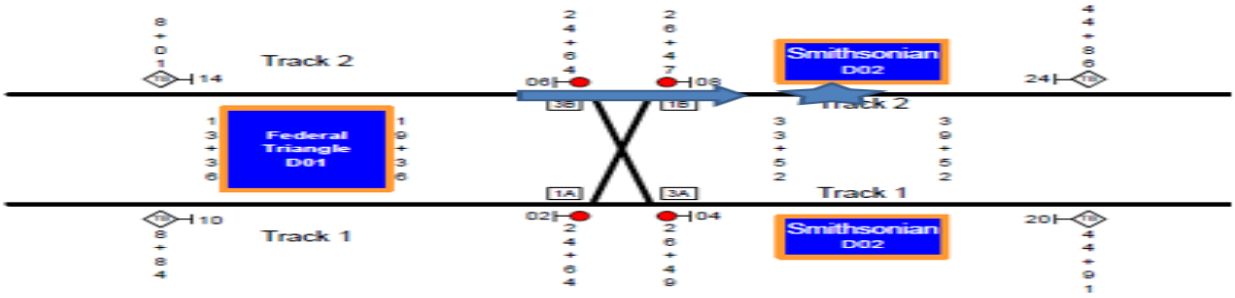
TRST removed the Equipment Operator from service for post-incident toxicology testing.

The probable cause of the Improper Rail Vehicle Movement event on March 14, 2023, was a failure to follow established Roadway Worker Protection rules, including piggyback work zone setup and rail vehicle movement within a work zone. Contributing Factors to the event include a failure to adequately perform Flagman's duties.

Incident Site

Smithsonian Station, track 2

Field Sketch/Schematics



** Locations are approximate. 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 Process and Methods

Upon receiving notification of the Improper Rail Vehicle Movement event on March 14, 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.

Investigation Methods

The preliminary investigative methodologies included the following:

- Site assessment through video and document review.

- Formal Interviews – SAFE interviewed three individuals as part of this investigation. The interviews included persons present at, during, and after the incident, those directly involved in the response process, and representatives from the Washington Metrorail Safety Commission (WMSC). SAFE interviewed the following individuals:
    - Piggyback Crew Leader
    - Flagman
    - Equipment Operator

- 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.
    - Roadway Worker in Charge (RWIC)

- Documentation Review – A collection of relevant work history information and process documentation in Metro record systems. These records include the following:
    - Metrorail Safety Rules and Procedures Handbook (MSRPH)
    - National Oceanic and Atmospheric Administration (NOAA)
    - Maximo Report
    - Roadway Job Safety Briefing Form

- System Data Recording Review – A collection of information in Metro Data Recording Systems. This data includes:
    - Audio Recording System (ARS) playback, including OPS 2 Radio
    - Vehicle Services Program (CENV) Analysis
    - Closed-Circuit Television (CCTV)
    - General Order and Track Rights System (GOTRS)
    - Track Movement Log

Investigation

On March 14, 2023, at 03:25 hours, PM-38 pushing Flatcar 531 collided with a WSAD within the platform limits at Smithsonian Station, track 2. A TRST Equipment Operator was operating PM-38 with a Flagman located on Flatcar 531 and was being utilized to work at the interlocking outside Smithsonian Station.

The Equipment Operator moved PM-38 within a Joint Occupancy work area between CM D2 10+00 and 35+00. The unit was moving outbound when the flat car collided with the WSAD, near the platform entrance at CM D2 33+52. The WSAD was damaged but no damage was reported to the Flatcar. The Flagman reported the event to the Crew Leader.

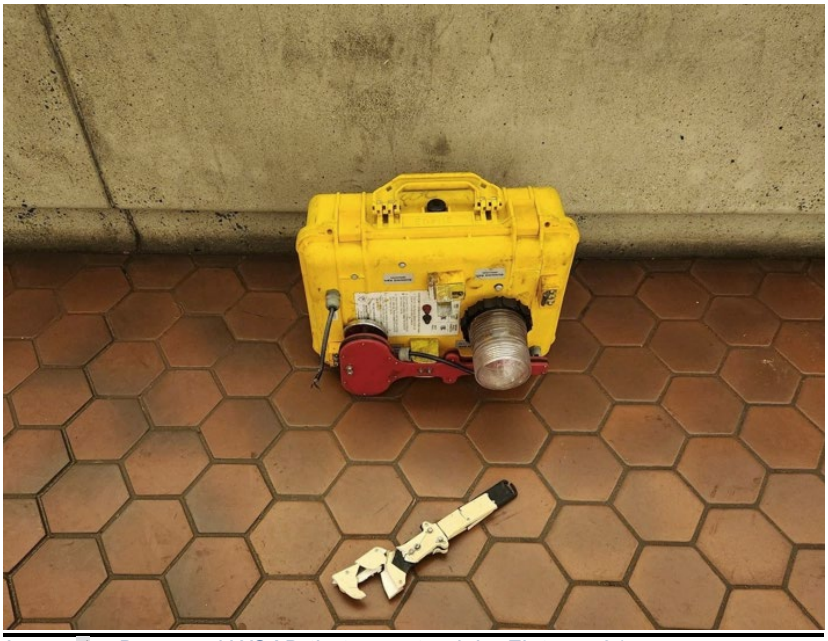


Image 1 – Damaged WSAD that was struck by Flatcar 531.

According to GOTRS, the work crew was approved to perform their work as a Junior Work Group (Piggyback Crew) to a Senior Work Group (RWIC) that was performing work between Metro Center Station (CM 03+00) to L'Enfant Plaza Station (CM 71+00), track 1 and 2. The Piggyback Crew was performing frog replacement at the interlocking near Smithsonian Station, track 2.

The Audio Recording System (ARS) playback revealed that at approximately 03:28 hours, the Crew Leader contacted the RWIC and requested to contact them via landline. It was during this call that the RWIC was notified of the event. At 03:49 hours, the RWIC advised the AOM of the event.

The CCTV revealed that at 03:25 hours, Flatcar 531 was moving outbound on track 2 when it entered the platform limits of Smithsonian Station, where it collided with the WSAD. The Unit stopped, and the Flagman disembarked onto the grated lights and removed the WSAD from the roadway. CCTV also showed that no end of work area mats, lights, or shunts were installed in the area of CM D2 35+00, which was the end of the Piggyback work area.

Multiple WMATA personnel were observed responding to the event. At 04:36 hours, PM-38 began to move inbound departing Smithsonian Station.

During the formal interview, the Flagman stated they were assigned to look for obstructions. Once the work was completed, the Crew Leader directed the crew to move the PM, pushing the flat car toward the platform. Soon after, the Flagman heard a loud sound and realized that the Flatcar had hit the WSAD installed on the roadway. The Flagman stated they were unaware that a WSAD was in the area. They indicated they could see the roadway but were focused on the platform at the time of the event. The Flagman stated that they notified the Crew Leader of the event. The Flagman admitted responsibility for the event and said they recognized that their job was to look for obstructions on the roadway.

The Crew Leader stated that they were assigned to replace a frog at the Smithsonian interlocking. Once the work was complete, they directed the Equipment Operator to push the Unit back 100 feet. They were notified that the Unit hit a WSAD installed on the roadway. The Crew Leader stated they needed to be briefed on the WSAD placement or another Work Group working on track 2 in the work zone. The Crew Leader noted that the lack of communication was a leading cause of the event.

The Equipment Operator stated that they were assigned to operate PM-38, and the maintenance crew was replacing a frog at the Smithsonian interlocking. After replacing the frog, the Crew Leader instructed them to move PM-38. They were asked to reverse the Unit and move to the first switch, which was routine. After stopping at the switch, they received a hand signal indicating to proceed moving the Unit towards the platform. The Equipment Operator moved the Unit about 150 feet when they heard the WSAD strike. They stopped the Unit and waited for the Crew Leader to provide further instructions. They were not aware that the WSAD was on the roadway. The Equipment Operator stated that before working, they received a safety briefing from the Crew Leader and were piggybacking with another work crew.

TRST performed an investigation for this event and determined that the incident could have been prevented had the Flagman observed the obstruction (WSAD) ahead on the roadway. The Flagman attended re-instruction training with an emphasis on MSRPH Rules 3.175.7 and 3.175.10.

Chronological ARS Timeline

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

Time	Description
03:25:41 hours	Flatcar 531 collided with a WSAD at Smithsonian Station, track 2. [CCTV]
03:28:53 hours	Crew Leader: Requested to go direct to the RWIC. Radio RTC: Acknowledged. Crew Leader: Requested to contact the RWIC via telephone. RWIC: Acknowledged. [Radio Ops 2]
03:49:09 hours	RWIC: Notified the AOM of the event. [Phone]
03:54:35 hours	RWIC: Notified the MAC of the event. [Phone]
04:23:01 hours	AOM: Instructed the RWIC to clear the work location. [Phone]

***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 three individuals. 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.

Flagman

- The Flagman stated that they were assigned to look for obstructions.
- Once the work was completed, the Crew Leader directed the crew to move the PM, pushing the flat car toward the platform.
- The Flagman heard a loud sound and realized that the Flatcar had hit a WSAD installed on the roadway.
- The Flagman stated they were unaware that a WSAD was installed in the area.
- They stated that they could see the roadway but were focused on the platform at the time of the event.
- The Flagman stated that they notified the Crew Leader of the event.
- The Flagman admitted responsibility for the event and stated that they recognized that their job was to look for obstructions on the roadway.

Crew Leader

- The Crew Leader stated that they were assigned to replace a frog at the Smithsonian interlocking.
- Once the work was complete, they directed the Equipment Operator to push the Unit back 100 feet.
- They were notified that the Unit hit a WSAD installed on the roadway.
- The Crew Leader stated they were not briefed on the WSAD placement or the other Work Group working on track 2 in the work zone.
- The Crew Leader stated that the lack of communication was a leading cause of the event.

Equipment Operator

- The Equipment Operator stated that they were assigned to operate PM-38, and the maintenance crew was replacing a frog at the Smithsonian interlocking.

- After replacing the frog, the Crew Leader instructed them to move PM-38. They were asked to reverse the Unit and move to the first switch, which was routine.
- After stopping at the switch, they received a hand signal indicating to proceed to move the Unit toward the platform. The Equipment Operator moved the Unit about 150 feet when they heard the WSAD.
- They stopped the Unit and waited for the Crew Leader to provide further instructions.
- They were not aware that the WSAD was on the roadway.
- The Equipment Operator stated that they received a briefing from the Crew Leader and were piggybacking with another work crew.

Office of Track and Structures (TRST)
Adopted from TRST report of findings:

TRST performed an investigation for this event and determined that the incident could have been prevented had the Flagman observed the obstruction (WSAD) ahead on the roadway. The Flagman attended re-instruction training with an emphasis on MSRPH Rules 3.175.7 and 3.175.10.

Weather

On March 14, 2023, at the time of the incident, NOAA recorded the temperature as 37° F, with partly cloudy skies. This event occurred in a tunneled section of the rail system. The weather was not a contributing factor in this event (Weather source: NOAA – Location: Washington, DC)

Human Factors

Evidence of Fatigue

Conditions were evaluated at the time of the incident to distinguish whether evidence of fatigue was present. The Equipment Operator, Track Maintenance Supervisor, and Track Maintenance Employee reported feeling fully alert during the incident. None reported experiencing symptoms of fatigue in the time leading up to the incident.

Fatigue Risk

The incident data was evaluated for fatigue risk factors for the Train Operator. Risk factors for fatigue were not present for the Train Operator. 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 Equipment Operator complied with the Drug and Alcohol Policy and Testing Program 7.7.3/6.

Training and Work History

The Equipment Operator, Track Maintenance Supervisor, and Track Maintenance Employee have not had any negative personnel actions or safety violations within the last three years. The 30-Day work history did not reflect any indications of fatigue risk. The Equipment Operator holds a Roadway Worker Protection (RWP) Level 2 certification that expires in October 2023. The Track

Maintenance Supervisor holds a RWP Level 4 certification that expires in November 2023. The Track Maintenance Employee holds a RWP Level 2 certification that expires in January 2024.

Related Rules and Procedures

MSRPH Section 3 – Operating Rules, 3.175.7 Speed of Roadway Maintenance Machines

MSRPH Section 3 – Operating Rules, 3.175.10 Vigilant Lookout; Conduct Each employee shall assist the operator in keeping vigilant lookout for trains, other equipment and obstructions, on or off the track, including people, vehicles, animals, contractors' equipment, or anything that could affect safe movement. While in motion, operators and occupants of equipment shall remain vigilant, not engage in unnecessary conversation or in boisterous conduct while equipment is in motion.

END WORK AREA Reflective Mat

The end of the actual work limit is identified, in part, by the placement of "END WORK AREA" reflective mats placed on the ground between the active rails (gauge) of the work area. These mats are white with orange candy striping with the words "END WORK AREA" printed in large block letters. Rail Vehicles entering and leaving the actual work limit should visually see and be on the lookout for these visual makers. When the nature of the work requires multiple work zones (piggybacking) each piggyback location will also be marked with these mats. Personnel assigned to a work zone shall not walk past the mats and should be readable from within the work zone.

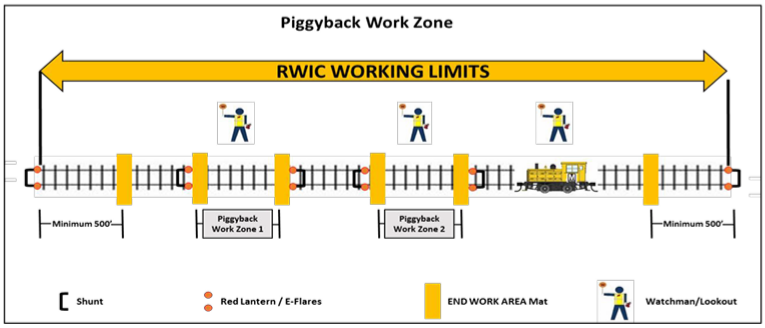
5.15 Piggybacking

Piggybacking is the process that is followed to permit additional Roadway work crews to work within the working limits of a RWIC. The crew leader is under the authority of the RWIC. Piggybacking is only permitted under IT and ETO protections.

Piggybacking Responsibilities:

1. All piggybacking work crews must participate in the RSJB prior to entering the Roadway.
2. The Crew Leaders shall request permission from the RWIC to enter the working limits.
   - If the work crew must access the Roadway outside of the established working limits, the Crew Leader shall request permission from ROCC to enter the Roadway.
3. Establish a work zone within the RWIC working limits and shall conform to the following:
   - Install a shunt and two red lanterns or e-flares at each end of their work zone within the RWIC's working limits.
   - Place "END WORK AREA" reflective mats at the shunt (omitting the five hundred (500) foot safety buffer zone.
   - Notify the RWIC that the Piggyback work zone is set up correctly for inspection.
4. Piggyback workers and equipment shall not go past their "END WORK AREA" reflective mats without permission from the RWIC.
5. Piggyback Crew Leaders shall never extend their work zone without the consent of the RWIC.
6. The crew leader of each piggyback work crew shall notify the RWIC before leaving the RWIC's working limits. The crew leader shall inform the RWIC that:
   - All material, parts and debris have been removed from the piggyback work zone
   - All of the crew's personnel and safety equipment are clear of the Roadway
7. The RWIC shall inspect the entire working limits for personnel, equipment and material before turning the working limits back over to ROCC for normal revenue service.
8. Piggyback work areas shall not be used with AMF, FT, or ITD as the primary form of RWP.
9. There shall be no Piggybacking in emergency situations.

Piggyback Work Zone



Important: There are occasions where shunts installed for activities such as Piggybacking cannot be verified due to the placement of the primary shunts installed at the work limits. Therefore, it is imperative to secure secondary shunts properly to the rails.

Notice: WMATA Inter-departmental support is not considered Piggybacking.

5.16 Emergency Maintenance Procedure (EMP)

EMP is invoked to address conditions occurring during revenue hours that can result in harm to individuals, fire/smoke events; damage to equipment or property; are causing a significant service disruption; are significantly impairing a safety critical system, or any combination of these circumstances. These events are of a short duration (typically, 30 minutes or less) and are of a nature that emergency repairs can be accomplished without the use of a Class 2 rail vehicle. A RWIC is required for all EMP operations (with the exception of 5.16.1). If for any reason the RWIC or ROCC becomes aware that the repair will require a prolonged period of time, or additional resources, such as a Class 2 rail vehicle, is needed to support the work, then a fixed work zone (ETO or IT) must be established. Piggybacking or other work activities within the work zone are not permitted during EMP operations.

Employees utilizing EMP must have the following equipment:

- PPE
- Hot stick
- WSAD
- Shunt
- Third rail mat or physical barrier, if applicable
- High-voltage electrical safety gloves, if applicable

To establish EMP the RWIC must:

- Request FT from ROCC
- If applicable, request Third Rail to be de-energized and/or restored using Supervisory power outage. Refer to SOP 2 and MSRPH SOP 28.
- Hot stick/VAD the third rail to confirm it is de-energized, as applicable
- Place a WSAD, as applicable
- Place a shunt in proximity of the Roadway Workers
- Clamp switches, as applicable

ROCC must:

- Establish FT protection
- Verify adjacent track is clear of Roadway Workers (See RWP Cardinal Rule #3) prior to implementing single track operations.

The RWIC and ROCC coordinate the relinquishing of FT and the return to normal operation at the conclusion of work (refer to Foul Time Protection (FT) MSRPH 5.13.5).

Findings

- Involved piggyback crew reported they were unaware that a WSAD was installed within their listed piggyback work zone.
- Flagman failed to observe WSAD in the path of travel.
- Crew Leader instructed to move the Prime Mover, which the Equipment Operator followed.
- Investigation did not find evidence of piggyback work zone setup, including work mats, shunts, and lanterns.

Immediate Mitigation to Prevent Recurrence

- TRST removed the Equipment Operator from service.

Probable Cause Statement

The probable cause of the Improper Rail Vehicle Movement event on March 14, 2023, was a failure to follow established Roadway Worker Protection rules, including piggyback work zone setup and rail vehicle movement within a work zone. Contributing Factors to the event include a failure to adequately perform Flagman's duties.

Recommended Corrective Actions

Corrective Action Code	Description	Responsible Party	Estimated Completion Date
106858_SAFECAPS_OPMS_001	Flagman to attend Re-Instruction Training.	OPMS	Completed
106858_SAFECAPS_TRST_001	Develop a Personnel Notice to remind employees of proper work zone setup with equipment.	TRST	Completed
106858_SAFECAPS_TRST_002	During safety briefings, discuss and review the rules around piggyback work crews and work zones, with an emphasis on RWIC's responsibility to inspect the work zone after it is set up.	TRST	Completed
106858_SAFECAPS_TRST_001	Crew Leader to complete RWP Level 4 retraining, with an emphasis on Piggybacking Responsibilities as it relates to the RWIC's responsibility.	TRST	Completed

Drafted By: SAFE 711 – 05/03/2023
Reviewed By: SAFE 707 – 05/10/2023
Approved By: SAFE 71 – 05/12/2023

Appendices

Appendix A – Interview Summaries

Flagman

The Flagman is a WMATA employee with one year of service. The Flagman holds a Roadway Worker Protection (RWP) Level 2 certification that expires in January 2024.

During the interview, Flagman provided details about the Improper Rail Vehicle Movement on March 14, 2023, at about 03:28 hours at Smithsonian Station.

On that day, the Flagman was assigned to be the Flagman, responsible for looking out for obstructions when the PM would be moved. They indicated that they were replacing a frog at the Smithsonian interlocking. Once the work was completed, the Crew Leader directed the crew to move the PM, pushing a flat car toward the platform.

Soon after, the Flagman heard a loud sound and realized the PM had hit a WSAD installed on the roadway. The Flagman stated they were unaware or informed that a WSAD was deployed in that area. The Flagman indicated that they could see the roadway but were focused on the platform for safety reasons. As soon as they hit the WSAD, the Flagman notified the Crew Leader of the event.

During the interview, the Flagman readily admitted responsibility for the event.

Crew Leader

The Crew Leader is a WMATA employee with 16 years of service. The Crew Leader holds a Roadway Worker Protection (RWP) Level 4 certification that expires in November 2023.

During the interview, the Crew Leader provided details about the Improper Rail Vehicle Movement on March 14, 2023, at about 03:28 hours at Smithsonian Station.

The Crew Leader was assigned to replace a frog at the Smithsonian interlocking. Once the work was complete, the Crew Leader directed the Equipment Operator to push the PM back 100 feet to the next switch.

Soon after, they realized they had hit a WSAD installed on the roadway. The Crew Leader indicated they were needed to brief on the device being deployed or any other WMATA employees working on track 2 in that work zone. The Crew Leader identified the lack of communication as a leading cause of the event.

Equipment Operator

The Equipment Operator is a WMATA employee with seven years of service. The Equipment Operator holds a Roadway Worker Protection (RWP) Level 2 certification that expires in October 2023.

During the interview, the Equipment Operator provided details about the Improper Rail Vehicle Movement on March 14, 2023, at about 03:28 hours at Smithsonian Station.

The Equipment Operator on that day was assigned to operate PM-38. The maintenance crew was replacing a frog at the Smithsonian interlocking, and a Crew Leader was present. After replacing the frog, the Crew Leader verbally instructed the Equipment Operator to move the PM. The Crew Leader directed the Equipment Operator to reverse the PM and move it towards the first switch, which was a routine move.

After stopping at the switch, the Crew Leader gave a hand signal indicating to proceed to move the PM towards the platform. The Equipment Operator moved the PM about 150 feet when the WSAD went off. The Equipment Operator stated that the PM was immediately stopped. They then waited for the Crew Leader to provide further instructions.

The Equipment Operator stated they were unaware of the installation of a WSAD and not briefed by the RWIC, but by the Crew Leader and knew they were Piggybacking with another work crew.

Drafted By: SAFE 711 – 05/03/2023
Reviewed By: SAFE 707 – 05/10/2023
Approved By: SAFE 71 – 05/12/2023

GOTRS - GENERAL ORDERS & TRACK RIGHTS SYSTEM
Track Rights Request

Request Summary

Request Number:	202305305200	**Track Access:**	True
Dates Requested:	03/14/2023 00:30 to: 03/14/2023 04:00	**Clear In Ten:**	False
Request Status:	Closed	**Equipment on Track:**	1
Requestor:	[redacted]	**Allow Piggybacks:**	True
Requestor Organization:	TRST/TRACK	**In Piggyback:**	Yes, Junior
Supervisory Tag:	Closed (2023073717)	**Power Outage:**	Supervisory Supervisory
Lock Out / Tag Out:		**Additional AC:**	
Request Title:	Core / D02 Frog Replacement		

Location, Work Type and Description

Location:	Mainline
Non-Wayside Location Type:	
Request Type:	Regular
Charge Job Number:	
Contract Number:	
Maximo Work Order:	
Request Group:	No
Location Description:	Core / D02 Frog Replacement
Request Description:	Core / D02 Frog Replacement
Work Type:	Interlocking Work
Meeting Location:	B99
PB Meeting Location:	
Tools and Equipment:	Safety Equipment - PPE - Hand Tools
Equipment on Track:	Prime Mover with Flatcar

Track 2

Actual Work Area:	D015+00	D030+00
Protected Work Area:	D010+00	D035+00

Hot Stick Info. Third Rail Gaps:

From	To	Track ID
D006+77	D024+37	1
D024+93	D044+27	1
D044+83	D066+45	1
D005+97	D024+47	2
D024+93	D044+23	2
D044+79	D066+45	2

Date & Time

As of 03/23/2023 08:52
1 of 3

Document 1 - GOTRS Request Page 1 of 3

GOTRS - GENERAL ORDERS & TRACK RIGHTS SYSTEM
Track Rights Request

Request Summary

Request Number:	202305305200	**Track Access:**	True
Dates Requested:	03/14/2023 00:30 to: 03/14/2023 04:00	**Clear In Ten:**	False
Request Status:	Closed	**Equipment on Track:**	1
Requestor:	[redacted]	**Allow Piggybacks:**	True
Requestor Organization:	TRST/TRACK	**In Piggyback:**	Yes, Junior
Supervisory Tag:	Closed (2023073717)	**Power Outage:**	Supervisory Supervisory
Lock Out / Tag Out:		**Additional AC:**	
Request Title:	Core / D02 Frog Replacement		

Start: 03/14/2023 00:30 **End:** 03/14/2023 04:00

Contacts

Entered by

[redacted]

Work: [redacted]

Cell: **Home:**

Requestor

[redacted]

Work: [redacted]

Cell: [redacted] **Home:** [redacted]

WMATA Manager

[redacted]

Work: [redacted]

Cell: [redacted] **Home:**

Emergency Contact

[redacted]

Work: [redacted]

Cell: [redacted] **Home:** [redacted]

Support

SUPPORT GROUP	Crew Size
TRST/TRACK	6

Request Change History

Date	Event
02/22/2023 17:56	Request was created.
02/27/2023 13:06	Request was edited. Field(s) changed: End Date/Time. End Date/Time: 3/14/2023 8:30:00 AM to 3/14/2023 8:00:00 AM.
02/28/2023 16:51	Request status was changed to Approved
03/14/2023 01:17	Work Prep was completed.
03/14/2023 03:32	Request status was changed to Opened
03/14/2023 08:34	Request status was changed to Closed

Request Group

As of 03/23/2023 08:52
2 of 3

Document 2 - GOTRS Request Page 2 of 3

GOTRS - GENERAL ORDERS & TRACK RIGHTS SYSTEM
Track Rights Request

Request Summary

Request Number:	202305305200	**Track Access:**	True
Dates Requested:	03/14/2023 00:30 to: 03/14/2023 04:00	**Clear In Ten:**	False
Request Status:	Closed	**Equipment on Track:**	1
Requestor:	[redacted]	**Allow Piggybacks:**	True
Requestor Organization:	TRST/TRACK	**In Piggyback:**	Yes, Junior
Supervisory Tag:	Closed (2023073717)	**Power Outage:**	Supervisory Supervisory
Lock Out / Tag Out:		**Additional AC:**	
Request Title:	Core / D02 Frog Replacement		

Request Number	Description

Piggyback

Request Number	Order	Inherits Rights	Request Status	Piggyback Status	Track	Protected Area Start	Protected Area End
202231403507 PCN252141 - Cotton Annex - Monitoring Plan	JR-0	Yes	Closed	Forced	2	D029+00	D059+00
202231403507 PCN252141 - Cotton Annex - Monitoring Plan	JR-0	Yes	Closed	Forced	1	D029+00	D059+00
202304700601 Tunnel Camera Upgrade	SR	N/A	Closed	Forced	2	D003+00	D071+00
202304700601 Tunnel Camera Upgrade	SR	N/A	Closed	Forced	1	D003+00	D071+00
202305305200 Core / D02 Frog Replacement	JR-1	No	Closed	Forced	2	D010+00	D035+00

Piggyback History

Date	User	Event
02/27/2023 13:06		Piggyback with Senior Request 202304700601 was formed. Cause: Piggyback was forced.

Red Tag Information

Tag #: Request is not Red Tag.

Close-Out Summary

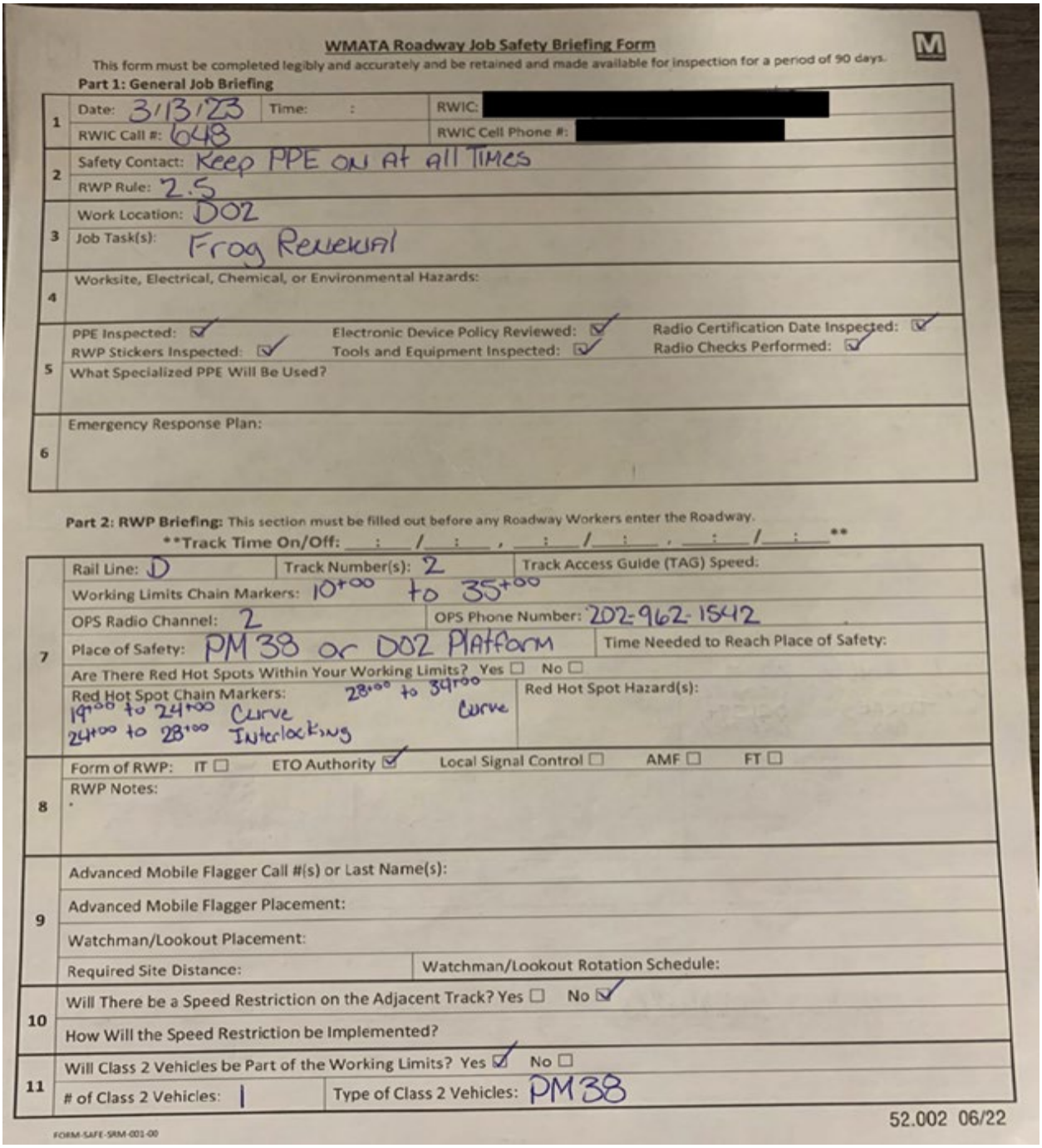
As of 03/23/2023 08:52
3 of 3

Document 3 - GOTRS Request Page 3 of 3

PM 38
Harsco Prime Mover

F531
Flatcar

Appendix D – WMATA Roadway Job Safety Briefing Form



WMATA Roadway Job Safety Briefing Form

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

Part 1: General Job Briefing

1	Date: 3/13/23	Time: :	RWIC: [redacted]
	RWIC Call #: 648		RWIC Cell Phone #: [redacted]
2	Safety Contact: Keep PPE ON At all Times		
	RWP Rule: 2.5		
3	Work Location: DO2		
	Job Task(s): Frog Renewal		
4	Worksite, Electrical, Chemical, or Environmental Hazards:		
5	PPE Inspected: ☑	Electronic Device Policy Reviewed: ☑	Radio Certification Date Inspected: ☑
	RWP Stickers Inspected: ☑	Tools and Equipment Inspected: ☑	Radio Checks Performed: ☑
	What Specialized PPE Will Be Used?		
6	Emergency Response Plan:		

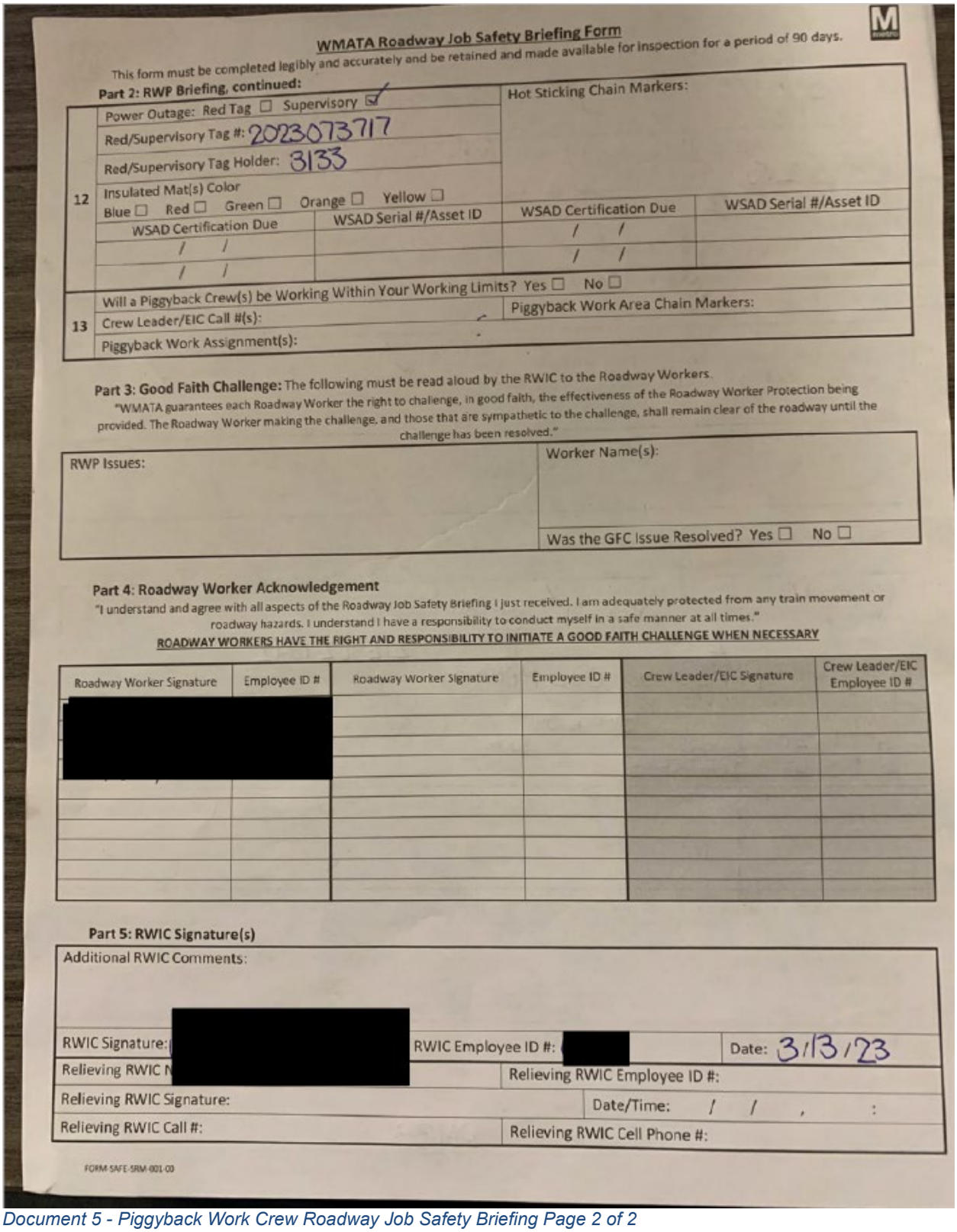
Part 2: RWP Briefing: This section must be filled out before any Roadway Workers enter the Roadway.

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

7	Rail Line: D	Track Number(s): 2	Track Access Guide (TAG) Speed:
	Working Limits Chain Markers: 10+00 to 35+00		
	OPS Radio Channel: 2	OPS Phone Number: 202-962-1542	
	Place of Safety: PM 38 or DO2 Platform		Time Needed to Reach Place of Safety:
	Are There Red Hot Spots Within Your Working Limits? Yes ☐ No ☐		
	Red Hot Spot Chain Markers: 19+00 to 24+00 Curve; 24+00 to 28+00 Interlocking; 28+00 to 34+00 Curve		Red Hot Spot Hazard(s):
8	Form of RWP: IT ☐ ETO Authority ☑ Local Signal Control ☐ AMF ☐ FT ☐		
	RWP Notes:		
9	Advanced Mobile Flagger Call #(s) or Last Name(s):		
	Advanced Mobile Flagger Placement:		
	Watchman/Lookout Placement:		
	Required Site Distance:	Watchman/Lookout Rotation Schedule:	
10	Will There be a Speed Restriction on the Adjacent Track? Yes ☐ No ☑		
	How Will the Speed Restriction be Implemented?		
11	Will Class 2 Vehicles be Part of the Working Limits? Yes ☑ No ☐		
	# of Class 2 Vehicles: 1	Type of Class 2 Vehicles: PM 38	

FORM-SAFE-SRM-001-00 52.002 06/22

Document 4 - Piggyback Work Crew 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 ☐ Supervisory ☑		Hot Sticking Chain Markers:	
	Red/Supervisory Tag #: 2023073717			
	Red/Supervisory Tag Holder: 3133			
	Insulated Mat(s) Color Blue ☐ Red ☐ Green ☐ Orange ☐ Yellow ☐		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 ☐ No ☐			
	Crew Leader/EIC Call #(s):		Piggyback Work Area Chain Markers:	
	Piggyback Work Assignment(s):			

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

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

RWP Issues:	Worker Name(s):
	Was the GFC Issue Resolved? Yes ☐ No ☐

Part 4: Roadway Worker Acknowledgement

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

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

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

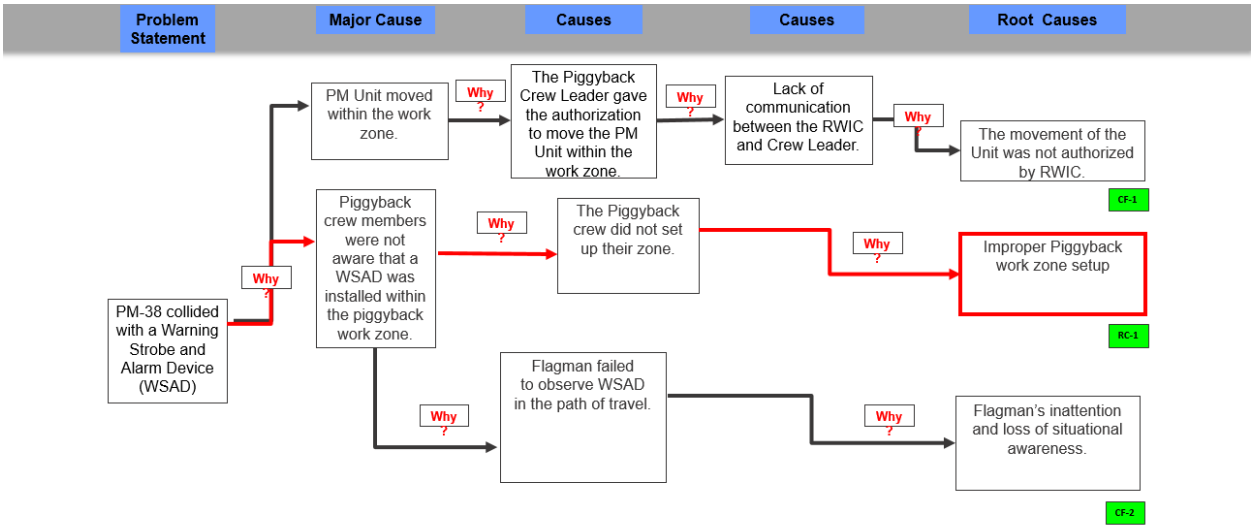
Part 5: RWIC Signature(s)

Additional RWIC Comments:		
RWIC Signature: [redacted]	RWIC Employee ID #: [redacted]	Date: 3/13/23
Relieving RWIC N[redacted]	Relieving RWIC Employee ID #:	
Relieving RWIC Signature:	Date/Time: / / , :	
Relieving RWIC Call #:	Relieving RWIC Cell Phone #:	

FORM-SAFE-SRM-001-00

Document 5 - Piggyback Work Crew Roadway Job Safety Briefing Page 2 of 2

Appendix E – Root Cause 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 E24083

Date of Event:	January 26, 2024
Type of Event:	Improper RWP
Incident Time:	10:07 Hours
Location:	Spring Hill Station, track 2
Time and How received by SAFE:	10:15 Hours – SAFE/MAC
WMSC Notification Time:	13:00 Hours
Responding Safety Officers:	WMATA: None WMSC: None Other: None
Rail Vehicle:	Train ID 604 (L7240-41x7199-98x7618-19x7589-88T)
Injuries:	None
Damage:	None
SMS I/A Incident Number:	20240130#114404

Drafted By: SAFE 709 – 07/21/2024
Reviewed By: SAFE 707 – 03/27/2024
Approved By: SAFE 707 – 03/27/2024

Spring Hill Station – Improper RWP

January 26, 2024

Table of Contents

Drafted By: SAFE 709 – 07/21/2024
Reviewed By: SAFE 707 – 03/27/2024
Approved By: SAFE 707 – 03/27/2024

Abbreviations and Acronyms

AIMS	Advanced Information Management System
AMF	Advanced Mobile Flagger
AOM	Assistant Operations Manager
ARS	Audio Recording System
ATC	Automatic Train Control
CCTV	Closed-Circuit Television
CMNT	Office of Car Maintenance
CMOR-IIT	Chief Mechanical Officer – Incident Investigation Team
MICC	Metro Integrated Command and Communications Center
MOR	Metrorail Operating Rulebook
NOAA	National Oceanic and Atmospheric Administration
RTRA	Office of Rail Transportation
RWIC	Roadway Worker In-Charge
SAFE	Department of Safety
SMS	Safety Measurement System
WMATA	Washington Metropolitan Area Transit Authority
WMSC	Washington Metrorail Safety Commission

Drafted By: SAFE 709 – 07/21/2024
Reviewed By: SAFE 707 – 03/27/2024
Approved By: SAFE 707 – 03/27/2024

Executive Summary

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

On Friday, January 26, 2024, at 10:06 hours, an Office of Track and Structures (TRST) Roadway Worker in Charge (RWIC) was given permission to perform a track inspection between Spring Hill Station and Wiehle-Reston Station on track 2 by the Radio Rail Traffic Controller (RTC) when they advised the Advanced Mobile Flagger (AMF) located Spring Hill Station on track 2 at the 8-car marker that foul time was granted. The AMF acknowledged that the mobile work crew was under foul time protection. At 10:07 hours, Train ID 604 (L7240-41x7199-98x7618-19x7589-88T) departed Spring Hill Station on track 2 towards Wiehle-Reston Station without receiving a briefing from the AMF.

At 10:14 hour, the RWIC had relinquished foul time and was located between Spring Hill Station and Wiehle-Reston Station on track 2, at chain marker (CM) N2 1024+00 when they contacted the Metro Integrated Command and Communications Center (MICC) and reported that the train passed their location at an excessive speed. The Radio RTC instructed the RWIC to standby for a train pickup.

At 10:24 hours, the Radio RTC contacted the Train Operator of Train ID 604 and inquired if they had spoken with the AMF before departing Spring Hill Station. The Train Operator reported that the AMF advised them that the mobile work crew had not entered the roadway.

At 10:28 hours, Train ID 606 was instructed to retrieve the mobile work crew at CM N2 1024+00 after departing Spring Hill Station. At 10:34 hours, the Train Operator of Train ID 606 advised that the mobile work crew had boarded the train and were clear from the roadway.

TRST removed the AMF from service for post-incident testing. Train ID 604 was removed from service for post-incident inspection.

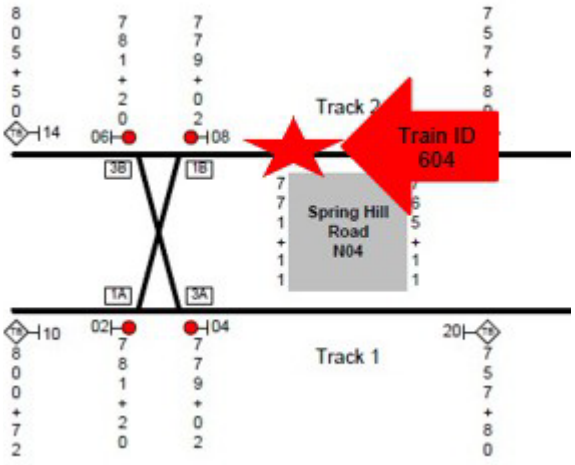
There were no injuries or damage as a result of this event.

The probable cause of the Improper RWP event between Spring Hill Station and Wiehle-Reston Station on January 26, 2024, was the AMF's lack of communication when they did not provide instruction for the train to remain on the platform after foul time was established.

Incident Site

Spring Hill Station, track 2 – CM N2 1056+00

Field Sketch/Schematics



The above depiction is not to scale.

Purpose and Scope

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

Investigative Methods

The investigative methodologies included the following:

- Site Assessment through document and video review.

- Formal Interviews – SAFE interviewed three individuals as part of this investigation. Interview included persons present at, during, and after the incident, those directly involved in the response process, and representatives from the Washington Metrorail Safety Commission (WMSC). SAFE interviewed the following individuals:
    - AMF
    - RWIC
    - Train Operator – Train ID 604

- Documentation Review – Collection of relevant work history information and process documentation contained in WMATA systems of record. These records include:
    - Train Operator Training Records
    - Train Operator Certifications
    - Train Operator 30-day work history review
    - RWIC Training Records
    - RWIC 30-day work history review
    - Metrorail Operating Rulebook (MOR)
    - 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
- Closed-Circuit Television (CCTV)
- The Office of Chief Mechanical Officer (CMOR) Incident Investigation Team (IIT) Vehicle Monitoring and Diagnostic System (VMDS)
- System Performance On-Time Summary Report

Investigation

On Friday, January 26, 2024, at 10:06 hours, TRST RWIC was given permission to perform a track inspection between Spring Hill Station and Wiehle-Reston Station on track 2 by the Radio RTC when they advised the AMF located Spring Hill Station on track 2 at the 8-car marker that foul time was granted. The AMF acknowledged that the mobile work crew was under foul time protection. At 10:07 hours, Train ID 604 (L7240-41x7199-98x7618-19x7589-88T) departed Spring Hill Station on track 2 towards Wiehle-Reston Station without receiving a briefing from the AMF.

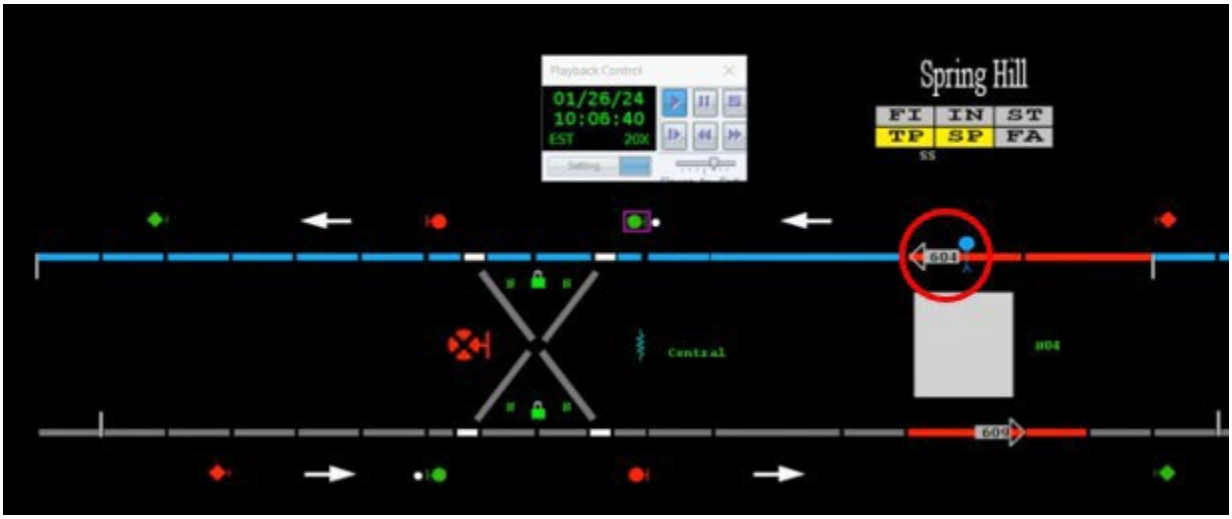


Figure 1 – Train ID 604 at Spring Hill Station, track 2 at 10:06 hours.

Closed Circuit Television (CCTV) revealed that prior to the event, at 09:59 hours, the RWIC arrived at a Wiehle-Reston Station and then entered the roadway on the Downtown Largo Station end of the platform.

The Audio Recording System (ARS) revealed that at 10:03 hours, the RWIC contacted the Radio RTC and requested to perform a track inspection from Wiehle-Reston Station to Spring Hill Track 2. Train ID 604 doors opened on the platform side at Spring Hill Station. The Track Inspector exited Train ID 602 at Wiehle-Reston Station. The RWIC advised that hot spots had been identified, a safety briefing was conducted, all personnel had proper PPE, then advised the AMF was located at the 8-car marker on track 2 at Spring Hill Station, ready to flag, and requested to start a track inspection under foul time from CM N2 1073 to 1073+00. The Radio RTC instructed the RWIC to standby.

At 10:06 hours, the Radio RTC granted foul time to the RWIC after they verified that Train ID 602 was berthed on the platform at Wiehle-Reston Station and then instructed the RWIC to verify that the AMF was in place at Spring Hill Station. Train ID 604 arrived at the 8-car marker at Spring Hill Station on track 2 and stopped at the 8-car marker. Train ID 602 arrived at the 8-car marker at

Wiehle-Reston East Station on track 2. The RWIC acknowledged that foul time was granted and advised the AMF that the mobile work crew was under foul time. Train ID 604 doors opened on

At 10:07 hours, the AMF acknowledged, and then advised, “Got one on the platform that just left.” The RWIC did not respond to the transmission. The AMF appeared to be speaking into the mic on their chest as Train ID 604 was stopped on the platform at Spring Hill Station with the train doors open. The AMF did not instruct the Train Operator to remain on the platform as the work crew was under foul time.

Image 1 - AMF at Spring Hill Station on track 2 talking into a mic, with Train ID 604 stopped on the platform with the train doors open at 10:07:07 hours.

Train ID 604 doors closed on the platform side at Spring Hill Station.

Image 2 - AMF positioned facing the train with the train doors closed at 10:07:13 hours.

The Radio RTC announced track personnel walking between Wiehle-Reston and Spring Hill on track 2. Train ID 604 departed Spring Hill Station on track 2. The RWIC entered the roadway from the end of platform.

At 10:08 hours, the Track Inspector entered the roadway from the end of the platform. Seconds later, the RWIC relinquished foul time and advised that they were back under AMF protection. The Radio RTC acknowledged that foul time was relinquished. The AMF responded, “foul time relinquished and back under AMF protection.”

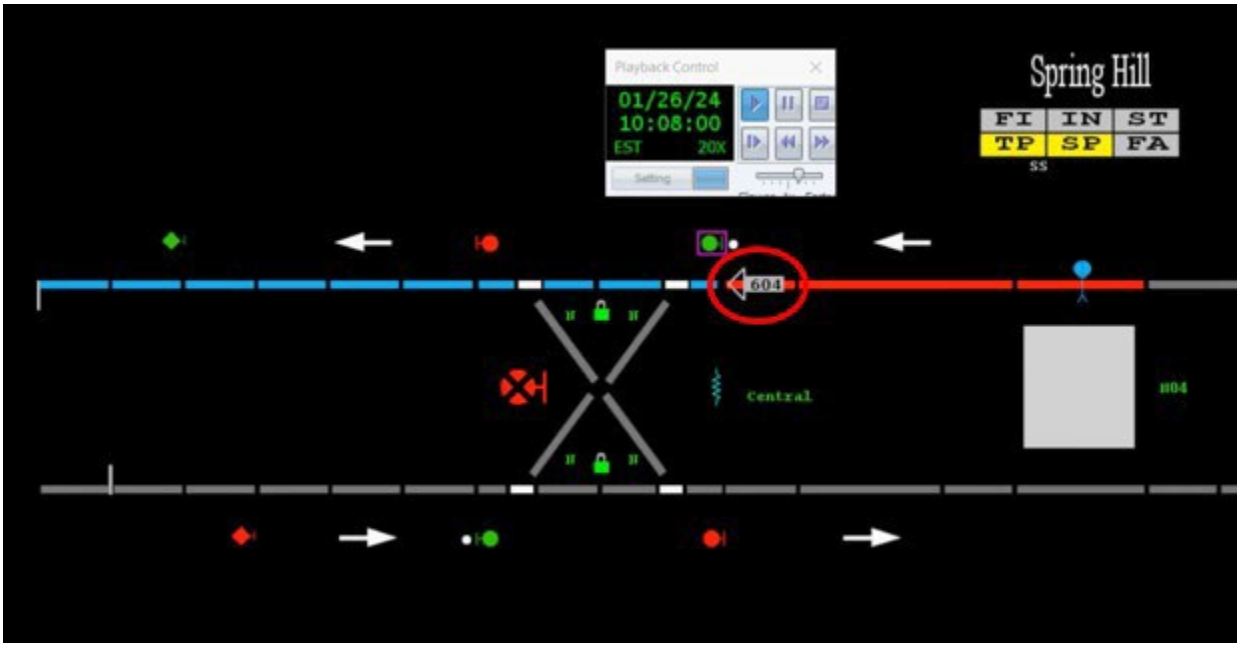


Figure 2 - Train ID 604 en route to Wiehle-Reston East Station at 10:08 hours.

The Office of Chief Mechanical Officer/Incident Investigation Team (CMOR/IIT) Analysis revealed that at 10:13 hours, Train ID 604 train speed was 57MPH when the master controller was placed in a B5 braking mode, then to the emergency position initiating emergency braking. The train passed the mobile work crew at 45MPH[1].

There was no transmission observed from the Train Operator reporting this event.

At 10:14 hours, the RWIC reported to the Radio RTC that they were located between Spring Hill Station and Wiehle-Reston Station on track 2 and that the train passed their location at an excessive speed.

At 10:16 hours, Train ID 604 arrived at the 8-car marker at Wiehle-Reston Station on track 2. The Radio RTC instructed the Rail Supervisor located at Loudoun Gateway Station to contact them via landline. The Button RTC notified the AOM of the report. The AOM instructed to have the RTRA Supervisor intercept the train.

At 10:18 hours, the Radio RTC instructed the RWIC to contact them via landline, and standby for a train pickup. At 10:24 hours, the Radio RTC inquired if the Train Operator of Train ID 604 had spoken with AMF. The Train Operator responded that the AMF at Spring Hill Station said, “Go ahead, I was good.” The Radio RTC requested the Train Operator to clarify what they meant by “they were good.” The Train Operator advised that “They were telling me no one was on the roadway.” The Radio RTC informed the RWIC of the report from the Train Operator on Train ID 604.

[1] *The CMOR/IIT Analysis revealed that Train ID 604 traveled between Spring Hill Station and Wiehle-Reston East Station at speeds up to 62MPH.*

At 10:24 hours, the Radio RTC contacted the Train Operator of Train ID 604 again and inquired if they had spoken with the AMF before departing Spring Hill Station. The Train Operator reported that the AMF advised them that the mobile work crew had not entered the roadway.

At 10:28 hours, Train ID 606 was instructed to retrieve the mobile work crew at CM N2 1024+00 after departing Spring Hill Station. At 10:34 hours, the Train Operator of Train ID 606 advised that the mobile work crew had boarded the train and were clear from the roadway.

At 10:39 hours, the RTRA Supervisor boarded Train ID 604 at Loudoun Gateway Station. At 10:47 hours, the RTRA Supervisor reported to the AOM that the Train Operator reaffirmed that the AMF stated that the roadway was clear.

At 10:56 hours, the Operations Manager (OM) contacted the RTRA Superintendent at Dulles Division and advised them of the event. The RTRA Superintendent instructed the Train Operator to remain in service.

A Rail Pros Supervisor arrived at Spring Hill Station and removed the AMF from service for post-incident testing.

Chronological Event Timeline

Time	Description
09:59:50 hours	The RWIC arrived at the end of the platform on the Downtown Largo Station end of the platform at Wiehle-Reston Station. [CCTV]
10:03:36 hours	TRST RWIC: Contacted the Radio RTC. MICC Radio RTC: Acknowledged the transmission. TRST RWIC: Requested to perform a track inspection from Wiehle-Reston Station to Spring Hill Track 2. Advised that hot spots had been identified, a safety briefing was conducted, and all personnel had proper PPE. Advised the AMF was at the 8-car marker on track 2 at Spring Hill, ready to flag. Requested to start the track inspection under foul time from N2 1073 to 1073+00. MICC Radio RTC: Responded, "Stand by." [Radio, Ops 4]
10:06:21 hours	MICC Radio RTC: Contacted the RWIC. TRST RWIC: Acknowledged. MICC Radio RTC: Requested to confirm the chain markers. TRST RWIC: Responded, "1073 to 1073+00 on N2." MICC Radio RTC: Responded, "Affirm. Verifying that the train is properly berthed and it's safe to do so, your foul time is granted. Go direct with your AMF at Spring Hill." [Radio, Ops 4]
10:06:41 hours	Train ID 604 arrived at the 8-car marker at Spring Hill Station on track 2. [CCTV]
10:06:42 hours	Train ID 602 arrived at the 8-car marker at Wiehle-Reston East Station on track 2. [CCTV]
10:06:51 hours	TRST RWIC: Responded, "Foul time has been granted, notify central when I relinquish. AMF, foul time has been granted. How do you copy? We're under foul time" [Radio, Ops 4]
10:06:56 hours	Train ID 604 doors opened on the platform side at Spring Hill Station. [CCTV]
10:06:57 hours	The Track Inspector exited Train ID 602 at Wiehle-Reston Station. [CCTV]

Time	Description
10:07:01 hours	AMF: Responded, “Good copy, AMF in place Spring Hill 8-car marker track 2, ready to flag, over. Got one on the platform that just left.” [Radio, Ops 4]
10:07:10 hours	The AMF appeared to be speaking into the mic on their chest. The doors began to close on Train ID 604. [CCTV]
10:07:12 hours	Train ID 604 doors closed on the platform side at SpringHill Station. [CCTV]
10:07:14 hours	MICC Radio RTC: Announced, “Attention all operators, be on the lookout for track personnel walking between Wiehle-Reston and Spring Hill on track 2; upon seeing personnel lightly tap your horn, dim your lights, speed not to exceed 15 half the regulated.” [Radio, Ops 4]
10:07:18 hours	Train ID 604 departed Spring Hill Station on track 2. [CCTV]
10:07:42 hours	The RWIC entered the roadway from the end of the platform. [CCTV]
10:08:16 hours	The Track Inspector entered the roadway from the end of platform. [CCTV]
10:08:30 hours	TRST RWIC: Relinquished foul time. Advised back under AMF protection. MICC Radio RTC: Acknowledged foul time relinquished at 10:08 hours. Advised that RWP was in effect. TRST RWIC: Acknowledged and repeated. Advised AMF that foul time was relinquished and back under AMF. AMF: Responded, foul time relinquished and back under AMF protection. [Radio, Ops 4]
10:14:49 hours	RWIC: Contacted the MICC and reported a train passed at full speed and they were located at N2 1056+00. [Phone, Silver Line 2]
10:16:04 hours	Train ID 604 arrived at the 8-car marker at Wiehle-Reston Station on track 2. [CCTV]
10:16:07 hours	MICC Radio RTC: Instructed that an RTRA Supervisor provide a landline. [Radio, OPS 4]
10:16:16 hours	MICC Button RTC: Advised AOM on the event. AOM: Acknowledged and directed to have an RTRA Supervisor intercept the train. MICC Button RTC: Acknowledged. RTRA Supervisor: Contacted via landline from Loudon Gateway Station and agreed to meet Train ID 604. [Phone, Silver Line 2]
10:18:28 hours	MICC Radio RTC: Requested the RWIC to call via landline. RWIC: Contacted the RTC and provided the current CM N2 1024+00. MICC Button RTC: Instructed the RWIC to standby for train pick-up. [Phone, Silver Line 2]
10:24:57 hours	MICC Radio RTC: Inquired if the Train Operator had spoken with AMF. Train ID 604: Responded, the AMF Spring Hill said, “Go ahead, I was good.“ [Radio, OPS 4]
10:25:39 hours	MICC Radio RTC: Requested the RWIC to give a landline. Requested that the Train Operator clarify what they meant by “they were good.” Was they telling you no one was on the roadway?” Train ID 604: Responded, “They were telling me no one was on the roadway.” Radio, Ops 4]
10:25:59 hours	MICC Button RTC: Advised the RWIC that the Train Operator stated that the AMF said the road was clear. [Phone, Silver Line 2]
10:28:23 hours	MICC Radio RTC: Instructed Train ID 606 to pick up the RWIC at CM N2 1024+00.

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Time	Description
	Train ID 606: Acknowledged. [Radio, Ops 4]
10:34:34 hours	Train ID 606: Advised stopped at CM N2 1024, keyed down, advised RWIC and crew boarded train. MICC Radio RTC: Acknowledged. [Radio, Ops 4]
10:41:41 hours	RailPros Supervisor arrived at Spring Hill Station and met with AMF. [CCTV]
10:47:56 hours	RTRA Supervisor: Reported that the Train Operator confirmed that the AMF said the roadway was clear. AOM: Acknowledged. [Phone Rail 2]
10:56:03 hours	RTRA Superintendent: Confirmed with the AOM based on current information. Train Operator remained in service. AOM: Acknowledged. [Phone, Rail 2]

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

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

Adopted from CMOR IIT report:

Train ID 604, L7240-41 X7199-98x7618-19x7589-88T, was reported for an RWP violation, for speeding past wayside workers. Incident Investigation Team (IIT) completed downloads and analysis of data from the reported consist.

Train ID 604 departed Spring Hill Station on track 2, in the direction of Wiehle-Reston Station. The train experienced a overspeed condition 2,828 feet after departing Spring Hill Station, while traveling 50.3 MPH, with an ATP speed limit of 50 MPH. The full-service brake applied, and Train speed decreased. The Overspeed alarm de-activated, and the train continued to operate as normal. An overspeed condition occurred two more times on the way to Wiehle-Reston Station.

2,022 feet before entering Wiehle-Reston Station, the master controller was placed in the emergency position, initiating emergency braking. The train speed was 57 MPH at that time.

Based on NVR video and ER data, the train passed wayside workers 1,724 ft. before Wiehle-Reston Station, while emergency brakes were applied. The train came to a complete stop 1,318 feet before entering Wiehle-Reston Station.

After recharging the brake pipe and being stopped for approximately 12 seconds, the master controller was moved to a P1-P4 power position and the train continued to the 8- Car marker at Wiehle-Reston Station, track 2.

There was no activation of the road horn during the incident time.

Based on VMDS an ER Data, there was no fault with the train that contributed to the cause of this incident. The train performed as commanded. NVR

Time	Description of Events
10:07:14.950	The train departed Spring Hill Station Track #2 In the direction of Wiehle-Reston.

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Reviewed By: SAFE 707 – 03/27/2024
Approved By: SAFE 707 – 03/27/2024

10:07:14.950 - 10:08:09.780	The train operated various power and braking modes at speeds up to 50.3 MPH.
10:07:38.900	ATP Speed limit and ADU Regulated Speed limit increase from 40 MPH to 50 MPH.
10:08:09.780	Train speed reached 50.3 MPH, Regulated Speed limit is 50 MPH, Overspeed alarm activates, and Full-service Brake applies. 2,828 ft. after departing Spring Hill Station.
10:08:16.090	Train speed decreased to 46 MPH, and Full-Service Brake Release and the train continued in normal operation.
10:08:16.090 - 10:08:49.870	The train operated various power and braking modes at speeds up to 55.4 MPH.
10:08:21.130	ATP Speed limit and ADU Regulated Speed limit increase from 55 MPH to 54 MPH respectively.
10:08:49.870	The train's speed reached 55.3 MPH; the regulated speed limit was 54 MPH at that time. An overspeed alarm was activated, and a full-service brake was applied. 5,753 ft. After departing Spring Hill.
10:08:51.390	Train speed decreased to 54 MPH and Full-Service Brake Release; train continues in normal operation.
10:08:51.390 - 10:09:48.610	The train operated various power and braking modes at speeds up to 62 MPH.
10:08:57.400	ATP Speed limit increases to 65 MPH.
10:09:32.910	ATP Speed limit decreases to 55 MPH.
10:09:48.610	The train's speed reached 55.5 MPH; the regulated speed limit was 54 MPH at that time. An overspeed alarm was activated, and a full-service brake was applied.
10:09:51.410	Train speed decreased to 52 MPH, and Full-Service Brake was released; the train continued normal operation.
10:09:51.410 - 10:13:42.690	The train operated various power and braking modes at speeds up to 62 MPH.
10:10:24.400	ATP Speed limit increases from 55 MPH to 75 MPH.
10:13:42.690	Master Controller moved to the Coast position; the train speed was 56 MPH.
10:13:44.930	Master Controller moved to the B5 Braking position; train speed was 57 MPH.
10:13:45.450	Master Controller moved to the emergency position, initiated emergency braking, train speed was 57 MPH.

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

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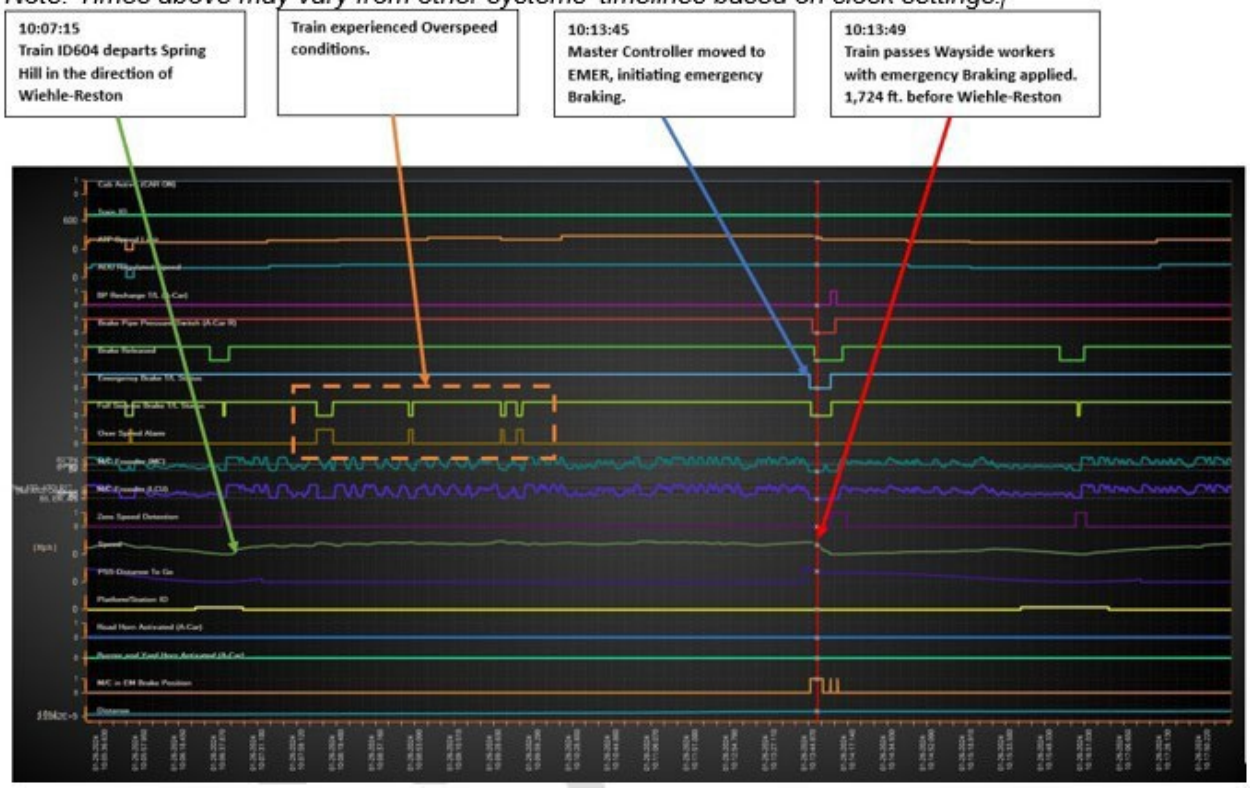
7240 ER Graph

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



Track and Structures (TRST)

TRST determined that the RWIC and AMF would receive discipline in accordance with the Disciplinary Administration Program. The AMF received refresher training on the AMF procedures.

Office of Rail Transportation (RTRA)

RTRA distributed an Operations Personnel Directive regarding the changes to the Advanced Mobile Flagging Procedures.

Interview Findings

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

<u>Train Operator – Train ID 604</u>

- The Train Operator stated that they did not receive a briefing from AMF at Spring Hill Station.
- The Train Operator stated that they did not recall hearing any announcements of personnel on the roadway.

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Reviewed By: SAFE 707 – 03/27/2024
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- The Train Operator stated that the AMF's equipment was a distance away from the 8-car marker, and the lantern was not illuminated.
- The Train Operator stated that they encountered the RWIC within a curved track with limited visibility.
- The Train Operator stated that stopped the train and believed the work crew ended up near the middle of the 8-car consist.
- The Train Operator stated that due to the curve and the consist placement they did not observe the crew.
- The Train Operator stated that they had no contact with the RWIC and resumed operating towards Wiehle-Reston Station.
- The Train Operator stated that the RTC asked if the Train Operator had spoken with the AMF.
- The Train Operator stated that they had seen the AMF but had not been briefed.
- The Train Operator stated that they were interviewed by a Supervisor and remained in service.

AMF

- The AMF stated that they took their equipment, flag, horn, and lantern out of the bag and placed them in the 8-car marker area.
- The AMF stated that a train arrived while the RWIC was waiting for foul time.
- The AMF stated that the train was able to go, so they let the train go.
- The AMF stated that the RWIC started requesting their walk, and 30 seconds, the train left.
- The AMF stated that they could not get on the radio with the RWIC to advise a train was leaving the platform because of the noise of the train.
- The AMF stated that they were not using the AMF equipment and was 10 feet from the train, further away from the equipment, and the flag was in the bag, and the lantern was not illuminated.
- The AMF stated they had responded to the RWIC that they were in place and ready to flag.
- The AMF stated that they transmitted that a train had just left and wasn't briefed.
- The AMF stated that they did not brief the Train Operator of Train ID 604.
- The AMF stated that they did not hear confirmation from the RWIC or MICC after the transmission that a train had left without being briefed.

RWIC

- The RWIC stated that they contacted the MICC to request foul time to begin the inspection and was instructed to standby.
- The RWIC stated that they contacted the AMF via radio and was advised the AMF was in place at the 8-car marker, at Spring Hill on track 2, ready to flag, and a train had just left.
- The RWIC stated that foul time was granted, and they began to walk when they reached CM 820+00, and they relinquished foul time.
- The RWIC stated that they moved to a place of safety upon seeing the train.
- The RWIC stated that they had forgotten that the train was coming.
- The RWIC stated that they contacted the MICC via cell phone and reported the event.
- The RWIC stated that they were instructed to standby for a train pickup.

Weather

On January 26, 2024, at the time of the incident, NOAA recorded the temperature as 64°F, with partially clear skies, winds of 9.9 mph, and 69% humidity. The weather was not a contributing factor in this incident (Weather source: NOAA) – Location: Reston, VA.

Related Rules and Procedures

- MOR 8.10.4.1 The Rail Vehicle Operator must remain vigilant and on the lookout for all work crews.
- MOR 8.10.4.3 Upon observing a work crew, the Rail Vehicle Operator must reduce speed to 15 mph, change to low-beam headlights, and be prepared to stop.
- MOR 8.10.5 As the Rail Vehicle Operator approaches the location of the Watchman/Lookout and receives the approved hand signal to proceed, the Rail Vehicle Operator will sound the appropriate horn signal to acknowledge the hand signal being given by the Watchman/Lookout, then operate at Restricted Speed past the entire work crew.
- MOR 8.10.6 If the Rail Vehicle Operator does not receive the proper approved hand signal to proceed from the Watchman/Lookout, the Rail Vehicle Operator must immediately stop one (1) car length away from the Watchman/Lookout and contact the Rail Traffic Controller for further instructions.
- MOR 9.2.3 All Rail Vehicle Operators shall maintain a constant lookout in the direction in which their vehicles are moving. When Rail Vehicle Operators observe persons on the roadway, they shall:
  a. Sound mainline horn (two (2) Long Sounds) to warn those people of the vehicle's approach and immediately reduce the train's speed to 15-mph.b. When personnel are located on the same track as the operating rail vehicle, and they do not physically clear the roadway to a place of safety and appropriately acknowledge the horn signal, Rail Vehicle Operators shall bring the vehicle to an immediate stop one (1) car length away from the watchman's position.
  c. Rail Vehicle Operators shall contact the Rail Traffic Controller and await their instructions before moving the vehicle.
  d. Rail Vehicle Operators shall report all near misses to the Rail Traffic Controller.
- MOR 17.8.7. a Rail Vehicle Operators will be attentive to all Rail Traffic Controller announcements regarding the location(s) of fixed work zones and mobile work crews within their routes.
- MOR 17.8.7. b. Rail Vehicle Operators must be vigilant and able to respond to all WMATA-approved hand signals given by Roadway Workers.

Human Factors

Fatigue

Signs and Symptoms of Fatigue

Train Operator

We evaluated conditions at the time of the incident to distinguish whether evidence of fatigue was present. The Train Operator reported feeling fully alert at the time of the incident. The Train Operator reported experiencing no symptoms of fatigue in the time leading up to the incident.

AMF

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.

RWIC

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 TRST RWIC reported experiencing no symptoms of fatigue in the time leading up to the incident.

Fatigue Risk

Train Operator

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 Train Operator reported keeping a regular sleep schedule in the days leading up to the incident. The Train Operator worked three days leading up to the incident. The employee was awake for 9 hours at the time of the incident. The Train Operator reported 5.5 hours of sleep in the 24 hours preceding the incident. The off-duty period was 12 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

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 four days in the days leading up to the incident. The AMF was awake for 6 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 16 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.

RWIC

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 TRST RWIC reported keeping a regular sleep schedule in the days leading up to the incident. The TRST RWIC worked for four days leading up to the incident. The employee was awake for 5 hours at the time of the incident. The TRST RWIC reported 7 hours of sleep in the 24 hours preceding the incident. The off-duty period was 16 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.

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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

- The AMF did not brief the Train Operator of Train ID 604.
- The train passed the mobile work crew at 45 MPH.
- The Train Operator did not notify the MICC of the event.
- The RWIC acknowledged that they heard the transmission from the AMF of the train departing the platform and not advise the MICC.
- The train reached speeds up to 62 MPH between Spring Hill Station and Wiehle-Reston Station.
- The incident occurred during the Train Operator's last trip of the day.

Immediate Mitigation to Prevent Recurrence

- The RWIC and crew were removed from the roadway by train pick-up.
- The Train Operator was interviewed by an RTRA Supervisor and remained in service.
- The AMF was removed from service.

Probable Cause Statement

The probable cause of the Improper RWP event between Spring Hill Station and Wiehle-Reston Station on January 26, 2024, was the AMF's lack of communication when they did not provide instruction for the train to remain on the platform after foul time was established.

Recommended Corrective Actions

Corrective Action Code	Description	Responsible Party	Estimated Completion Date
113910MX _SAFECAPS_RTRA_001	AMF to attend Retraining on AMF procedures.	TRST SRC	Completed
113910MX _SAFECAPS_OOP_001	Update AMF flagging policy to ensure work crews are under AMF protection once enroute to the work zone.	OOP SRC	Completed
113910MX_SAFECAPS_RTRA_002	RTRA Train Operator to received retaining on general speed restrictions and procedures related to notifying MICC upon encountering unanticipated personnel on roadway.	RTRA SRC	Completed

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Appendices

Appendix A – Interview Summaries

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

RTRA

Train Operator

The Train Operator is a WMATA employee with 14 years of service and 3 months of experience as a Train Operator. The Train Operator holds a Roadway Worker Protection (RWP) Level 2 certification that expires in May 2024.

On the day of the incident, the Train Operator started their shift at 04:30 hours, completing several trips with sufficient break periods. The incident occurred on their last trip of the day.

During the formal interview, the Train Operator stated that they did not recall hearing any RTC announcements related to track walkers.

The Train Operator stated that upon entering Spring Hill Station, track 2, they observed the 8-car marker, the AMF was present on the platform, moving near the shelters without an illuminated lantern and not in close proximity to the 8-car marker.

The Train Operator stated that they engaged with the AMF which involved a simple greeting of "Good Morning" through the window. The Train Operator stated that they initiated the door open, and they inquired about proceeding and received a non-verbal reply from the AMF in the form of a wave.

The Train Operator stated that ~~the~~ AMF did not provide any briefing, and their equipment was positioned at a distance from the 8-car marker. The Train Operator stated that they departed at a regulated speed and then encountered the work crew around a curved portion of the track. The Train Operator stated that they stopped the train in B5 and had been unable to observe the crew due to the curve and consist placement.

The Train Operator stated that they had no direct contact with the road crew and continued towards Wiehle-Reston Station. The Train Operator stated that later, the RTC contacted them on the radio, questioning their interaction with AMF. The Train Operator stated that they had seen the AMF but had not received a briefing.

The Train Operator stated that they continued and had been met by a Supervisor who interviewed them and obtained a written statement. The Train Operator stated that they were not taken out of service.

TRST

AMF

The AMF is a RailPros employee with 2 months of experience as an AMF. The AMF holds a Roadway Worker Protection (RWP) Level 2 certification that expires in November 2024.

During the formal interview, the AMF stated that they met the RWIC at Dulles Yard, completed the RJSB, and traveled to Spring Hill Station. Upon arrival, the AMF contacted the RWIC by text, notifying them of their presence at the station.

The AMF stated that they took out their equipment, including a flag, horn, and lantern, placing them in the 8-car marker area. The AMF stated that the MICC to initiate the track inspection, and the RTC put the AMF on standby. The AMF stated that when the RWIC called back, a train had left the station during the standby, and their equipment remained in the bag.

The AMF stated that as the train approached, the AMF was still on standby and allowed the train to continue. The AMF stated that RWIC resumed requesting the track inspection, and due to the delay, the train had left the platform by the time the AMF was ready with their equipment.

The AMF stated that they could not communicate with the RWIC due to the noise from the train. The AMF stated that after the train passed, the AMF informed the RWIC that they were ready, and mentioned that a train had just left without being briefed.

The AMF stated that they did not attempt to communicate about the unbriefed train, due to radio distortion and multiple transmissions. The AMF stated that shortly after, the RWIC called on the radio, notifying the AMF that foul time was relinquished. The AMF stated that they resumed their duties under AMF protection.

The AMF stated that 15 minutes later, the RWIC requested a train pickup, because the AMF didn't hear foul time was in place. The AMF stated that RWIC called about the foul time, and the AMF reiterated their lack of awareness.

The AMF stated that a Rail Pros Supervisor met them at Spring Hill Station, and they learned of the incident.

The AMF stated that they were removed from service.

RWIC

The Track Walker is a WMATA employee with 4 years of service and 2 years of experience as a RWIC. The RWIC holds a Roadway Worker Protection (RWP) Level 4 certification that expires in August 2024.

During the formal interview, the RWIC stated that the event began with the RWIC and crew members meeting at Dulles Yard, completing the RJSB, and traveling to Wiehle-Reston Station. The RWIC stated that they and one crew member exited while the AMF continued to Spring Hill Station.

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The RWIC stated that when they contacted the MICC via radio to request foul time for the track inspection, the MICC initially instructed them to standby, and then the MICC advised the RWIC to go direct with the AMF for confirmation.

The RWIC stated that upon making radio contact, the AMF informed the RWIC that they were in place at the 8-car marker, Spring Hill Track 2, ready to flag, and a train had just left.

The RWIC stated that foul time was granted five to ten minutes later, allowing the RWIC to commence the inspection. The RWIC stated that they reached CM 820+00, relinquished foul time, and continued walking under AMF protection. The RWIC stated that at that point, a train approached at high speed.

The RWIC stated that despite the elevated position of the Train Operator, the train did not sound the horn, prompting the RWIC and the crew to move to a place of safety. The RWIC stated that the train did not stop, leading them to contact the MICC via cell phone to report the incident.

The RWIC stated that during the conversation, the RTC asked whether the AMF had briefed the train. The RWIC admitted forgetting about the oncoming train, emphasizing that the RTC granted foul time and should have been aware of the approaching train.

The RWIC stated that the Train Operator should have been aware of radio transmissions concerning foul time, AMF protections, and workers on the track. The RWIC stated that RTC assured them that reporting of the incident and intercepting the train for an interview was underway.

The RWIC stated that following the incident, the RWIC and crew were picked up by a train and returned to the Wiehle-Reston Station. The RWIC stated that upon the return, the Train Operator informed the RTC that the AMF had not briefed them.

The RWIC stated that they remembered the AMF's statement about the train not being briefed that had just left the platform. The RWIC stated that they believed the MICC would have identified the train and not grant foul time. The RWIC stated that they did not follow up on the AMF's statement and thought it was directed towards the RTC and not the RWIC.

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Appendix B – Written Statements

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

Incident Information: This page must be completed for all incidents

Date:	Incident Time:	Time Reported:	Reported by: Customer ❑ Employee ❑ ROCC ❑ Other ❑
1-26-24	10:06		

Location

Station	Mezzanine #	Track #/Destination	Chain Marker/Signal Number
Springhill		2 / Ashburn	

TYPE OF INCIDENT

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

WEATHER	LIGHT CONDITIONS (natural lighting)	LIGHTING (artificial lighting)
Clear ❑ Rain ❑	Dawn/Dusk ❑ Daylight ❑	Lights On ❑ Lights Off ❑
Snow ❑ Sleet/Ice ❑	Dark ❑ Tunnel/Underground ❑	Lights Not Working ❑

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

Elevator/Escalator#:	AFC #:	Room Number/Location:

Failure Number(s):

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

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

TRAIN INCIDENTS

Train ID	Destination	Car Numbers(list all cars in consist):	Lead Car:
604	Ashburn	7240 - 7199 - 7618 - 7599	7240

Name of Responding Supervisor:	Name/Department of CMNT/TRST or other WMATA responder

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

Once arriving at Springhill & car marker, Servicing the station I operated my doors according to the SOP. I then seen AMF Who flagged me on. Not informing me that it was roadway personnel on tracks. Afterward Heading to Wiehle Reston I didn't see personnel until I was up close on them.

Employee Completing Report

[redacted]	Employee Signature: (sign)	[redacted]	Date: 1-26-24
Run # 802	Block #		

Dulles

To Be Completed By Reviewing Manager

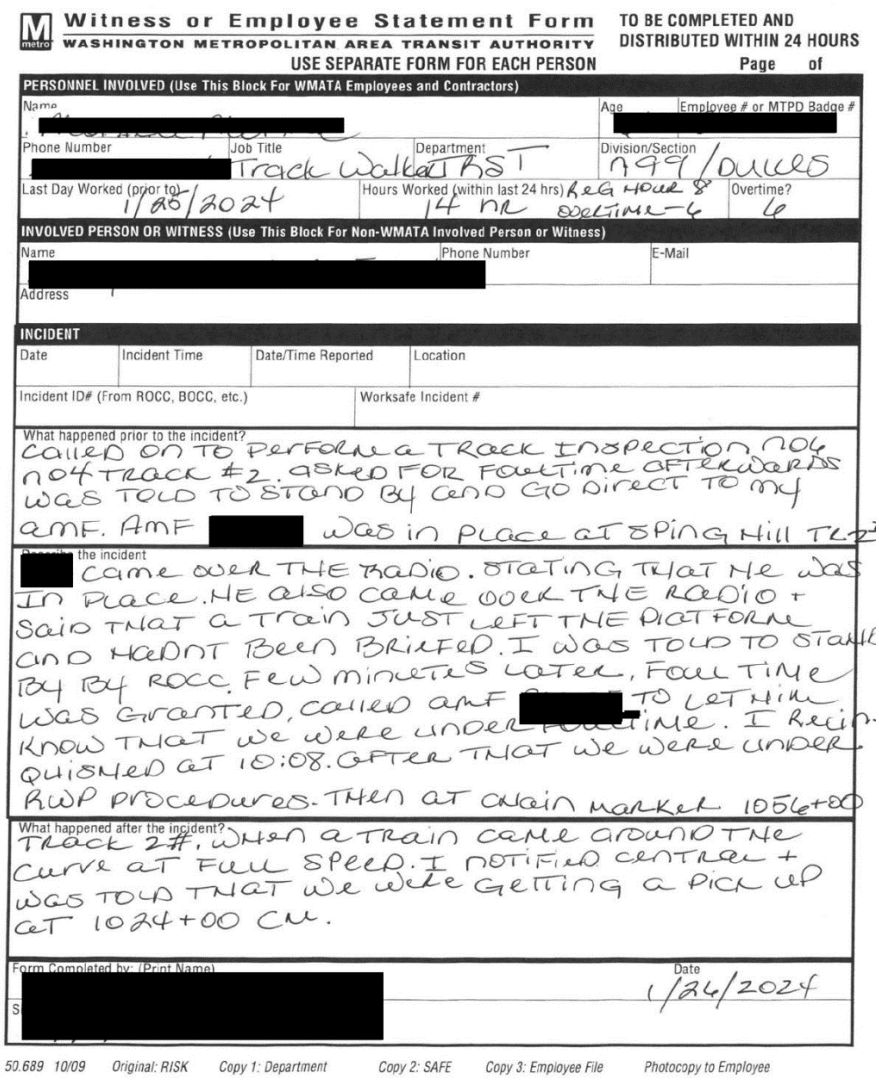
Supervisor Name:(print)	Supervisor Signature	Employee #	Date:

Action taken/needed

SMS Number:

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

Document 1 - Train Operator Incident Report



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

TO BE COMPLETED AND DISTRIBUTED WITHIN 24 HOURS
Page of

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

Name [redacted] | Age [redacted] | Employee # or MTPD Badge # [redacted]
Phone Number [redacted] | Job Title Track Walker TRST | Department | Division/Section 799/DULLES
Last Day Worked (prior to) 1/25/2024 | Hours Worked (within last 24 hrs) REG HOUR 8 OVERTIME-6 | Overtime? 6

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

Name [redacted] | Phone Number | E-Mail
Address

INCIDENT

Date | Incident Time | Date/Time Reported | Location
Incident ID# (From ROCC, BOCC, etc.) | Worksafe Incident #

What happened prior to the incident?
CALLED ON TO PERFORM A TRACK INSPECTION, NO4 NO4 TRACK #2. ASKED FOR FOULTIME AFTERWARDS WAS TOLD TO STAND BY AND GO DIRECT TO MY AMF. AMF [redacted] WAS IN PLACE AT SPRING HILL TR

[redacted] the incident
[redacted] CAME OVER THE RADIO. STATING THAT HE WAS IN PLACE. HE ALSO CAME OVER THE RADIO + SAID THAT A TRAIN JUST LEFT THE PLATFORM AND HADNT BEEN BRIEFED. I WAS TOLD TO STAND BY BY ROCC. FEW MINUTES LATER, FOUL TIME WAS GRANTED, CALLED AMF [redacted] TO LET HIM KNOW THAT WE WERE UNDER FOULTIME. I REIN. QUISHED AT 10:08. AFTER THAT WE WERE UNDER RWP PROCEDURES. THEN AT MAIN MARKER 1056+00

What happened after the incident?
TRACK 2#, WHEN A TRAIN CAME AROUND THE CURVE AT FULL SPEED. I NOTIFIED CENTRAL + WAS TOLD THAT WE WERE GETTING A PICK UP AT 1024+00 CM.

Form Completed by: (Print Name) [redacted] | Date 1/26/2024
S

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

Document 2 - TRST RWIC Written *Statement.*

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

TO BE COMPLETED AND DISTRIBUTED WITHIN 24 HOURS
Page of

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

Name	Age	Employee # or MTPD Badge #
[redacted]		[redacted]

Phone Number	Job Title	Department	Division/Section
[redacted]-807-[redacted]	AMF	Railpros	Tracks

Last Day Worked (prior to)	Hours Worked (within last 24 hrs)	Overtime?
1/26	3 hours	N/A

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

Name	Phone Number	E-Mail
[redacted]		

INCIDENT

Date	Incident Time	Date/Time Reported	Location
1/26	1010	1/26/24	Spring Hill Track 2

Incident ID# (From ROCC, BOCC, etc.)	Worksafe Incident #
6240	

What happened prior to the incident?

Describe the incident:
At 1010 [redacted] c [redacted] requested to start Walk with foul time. Than [redacted] Called on me (AMF) [redacted] to let them know I was in place. At this time Train Left Station 1st Car was already gone. before I called in I'm in Place. Then I said train left and wasn't brief. Then I proceeded to but My light Down and take out my flag. I never heard foul time was granted. but later heard relinghed foul time. [redacted] Called me to relinghed foul time. So I proceed to relinghed foul time back under AMF protection on Radio.

What happened after the incident?

[redacted]mpleted by: (Print Name) [redacted] Date 1/26/24

Signature

Document 3 - TRST Track Inspector Written *Statement*.

Drafted By: SAFE 709 – 03/27/2024
Reviewed By: SAFE 707 – 03/27/2024
Approved By: SAFE 707 – 03/27/2024

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

TO BE COMPLETED AND DISTRIBUTED WITHIN 24 HOURS
Page of

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

Name	Age	Employee # or MTPD Badge #
[redacted]		[redacted]

Phone Number	Job Title	Department	Division/Section
[redacted]	AMF	Railpros	Tracks

Last Day Worked (prior to)	Hours Worked (within last 24 hrs)	Overtime?
1/26	7 hours	N/A

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

Name	Phone Number	E-Mail
[redacted]		

INCIDENT

Date	Incident Time	Date/Time Reported	Location
1/26	1010	1/26/24	Spring Hill Track 2

Incident ID# (From ROCC, BOCC, etc.)	Worksafe Incident #
6240	

What happened prior to the incident?

Describe the incident:
At 1010 [redacted] c [redacted] requested to start walk with foul time. Than [redacted] Called on me(AMF) [redacted] to let them know I was in place. At this time Train Left Station 1st Car was already gone. before I called in I'm in place. Then I said train left and wasn't brief. Then I proceeded to but My light Down and take out my flag. I never heard foul time was granted. but later heard relinghed foul time. [redacted] Called me to relinghed foul time. So I proceed to relinghed foul time back under AMF protection on Radio.

What happened after the incident?

[redacted]mpleted by: (Print Name) [redacted]
Date 1/26/24
Signature

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

Document 4 - AMF Written Statement.

Appendix C – Safety Bulletin – Advanced Mobile Flagging

SAFETY BULLETIN | WMATA-WIDE | SB-24-03-A Version #2 Issue Date: 02/29/24

Advanced Mobile Flagging

Procedural changes effective March 1st, 2024

OVERVIEW

This safety bulletin complements *Permanent Order (PO) 23-21 Advanced Mobile Flagging*, which details changes to the Advanced Mobile Flagging Rules and Procedures and serves as a reminder that updates to the *Metrorail Operating Rulebook* go into effect on March 1, 2024. Since the September 1, 2023 issue date of the rulebook, several permanent orders have been approved and published by the Rail Safety Standards Committee which modifies existing operating rules. It is important to take the time to review the changes and to update all printed copies of the rulebook.

DETAILS AND ACTIONS

For the changes in full, please read Permanent Order PO 23-21 Advanced Mobile Flagging and Metrorail Operating Rules 8.10 & 17.22. The permanent order must be reviewed in its entirety. However, to assist employees and contractors in understanding the critical elements of the changes, this safety bulletin highlights the following:

- Rail Vehicles are no longer required to:
  - Operate at half-regulated speed,
  - Reduce to 15 mph upon observing roadway workers, and
  - Continuously sound the horn.
- Roadway Workers in Charge must ensure that Watchman/Lookouts are placed sufficiently in advance of the remaining crew member(s) to provide ample time/warning.
  - Ample time/warning requires all members of the work crew, including the watchman/lookout to be in a place of safety a minimum of 15 seconds before the equipment reaches their location.
- Rail Vehicles may proceed at a speed not exceeding 35 MPH to the next passenger station.
- Rail Traffic Controllers must not provide permission to access roadway until it is verified that all unbriefed rail vehicles have passed the mobile work crew.
- There is an updated script for Advanced Flaggers:
  - *"There may be multiple work groups ahead. Contact MICC and receive permission to proceed in Mode 2 - Level 1 at a speed not to exceed 35 mph until you reach the next passenger station."*
  - **Please Note:** Refrain from using the prior MOR card script and rely on the language in the Updated MOR when applicable.

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

M metro SAFE Department of Safety

Document 5 – SB-24-03-A, Page 1 of 1

Drafted By: SAFE 709 – 03/27/2024
Reviewed By: SAFE 707 – 03/27/2024
Approved By: SAFE 707 – 03/27/2024

Appendix D – RTRA Operations Personnel Directive

RTRA OPERATIONS PERSONNEL DIRECTIVE

Thursday, March 07, 2024

RTRA-703-19-00

Advanced Mobile Flagging (AMF) Procedural Changes Effective Friday, March 1, 2024

With the implementation of new procedures within the Metrorail Operating Rulebook (MOR), Permanent Order 23-21, Advanced Mobile Flagging, details the changes to the Advanced Mobile Flagging Rules and Procedures. Please refer to information listed below as well as PO 23-21 and MOR Rules 8.10 and 17.22 for more details.

Dos	Don'ts
Upon speaking with an AMF, proceed at a speed of no greater than 35mph	Operate at half the regulated speed
Upon reaching roadway workers, dim headlights & give two long horn blasts	Reduce speed to 15mph upon observing roadway workers
Upon receiving proper hand signal, give two short horn blasts as acknowledgment	Continuously sound train horn
If proper hand signal is not given, stop train and contact MICC	
Continue at a speed of no greater than 35mph until approach of the next station	

SAFETY BULLETIN | WMATA-WIDE

Advanced Mobile Flagging

Procedural changes effective March 1st, 2024

OVERVIEW

This safety bulletin complements *Permanent Order (PO) 23-21 Advanced Mobile Flagging*, which details changes to the Advanced Mobile Flagging Rules and Procedures and serves as a reminder that updates to the *Metrorail Operating Rulebook* go into effect on March 1, 2024. Since the September 1, 2023 issue date of the rulebook, several permanent orders have been approved and published by the Rail Safety Standards Committee which modifies existing operating rules. It is important to take the time to review the changes and to update all printed copies of the rulebook.

DETAILS AND ACTIONS

For the changes in full, please read Permanent Order PO 23-21 Advanced Mobile Flagging and Metrorail Operating Rules 8.10 & 17.22. The permanent order must be reviewed in its entirety. However, to assist employees and contractors in understanding the critical elements of the changes, this safety bulletin highlights the following:

- Rail Vehicles are no longer required to:
  - Operate at half-regulated speed,
  - Reduce to 15 mph upon observing roadway workers, and
  - Continuously sound the horn.
- Roadway Workers in Charge must ensure that Watchmen/Lookouts are placed sufficiently in advance of the remaining crew member(s) to provide ample time/warning.
  - Ample time/warning requires all members of the work crew, including the watchman/lookout to be in a place of safety a minimum of 15 seconds before the equipment reaches their location.
- Rail Vehicles may proceed at a speed not exceeding 35 MPH to the next passenger station.
- Rail Traffic Controllers must not provide permission to access roadway until it is verified that all unforbid rail vehicles have passed the mobile work crew.
- There is an updated script for Advanced Flaggers:
  - *"There may be multiple work groups ahead. Contact MICC and receive permission to proceed in Mode 2 - Level 1 at a speed not to exceed 35 mph until you reach the next passenger station."*
  - **Please Note:** Refrain from using the prior MOR card script and rely on the language in the Updated MOR when applicable.

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

M SAFE

If you have questions regarding the contents within this notice, please contact an RTRA Division Manager or Rail Operations Supervisor.

Document 6 – RTRA Personnel Notice – AMF Procedural Changes, Page 1 of 1

Appendix D – Permanent Order – Changes to AMF Procedures

PERMANENT ORDER

METRORAIL OPERATING RULEBOOK

NO. PO-23-21 Changes to AMF Procedures	**Approved Date:** Wednesday, October 18, 2023
Affected Rule: Metrorail Operating Rulebook Rules 8.10 and 17.22	**Effective Date:** Friday, March 01, 2024

TO: All Personnel

Scope:

Permanent Order PO-23-21 affects Metrorail personnel involved in providing, working under, or operating within areas where Advanced Mobile Flagging (AMF) is utilized as a method of Roadway Worker Protection (RWP).

Purpose:

Permanent Order PO-23-21 is issued amend the existing rule for AMF procedures to change maximum speed to 35 mph and eliminate the requirements for Rail Vehicle Operators (RVOs) to continuously blow horn and to reduce speed to 15 mph when observing and passing mobile work crews….

Permanent Order Details:

Additions to rules and procedures are shown in **Bold** and Underlined text; deletions are struck-through (e.g. ~~Rule Deletion~~).

8.10 Advanced Mobile Flagging Operations

8.10.1 When ~~an~~ **a Rail Vehicle Operator observes an** Advanced ~~Mobile~~ Flagger **presenting an orange flag and flashing amber e-flare or lantern,** ~~is present, Rail Vehicle Operators MUST~~ **they must** ~~come to a complete~~ stop at the ~~end of the station platform (~~eight (8) car marker or end gate ~~area)~~. ~~When departing from a terminal station Class 1 Rail Vehicle Operators are required to stop at the end of the platform to receive instructions from the Advanced Mobile Flagger regardless of the number of cars in a consist.~~

~~8.10.2 Rail Vehicle Operators will be given face to face verbal instructions regarding working crews on the tracks.~~

8.10.~~3~~2 Rail Vehicle Operator**s** must **not depart a passenger station where an Advanced Flagger is present until:**

a) ~~ensure~~ they receive ~~all necessary instructions before proceeding.~~ **a briefing from the Advanced Flagger, and**

b) They have confirmed with the Advanced Flagger they have permission to operate in Mode 2 – Level 1.

8.10.~~4~~3 ~~The Rail Vehicle Operator will~~ After depart**ing** the **passenger** station**, the Rail Vehicle Operator must not exceed 35 mph** ~~at half the regulated speed~~ until ~~the Rail Vehicle Operator reaches~~ **reaching** the next **passenger** station, staying alert for multiple work crews.

~~8.10.4.1 The Rail Vehicle Operator must remain vigilant and on the lookout for all work crews.~~

~~8.10.4.2 The Rail Vehicle Operator must blow the train horn continuously, in short blasts, until they encounter the mobile work crew.~~

8.10.4.~~3~~ Upon observing ~~a work crew~~ **roadway workers**, ~~the~~ Rail Vehicle Operator**s** must ~~reduce speed to 15 mph,~~ change to low beam headlights~~,~~ and ~~be~~ **operate** prepared to stop.

~~8.10.5 As the Rail Vehicle Operator approaches the location of the Watchman/Lookout, and receives the approved hand signal to proceed, the Rail Vehicle Operator will sound the appropriate horn signal, to acknowledge the hand signal being given by the Watchman/Lookout, then operate at Restricted Speed past the entire work crew.~~

8.10.~~6~~5 If the Rail Vehicle Operator does not receive **a** ~~the proper approved~~ **proceed** hand signal **from the roadway workers,** ~~to proceed from the Watchman/Lookout,~~ the Rail Vehicle Operator must **stop** immediately ~~stop one (1) car length away from the Watchman/Lookout~~ and contact the Rail Traffic Controller for further instructions.

~~8.10.7 Once the rear of the rail vehicle has passed the entire work crew, the Rail Vehicle Operator shall continue at half (1/2) the regulated speed until they reach the next station.~~

17.22 Advanced Mobile Flagging (Mobile Work Crew)

17.22.1 Advanced Mobile Flagging is a form of RWP used by Mobile Work Crews in which on-track safety is provided, in coordination with the Rail Traffic Controller, by the combined use of:

a. An Advanced Flagger who warns Rail Vehicle Operators of Roadway Workers on the track ahead, and

b. A Watchman/Lookout that provides ample time/warning of approaching rail vehicles to their Crew Members performing work.

17.22.2 Advanced Mobile Flagging protection must be established passenger station-to-passenger station with no intermediate passenger station(s).

17.22.3 Mobile work crews must not share Advanced Flaggers and Watchmen/Lookouts.

17.22.4 Establishing Advanced Mobile Flagging Protection

17.22.4.1 Before accessing the roadway, the Roadway Worker in Charge shall ensure the Advanced Flagger is properly equipped and positioned on the correct track at the 8-car marker or end gate at the next passenger station in advance of the Mobile Work Crew.

17.22.4.2 The RWIC must contact the Rail Traffic Controller and provide the following information:

a. Department, when applicable, and radio call number of employee requesting Advanced Mobile Flagging.
b. Track designation (line and track number).
c. Track limits (between passenger stations).
d. Reason for requesting Advanced Mobile Flagging (nature of work to be performed).
e. Confirm the Advanced Flagger is in position.

17.22.4.3 The RTC must provide the following information:

a. Department, when applicable, and radio call number of employee requesting Advanced Mobile Flagging protection
b. Track designation (line and track number)
c. Track limits (between passenger stations).
d. Reason for requesting Advanced Mobile Flagging (nature of work to be performed).
e. Confirm the Advanced Flagger is in position.

17.22.4.4 The Advanced Flagger shall not begin Advanced Mobile Flagging operations until directed to do so via radio by the Roadway Worker in Charge.

17.22.4.5 The Rail Traffic Controller shall not grant permission to access the roadway until:

a. Receiving confirmation from the RWIC that the Advanced Flagger is performing Advanced Mobile Flagging operations, and
b. All unbriefed rail vehicles have passed the Mobile Work Crew.

17.22.5 Performing Work Under Advanced Mobile Flagging

17.22.5.1 All rail vehicles stopping at the passenger station's 8-car marker or end gate must be read the following script by each Advanced Flagger:

"There may be multiple work groups ahead. Contact ROCC and receive permission to proceed in Mode 2 - Level 1 at a speed not to exceed 35 mph until you reach the next passenger station."

17.22.5.2 If the Advanced Flagger hears multiple horn blasts from the rail vehicle the Advanced Flagger must make every effort to stop the rail vehicle by continuously displaying the stop hand signal using the orange flag.

17.22.5.3 If ANY rail vehicle moving in the direction of the Mobile Work Crew fails to stop at the Advanced Flagger's location, the Advanced Flagger shall:

a) Immediately transmit via radio "Emergency, emergency, emergency," followed by identifying information and nature of the emergency.

b) Attempt to contact the RWIC via radio to ensure all personnel are clear of the roadway or in a place of safety, alerting them to the approaching rail vehicle.

c) Warn the Mobile Work Crew utilizing their air horn and whistle in short, rapid blasts.

d) Report the incident to the Rail Traffic Controller as soon as possible.

17.22.5.4 Advanced Mobile Flagging procedures must continue until the Mobile Work Crew is clear of the roadway or an alternate form of RWP is provided.

17.22.6 Releasing Advanced Mobile Flagging Protection

17.22.6.1 When Advanced Mobile Flagging protection is no longer required the RWIC must contact the Rail Traffic Controller and notify them they no longer require Advanced Mobile Flagging protection.

17.22.7 Placement of the Watchman/Lookout

17.22.7.1 It is the responsibility of the RWIC to properly place their Watchman/Lookout in a position that allows them to provide all members of the Mobile Work Crew with ample time/warning. The Watchman/Lookout is part of the Mobile Work Crew, and as such, must provide ample/time warning for themselves should they be positioned in the foul of the track.

17.22.7.2 Immediately upon entering the roadway, the RWIC shall place the Watchman/Lookout a sufficient distance from the Crew Members performing work to prevent the Watchman/Lookout from being distracted.

17.22.7.3 The positioning of the Watchman/Lookout is dynamic and may require the Watchman/Lookout to vary their distance from Crew Members performing work to provide them with ample time/warning. Whenever possible, the Watchman/Lookout should be positioned in a place of safety. However, they may be placed in the foul of the track, when required.

17.22.7.4 Civil track speeds (not regulated speeds), track geometry, physical characteristics, weather conditions, ambient noise, and all other pertinent situational information must be considered to allow for the Watchman/Lookout to provide ample time/warning to the Mobile Work Crew.

17.22.7.5 Where proper sighting distance cannot be achieved by the Watchman/Lookout and they cannot provide ample time/warning to all members of the Mobile Work Crew, a higher form of protection (e.g., Foul Time, Exclusive Track Occupancy,

or Inaccessible Track) must be used to ensure the safety of all Roadway Workers.

17.22.7.6 Roadway Workers in Charge must use the Need vs. Speed Chart and track segment speeds listed in the Track Access Guide to determine necessary sight distance vs. rail vehicle speeds to ensure ample time/warning is provided.

~~17.22.1 Advanced Mobile Flagging protection is the use of Watchman/Lookouts assigned to a Mobile Work Crew in conjunction with an additional flagger positioned at the station in advance of the Mobile Work Crews.~~

~~17.22.2 A Watchman/Lookout must be a minimum of 50 feet in advance of the Mobile Work Crew.~~

~~17.22.3 The Advance Mobile Flagger is an assigned Roadway Worker positioned at the end of a platform (eight (8) car marker or end gate) in the direction of normal travel for rail vehicles.~~

~~17.22.4 RWICs are to use the Need vs. Speed Chart to determine sight distance vs rail vehicle speeds to provide Ample Time/Warning.~~

~~17.22.5 If proper sighting distance cannot be achieved for the work crew to reach a place of safety in Ample Time/ Warning, then a higher form of protection (e.g., Foul Time, Exclusive Track Occupancy, or Inaccessible Track) must be used.~~

~~17.22.6 Advanced Mobile Flagging Procedures:~~

~~a. The RWIC will conduct a Roadway Job Safety Briefing prior to entering the roadway and assign the Advanced Mobile Flagger(s) and Watchman/ Lookout(s).~~

~~b. The RWIC will contact the Rail Traffic Controller and perform a radio check establishing positive communication.~~

~~c. The Advanced Mobile Flagger is required to follow PPE guidelines per the Minimum PPE Standard for on-track safety.~~

~~d. In addition to the PPE required, the following equipment is also required when performing the duties of an Advanced Mobile Flagger:~~

~~• WMATA approved flashing amber lantern/Eflare and orange flag,~~

~~• WMATA approved and calibrated working radio,~~

~~• WMATA approved air horn and whistle.~~

~~e. Under the direction of the RWIC, the Advanced Mobile Flagger will position themselves at the next station ahead (in the direction the Mobile Work Crew will be walking). Advanced Mobile Flaggers will take their position at the end of the platform (eight (8) car marker or end gate) in the direction the train is traveling, and on the track the Mobile Work Crew is inspecting.~~

~~f. Once the Advanced Mobile Flagger has taken their position on the platform ahead of the Mobile Work Crew, they will turn on and place their flashing amber lantern/E-flare into its base and position it at the end of the platform (eight (8) car marker or end gate area) in the direction of rail vehicle movement, on the track their crew is inspecting or working on. The Advanced Mobile Flagger shall always hold the orange flag in their hand while they are on duty.~~

~~g. Advanced Mobile Flaggers must establish positive communication, via WMATA calibrated radio, to notify the RWIC that they are in place and the flashing amber lantern/E-flare positioned and Orange Flag in their possession.~~

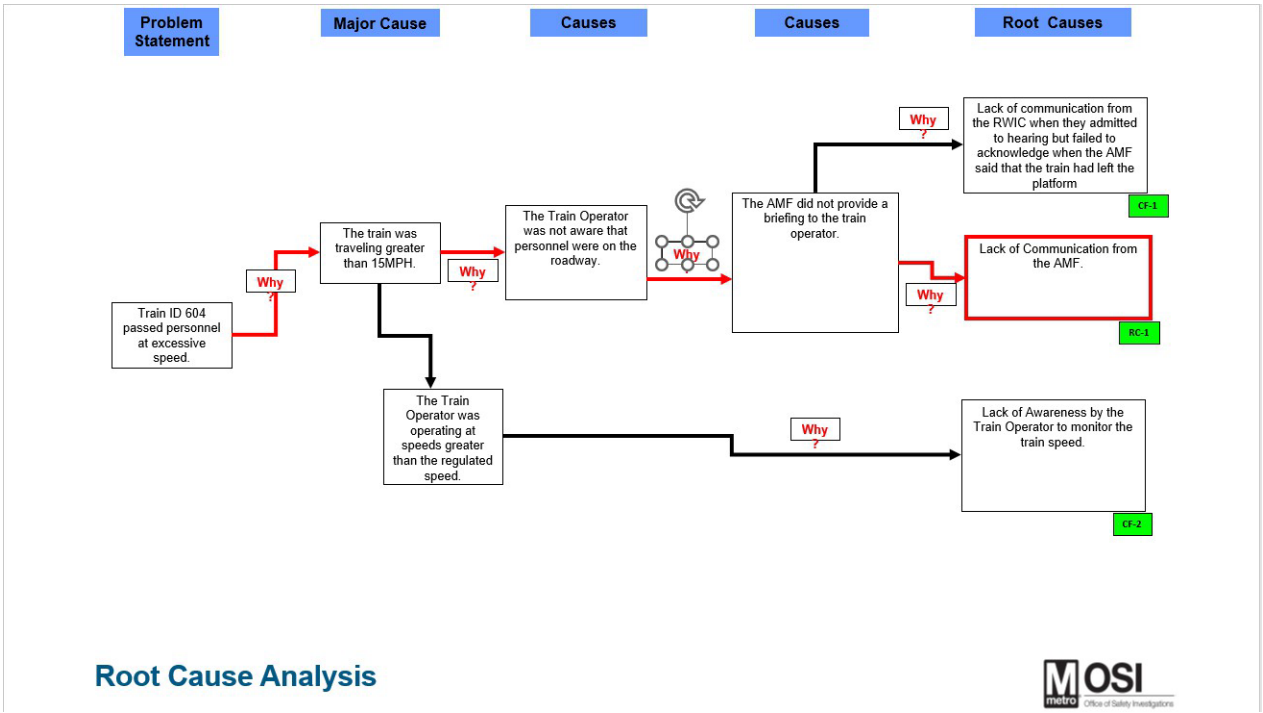
h. After receiving confirmation that the Advanced Mobile Flagger is in position, the RWIC will request permission from the Rail Traffic Controller to enter the roadway.
i. The RWIC shall request the location of any rail vehicles on the roadway that may currently be operating or stopped between the station where the Advanced Mobile Flagger is positioned and the station where the Mobile Work Crew is preparing to enter the roadway.
j. Once the Rail Traffic Controller gives the RWIC permission to enter the roadway, the RWIC will note their "On Track Time" given by the Rail Traffic Controller on their Roadway Job Safety Briefing form.
k. Once the Rail Traffic Controller gives permission, and before the Mobile Work Crew enters the roadway, the RWIC will notify the Advanced Mobile Flagger to begin Advanced Mobile Flagging operations.
l. As the rail vehicle approaches, the Advanced Mobile Flagger is to present the orange flag toward the Rail Vehicle Operator and confirm the amber lantern/E-flare is visible to ensure the rail vehicle comes to a complete stop at their location.
m. If the Advanced Mobile Flagger hears multiple horn blasts from a Class 1 rail vehicle, indicating the vehicle is not planning to service the station, the Advanced Mobile Flagger must make every effort, to stop the rail vehicle by continuously displaying a stop hand signal using the orange flag.
n. If any rail vehicle fails to stop at the Advanced Mobile Flagger 's location and is proceeding towards the Mobile Work Crew, the Advanced Mobile Flagger 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 Advanced Mobile Flagger's alarm to the approaching rail vehicle, the Advanced Mobile Flagger shall warn the Mobile Work Crew utilizing their air horn and whistle in short rapid blasts. The incident must be reported to the Rail Traffic Controller, at the first available opportunity, and an investigation by the Department of Safety shall be completed.
o. Once the Rail Vehicle is stopped and the Rail Vehicle Operator has initiated and confirmed the train doors have opened on the platform side, the Advanced Mobile Flagger will provide face-to-face instructions to the Rail Vehicle Operator. Advanced Mobile Flaggers shall read the script as follows: "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."
p. A cell phone can only be used by the Advanced Mobile Flagger or the Mobile Work crew in an emergency. All other cell phone use on the roadway will comply with WMATA Electronic Device Policy/Instruction.
q. If the Advanced Mobile Flagger is not in position at the eight (8) car marker, or a distraction requires them to leave their position, the Roadway Worker In Charge (RWIC) of the Mobile Work Crew must be notified by the assigned Advanced Mobile Flagger and clear the crew from the Roadway prior to the Advanced Mobile Flagger leaving their assigned position. The Advanced Mobile Flagger must never leave their position while the Mobile Work Crew is still on the roadway.
r. When Foul Time procedures are in effect, the RWIC shall inform the Advanced Mobile Flagger to hold the rail vehicle until Foul Time is relinquished and the Advanced Mobile Flagger procedures can resume.
s. Upon entering the roadway, the RWIC will position Watchman/Lookout(s) a minimum of 50 feet in advance of the Mobile Work Crew.

~~t. Once the RWIC and the Mobile Work Crew reaches the platform where the Advanced Mobile Flagger is set up, the RWIC repeats this process until the tasks of the Mobile Work Crew are complete.~~

Document 13 - PO-23-21 Changes to AMF Procedures, Page 7 of 7

Drafted By: SAFE 709 – 03/27/2024
Reviewed By: SAFE 707 – 03/27/2024
Approved By: SAFE 707 – 03/27/2024

Appendix D - Root Cause Analysis



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

FINAL REPORT OF INVESTIGATION A&I E24156

Date of Event:	February 27, 2024
Type of Event:	O-23: Improper Roadway Worker Protection
Incident Time:	11:11 hours
Location:	Rhode Island Avenue Station, Track 2
Time and How received by SAFE:	11:18 hours – MAC Desk
WMSC Notification Time:	11:50 hours
Responding Safety Officers:	None
Rail Vehicle:	Train 805 (**L**3209/08**X**3200/01**X**3154/55**X**3272/73)
Injuries:	None
Damage:	None
Emergency Responders:	None
SMS I/A Number	20240227#115062MX

February 27, 2024
Table of Contents

Abbreviations and Acronyms

AIMS	Advanced Information Management System
AMF	Advanced Mobile Flagger
ARS	Audio Recording System
ATC	Automatic Train Control
CCTV	Closed-Circuit Television
CMOR	Office of the Chief Mechanical Officer
IIT	Incident Investigation Team
MOR	Metrorail Operating Rulebook
NOAA	National Oceanic and Atmospheric Administration
RJSB	Roadway Job Safety Briefing
RTC	Rail Traffic Controller
RTRA	Office of Rail Transportation
RWIC	Roadway Worker In Charge
RWP	Roadway Worker Protection
SAFE	Department of Safety
SMS	Safety Measurement System
VMS	Vehicle Monitoring System
WMATA	Washington Metropolitan Area Transit Authority
WMSC	Washington Metrorail Safety Commission

Executive Summary

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

On Wednesday, February 27, 2024, at 10:11 hours, an Office of Track and Structures (TRST) Roadway Worker In Charge (RWIC) contacted the Radio Rail Traffic Controller (RTC) to request permission to conduct a switch inspection at Brentwood Yard and needed to access tracks 1 and 2.

The RWIC informed the Radio RTC that they had an Advanced Mobile Flagger (AMF) stationed at NoMa Station on track 1 and an AMF at Rhode Island Avenue Station on track 2 as their form of protection while they were working.

The AMFs were positioned at their respective locations and were waiting to begin AMF duties. Train ID 805 (L3209/08X3200/01X3154/55X3272/73), an eight-car non-revenue consist, was being transported from Glenmont Yard to Brentwood Yard for collector shoe inspection. Train ID 805 entered Rhode Island Avenue Station platform limits traveling at the required non-revenue speed of 25 MPH, but the Train Operator failed to sound the train horn.

The AMF was located at the 8-car marker on track 2, however they were not properly positioned to flag the train to stop. When the AMF realized that Train ID 805 was not going to stop, the AMF began to wave their hands in order to gain the attention of the Train Operator to stop the train. Train ID 805 came to a complete stop 194 feet beyond the 8-car marker, the train did not encounter any personnel on the roadway.

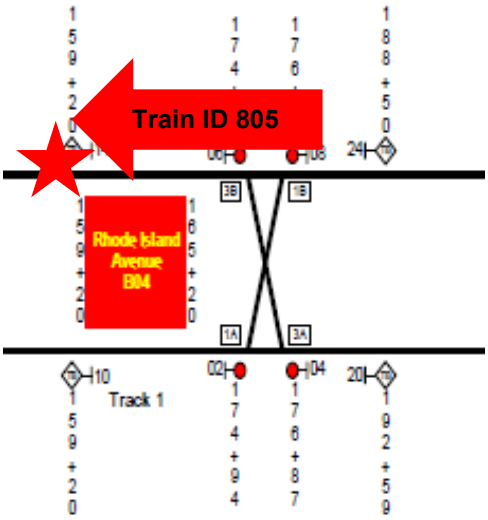
The Radio RTC instructed Train ID 805 to continue into Brentwood Yard where the Train Operator was removed from service.

The probable cause of the Improper Roadway Worker Protection (RWP) event on February 27, 2024, at Rhode Island Avenue Station was the Train Operator's lack of awareness when they did not observe the AMF positioned on the platform at the 8-car marker with the amber lanterns deployed. Additionally, the Train Operator failed to sound the horn as the train entered the platform limits since the train was in non-revenue service.

Incident Site

Rhode Island Station is an outdoor aerial station with a center platform and direct fixation tracks. There is an interlocking on the outbound end of the station.

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

Upon receiving notification of the Improper Roadway Worker Protection event at Rhode Island Avenue Station on February 27, 2024, 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 preliminary investigative methodologies included the following:

- Site assessment through video and document review
- Formal Interviews – SAFE interviewed two individuals as part of this investigation. The interviews included persons present at, during, and after the incident, those directly involved in the response process, and representatives from the Washington Metrorail Safety Commission (WMSC). SAFE interviewed the following individuals:
  - Train Operator – Train ID 805
  - AMF
- Informal Interviews – Collected through conversations with individuals during the investigation to provide background and supporting information. Written statements were reviewed from personnel present during the event.
- Documentation Review – A collection of relevant work history information and process documentation contained in Metro systems of record. These records include:
  - Metrorail Operating Rulebook (MOR)

- National Oceanic and Atmospheric Administration (NOAA)
- Train Operator 30 Day Work History
- Train Operator Written Statement
- Train Operator's Manifest
- RTRA Post-Incident Interview Questionnaire
- Roadway Job Safety Briefing (RJSB) Form

- System Data Recording Review – A collection of information contained in Metro Data Recording Systems. This data includes:
  - Audio Recording System (ARS) playback, include OPS 1 Radio, Brentwood Tower, Ops.1 Phone
  - Closed-Circuit Television (CCTV)
  - Vehicle Monitoring System (VMS) Data

Investigation

On Tuesday, February 27, 2024, at 10:11 hours, a TRST RWIC contacted the Radio RTC to request permission to conduct a switch inspection in Brentwood Yard and required access tracks 1 and 2.

The RWIC informed the Radio RTC that an AMF was positioned at NoMa Station on track 1 and a second AMF at Rhode Island Avenue Station on track 2 as protection while they were working. At 10:15 hours, the Radio RTC granted the RWIC permission to enter the roadway to conduct their switch inspection.

The AMFs were positioned at their respective locations and were waiting to begin AMF duties. At 10:20 hours, the AMF located at Rhode Island Station, track 2, started AMF duties.

The Audio Recording System (ARS) revealed that at 10:56 hours, the Train Operator of Train ID 805 contacted the Radio RTC on Radio Ops. 1 and advised that they were transporting an eight-car non-revenue consist (L3273-72x3155-54x3201-00x3208-09T) from Glenmont Yard to Brentwood Yard for a collector shoe inspection.

The Radio RTC acknowledged the transmission, and Train ID 805 proceeded towards Brentwood Yard. At 11:07 hours, Train ID 805 entered the Rhode Island Avenue Station platform limits, traveling at the required non-revenue speed of 25 MPH. However, the Train Operator failed to sound the train horn. The AMF was located at Rhode Island Avenue Station at the 8-car marker on track 2; however, they were not properly positioned to flag the train to stop. The AMF had the flag in their pocket when the train initially entered the platform limits.

The AMF had deployed the amber lantern at the 8-car marker, and the orange flag was in their pocket as Train ID 805 approached the end of the platform.

The Closed-Circuit Television (CCTV) revealed that the AMF began to wave their hands to gain the attention of the Train Operator to stop the train. Train ID 805 came to a complete stop 194 feet beyond the 8-car marker, the train did not encounter any personnel on the roadway.

The Radio RTC instructed Train ID 805 to continue into Brentwood Yard where the Train Operator was removed from service.

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

Time	Description
10:11:57 hours	TRST RWIC: Contacted the Radio RTC and requested permission to conduct a switch inspection at Brentwood Yard, they would have to access tracks 1 and 2, and would have an AMF at NoMa Station on track 1, and one at Rhode Island Avenue Station on track 2; then advised that a RJSB was completed. Radio RTC: Gave 100% repeat back and instructed to go direct with the AMFs. [Ops. 1]
10:12:47 hours	TRST RWIC: Contacted both AMFs directly and they both reported in place at their respective locations. [Ops. 1]
10:15:26 hours	Radio RTC: Granted TRST RWIC permission to enter the roadway at CM B1 134+00 to perform a switch inspection and instructed to contact Central when they switch to track 2. TRST RWIC: Gave a 100% repeat back. [Ops. 1]
10:21:04 hours	TRST RWIC: Contacted the AMF at Rhode Island Avenue Station and advised that personnel were on track 2 and to begin AMF duties. TRST AMF: Advised they were at Rhode Island Avenue Station and ready to flag. [Ops. 1]
10:39:40 hours	ATC RWIC: Contacted the Radio RTC and requested permission to enter the roadway by way of an access gate for shunt verification, and they were using AMF protection in conjunction with foul time from CM B2 156+00 – B2 204+00. Radio RTC: Gave 100% repeat back and instructed to go direct with the AMF. [Ops. 1]
10:41:18 hours	ATC RWIC: Contacted the AMF to verify that they were in position at the 8-car marker at Rhode Island Avenue Station on track 2. ATC AMF: Responded they were located at the 8-car marker, at Rhode Island Avenue Station on track 2 and ready to flag. [Ops. 1]
10:48:25 hours	Radio RTC: Granted the ATC RWIC permission to enter the roadway using the access gate and instructed them to go direct with their AMF at Rhode Island Avenue Station. ATC RWIC: Contacted the AMF. ATC AMF: Advised that they were in place and ready to flag. [Ops. 1]
10:56:01 hours	Train ID 805: Advised that 8 cars and was being transported to Brentwood Yard. Radio RTC: Acknowledged. [Ops. 1]
11:11:49 hours	AMF: Reported, “Emergency, emergency, emergency, the train did not stop at the 8-car marker at Rhode Island Avenue Station, track 2”. Radio RTC: Gave a 100% repeat back. [Ops. 1]
11:12:29 hours	Button RTC: Contacted Brentwood Tower, instructed them to route Train ID 805 into the yard, and advised they did not stop for the AMF briefing. [BW Tower Phone]
11:14:17 hours	Radio RTC: Instructed the Train Operator to switch to the Tower Ops , and to landline Central once they get settled in the Yard. Train ID 805: Gave 100% repeat back. [Ops. 1]

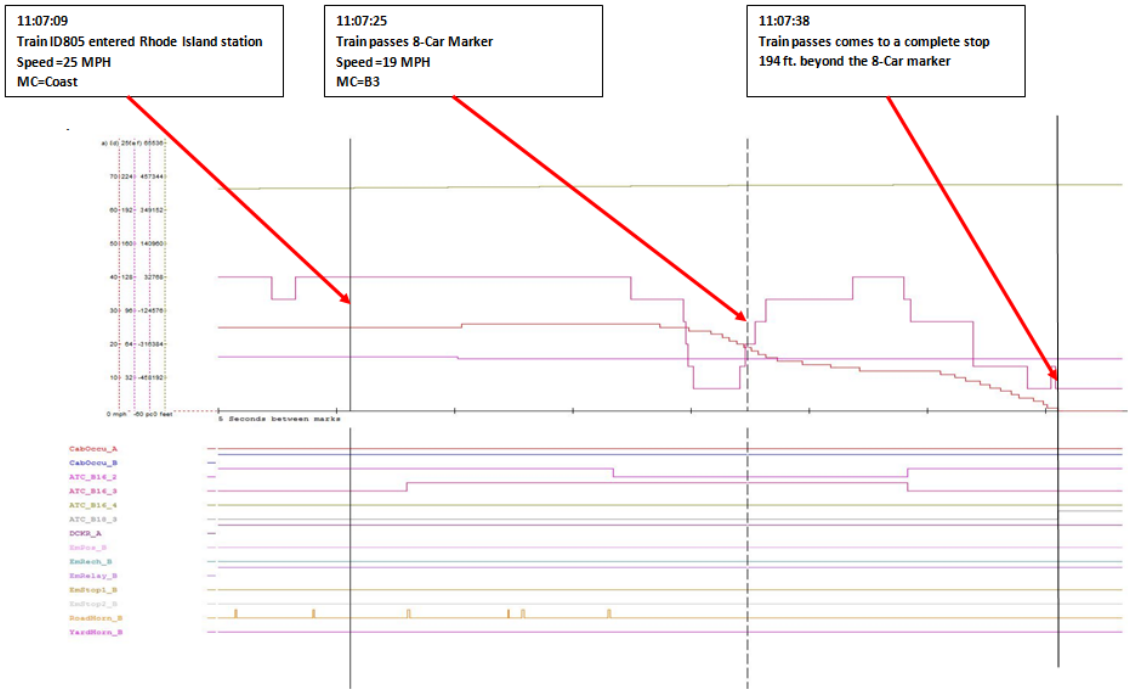
***Note: Times above may vary from other systems’ timelines based on clock settings and reporting sources.*

IIT completed a data download and analysis for the consist. Train ID 805 entered Rhode Island Avenue Station on Track #2 at a speed of 25 MPH with the Master Controller in the Coast position.

The Master Controller was moved to the B1 Braking position 165 feet before the 8-car marker, then to the B5 Braking position 68 feet before the 8-car marker. The train passed the 8-car marker at a speed of 19 MPH, with the master controller moved in the B3 Braking position. The Master Controller was placed in a B1 position, then in the coast position 92 feet beyond the 8-car marker; the train speed at that time was 13 MPH. The Master Controller was placed at B4 Braking 17 feet after the 8-car marker at a speed of 9 MPH, and eventually coming to a complete stop 194 feet beyond the 8-car marker. The train failed to stop at the 8-car marker for the Advanced Mobile Flagger briefing.

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

Time	Description of Events
11:07:08.760	Train ID 805 entered Rhode Island Avenue Station. Train speed 25 MPH, with the Master Controller moved to Coast position.
11:07:20.556	Master Controller moved to a B1 Braking Braking position, Train speed was 26 MPH, 165 feet before the 8-Car marker.
11:07:23.208	Master Controller moved to a B5 Braking position, Train speed was 24 MPH, 68 feet before the 8-Car marker.
11:07:25.480	The train passed the 8-Car marker. Train speed was 19 MPH, and the Master Controller was in the B3 Braking position.
11:07:26.244	Master Controller placed in the B1 Braking position, Train speed was 16 MPH, 18 feet beyond the 8-Car marker.
11:07:29.924	Master Controller placed in the Coast position, Train speed was 13 MPH, 92 feet beyond the 8-Car marker.
11:07:32.352	Master Controller placed in B2 Braking position, train speed was 12 MPH.
11:07:34.972	Master Controller placed in B4 Braking position, train speed was 9 MPH, 17 feet beyond the 8-Car Marker.
11:07:38.551	Master Controller was placed on B5 as the Train came to a complete stop 194 feet beyond the 8-Car marker.
11:12:36.184	The Master Controller moved to the P2 Power position, and the train began to move.
11:12:40.116	The Road Horn sounded 2 times, 6 feet after moving from stop.



Office of Rail Transportation (RTRA)
Adopted from RTRA report:

The Train Operator received discipline under the Disciplinary Administration Program, a Written Reprimand, and Refresher Training as a result of this event.

See Appendix D: RTRA Investigative Report

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

<u>Train Operator – Train ID 805</u>

- The Train Operator stated that they were working yard duties on the day of the incident.
- The Train Operator stated that they were transporting an 8-car train from Glenmont Yard to Brentwood Yard.
- The Train Operator stated that when they received permission to enter the mainline, they did not hear the RTCs make any roadway announcements to let the Operators know where the personnel were.
- The Train Operator stated that they recalled entering Rhode Island Avenue Station traveling at 25 MPH or lower.
- The Train Operator stated that they did not remember seeing the flashing amber lantern at the 8-car marker.
- The Train Operator stated that they saw personnel near the 8-car marker and one appeared to be an AMF.
- The Train Operator stated that they did not think they had to stop at the 8-car marker.

- The Train Operator stated that they noticed the AMF waving at them, so they began to stop the train.

AMF

- The AMF stated they have been serving as an AMF for three months.
- The AMF is a contractor for Rail Pro.
- The AMF was fully alert when the incident occurred.
- The AMF was flagging for a TRST crew conducting an interlocking inspection at Brentwood Yard.
- The AMF noticed the train was not slowing down to stop at the 8 car-marker.
- The AMF waved violently at the Train Operator to get them to stop.
- The AMF mentioned they do not use hand signals with the Train Operators instead they use the flag if they need to stop the Train Operator.
- The AMF communicated, “emergency, emergency, emergency” via the radio when the Train Operator did not stop.

Weather

On February 27, 2024, at the time of the incident, NOAA recorded the temperature as 60.8°F, with clear skies, winds 10 mph, and 48.03% humidity. The weather was not a contributing factor in this incident. (Weather source: NOAA) – Location: [Washington, DC].

Related Rules and Procedures

- **5.5.1:** Hand signal indications shall be given facing the oncoming vehicle from a point where they may be plainly seen, in a manner that can be understood and sufficiently ahead of time to permit the train to comply.

- **5.5.2:** Rail Vehicle movement must be stopped if:
  - There is doubt of the meaning of a signal,
  - There is doubt for who the signal is intended, or
  - The signal disappears from view.

- **5.5.3:** Rail vehicle operators shall stop their vehicles immediately when observing anyone violently waving any object on or near the track.

- **8.10.1:** When an Advanced Mobile Flagger is present, Rail Vehicle Operators MUST come to a complete stop at the end of the station platform (eight (8) car marker or end gate area).

- **17.8.7: a.** Rail Vehicle Operators will be attentive to all Rail Traffic Controller announcements regarding the location(s) of fixed work zones and mobile work crews within their routes.

- **17.22.6: f.** The Advanced Mobile Flagger shall always hold the orange flag in their hand while they are on duty.

- **17.22.6: l.** As the rail vehicle approaches, the Advanced Mobile Flagger is to present the orange flag toward the Rail Vehicle Operator and confirm the amber lantern/E-flare is visible to ensure the rail vehicle comes to a complete stop at their location.

- **17.22.6: m.** If the Advanced Mobile Flagger hears multiple horn blasts from a Class 1 rail vehicle, indicating the vehicle is not planning to service the station, the Advanced Mobile Flagger must make every effort, to stop the rail vehicle by continuously displaying a stop hand signal using the orange flag.

- **17.22.6: n.:** If any rail vehicle fails to stop at the Advanced Mobile Flagger's location and is proceeding towards the Mobile Work Crew, the Advanced Mobile Flagger must immediately contact the RWIC and advise them to clear personnel from the roadway, alerting them to the approaching rail vehicle.

Human Factors

Train Operator

Evidence of Fatigue

We evaluated conditions at the time of the incident to distinguish whether evidence of fatigue was present. No video of the involved person was available to ascertain whether evidence of fatigue was present. The Train Operator reported feeling moderately alert at the time of the incident. The Train Operator 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 Train Operator reported some variation in the sleep schedule in the days leading up to the incident. The Train Operator recently changed their schedule from working night shift to working day shift in the days leading up to the incident. The Train Operator was awake for four hours at the time of the incident. The Train Operator reported seven hours of sleep in the 24 hours preceding the incident. The off-duty period was 16 hours which provides an opportunity for 7-9 hours of sleep. This was a comparable amount of sleep as the Train Operator's usual workday sleep durations. The employee reported no issues with sleep.

Post-Incident Toxicology Testing

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

Findings

- A TRST work crew was conducting a switch inspection at Brentwood Yard.
- The AMF stationed at Rhode Island Avenue Station, track 2 was a Rail Pros employee.
- Train ID 805 was being transported from Glenmont Yard to Brentwood Yard for collector shoe inspection.
- The Train Operator of Train ID 805 recently certified as a Train Operator.
- The Train Operator reported that they misunderstood the radio communications on Ops. 1 prior to arriving at Rhode Island Avenue Station.
- The Train Operator failed to blow their horn as they entered Rhode Island Avenue Station as a non-revenue train.
- The Train Operator identified personnel near the 8-car marker but did not identify the flashing amber lantern at the 8-car marker.
- Train ID 805 failed to stop at the 8-car marker to be briefed by the AMF.
- The AMF reported an emergency over Radio Ops 1 when Train ID 805 failed to stop.
- The AMF deployed a flashing amber lantern which was positioned at the 8-car marker.
- The orange flag was in the pocket of the AMF as Train ID 805 approached the 8-car marker.
- The AMF did not provide proper hand signals to stop the train.
- Train ID 805 stopped 194 feet beyond the 8-car marker.

Immediate Mitigation to Prevent Recurrence

- In adherence to Standard Operating Procedure 102-1, which outlines the protocol for Removing an Employee from Service for involvement in an operational safety event, the Radio RTC dispatched a Rail Supervisor to relieve the Train Operator from duty for post-incident testing.
- In accordance with the Office of the Chief Mechanical Officer CMOR IIT Operations Administrative Policy (OAP) 102.06, the MICC promptly removed Train ID 805 from revenue service for post-incident investigative measures. This action adhered to the Rail Vehicle Event Investigation Policy, ensuring a comprehensive incident examination.
- The AMF was removed from service following the incident.

Probable Cause Statement

The probable cause of the Improper Roadway Worker Protection (RWP) event on February 27, 2024, at Rhode Island Avenue Station was the Train Operator's lack of awareness when they did not observe the AMF positioned on the platform at the 8-car marker with the amber lanterns deployed. Additionally, the Train Operator failed to sound the horn as the train entered the platform limits since the train was in non-revenue service.

Recommended Corrective Actions

Corrective Action Code	Description	Responsible Party	Estimated Completion Date
115062_SAFECAPS_RTRA_001	The Train Operator must complete refresher training emphasizing proper RWP procedures and entering a station as a non-revenue train.	RTRA SRC	Completed

Appendices
Appendix A – Interview Summaries

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

Train Operator – Train ID 805

The Train Operator is a WMATA employee with ten (10) years of experience and less than one year of experience as a Train Operator. The Train Operator certified in train operations in August 2023. The Train Operator holds an RWP Level 2, which expires in March 2024.

During the formal interview, the Train Operator stated that they previously worked as a Bus Operator, and the most challenging part of train operation training was learning about the train because they had no prior experience unlike when they became a Bus Operator.

The Train Operator stated that they were feeling moderately alert while operating the train. The Train Operator stated that no non-work-related circumstances affected their opportunity to get good sleep. The Train Operator stated that they did not experience any mechanical issues while operating Train ID 805.

The Train Operator stated that they were working yard duties on the day of the incident. The Train Operator stated that they were transporting Train ID 805 from Glenmont Yard to Brentwood Yard for collector shoe inspection.

The Train Operator stated that they received permission to enter the mainline, and they never heard the RTCs make roadway announcements to let the Operators know where personnel were located. The Train Operator stated that they were transporting Train ID 805 non-revenue so they were not making station stops.

The Train Operator stated that they recalled entering Rhode Island Avenue Station traveling at 25 MPH or lower. The Train Operator stated that when they entered the station, they did not see the flashing amber lantern at the 8-car marker. The Train Operator stated that they did notice personnel near the 8-car marker. The Train Operator stated that they heard radio communications that an ATC crew was being picked up, but it was the second train, and they thought the train was after them, so they stopped.

The Train Operator stated that when they passed the 8-car marker, they saw the AMF waving at them violently from their peripheral vision. The Train Operator stated that they immediately stopped the train and heard the AMF say “emergency, emergency, emergency” over the radio.

AMF

The AMF has been an employee with contractor, Rail Pro, for three (3) months and only serves as an AMF. The AMF holds an RWP Level 2, which expires in December 2024. The AMF does not have a set work location. The AMF completed the required AMF training and did not complete any post-incident testing. The AMF mentioned feeling fully alert right before the incident. The AMF did not have any issues with their sleep.

The AMF was knowledgeable of their roles and responsibilities as an AMF. The AMF stated they needed an e-lantern, safety vest, orange flag, and a script to read to the Train Operator to perform their duties. They completed AMF training with WMATA and Rail Pro. They did not experience any radio communication issues on the day of the incident. The AMF’s assignment was to flag at

Rhode Island Avenue Station, on track 2 for TRST personnel performing interlocking inspections at Brentwood Yard. They said they conducted an RJSB on the day of the incident at Brentwood Yard. The AMF mentioned that non-revenue trains typically tap their horn as they enter the station. The AMF noticed the train was not going to stop after they went to get the script to read to the Train Operator and the train speed was not slowing. The AMF never gives hand signals to Train Operators but instead uses the flag to stop trains.

Appendix B – Roadway Job Safety Briefing Form

WMATA Roadway Job Safety Briefing Form

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

Part 1: General Job Briefing

1	Date: 2/27/24 Time: 07 : 30	RWIC: [redacted]
	RWIC Call #: 6155	RWIC Cell Phone #: [redacted]
2	Safety Contact: Importance of Mentoring	
	RWP Rule: 5.2.1	
3	Work Location: B99 mainline switches	
	Job Task(s): Switch inspection	
4	Worksite, Electrical, Chemical, or Environmental Hazards: Third rail Hazard	
5	PPE Inspected: ☑ Electronic Device Policy Reviewed: ☑ Radio Certification Date Inspected: ☑	
	RWP Stickers Inspected: ☐ Tools and Equipment Inspected: ☑ Radio Checks Performed: ☑	
	What Specialized PPE Will Be Used? Cell Phone	
6	Emergency Response Plan: Yard Parking lot	

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

**Track Time On/Off: 10:00 / 2:00 : / : , : / : **

7	Rail Line: B	Track Number(s): 1 & 2 Track Access Guide (TAG) Speed:
	Working Limits Chain Markers: B 127+00 TO B 114+07	
	OPS Radio Channel: 1	OPS Phone Number: [redacted]
	Place of Safety: Side of fence	Time Needed to Reach Place of Safety: 15 Sec
	Are There Red Hot Spots Within Your Working Limits? Yes ☐ No ☑	
	Red Hot Spot Chain Markers:	Red Hot Spot Hazard(s):
8	Form of RWP: IT ☐ ETO Authority ☐ Local Signal Control ☐ AMF ☑ FT ☑	
	RWP Notes:	
9	Advanced Mobile Flagger Call #(s) or Last Name(s): [redacted]	
	Advanced Mobile Flagger Placement:	
	Watchman/Lookout Placement:	
	Required Site Distance:	Watchman/Lookout Rotation Schedule:
10	Will There be a Speed Restriction on the Adjacent Track? Yes ☐ No ☑	
	How Will the Speed Restriction be Implemented?	
11	Will Class 2 Vehicles be Part of the Working Limits? Yes ☐ No ☑	
	# of Class 2 Vehicles:	Type of Class 2 Vehicles:

FORM-SAFE-SRM-001-00 52.002 06/22

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 ☐ Supervisory ☐		Hot Sticking Chain Markers:	
	Red/Supervisory Tag #:			
	Red/Supervisory Tag Holder:			
	Insulated Mat(s) Color Blue ☐ Red ☐ Green ☐ Orange ☐ Yellow ☐			
	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 ☐ No ☐			
	Crew Leader/EIC Call #(s):		Piggyback Work Area Chain Markers:	
	Piggyback Work Assignment(s):			

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

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

RWP Issues:	Worker Name(s):
	Was the GFC Issue Resolved? Yes ☐ No ☐

Part 4: Roadway Worker Acknowledgement

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

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

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

Part 5: RWIC Signature(s)

Additional RWIC Comments:		
RWIC Signature: [redacted]	RWIC Employee ID #: [redacted]	Date: 2/27/24
Relieving RWIC Name:	Relieving RWIC Employee ID #:	
Relieving RWIC Signature:	Date/Time: / / , :	
Relieving RWIC Call #:	Relieving RWIC Cell Phone #:	

FORM-SAFE-SRM-001-00

Appendix C – Train Operator Written Statement

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

Incident Information: This page must be completed for all incidents

Date	Incident Time	Time Reported:	Reported by: Customer ❑ Employee ❑ ROCC ❑ Other ❑
2/27/24	11:11	11:11	

Location

Station	Mezzanine #	Track #/Destination	Chain Marker/Signal Number
RIAVE	N/A	2	N/A

TYPE OF INCIDENT

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

WEATHER	LIGHT CONDITIONS (natural lighting)	LIGHTING (artificial lighting)
Clear ☒ Rain ❑	Dawn/Dusk ❑ Daylight ☒	Lights On ❑ Lights Off ❑
Snow ❑ Sleet/Ice ❑	Dark ❑ Tunnel/Underground ❑	Lights Not Working ❑

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

Elevator/Escalator#:	AFC #:	Room Number/Location:
N/A	N/A	

Failure Number(s):

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

Name of Responding Supervisor:	Name/Department of PLNT/AFC or other WMATA responder
[redacted]	ROCC

TRAIN INCIDENTS

Train ID	Destination	Car Numbers(list all cars in consist):	Lead Car:
005	Brentwood Yard	8	3073

Name of Responding Supervisor:	Name/Department of CMNT/TRST or other WMATA responder
[redacted]	

DESCRIBE THE INCIDENT: Include what you did to correct the problem and who you notified and when.

Describe any property damage and the extent of any injuries.

As I was Approaching the Platform I heard Central talking to ATC telling them NOT that train the Second One. I Look DWN to see some one talking w/ Central So I Assumed they JUST WANted to get on board the train SO I did my normal procedure reduce my Speed and tutt the horn thru Station I didnt realize they wanted me to stop Until I started to pass I then Stopped the train Central come over the air stop the train the train was already Stopped

Employee Completing Report

Employee (print)	Employee (sign)	Employee #	Date:
[redacted]	[redacted]	[redacted]	2/27/24

Division:	Run #	Block #	Assigned Days:
Glenmont	407	N/A	S/S

To Be Completed By Reviewing Manager

Supervisor Name (print)		Employee #	Date:
[redacted]	[redacted]	[redacted]	2/28/2024

Action taken/needed: Under Investigation

SMS Number: 20240227 # 115062MX

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

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

INVESTIGATION REPORT	DIVISION: Glenmont	GARAGE: N/A	FILE NO.: 20240227-016259

DATE OF OCCURRENCE:	TIME:	VEHICLE NO.:	RUN #	SHIFT:	BLOCK NO.:
February 27, 2024	11:12AM	3273X3155X3201X3208	Transport train	AM	

LINE:	LOCATION:	DESTINATION:
Red Line	Rhode Island Ave. Station Track #2	Brentwood Yard

TYPE OF CASE:	REPORTED BY:
Violation: MSRPH 1.46 & O.R. 3.29 & 3.87 Cardinal Rule 1.3	AMF PERSONNEL

NAME OF EMPLOYEE INVOLVED:	EMPLOYEE NO.:
[redacted]	[redacted]

NATURE OF OCCURRENCE: **RWP Violation (Failure to Stop at 8-car Marker for AMF)**

1. SUMMARY OF INVESTIGATION 2. STATEMENT OF EMPLOYEE 3. SUMMARY OF VIOLATION.
4. ANALYSIS OF FACTS / EVIDENCE IN SUPPORT OF RULE VIOLATION 5. ASSESSMENT OF DISCIPLINE

1.Train Operator [redacted], on Tuesday, February 27, 2024, at approximately 12:25pm, while operating Train ID 805 on Track #2 at Rhode Island Ave. Station in the direction of Shady Grove, RWP AMF procedures were in effect between Rhode Island Ave. Station and Na-Ma Gallaudet stations. Operator [redacted], you continued to by pass the station failing to stop at the (8) eight car marker to receive your instruction from the AMF that a work crew was working between Rhode Island Ave. Station and No-ma Gallaudet Station track#2. The AMF personnel was located at the (8) car marker Rhode Island Ave. Station track#2. The AMF personnel did attempt to stop you by giving the proper hand signals when realizing the train was not stopping. Operator [redacted] you then stopped your train for cars pasted Rhode Island Ave. Station. At that time ROCC was notified and you were removed from service and transported to medical for testing.

2. Train Operator [redacted], you stated in your incident report: "As I was approaching the platform I heard Central talking to ATC tell them not that train the second one. I look down to see someone talking with Central so I assume they just wanted to get on board the train so I did my normal procedure reduce my speed and tutt the horn thru station I didn't realize they wanted me to stop until I started to pass. I then stopped the train Central came over the air stop the train the train was already stopped."

ACTION TAKEN: **Level II Safety/Safety Operational Violation: Six (6) Points. Operator has received two (2) Positive Performance Points under the Disciplinary Administration Program. Four (4) points assessed, a Written Reprimand and Refresher Training with ROQT**

DATE:	ACTION TAKEN BY:	TITLE:
March 26, 24	[redacted]	Superintendent

EMPLOYEE SIGNATURE: Mailed Certified due to Employee out sick.

I certify that the above has been called to my attention, and I understand that my signature does not imply admission of guilt

EMPLOYEE MAY WRITE A STATEMENT IN THIS SPACE

4.21 (6/79) Orig: Office of Bus Service (BUSV) or RAIL Yellow: Employee
Green: Employee Division File Pink: Union Gold: Marketing/MARK

3. Based on the above investigation you violated the following MSRPH Rules:

Cardinal Rule 1.3- Acceptance of employment signifies the individual's willingness to comply with all WMATA's rules and regulations and orders; and to perform specific job duties and requirements in a safe, orderly and efficient manner.

G.R. 1.46- Employees shall not permit unnecessary conversation, reading, lounging or any other action or condition of mind to divert their attention from the safe and efficient performance of duty.

O.R. 3.29 – When in Mode 2 – Level 2, a Class I vehicle shall be operated at Restricted speed (15mph or less, or as directed by ROCC) on mainline being prepared to stop within half the range of vision, short of any train, obstruction, broken rail or improperly aligned switch. Speed is governed by Rule 3.84 for yard operations.

O.R. 3.87 – Class I and Class II Rail Vehicle Operators shall maintain a constant lookout in the direction in which their vehicles are moving. When Rail Vehicle Operators observe persons on the roadway, they shall:

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

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

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

c) Upon clearing the personnel on the roadway, return to the prescribed operating mode.

4. An investigation was conducted by Glenmont Division Managers. The investigation included your incident report, the Rail Operations Supervisor's Report, ROCC's incident report, an interview conducted with you, audio, VMS and TWC Data Reports and an interview with Safety personnel, which combined, revealed the following:

After departing Glenmont Station in the direction of Shady Grove, You were operating train ID 805 travelling non-revenue to Brentwood yard inbound on track#2. You entered Rhode Island Ave. Station and continued passed the AMF personnel that was posted at the 8 car marker on track#2. The AMF personnel attempted to stop your train by giving you the hand signals when realizing the train was not stopping. Operator [redacted] you then stopped the train 4 cars passed the AMF personnel, you were instructed by ROCC to continue to Brentwood yard when you were interviewed by Superintendent [redacted] regarding this incident and transported to medical for testing.

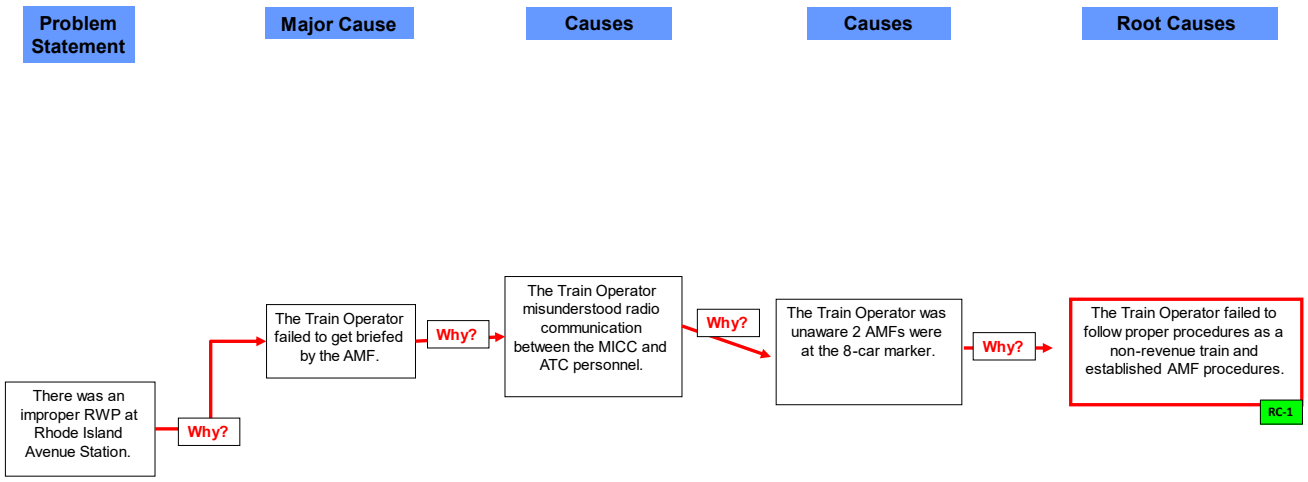
5. Operator [redacted] in determining the appropriate disciplinary penalty for your actions, the Division considered many factors. The records of WMATA indicate you have been an employee since June 24, 2005. The records indicate you have been a Train Operator since October 15, 2006. I have reviewed the circumstances of this violation and do not find any mitigating factors to consider that would impact on my decision of disciplinary action. Based upon the nature of this violation, established discipline for this type of violation, and your blatant disregard for WMATA's Safety Rules and Procedures, after receiving two (2) Positive Performance Points under the Disciplinary Administration Program, you are assessed four (4) points, a Written Reprimand and Refresher Training with ROQT. It is noted that you received Refresher Training TBD with ROQT. Be advised that any future operational/safety incidents of any nature or an accumulation of a total of 24 points under the Discipline Administration Program (DAP), will result in progressive disciplinary action to include Discharge from the Washington Metropolitan Area Transit Authority.

Post incident drug and alcohol testing results: _____ Positive __x__ Negative

EMPLOYEE NAME: _____

PAYROLL #: _____ DATE: _____

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 E23452

Date of Event:	July 4, 2023
Type of Event:	O-23: Improper RWP
Incident Time:	01:58 hours
Location:	College Park Station CM E1 500+00
Time and How received by SAFE:	02:18 Hours - Mission Assurance Coordinator (MAC)
WMSC Notification Time:	02:58 Hours
Responding Safety Officers:	WMATA: None WMSC: None Other: None
Rail Vehicle:	Train ID 502 (L6082-6083-6112-6113-6072-6073-6172-6172T)
Injuries:	None
Damage:	None
Emergency Responders:	None
SMS I/A Incident Number:	2023070706#109703

July 4, 2023
Table of Contents

Abbreviations and Acronyms

AIMS	Advanced Information Management Systems
ARS	Audio Recording System
CM	Chain Marker
CCTV	Closed-Circuit Television
FT	Foul time
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
RWIC	Roadway Worker in Charge
SAFE	Department of Safety
SPOTS	System Performance On-Time Management System
SMS	Safety Measurement System
WMATA	Washington Metropolitan Area Transit Authority
WMSC	Washington Metrorail Safety Commission

Executive Summary

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

On Tuesday, July 4, 2023, at 01:58 hours, a Department of Rail Transportation (RTRA) Supervisor was operating Train ID 502 (L6082-6083-6112-6113-6072-6073-6173-6172T) when they observed two roadway personnel on Track 1 holding onto Fiber Optic or telephonic cables between College Park Station (E09) and Chain Marker (CM) E1 500+00. The Train Operator transmitted an emergency message to the Rail Operations Control Center (ROCC) Radio Rail Traffic Controller (RTC), alerting them of the unexpected personnel on Track 1 near CM E1 500+00. The Radio RTC stated that when they questioned the Roadway Worker in Charge (RWIC) , the roadway crew stated that they were off Track 1 but looking through the breezeway to complete their tunnel light inspection. The Train Operator further said they observed both personnel on Track 1 as they approached CM E1 500+00 wearing their prescribed Protective Personal Equipment (PPE).

The Audio Recording System (ARS) playback revealed that at approximately 01:41 hours, a Power Department Low Voltage Technician, acting as the Roadway Worker in Charge (RWIC), contacted the Radio RTC via radio channel Ops 3 to request Foul Time (FT) for tunnel light inspections for themselves and one additional personnel for CM E2 491+00 to 493+00.

At 01:43 hours, the RTC granted FT for a tunnel light inspection on Track 2, from CM 491+00 to 493+00. The RWIC completed a 100% repeat-back of the instructions.

After Train ID 502 reported that personnel were on the roadway, the Radio RTC contacted the RWIC to ascertain their location and, once verified, directed them to a place of safety and to await further instructions.

At 02:01, the work crew transmitted that they were in a place of safety in Fan Shaft FE 13-E2, which is adjacent to College Park Station.

Both work crew members were removed from service and transported for post-incident testing and subsequent investigation.

There were no injuries because of this incident nor damage to any WMATA assets.

The probable cause of the Improper Roadway Worker Protection event at College Park Station (CM E1 500+00) on July 4, 2023, was the failure of the work crew to follow established rules and procedures regarding Foul Time protection. The personnel fouled Track 1 instead of Track 2, as instructed and protected. The work crew assessed the risk of looking across to Track 1 as low and encroached into the area without requesting a change in their Foul Time protection.

Incident Site

College Park Station Chain Marker E1 500+00

Field Sketch/Schematics

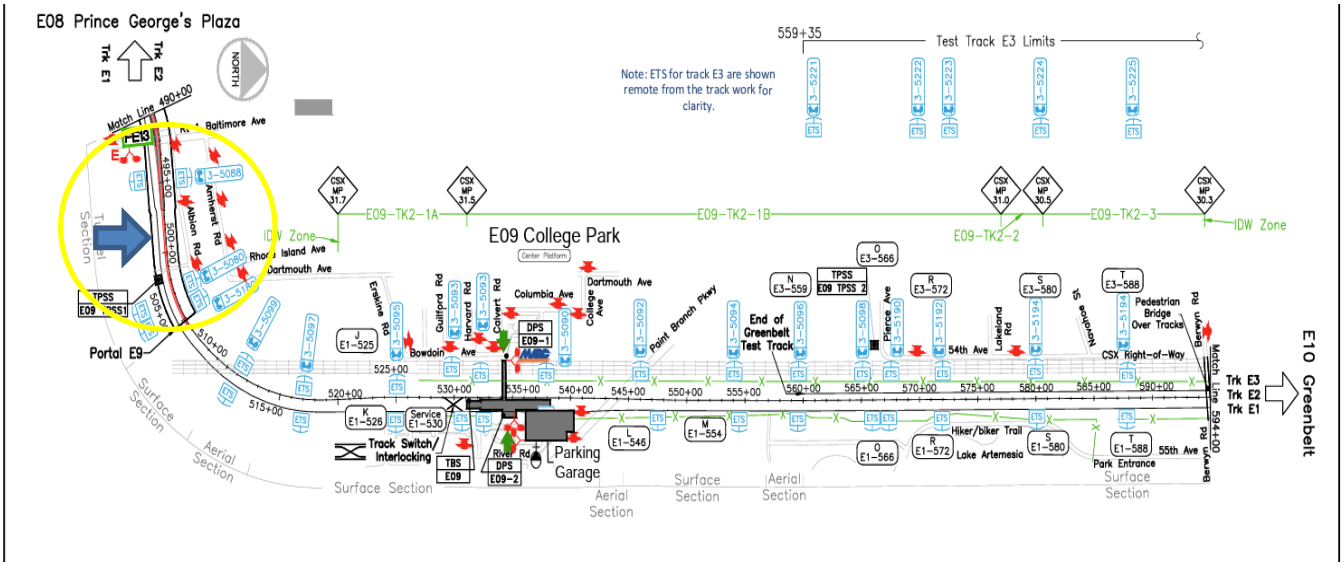


Figure 1 - Map of area with event location circled in yellow

Purpose and Scope

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

Investigation Methods

Upon receiving notification of the Improper RWP event near College Park Station, 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:

- Field Response and site assessment through video and document review.
- Informal Interviews – Collected through conversations with individuals during the investigation to provide background and supporting information. Written statements were reviewed by personnel present during the event.
    - Low Voltage Technician 1 (RWIC)
    - Low Voltage Technician 2
    - RTRA Supervisor (Operator of Train ID 502)
- 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:
    - Low Voltage Technician 1 (RWIC)
    - Low Voltage Technician 2

- Documentation Review – A collection of relevant work history information and process documentation contained in Metro record systems. These records include the following:
    - Metrorail Safety Rules and Procedures Handbook (MSRPH)
    - National Oceanic and Atmospheric Administration (NOAA)
    - Employee Training Records
    - Employee Certifications
    - Employee 30 Day Work History
    - Rail Operations Control Center (ROCC) Incident Report
    - Maximo Data

- System Data Recording Review – A collection of information contained in Metro Data Recording Systems. This data includes:
    - Audio Recording System (ARS) playback, including OPS 3 Radio and Landline Communications.
    - Advanced Information Management System (AIMS)
    - System Performance On-Time Summary (SPOTS)

Investigation

On Tuesday, July 4, 2023, at 01:58 hours, a Department of Rail Transportation (RTRA) Supervisor was operating Train ID 502 (L6082-6083-6112-6113-6072-6073-6173-6172T) when they observed two roadway personnel on Track 1 holding onto Fiber Optic or telephonic cables between College Park Station (E09) and Chain Marker (CM) E1 500+00. The Operator transmitted an emergency message to the ROCC RTC alerting the ROCC of unauthorized personnel on Track 1 near CM E1 500+00. The Radio RTC stated that when they questioned the Roadway Worker in Charge (RWIC), the roadway crew stated that they were off Track 1 but looking through the breezeway to complete their tunnel light inspection. The operator further said they observed both track personnel on Track 1 as they approached CM 500+00 wearing their PPE.

Prior to the event, at 01:41 hours, a Power Department Low Voltage Technician, acting as the RWIC for their work crew, contacted the Radio RTC via radio channel Ops 3 to request foul time for tunnel light inspections for themselves and one additional personnel for CM E2 491+00-493+00. At 01:43 hours, the Radio RTC granted FT for a Tunnel Light inspection on Track 2, from CM 491+00 to 493+00. Low Voltage Technician 1 completed a 100% repeat-back of instructions.

At 01:58 hours, Train ID 502 reported to the ROCC RTC via Ops 3 that there were personnel on the roadway in the vicinity of E1 CM 500+00. At 02:00, the Radio RTC contacted Low Voltage Technician 1 to ascertain their location and, once verified, directed them to a place of safety and await further instructions. At 02:01, the work crew reported that they were in an area of safety in Fan Shaft FE 13-E2, which is adjacent to College Park Station on the North end of Track 2.

At 02:00 hours, Train ID 502 arrived at College Park Station and had a dwell time of one minute and forty-three seconds. Train ID 502 departed College Park Station at 02:04 hours, verified by SPOTS.

During their interview, the Low Voltage Technician stated that the crew accessed the roadway by utilizing a fan shaft. The team members did not adhere to Safety Rule 4.183.2, which states that employees must contact the Maintenance Operations Center (MOC) Power Desk with the coordination with the ROCC to grant access to the roadway from any ancillary location or building.

Both work crew members were removed from service and transported for post-incident testing and subsequent investigation.

A team member served a five-day unpaid suspension as a result of this incident.

Both members are scheduled to attend a refresher RWP class to focus on MSRPH Rules 5.10.1, 5.13.5, and 4.183.2.

There were no reported injuries or damage as a result of this incident.

Chronological ARS Timeline

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

Time	Description
01:41:14 hours	Low Voltage Technician 1: Requested foul time for tunnel light inspection for themselves plus one for CM E2 491+00 – 493+00. [Ops3 Radio]
01:43:42 hours	Radio RTC: Granted foul time for tunnel light inspection, CM E2 491+00 – 493+00 only. Low Voltage Technician 1: Acknowledged and Repeated. [Radio Ops3]
01:58:19 hours	Train 502: Reported personnel on the Roadway at CM E1 500+00. Radio RTC: Contacted Low Voltage Technician 1 for their location and directed them to relocate to a place of safety. [Radio Ops3]
02:00:25 hours	Radio RTC: Instructed the Low Voltage Technician 1 and crew to clear the roadway. Low Voltage Technician 1: Acknowledged the transmission. [Radio Ops3]
02:00:35 hours	Buttons RTC notified the AOM. [Phone, Ops 3]
02:00:56 hours	Train 502: Arrived at College Park Station. [SPOTS]
02:01:27 hours	Low Voltage Technician 1: Reported they were in a place of safety- Fan Shaft FE 13- E2 and relinquished Foul Time. Radio RTC: Acknowledged and repeated. [Radio Ops3]
02:03:36 hours	Radio RTC: Requested the Train Operator of 502 to give them a landline after arriving at Greenbelt Station platform. Train 502: Acknowledged the transmission. [Radio Ops 3]
02:04:09 hours	Train 502: Tail cleared College Park Station. [SPOTS]
02:06:36 hours	AOM: Interviewed Low Voltage Technician 1 regarding the incident. Low Voltage Technician 1: Stated that they stuck their heads through the cut out to conduct an inspection but did not enter onto track 1. [Phone Ops3]
02:07:37 hours	Train 502: The Train Operator called the ROCC to inquire whether a report is required for this event. Buttons RTC: Placed the Train Operator on hold. [Phone Ops3]
02:10:12 hours	Train 502: Contacted the AOM and updated them with a timeline of events that transpired with the work crew. AOM: Asked what happened during the event. Train 502: Stated the work crew was standing on track 1 holding onto the wall, when the Train 502 noticed the work crew, the Train Operator sounded their horn, stopped their train and contacted the Radio RTC. AOM: Instructed the Train Operator to complete an Incident Report. [Ops3 Phone]
02:12:54 hours	AOM: Called Ops3 Button RTC to ascertain when Foul time was granted. [Phone Ops3]

Time	Description
02:19:34 hours	AOM: Called Low Voltage Technician 1 ’s supervisor to brief them on the incident. [Phone Ops3]

***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 employees. The interviews identified the following key findings associated with this event. The findings detailed below include reported information from involved personnel and may conflict with other data sources contained in the report.

RTRA Train Operator (Written Statement)

- Train Operator's Observation: The Train Operator reported that while operating train 502, they observed two personnel on the catwalk holding onto the cables as they approached. They immediately acted by sounding the horn and yard horn to warn the personnel and began stopping the train.

- Communication with ROCC: The Train Operator contacted the ROCC to inquire about personnel on the roadway. The ROCC responded that no one should be on Track #1. The ROCC then contacted the Power Personnel, who were supposed to be on Track #2, to determine their location.

- Confirmation of Personnel on Track #1: The Train Operator observed the personnel on Track #1 wearing yellow safety shirts and safety helmets.

- Clearing the Roadway: Following the communication with the ROCC, Personnel stated that they were clear of Track #1 and indicated that they were clearing the roadway as per the request of the ROCC. This information allowed the Train Operator to resume movement to the next station at restricted speeds.

- ROCC Instructions and Incident Report: The Train Operator received instructions from the ROCC via radio, requesting a landline. They were then instructed to complete an incident report, highlighting the importance of documenting the event for further investigation.

Low Voltage Technician 2 (Formal Interview)

- Tunnel Light Inspection: The Low Voltage Technician 2 was conducting a tunnel light inspection in the cut-away portion of the tunnel. They briefly extended their head through the tunnel's cutaway to assess the operability of the tunnel lights on Track 1. They stressed that they did not enter Track 1 or encroach upon the track during the visual inspection.

- Foul Time Authorization: The Low Voltage Technician had explicit authorization for foul time, specifically granted for conducting tunnel light inspections on Track 2. They said they followed the approved plan and adhered to the designated work area.

- Safe Entry Point: The Low Voltage Technician utilized a fan shaft room adjacent to the College Park Station to access the roadway. This ensured a safe and designated entry point for their activities.

  Radio Communication Challenges: The Low Voltage Technician experienced difficulties with radio communications during the incident. The point-to-point communication with

the RTC was unreliable, resulting in intermittent and disrupted exchanges throughout the night.

Low Voltage Technician 1 - RWIC (Formal Interview)

- Low Voltage Technician 1 stated that they contacted the ROCC to request foul time for CM 491+00 – 493+00 track 2 to conduct tunnel light inspections. They further said they were only granted foul time at 01:46 hours for track 2.

- Low Voltage Technician 1 stated that they walked from CM 530+00 to 533+00 and noticed two tunnel lights were inoperable; they further noted that they observed a cutaway between the tracks 1 and 2, and instead of requesting foul time for the additional Chain Markers from the ROCC, they poked their head through the cut away to inspect the tunnel lights on track 1.

- Low Voltage Technician 1 stated that while inspecting the tunnel lights from a place of safety in the cutaway, they observed a train approaching on track 1. They further placed themselves in a place of safety while the train passed their location. The Low Voltage Technician 1 stated that the train did not stop at any point to question them as to why they were on track 1.

- Low Voltage Technician 1 stated that the ROCC communicated with them to return to a place of safety and relinquish their foul time.

- Low Voltage Technician 1 stated that they returned to a place of safety in Fan Shaft room F-E-13 and, relinquished their foul time, and awaited further instructions.

- Low Voltage Technician 1 acknowledged that they violated RWP protections in this event.

Weather

On July 4, 2023, at the time of the incident, NOAA recorded the temperature as 70°F, with clear skies. The weather did not contribute to this incident (Weather source: NOAA) – Location: College Park, Maryland.

Human Factors

Low Voltage Technician 2

Fatigue

Evidence of Fatigue:

SAFE evaluated incident data for evidence of fatigue that may have been present at the time of the incident. No signs or symptoms of fatigue were detected from the available data. The Low Voltage Technician 2 reported feeling fully alert at the time of the incident. The Low Voltage Technician reported experiencing no symptoms of fatigue in the time leading up to the incident.

Fatigue Risk:

SAFE evaluated incident data for fatigue risk factors. Risk factors for fatigue were not identified. The incident time of day did not suggest an increased risk of fatigue-related impairment. The Low Voltage Technician reported a regular sleep schedule in the days leading up to the incident. The Low Voltage Technician performed overnight shift work in the days leading up to the incident. The Low Voltage Technician was awake for 5 hours at the time of the incident. The Low Voltage Technician reported 7 hours of sleep in the 24 hours preceding the incident. The off-duty period was 8 hours, providing an opportunity for 7 hours of sleep. This was more than a comparable amount of sleep to the Low Voltage Technician's regular workday sleep durations. The Low Voltage Technician reported no issues with sleep.

The 30-day work history was provided and analyzed. No overtime abuse or scheduling conflict was discovered.

Low Voltage Technician 1

Fatigue

Low Voltage Technician 1 was unable to recall their sleep pattern data for the period leading up to the event. SAFE could not gather essential information regarding fatigue factors. This lack of data precluded the ability to perform a comprehensive analysis.

Post-Incident Toxicology Testing

WMATA's Drug and Alcohol Program determined that the Personnel Involved complied with and were not in violation of the Drug and Alcohol Policy and Testing Program 7.7.3/6.

Training and Work History

The involved personnel were current with their training and certification for their positions. They had no prior history of RWP violations.

Related Rules and Procedures

5.10.1 RWP Level 2

RWP Level 2 is provided to all personnel for Limited Access to the Roadway. RWP Level 2 is also provided to contractors who will function as an Advanced Mobile Flagger (AMF). RWP Level 2 qualified personnel can perform the function of a Watchman/Lookout or AMF and shall remain subordinate to a RWP Level 4 RWIC. RWP Level 2 may serve as an escort in a rail yard. RWP Level 2 qualified personnel shall travel on the Roadway only from a place of safety and shall never enter the dynamic envelope of a Rail Vehicle without the use of Foul Time Protection.

5.13.5 Foul Time Protection (FT)

A method of RWP in which a qualified Level 2 or Level 4 Roadway Worker requests that ROCC Stop all rail vehicle movement in a specific area for a limited amount of time. FT is used to safely clear a **RED HOT SPOT** area or when additional RWP is required. FT can only be requested by a qualified Level 2 or Level 4 Roadway Worker.

Important: When there are **RED HOT SPOTS**, FT protection from ROCC must be obtained prior to moving through the area.

Mobile Work Crews must use an AMF in conjunction with FT.

FT may be granted to individuals who are RWP level 2 or RWP Level 4 qualified that are accessing rooms along the Roadway, to include vent shafts, who are not engaged in work activities.

Safety Rule 4.183.2.

When access to a customer station or any rail support or ancillary building is required during non-revenue service hours, authorized employees shall contact the MOC by telephone or radio and provide the following information:

- Reason for access.
- Name of the facility to be accessed.
- Approximate length of time the personnel will be in the facility.
- Specific location or description of the point of access.
- Specific location or description of the exit point if different from the access point.
- **Notice:** If WMATA personnel are in a rail facility when it closes, they shall follow the above procedures once the facility is closed.

Advanced Information Management System (AIMS)

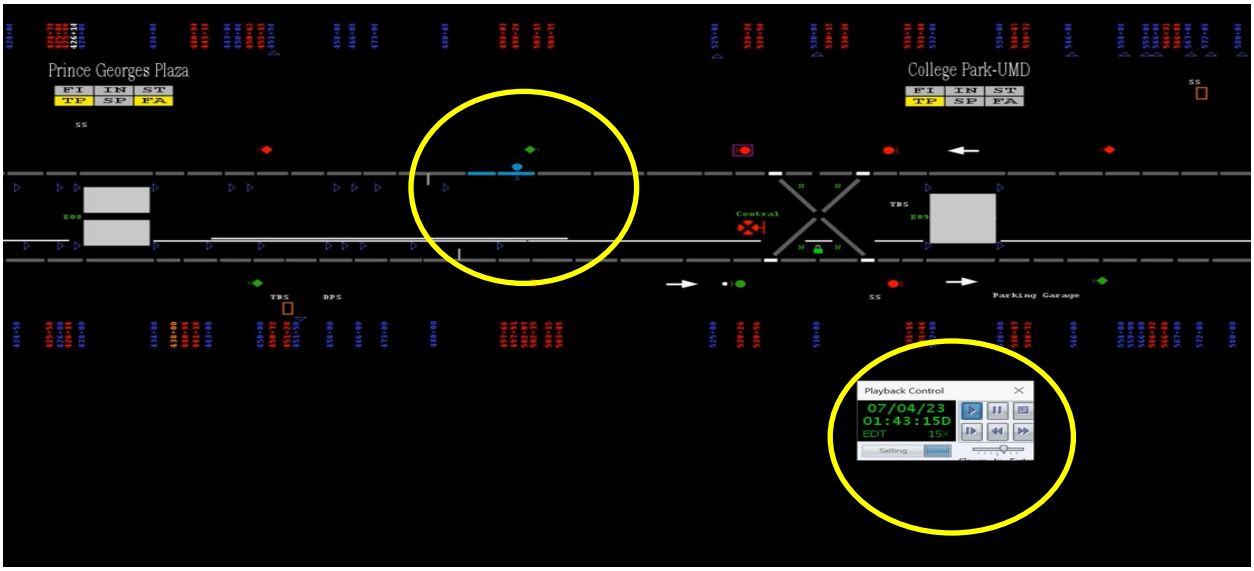
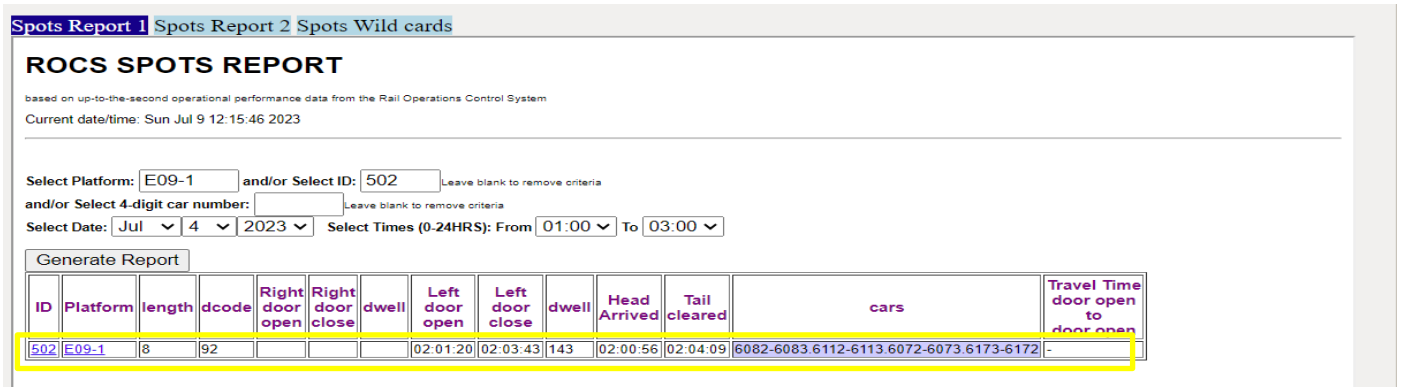


Figure 2 AIMS - Foul time Track #2 CM 491+00-493+00

Office of System Maintenance, Office of Radio Communications (COMM)

On July 12, 2023, COMR completed communication testing and determined that the radio checks performed from Prince George Plaza [E08] to College Park Stations [E09] were loud and clear.

System Performance On-Time Summary (SPOTS)



Spots Report 1 Spots Report 2 Spots Wild cards

ROCS SPOTS REPORT

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

Current date/time: Sun Jul 9 12:15:46 2023

Select Platform: E09-1 and/or Select ID: 502 Leave blank to remove criteria

and/or Select 4-digit car number: Leave blank to remove criteria

Select Date: Jul 4 2023 Select Times (0-24HRS): From 01:00 To 03:00

Generate Report

ID	Platform	length	dcode	Right door open	Right door close	dwell	Left door open	Left door close	dwell	Head Arrived	Tail cleared	cars	Travel Time door open to door open
502	E09-1	8	92				02:01:20	02:03:43	143	02:00:56	02:04:09	6082-6083.6112-6113.6072-6073.6173-6172	-

Figure 3 Train ID 502 at College Park Station

Findings

- The Low Voltage technicians were granted FT for their assigned work area, from CM E2 - 491+00 to CM 492+00. They did not request foul time to extend their work area to CM E1 500+00, leading to their unauthorized presence on Track 1.
- The work crew failed to notify MOC of their use of the fan shaft in order to access the roadway.
- The RWIC acknowledged that they went outside of their Foul Time protected area in order to perform a visual inspection of the lighting on Track 1.

Immediate Mitigation to Prevent Recurrence

- The RTC instructed both Low Voltage Technicians to move to a place of safety. This instruction aimed to ensure their activities' immediate cessation and mitigate any further potential safety risks.

- Both Low Voltage Technicians were promptly removed from service and taken for post-incident testing.
-

Probable Cause Statement

The probable cause of the Improper Roadway Worker Protection event at College Park Station (CM E1 500+00) on July 4, 2023, was the failure of the work crew to follow established rules and procedures regarding Foul Time protection. The personnel fouled Track 1 instead of Track 2, as instructed and protected. The work crew assessed the risk of looking across to Track 1 as low and encroached into the area without requesting a change in their Foul Time protection.

Recommended Corrective Actions

Corrective Action Code	Description	Responsible Party	Due Date
10973_SAFECAPS_LVEM_01	LVEM retraining for Low Voltage Technicians relating to MSRPH rule 5.13.5 Foul time Protection and 5.10.1 RWP level 2.	LVEM	Completed
10973_SAFECAPS_LVEM_02	Review the MOC POWR Desk script/checklist (or similar) for granting permission to enter the roadway from any ancillary building or location. (MSRPH – Roadway Safety Section K – 4.183.2)	LVEM	Completed
10973_SAFECAPS_LVEM_03	Review Safety Bulletin SB-23-01B7 – Roadway Worker Protection Awareness with personnel.	LVEM	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 conflict with the data contained in systems of record.

Train Operator (Written Statement)

The Train Operator noted that at approximately 01:40 hours, they were operating train 502 lead car 6082. The Train Operator noted that after leaving Hyattsville crossing, they resumed normal speeds of the railroad and observed two personnel on the catwalk holding on to the cables as they approached. The Train Operator stated that they began sounding the horn and yard horn to warn them and began to stop the train. The Train Operator noted that they contacted ROCC and asked if they had any personnel on the roadway. The Train Operator stated that the ROCC responded, “No one should be on track #1.”

ROCC then contacted the Power Personnel that was supposed to be on track number #2 and asked which track they were on because they were supposed to be on number #2. The Train Operator stated that the ROCC then asked my location, to which I replied track #1 at Chain Market E1 500+00. The Power Personnel responded that they were looking at track #1 through a breezeway and were not on track #1. The Train Operator stated that they observed the personnel’s whole bodies on track #1, and they were wearing yellow safety shirts and safety helmets. The Train Operator said that ROCC asked the power personnel multiple questions about their whereabouts.

At the end of the transmission, the Power Personnel stated they were clear of track number 1 and said they were clearing the roadway per the request of ROCC. The Train Operator noted that after they (Power Crew) stated they were clear, I began to move the train at restricted speeds to the next station. The Train Operator said that ROCC contacted them via the radio requesting a landline. They then instructed me to do an incident report.

Low Voltage Technician 2 (Formal Interview)

WMATA has employed the Low Voltage Technician for two years and has held their current position since employed. They hold RWP Level 2 certification, valid until 4/2024.

The Low Voltage Technician described the situation during the incident as follows:

They were present in the cut-away portion of the tunnel and engaged in a tunnel light inspection. While conducting the inspection, they briefly extended their head through the tunnel's cutaway to assess the operability of the tunnel lights, specifically on Track 1. They stressed that the Low Voltage Technicians did not enter the Track 1 area or encroach upon the track during the entire inspection process.

The Low Voltage Technician confirmed they had received explicit authorization for foul time, allowing them to conduct tunnel light inspections on the designated Track 2 side. By their account of events, they followed the approved plan accordingly.

To access the roadway, the Low Voltage Technician utilized a fan shaft room adjacent to the College Park Station, ensuring a safe entry point.

The Low Voltage Technician experienced difficulties with radio communications during the event. Specifically, the point-to-point communication with the Rail Traffic Controller (RTC) was found to be unreliable, resulting in intermittent and disrupted exchanges throughout the night. These communication challenges impacted the overall coordination and clarity of instructions during the incident.

Low Voltage Technician 1 (Formal Interview)

WMATA has employed the Low Voltage Technician 1 for ten years and has held their current position since employed. They hold RWP Level 4 certification, valid until 11/2023.

The Low Voltage Technician 1 described the situation during the incident as follows:

The Low Voltage Technician 1 stated they contacted the ROCC to request foul time for CM 491+00 – 493+00 track 2 to conduct tunnel light inspections. They further stated they were granted foul time at 01:46 hours for track 2 only. To access the roadway, the Low Voltage Technician utilized a fan shaft room adjacent to the College Park Station, ensuring a safe entry point.

The Low Voltage Technician 1 stated that they walked from CM 530+00 to 533+00 and noticed two tunnel lights were inoperable; they further stated that they observed a cutaway between tracks 1 and 2, and instead of requesting foul time for the additional Chain Markers from the ROCC, they briefly extended their head through the cut away to inspect the tunnel lights on track 1.

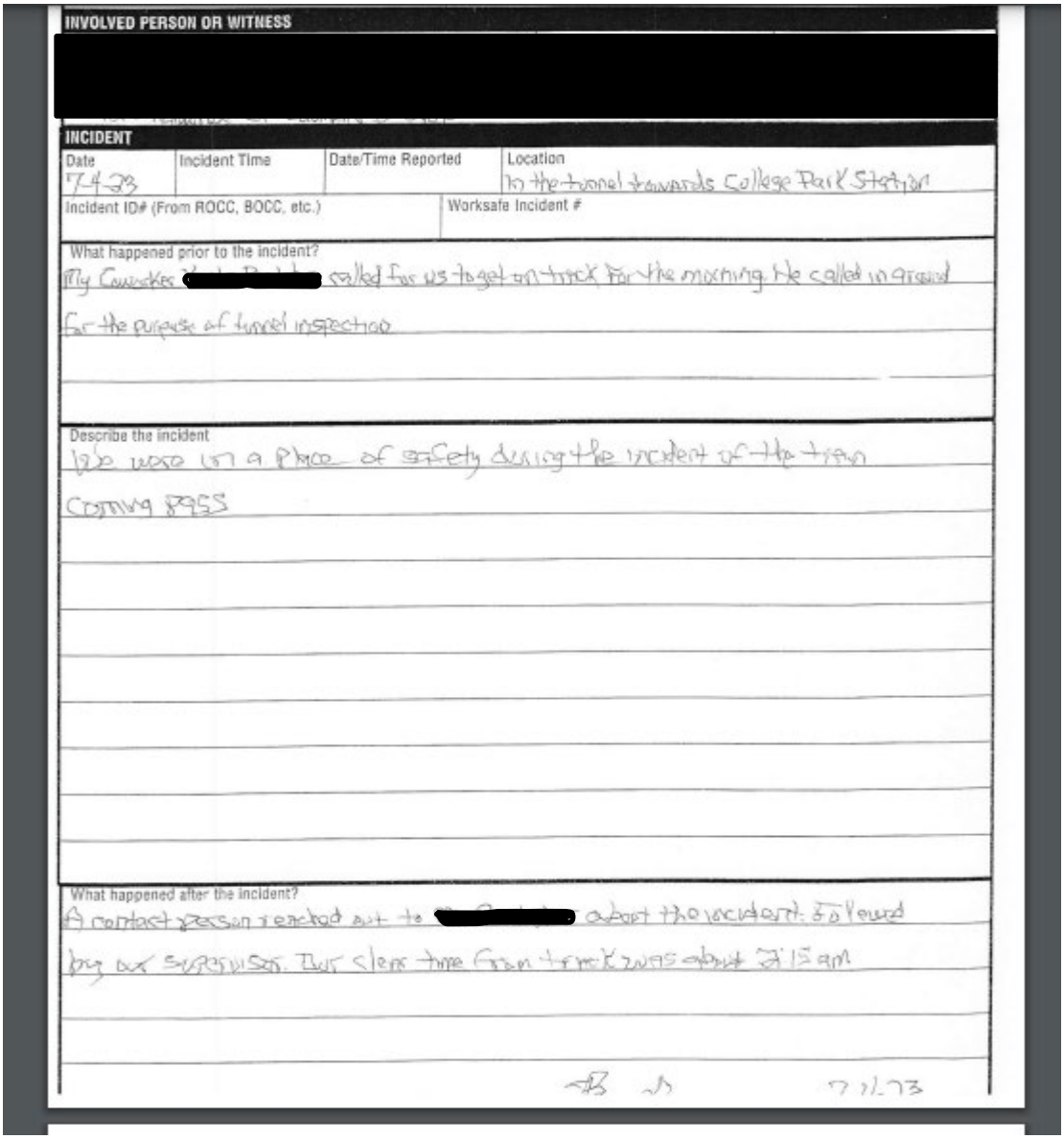
The Low Voltage Technician 1 stated that while inspecting the tunnel lights from a place of safety in the cutaway, they observed a train approaching them on track 1, and they placed themselves in a place of safety while the train passed their location at a reduced speed.

The Low Voltage Technician 1 stated that the train did not stop at any point to question them as to why they were on track 1. The Low Voltage Technician 1 stated that the ROCC communicated with them to return to a place of safety and relinquish their foul time.

The Low Voltage Technician 1 stated that they returned to a place of safety in Fan Shaft room F-E-13, relinquished their foul time, and awaited further instructions.

The Low Voltage Technician stated that the event was totally their fault. They further stated that they understand why the RWP rules are in place and serve as a safety component to prevent injuries while on the roadway. The Low Voltage Technician 1 is in full agreeance with the outcome of this investigation.

Appendix B – Employee's Written Statements



INVOLVED PERSON OR WITNESS

[redacted]

INCIDENT

Date	Incident Time	Date/Time Reported	Location
7-4-23			In the tunnel towards College Park Station

Incident ID# (From ROCC, BOCC, etc.) | Worksafe Incident #

What happened prior to the incident?

My Coworker [redacted] called for us to get on track for the morning. He called in a track for the purpose of tunnel inspection

Describe the incident

We were in a Place of safety during the incident of the train Crossing 8955

What happened after the incident?

A contact person reached out to [redacted] about the incident. 50 Hours by our Supervisor. Our clear time from track was about 3:15 am

7/7/23

Figure 4 Employees Written Statement Pg-1

Last Day Worked (prior to)	Hours Worked (within last 24 hrs)	Overtime?

INVOLVED PERSON OR WITNESS

[redacted]

Address

INCIDENT

Date 7/4/23	Incident Time	Date/Time Reported 0315	Location FE13 FAN SHAFT
Incident ID# (From ROCC, BOCC, etc.)		Worksafe Incident #	

What happened prior to the incident?

TUNNEL LIGHT INSPECTION

Describe the incident

CALLED FOR FOUL TIME FOR TRK 2 AT APPROX 0140

GRANTED 0146 → WALKED FROM CM 530+00 – 533+00

NOTICING NO LIGHTS OUT ON 2 TRK (except 2)

I NOTICED A CUT AWAY AREA BETWEEN TRACKS

INSTEAD OF ASK FOR FOUL TIME I POKED THROUGH TO TRK

1 AND STOOD ON SAFETY AREA AND LOOKED ~~INBOUND~~ AND

OUTBOUND FOR LIGHT OUTAGE A TRAIN APPROACHED

AND SAW US. AND STOPPED I TOLD OPPS WE WERE IN A PLACE

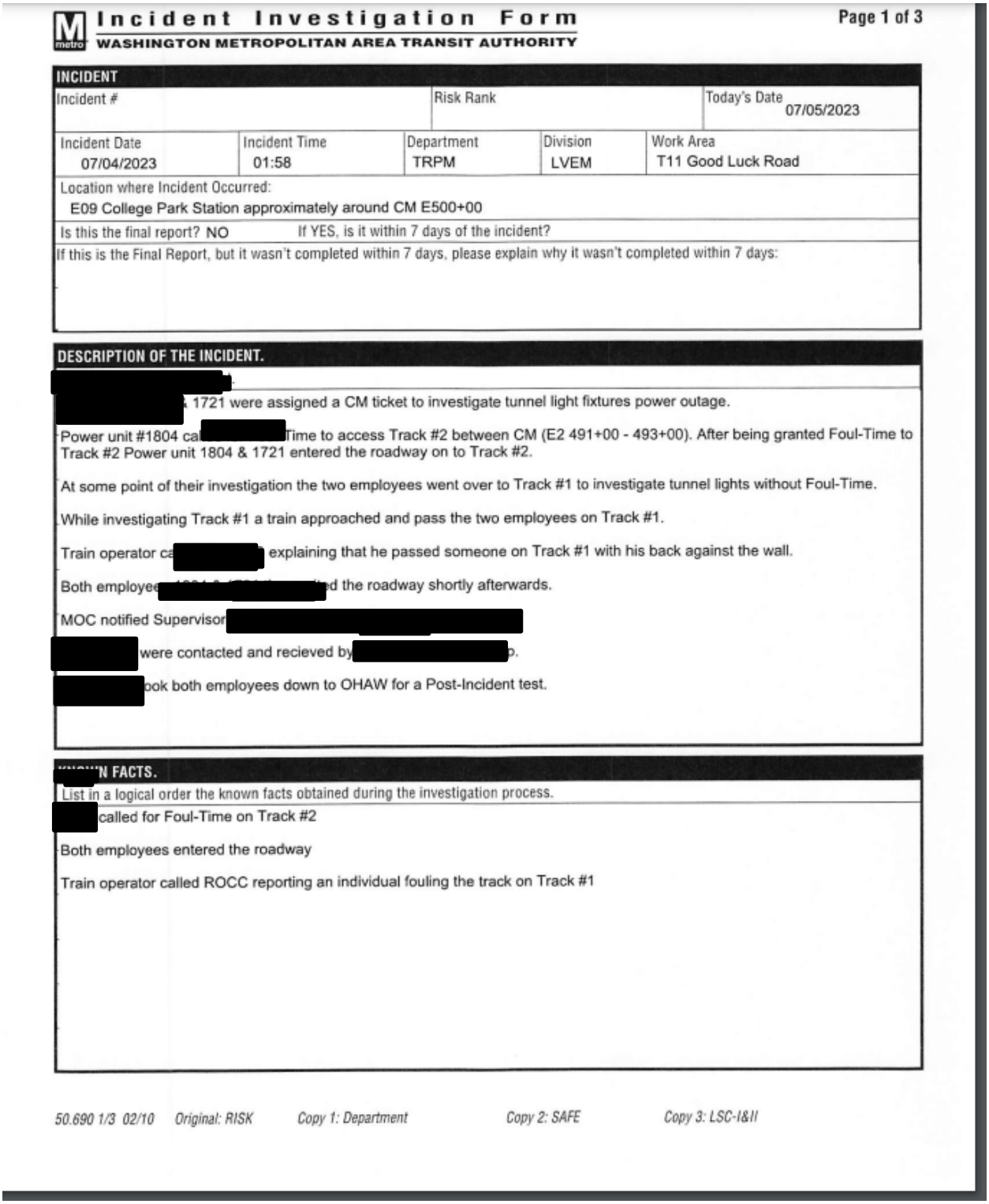
OF SAFETY AND TRAIN PROCEEDED

THEN I CALLED OPPS AFTER RELINQUISHING FOUL TIME

What happened after the incident?

CLEARED FAN SHAFT SPOKE TO SUPERVISOR [redacted]

Figure 5 Employees Written Statement Pg-2



Incident Investigation Form

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

Page 1 of 3

INCIDENT

Incident #	Risk Rank	Today's Date
		07/05/2023

Incident Date	Incident Time	Department	Division	Work Area
07/04/2023	01:58	TRPM	LVEM	T11 Good Luck Road

Location where Incident Occurred:
E09 College Park Station approximately around CM E500+00

Is this the final report? NO 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.

[redacted] 1721 were assigned a CM ticket to investigate tunnel light fixtures power outage.

Power unit #1804 ca[redacted]Time to access Track #2 between CM (E2 491+00 - 493+00). After being granted Foul-Time to Track #2 Power unit 1804 & 1721 entered the roadway on to Track #2.

At some point of their investigation the two employees went over to Track #1 to investigate tunnel lights without Foul-Time.

While investigating Track #1 a train approached and pass the two employees on Track #1.

Train operator ca[redacted] explaining that he passed someone on Track #1 with his back against the wall.

Both employe[redacted]d the roadway shortly afterwards.

MOC notified Supervisor[redacted]

[redacted] were contacted and recieved by[redacted].

[redacted]ook both employees down to OHAW for a Post-Incident test.

[redacted]N FACTS.

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

[redacted] called for Foul-Time on Track #2

Both employees entered the roadway

Train operator called ROCC reporting an individual fouling the track on Track #1

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

Figure 6 LVEM Investigative Report Pg-1

Incident Investigation Form

Page 2 of 3

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

INJURY CAUSING AGENT (MARK ONLY ONE)

- ❑ Absorbed Hazardous Substance
- ❑ Asphyxiation
- ❑ Assault
- ❑ Awkward Positions/Static Posture
- ❑ Bite
- ❑ Biological Substance
- ❑ Caught In/On/Between Object
- ❑ Contacted Electric Current
- ❑ Contacted Extreme Temperature
- ❑ Exposure
- ❑ Foreign Object in Eye
- ❑ Harassment
- ❑ Illness
- ❑ Inhaling Hazardous Substance
- ❑ Lifting
- ❑ Over Exertion
- ❑ Physical Altercation
- ❑ Repetitive Motions/Cumulative Trauma
- ❑ Slip, Trip or Fall
- ❑ Strike against
- ❑ Struck by
- ❑ Swallow Hazardous Substance
- ❑ Other
- ❑ Witnessed Event

EQUIPMENT (MARK ALL WMATA EQUIPMENT DIRECTLY INVOLVED IN INCIDENT)

- ❑ Access Platforms
- ❑ Automobile
- ❑ Ballast Car
- ❑ Ballast Regulator
- ❑ Bath or Toilet Facilities
- ❑ Blowdowns
- ❑ Blowers or Fans
- ❑ Boom Truck
- ❑ Buildings
- ❑ Bus
- ❑ Compressors
- ❑ Control Hardware or Software
- ❑ Crane
- ❑ DC Systems
- ❑ Detection Systems (i.e. Fire, Gas)
- ❑ Diesel
- ❑ Drain Machine
- ❑ Elevator
- ❑ Escalator
- ❑ Exchangers
- ❑ Filtration
- ❑ Flat Car
- ❑ Forklift
- ❑ Generator
- ❑ Geismer
- ❑ Guards Or Barriers
- ❑ Hand Rails
- ❑ Hand Tools
- ❑ Heaters
- ❑ High Pressure Washdown
- ❑ HVAC
- ❑ Ladders
- ❑ Lighting
- ❑ Microwaves
- ❑ Motor Controllers
- ❑ Motors
- ❑ PA System
- ❑ Power Tools
- ❑ Prime Mover
- ❑ Pumps
- ❑ Radios
- ❑ Rigging
- ❑ Riser Guard
- ❑ Scaffolds
- ❑ Separators
- ❑ Speed Swing
- ❑ Stairs or Ladders
- ❑ Surface Grinder
- ❑ Switch Gear
- ❑ Tamper
- ❑ Tanks
- ❑ Telephones
- ❑ Tie Inserter
- ❑ Towers
- ❑ Transformers
- ❑ Truck
- ❑ Utility Air
- ❑ Walls or Fences
- ❑ Winch, Hoist, Chain Fall
- ❑ Other

Activity In Progress

- ❑ Maintenance
- ❑ Normal
- ❑ Emergency
- ❑ Start-Up

EMPLOYEE INJURY (MARK ONLY ONE)

- ❑ Amputation
- ❑ Bruise
- ❑ Burn
- ❑ Cut
- ❑ Concussion
- ❑ Dislocation
- ❑ Fracture
- ❑ Illness
- ❑ Internal
- ❑ Loss of Sense
- ❑ Poisoning
- ❑ Sprain
- ❑ Strain
- ❑ Shock
- ❑ Other
- ❑ Multiple Injuries
- ☑ No Physical Injury

BODY PART (MARK PRIMARY BODY PART)

- ❑ Abdomen
- ❑ Arms/Left
- ❑ Arms/Right
- ❑ Back/Upper
- ❑ Back/Lower
- ❑ Eyes/Left
- ❑ Eyes/Right
- ❑ Chest
- ❑ Feet/Left
- ❑ Feet/Right
- ❑ Hands/Left
- ❑ Hands/Right
- ❑ Head
- ❑ Internal
- ❑ Knees/Left
- ❑ Knees/Right
- ❑ Legs/Left
- ❑ Legs/Right
- ❑ Neck
- ❑ Multiple
- ❑ Other

BASIC CAUSES SPECIFY ALL THE UNDERLYING CAUSES CONTRIBUTING TO THE INCIDENT

Design Failures

- ❑ Design Management of Change Inadequate
- ❑ Ergonomic Design Inadequate
- ❑ Guards/Barriers or Safety Devices Inadequate
- ❑ Technical Design Inadequate

Human Factors

- ❑ Diminished Capacity Due to Medication
- ❑ Fatigue
- ❑ Hearing Deficiency
- ❑ Impaired Due to Drugs or Alcohol
- ❑ Improper Position
- ❑ Operating at Improper Speed
- ❑ Restricted Range of Motion
- ❑ Vision Deficiency

Planning Failure

- ❑ Appropriate Human Resources Not Available
- ☑ Assessment of Hazards & Safe Guards Inadequate
- ❑ Documentation Inadequate
- ❑ Isolation of Energy Source (LOTO) Inadequate
- ❑ Materials Inadequate
- ❑ Roles and Responsibilities Not Understood
- ❑ Safe Guards Not In Place (i.e. barricades, signs)
- ❑ Scheduling Inadequate
- ❑ Supervision Inadequate

Maintenance Inadequate

- ❑ Adjustment , Assembly or Installation Inadequate
- ❑ Housekeeping Inadequate
- ❑ Preventive Maintenance Inadequate
- ❑ Replacement Parts Used Were Inappropriate
- ❑ Safety Devices Defective
- ❑ Servicing Schedule Not Followed
- ❑ Wear and Tear Excessive

Procedures Failure

- ❑ Failure to Warn
- ☑ Operating Without Authority
- ❑ Prestartup Safety Review Inadequate
- ☑ Procedure Inadequate
- ☑ Procedure Not Followed
- ❑ Procedure Not In Place
- ❑ Procedure Not Known or Understood
- ☑ Procedure, Instructions or Signage Not Followed
- ❑ Procedures Not Updated
- ☑ Taking Short Cut

Communication

- ❑ Communication Method Not Available or Inadequate
- ❑ Communication Between Shifts Inadequate
- ❑ Communication Between Work Groups Inadequate
- ❑ Horizontal Communication Inadequate
- ❑ Instructions Incorrect
- ❑ Vertical Communication Inadequate

Tools & Equipment

- ❑ Personal Protective Equipment Defective
- ❑ Personal Protective Equipment Not Available
- ❑ Personal Protective Equipment Not Used or Used Improperly
- ❑ Tools and Equipment Defective
- ❑ Tools and Equipment Not Available
- ❑ Tools and Equipment Used Improperly
- ❑ Tools and Equipment Wrong for the Job

Training

- ❑ Assessment of Required Skills Inadequate
- ❑ Skills Development Inadequate
- ❑ Training Inadequate
- ❑ Training Not Provided
- ❑ Training Updates Inadequate

Leadership

- ❑ Correction of Worksite or Job Hazards Inadequate
- ❑ Enforcement of Procedures Inadequate
- ❑ Incident Investigation Inadequate
- ❑ Management of Change System Inadequate

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Figure 7 LVEM Supervisor Investigative Report Pg-2

Incident Investigation Form
WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

EXPLANATION FOR CONCLUSIONS

Provide an explanation and basis for the conclusions reached.

In the matter of the two employees fouling the track, I believe the explanation would be mainly taking short cuts and NOT following proper procedures accordingly to instructions and RWP rules.

RECOMMENDATIONS TO PREVENT RECURRENCE	MS (SEE BELOW)	RESPONSIBLE PERSON	TARGET COMPLETION DATE	DATE ACTION WAS COMPLETED
1. Go over with employees the significance of NOT being complacent and elaborate more on the importance of following proper safety procedures.	15	[redacted]		
2.				
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			

[redacted]

Reviewed by Manager (Signature)	Date
Print name	Phone Number

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Figure 8 LVEM Supervisor Investigative Report Pg-3

RTRA Supervisor's Report

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

DEPARTMENT OF OPERATIONS-RAIL SERVICE

Office of Rail Transportation

Date	Incident Time	Incident Location (Station Mezzanine#)	Track/Mezzanine#
07/04/2023	1:40Approx	In Between Hyattsville Crossing and College Park ChE1 500+00	Track # 1

Equipment Number (Train ID & Car Numbers; Escalator/Elevator #, Room #)
Train 502 lead car 6082

Incident Description

Personnel on the Roadway

WMATA Personnel Involved	Employee #	Rule Violation?	Home Division	Post Incident
2 Power Personnel	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A

Name N/A	Address N/A	Injury? N/A
Name N/A	Address N/A	Injury? N/A
Name N/A	Address	Injury?

Arrival Time	Unit Number	Person In Charge	Remarks
N/A	56	[redacted]	N/A

Chronological Account of Incident

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

At approximately 1:40A.M, as I was operating train 502 lead car 6082. After leaving Hyattsville crossing resumed normal speeds of the railroad and I observed 2 personnel on the catwalk holding on to the cables as I approached. I began to start sound the horn and yard horn to warned them and begun to stop the train. I contacted ROCC and asked if they had any personnel on the roadway. Their response was "No one should be on the track #1." ROCC then contacted Power Personnel that was supposed to be on track number #2 and asked which track they were on because they were supposed to be number #2. ROCC then asked me again of my location in which I replied track #1 at CM.E1 500+00. The Power Personnel responded that they were just looking at track #1 through a breeze way and were not on track #1. My observation was that their whole body was on track #1 they had on yellow safety shirts with safety helmets. ROCC then asked the power personnel multiple questions of their where abouts and at the end of the transmission the Power Personnel stated they were clear of track number 1 and stated they were clearing the roadway per the request of ROCC. After, they stated they were clear I began to move the train at restricted speeds to the next station. ROCC contacted me via the radio requesting a landline. Then instructed me to do a incident reports.

50.437 09/10

REPORT MUST BE FAXED TO ROCC 301-618-1012 at end of tour

[redacted]

Figure 9 Train Operators Written Statement Pg-1

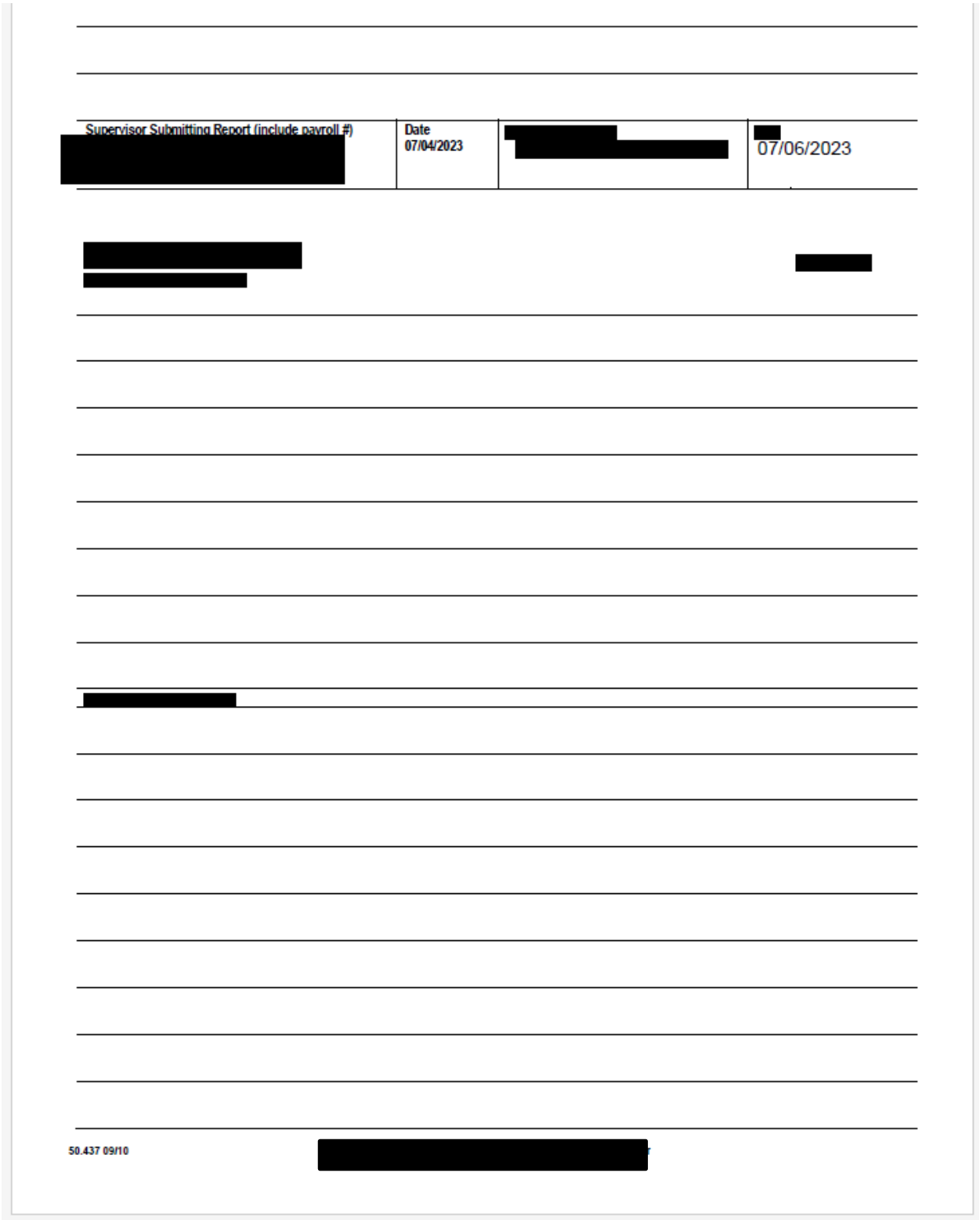


Figure 10 Train Operators Written Statement Pg-2

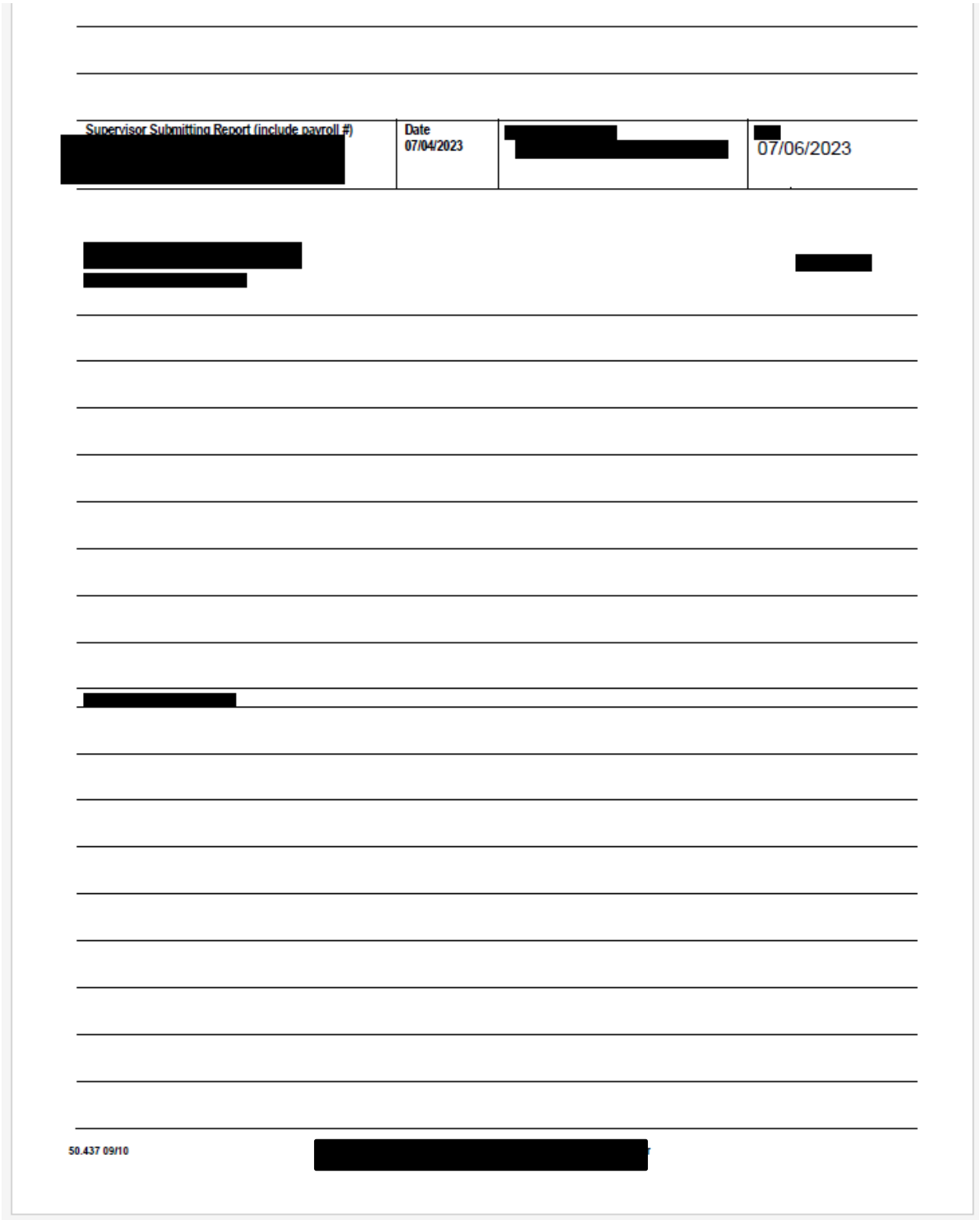
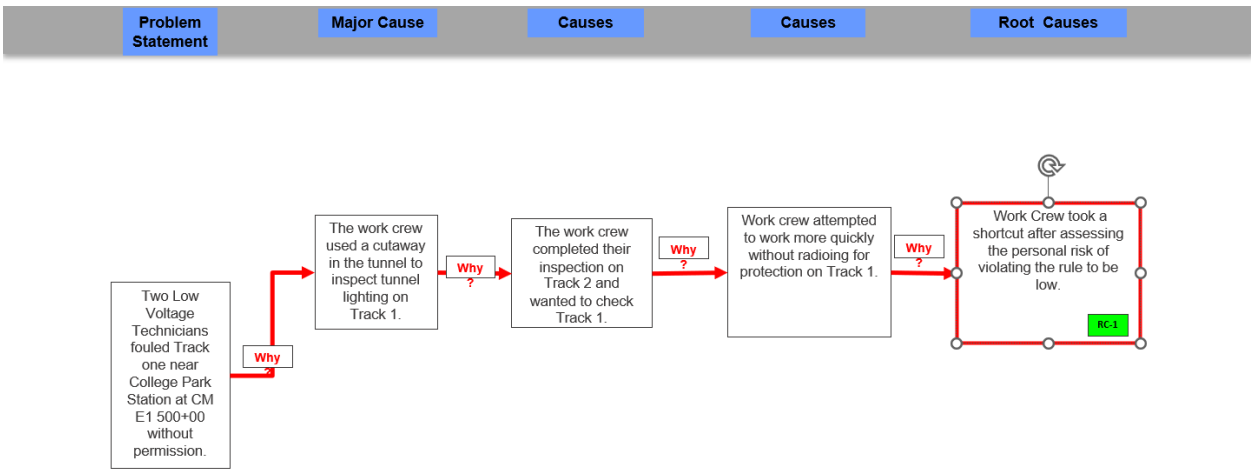


Figure 11 Train Operators Written Statement Pg-3

Appendix C – Why Tree



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

FINAL REPORT OF INVESTIGATION A&I E24049

Date of Event:	January 18, 2024
Type of Event:	Improper Roadway Worker Protection (RWP)
Incident Time:	10:16 hours
Location:	Glenmont Station, track 1
Time and how received by SAFE:	11:00 hours – Mission Assurance Coordinator (MAC)
WMSC Notification Time:	11:44 hours
Responding Safety Officers:	None
Rail Vehicle:	Train ID 891 (L7076/77X7037/36X7058/59X7023/22T)
Injuries:	None
Damage:	None
Emergency Responders:	None
SMS I/A Number	20240118#114079MX

Drafted By: SAFE 705 – 03/18/2024
Reviewed By: SAFE 707 – 03/18/2024
Approved By: SAFE 707 – 03/18/2024

Glenmont Station – Improper RWP

January 18, 2024
Table of Contents

Drafted By:	SAFE 705 – 03/18/2024
Reviewed By:	SAFE 707 – 03/18/2024
Approved By:	SAFE 707 – 03/18/2024

Abbreviations and Acronyms

AIMS	Advanced Information Management System
AMF	Advanced Mobile Flagger
AOM	Assistant Operations Manager
ARS	Audio Recording System
ATC	Automatic Train Control
CCTV	Closed-Circuit Television
CMNT	Office of Car Maintenance
CMOR-IIT	Chief Mechanical Officer – Incident Investigation Team
MICC	Metro Integrated Command and Communications Center
MOR	Metrorail Operating Rulebook
NOAA	National Oceanic and Atmospheric Administration
RTRA	Office of Rail Transportation
RWIC	Roadway Worker In-Charge
SAFE	Department of Safety
SMS	Safety Measurement System
WMATA	Washington Metropolitan Area Transit Authority
WMSC	Washington Metrorail Safety Commission

Executive Summary

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

On January 18, 2024, at 10:16 hours, Train ID 891 (L7076/77X7037/36X7058/59X7023/22T) failed to stop for an Office of Track and Structures (TRST) Advanced Mobile Flagger (AMF) at the eight-car marker of Glenmont Station, track 1.

The TRST Roadway Worker In-Charge (RWIC) had gained permission from the Radio Rail Traffic Controller (RTC) to conduct an interlocking inspection at Wheaton Station.

At the same time, a Student Train Operator under guidance from a Train Operator Instructor was moving from the Glenmont Yard to the mainline by way of track 1 at Glenmont Station while operating Train ID 891. This was the first time the Student Operator had operated a train on the mainline.

Closed-Circuit Television (CCTV) determined that the AMF had equipment set up at the eight-car marker of both tracks at Glenmont Station with amber lanterns deployed and functioning. At the time of the incident, the AMF was addressing the Train Operator on track 2 as Train ID 891 passed the flashing amber lantern.

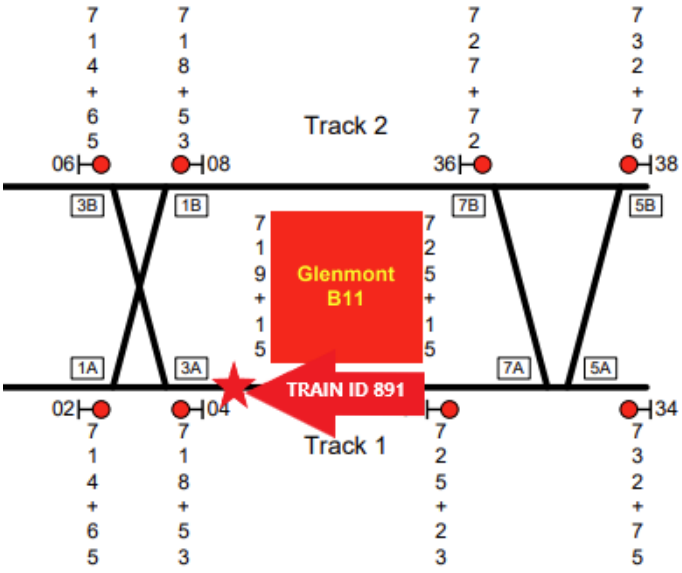
The Advanced Information Management System (AIMS) playback and written statements from both the Student Operator and Train Operator Instructor determined that Train ID 119 was positioned outside of the Glenmont Station on Track 1, facing Train ID 891, waiting to enter the platform at Glenmont Station. The Student Operator and the Train Operator Instructor reported that their vision was obscured by the train headlights, and they did not observe the AMF nor the amber lantern prior to departing Glenmont Station.

The probable cause of the Improper RWP event on January 18, 2024, was a human factors error, a lack of experience, and a lack of situational awareness brought on by the orientation of the oncoming-oriented train lights and the RWIC's failure to advise their AMF to commence flagging which in turn, contributed to the Terminal Supervisor Student's failure to advise the Student Train Operator of personnel in the roadway.

Incident Site

Glenmont Station, track 1

Field Sketch/Schematics



Incident site notated by a red "star." 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

Upon receiving notification of the Improper RWP at the Glenmont Station on January 18, 2024, 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 documentation review and video.
- Formal Interviews – SAFE interviewed two individuals 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:
  - Train Operator Instructor
  - Student Train Operator
- Informal Interviews – Collected through conversations with individuals during the investigation to provide background and supporting information. Written statements were reviewed from personnel present during the event.
- Documentation Review – A collection of relevant work history information and process documentation contained in Metro systems of record. These records include:
  - Metrorail Safety Rules and Procedures Handbook (MSRPH)

- National Oceanic and Atmospheric Administration (NOAA)
- Instructor's Training Records
- Instructor's Certifications
- Instructor's 30-day Work History
- Student Operator's Training Records
- Student Operator's Certifications
- Student Operator's 30-day Work History
- TRST RWIC's Written Statement
- TRST AMF's Written Statement (Pending)
- RTRA Student Written Statements

- System Data Recording Review – A collection of information contained in Metro Data Recording Systems. This data includes:
  - Advanced Information Management System (AIMS) Playback
  - Audio Recording System (ARS) playback
  - Closed-Circuit Television (CCTV)

Investigation

On January 18, 2024, at 09:55 hours, the Student Operator of Train ID 891 requested permission from the Interlocking Operator at Glenmont Yard to proceed out of the yard towards the mainline. At 09:58 hours, the Student Operator was provided an absolute block to Red Signal B11-38.

At 10:02 hours, the TRST RWIC requested foul time to perform an interlocking inspection of Wheaton Station commencing between CM B2 632+84 to 637+45 for two minutes, and further advised that AMFs were positioned at both Wheaton and Glenmont Stations.

At 10:03 hours, the Student Operator advised the Terminal Supervisor that they were standing by at B11-38. At 10:05 hours the AMF is observed by CCTV footage positioning and activating their amber lanterns at the eight-car marker of both tracks at Glenmont Station.

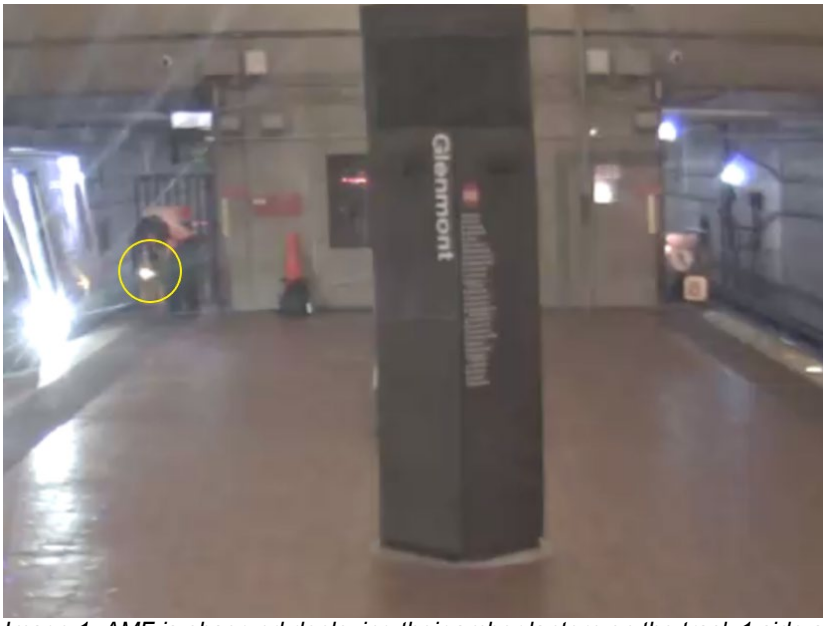


Image 1: AMF is observed deploying their amber lantern on the track 1 side at 10:05 hours.

At 10:12 hours, the Terminal Supervisor advised Train ID 891 to verify their lunar at B11-38 to B11-04 and that they had a permissive block across the interlocking to track 2.

At 10:16 hours, CCTV determined that Train ID 891 failed to stop for the AMF at the eight-car marker of Glenmont Station, track 1.

Image 2: Train ID 891 on approach to the AMF on the track 1 side at 10:16 hours. Note the AMF addressing Train ID 118 on track 2. Train ID 118 departed Glenmont Terminal at 10:19 hours.

Image 3: Train ID 891, 2 seconds later, having not stopped for the AMF's flashing amber lantern.

As Train ID 891 passed, the AMF advised the TRST RWIC to stand by and stand clear as a train was approaching their location.

At 10:08 hours, the TRST RWIC advised the Radio RTC that the approaching train had cleared the area. The Radio RTC acknowledged and granted two minutes of foul time. The TRST RWIC did not advise the AMF to commence flagging.

At 10:11 hours, the TRST RWIC relinquished foul time, however, did not advise the AMF of this occurrence.

At 10:18 hours, forward-facing camera footage of Train ID 891 captured one of the members of the work crew in a place of safety, within the roadway.

Image 4: A silhouette of personnel on the catwalk in the roadway at 10:18 hours.

After the Terminal Supervisor noticed the train departed terminal without stopping at the 8-car marker, they exited the terminal and asked the AMF if Train ID 891 was briefed. The AMF advised they did not see the train.

At 10:21 hours, the Terminal Supervisor advised the Buttons RTC that Train ID 891 did not stop for the AMF positioned at Glenmont Station, eight-car marker.

At 10:45 hours, the Assistant Operations Manager (AOM) was advised of the incident.

At 10:47 hours, the Train Operator Instructor advised the Buttons RTC that they did not observe an AMF at the eight-car marker of Glenmont Station.

At 11:15 hours, the AOM advised the Assistant Director of RTRA Training that the Train Operator Instructor was operating Train ID 891 at the time of the incident. The Assistant Director of RTRA Training advised the AOM to remove the Train Operator Instructor from service and post-incident

test them. No instruction was given in reference to the Student Operator. During the formal interview, it was determined a Student Train Operator was operating ID 891 during the time of the incident, not the Train Operator Instructor.

At 11:39 hours, SPOTS confirmed that Train ID 891 was laid up at Shady Grove Yard.

Chronological Event Timeline

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

Time	Description
09:55:02 hours	Student Operator of Train ID 891: Requested permission from the Interlocking Operator to proceed towards Shady Grove Station. Interlocking Operator: Acknowledged. [Radio, GM Yard 1]
09:58:14 hours	Interlocking Operator: Provided an absolute block to Red Signal to B11-38 Student Operator of Train ID 891: Acknowledged. [Radio, GM Yard 1]
10:02:39 hours	TRST RWIC: Requested foul time to perform an interlocking inspection of Wheaton Station starting between CM B2 632+84 to 637+45 for two minutes, AMFs at both Wheaton and Glenmont Stations. Radio RTC: Acknowledged and advised to go direct with their AMF. [Radio, OPS 1]
10:03:39 hours	Student Operator of Train ID 891: Advised standing by at Red Signal B11-38. Terminal Supervisor: Acknowledged. [Radio, GM Terminal]
10:04:37 hours	AMF: Advised in position ready to flag at Glenmont Station, tracks 1 and 2. AMF#2: Advised in position ready to flag at Wheaton Station, tracks 1 and 2. Further advised that a train just left the station without having been briefed. TRST RWIC: Acknowledged. Radio RTC: Acknowledged, then advised to standby for outgoing train. Further advised all personnel on OPS 1 that personnel would be in the area at Wheaton Station, both tracks. [Radio, OPS 1]
10:05:30 hours	AMF is observed deploying amber lanterns in position on both tracks. [CCTV]
10:08:02 hours	TRST RWIC: Advised the Radio RTC that the train had passed. Radio RTC: Acknowledged and granted foul time. TRST RWIC: Acknowledged. *TRST RWIC did not advise the AMF.* [Radio, OPS 1]
10:11:31 hours	TRST RWIC: Relinquished foul time. *TRST RWIC did not advise the AMF* Radio RTC: Acknowledged. [Radio, OPS 1]
10:12:53 hours	Terminal Supervisor: Advised Train ID 891 to verify their lunar at B11-38 to B11-04 and that they had a permissive block across the interlocking to track 2. Student Operator of Train ID 891: Acknowledged. [Radio, GM Terminal]
10:16:12 hours	Train ID 891 is observed passing the eight-car marker of track 1 at Glenmont Station without being briefed by the AMF.

	[CCTV]
10:16:39 hours	AMF: Advised the TRST RWIC to standby and stand clear and that one train was headed towards their position. TRST RWIC: Acknowledged. [Radio, OPS 1]
10:21:12 hours	Terminal Supervisor: Advised the Buttons RTC that Train ID 891 did not stop for the AMF positioned at Glenmont Station, eight-car marker. Buttons RTC: Acknowledged. [Phone, OPS 1]
10:26:06 hours	TRST RWIC: Requested foul time to perform an interlocking inspection of Wheaton Station interlocking back toward the platform by way of track 1. Radio RTC: Acknowledged and granted foul time. [Radio, OPS 1]
10:29:11 hours	TRST RWIC: Advised the Radio RTC that they were clear of the Wheaton Interlocking. Radio RTC: Acknowledged. [Radio, OPS 1]
10:45:15 hours	Buttons RTC: Advised the AOM of the incident. AOM: Acknowledged. [Phone, OPS 1]
10:46:10 hours	Radio RTC: Advised Train ID 891 to call the MICC. Instructor of ID 891: Acknowledged. [Radio, OPS 1]
10:47:11 hours	Instructor of Train ID 891: Advised the Buttons RTC that no AMF was stationed at the eight-car marker of Glenmont Station. Buttons RTC: Acknowledged. [Phone, OPS 1]
11:06:55 hours	Terminal Supervisor: Advised the AOM that they noticed Train ID 891 did not stop at the 8-car marker. They exited the Glenmont Blockhouse asked the AMF if Train ID 891 was briefed. AMF advised they were not. AOM: Confirmed the AOM was unable to brief the AMF. Terminal Supervisor: Replied, No. Advised lanterns were in place. AOM: Confirmed via CCTV footage. Terminal Supervisor: Stated the Training Instructor should have stopped. AOM: Acknowledged. [Phone, Rail 2]
11:15:21 hours	AOM: Advised the Assistant Director of RTRA Training that the Train Operator Instructor was operating Train ID 891 at the time of the incident. Assistant Director of RTRA Training: Acknowledged and advised the AOM to remove the Train Operator Instructor from service. [Phone, OPS 1]
11:39:52 hours	Train ID 891 is laid up at Shady Grove Yard [SPOTS]

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

Advanced Information Management System (AIMS)

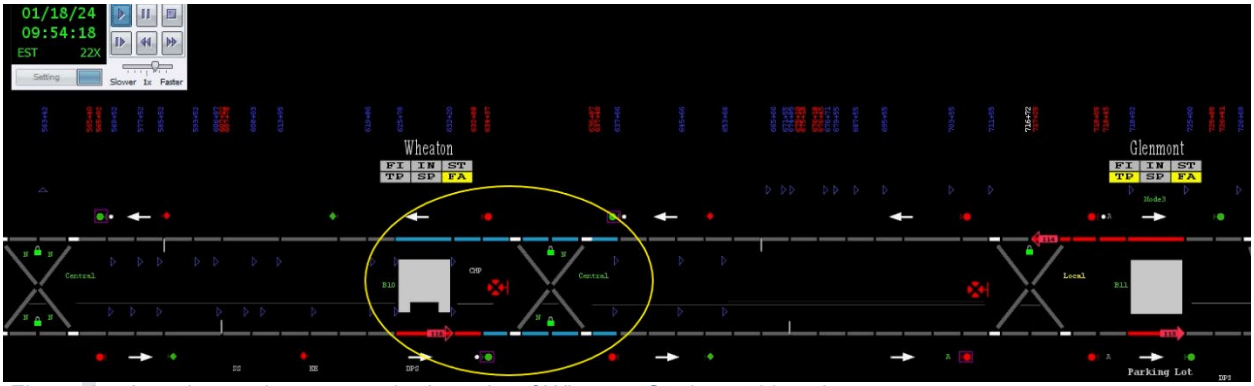


Figure 1 – A work zone is set up on both tracks of Wheaton Station at 09:54 hours.

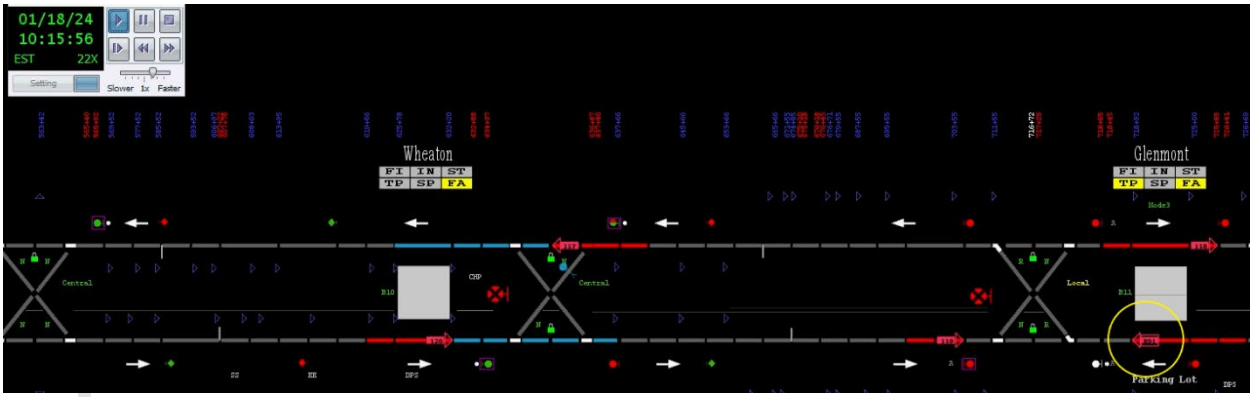


Figure 2 –Train ID 891 arrived at Glenmont Station, track 1 at 10:16 hours.

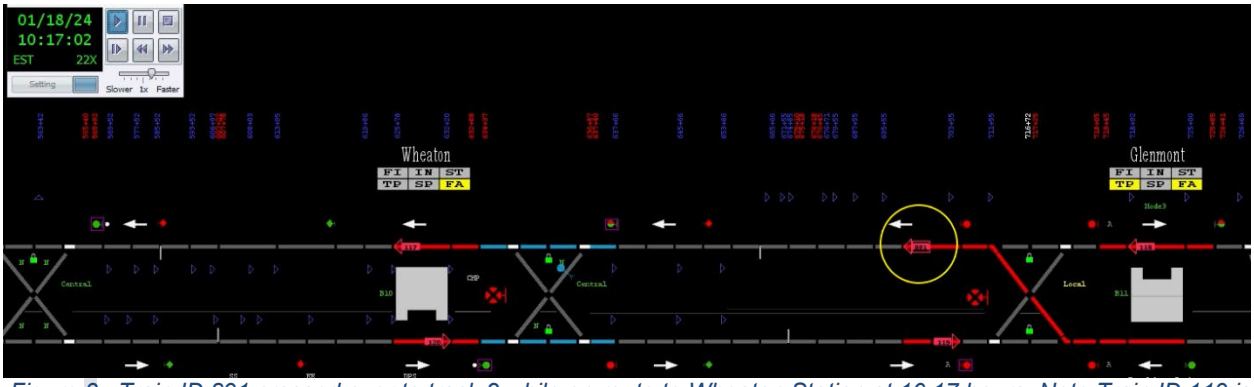


Figure 3 –Train ID 891 crossed over to track 2 while en route to Wheaton Station at 10:17 hours. Note Train ID 119 is facing Train ID 891 with lights engaged.

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 the data and video analysis. The forward-facing video and the data confirmed that train 891 did not stop at the Place the AMF left the flashing amber lights. The train continued towards Wheaton Station above half of the regulated speed. A silhouette that resembles a Worker

is seen in the forward-facing video at 10:18:59. At this time the train did not blow the road horn nor was it traveling at or under half of regulated speed. The video is available at SharePoint.

Data Analysis

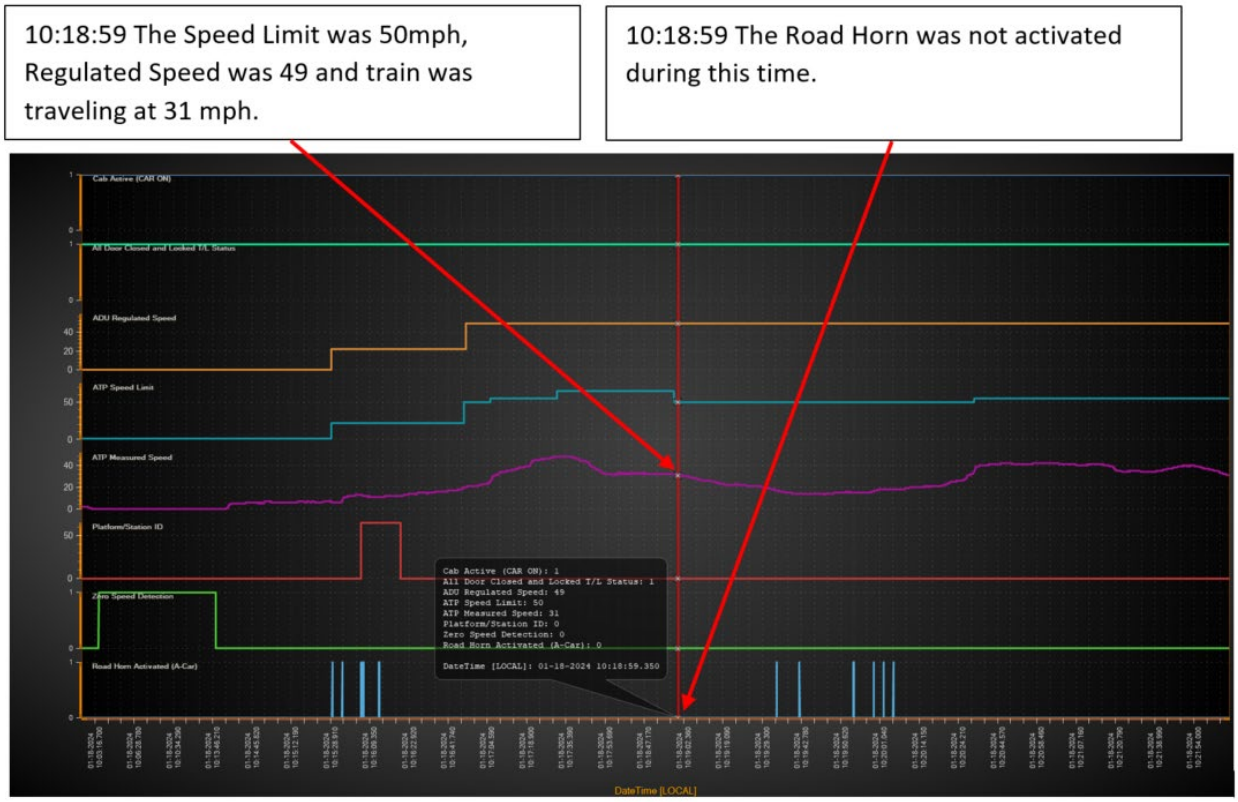


Figure 3 –Train ID 891 speed and horn activations.

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

ROCS SPOTS Report

Select Platform: and/or Select ID: Leave blank to remove criteria
and/or Select 4-digit car number: 7076 Leave blank to remove criteria
Select Date: Jan 18 2024 Select Times (0-24HRS): From 10:00 To 12:00

Generate Report

ID	Platform	length	dcode	Right door open	Right door close	dwell	Left door open	Left door close	dwell	Head Arrived	Tail cleared	cars	Headway door open to door open
891	B10-2	8	87							10:19:48	10:20:34	7022-7023.7059-7058.7036-7037.7077-7076	-
891	B09-2	8	87							10:22:59	10:23:38	7022-7023.7059-7058.7036-7037.7077-7076	-
891	B08-2	8	87							10:26:34	10:27:12	7022-7023.7059-7058.7036-7037.7077-7076	-
891	B07-2	8	87							10:28:59	10:30:00	7022-7023.7059-7058.7036-7037.7077-7076	-
891	B06-2	8	87							10:32:29	10:33:43	7022-7023.7059-7058.7036-7037.7077-7076	-
891	B05-2	8	87							10:35:19	10:36:33	7022-7023.7059-7058.7036-7037.7077-7076	-
891	B04-2	8	87							10:37:42	10:38:21	7022-7023.7059-7058.7036-7037.7077-7076	-
891	B35-2	8	87							10:39:59	10:40:43	7022-7023.7059-7058.7036-7037.7077-7076	-
891	B03-2	8	87							10:41:43	10:43:02	7022-7023.7059-7058.7036-7037.7077-7076	-
891	B02-2	8	87							10:43:54	10:44:38	7022-7023.7059-7058.7036-7037.7077-7076	-
891	B01-2	8	87							10:44:54	10:45:35	7022-7023.7059-7058.7036-7037.7077-7076	-
891	A01-2	8	87							10:45:41	10:49:31	7022-7023.7059-7058.7036-7037.7077-7076	-
891	A02-2	8	87							10:50:43	10:51:53	7022-7023.7059-7058.7036-7037.7077-7076	-
891	A03-2	8	87							10:52:36	10:54:26	7022-7023.7059-7058.7036-7037.7077-7076	-
891	A04-2	8	87							10:58:15	10:58:51	7022-7023.7059-7058.7036-7037.7077-7076	-
891	A05-2	8	87							10:59:57	11:00:34	7022-7023.7059-7058.7036-7037.7077-7076	-
891	A06-2	8	87							11:01:29	11:02:40	7022-7023.7059-7058.7036-7037.7077-7076	-
891	A07-2	8	87							11:04:18	11:05:59	7022-7023.7059-7058.7036-7037.7077-7076	-
891	A08-2	8	87							11:06:57	11:11:49	7022-7023.7059-7058.7036-7037.7077-7076	-
891	A09-2	8	87							11:14:05	11:15:40	7022-7023.7059-7058.7036-7037.7077-7076	-
891	A10-2	8	87							11:17:06	11:17:41	7022-7023.7059-7058.7036-7037.7077-7076	-
891	A11-2	8	87							11:21:01	11:21:41	7022-7023.7059-7058.7036-7037.7077-7076	-
891	A12-2	8	87							11:23:26	11:24:03	7022-7023.7059-7058.7036-7037.7077-7076	-
891	A13-2	8	87							11:25:33	11:26:08	7022-7023.7059-7058.7036-7037.7077-7076	-
891	A14-2	8	87							11:28:43	11:29:21	7022-7023.7059-7058.7036-7037.7077-7076	-
	A15-2	8	0				11:36:17	11:36:24	7	11:35:28	11:39:52	7022-7023.7059-7058.7036-7037.7077-7076	-

Figure 4 – Movement of Train ID 891

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

No communication system issues were identified as contributory or root cause effects in this incident.

Interview Findings

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

Train Operator Instructor Train ID 891 Formal Interview

- The Instructor stated they were teaching the Student Train Operator of Train ID 891 at the time of the incident.
- The Instructor stated the Student Operator was on their second week of practical train operations and was their first time out of the yard and on to mainline. The Instructor stated the Student Operator had previously undertaken 5 weeks of classroom study and simulation.
- The Instructor stated they started the day by laying up Train ID 891 at approximately 09:30 hours. The Instructor stated they then had the Student operate the train while contacting the Interlocking Operator to Red Signal B11-38 on the Glenmont Yard channel. Once at

Red Signal B11-38, the Instructor stated they then had the Student Operator change channels to liaise with the Terminal Supervisor on the Glenmont Terminal channel.

- The Terminal Supervisor then instructed the Student Operator to verify their lunars and commence on to the mainline. The Instructor stated they then transitioned over to OPS 1 while leaving Glenmont Station after verifying their lunar signals.
- The Instructor stated they did not observe an AMF in position, the amber lantern, or a waving orange flag.
- The Instructor stated that the light from a stationary, oncoming-oriented train (Train ID 119), as well as actively verifying the flashing lunar ahead, made observation of any other lights difficult. The Instructor stated they did not observe any personnel in the interlocking prior to their approach to Wheaton Station.
- The Instructor stated they felt rushed getting out of Glenmont Station due to the requirements of revenue service.
- The Instructor stated it would have been helpful to plan a stop at the eight-car marker of Glenmont Station, track 1, regardless of the presence of an AMF.

Student Train Operator of Train ID 891 Formal Interview

- The Student Operator stated they were operating Train ID 891 at the time of the incident with the Train Operator Instructor.
- The Student Operator stated prior to the incident, they had recently completed 2 weeks of yard operations. Prior to that, 5 weeks of theoretical training to include approximately 1 hour of simulator time.
- The Student Operator stated they did not remember passing Glenmont Station, nor did they remember observing an AMF in position.
- The Student Operator stated they did remember observing the light of an oncoming-oriented train (Train ID 119) as well as seeing a flashing lunar.
- The Student Operator stated they then proceeded to the end of the line at Shady Grove and the Train Operator Instructor was removed from service and submitted to post-incident testing.
- The Student Operator stated they were not submitted for post-incident testing. The Student Operator stated they believed they were adequately prepared to operate the train on the mainline.

Terminal Supervisor Instructor Written Statement and Informal Interview

- The Instructor stated they were on duty at the time of the incident training the Terminal Supervisor Student.
- The Instructor stated they observed the amber lanterns deployed at the eight-car makers of both tracks.
- The Instructor stated they observed Train ID 891 moving through the platform of Glenmont Station at approximately 5-10 MPH and pass the AMF without stopping.
- The Instructor stated they did not hear the communications between the TRST RWIC and TRST AMF.
- The Instructor stated that their student did not advise Train ID 891 to stop at the eight-car marker and receive a briefing from the AMF having “forgotten” to do so.
- The Instructor stated they then contacted the AMF outside who stated they did not observe Train ID 891.
- The Instructor stated they then had their student notify the ROCC.

Terminal Supervisor Student Written Statement

- The Student stated at 10:15 hours, they gave permission for Train ID 891 to enter the platform at Glenmont Station.

- The Student stated they advised the Student Train Operator of Train ID 891 to "Verify your lunar at B11-38 crossing over from track 2 to track 1; you have a permissive block to properly birth Glenmont track 1. Once you get to the 8-car marker verify your lunar at B11-04 you got permission into mainline crossing over from track 1 to track 2 contact central Ops #1."
- The Student stated they observed the AMF at the eight-car marker with functioning amber lanterns across both tracks.
- The Student stated the Student Train Operator did not stop at the eight-car marker to be briefed by the AMF.
- Student stated the AMF did not observe Train ID 891 pass them as they were engaged with Train ID 118 on track 2.

TRST RWIC Informal Interview and Written Statement

- The RWIC stated they were on duty at the time of the incident and had organized to conduct an inspection of the interlocking at Wheaton Station, starting on the track 2 side.
- The RWIC stated they had gone direct with their AMF once the Radio RTC had advised them to do so, however, an incoming train delayed their inspection.
- The RWIC stated they did not recall whether they had interacted with their AMF after the train cleared the area.
- The RWIC stated that they had already relinquished foul time at the time that Train ID 891 had passed their location.
- The RWIC stated they concluded their inspection by crossing over the interlocking by way of track 1.

Student Operators on board Train ID 891 Written Statements Summary

- Three additional Student Operators were on board Train ID 891 at the time of the incident.
- None of these personnel were operating or assisting in operating Train ID 891.
- All three students stated they did not observe the amber lanterns of the AMF, nor did they observe the AMF in position.

Weather

On January 18, 2024, at the time of the incident, NOAA recorded the temperature as 29°F, with significant cloud cover, winds 4.1 mph, and 53% humidity. Weather was not a contributing factor in this incident (Weather source: NOAA) – Location: Silver Spring, MD.

Related Rules and Procedures

- MOR 8.10: Advanced Mobile Flagging Operations
- MOR 17.8.5: Advanced Mobile Flagger
- MOR 17.22: Advanced Mobile Flagging (Mobile Work Crew)

Human Factors

Fatigue

Signs and Symptoms of Fatigue

OSI evaluated conditions at the time of the incident to distinguish whether evidence of fatigue was present. Video of the incident was reviewed for behaviors suggesting fatigue. No indications of

fatigue were evident from the video. The Student Train Operator reported feeling fully alert at the time of the incident. The Train Operator reported experiencing no symptoms of fatigue in the time leading up to the incident.

Fatigue Risk

OSI evaluated incident data for fatigue risk factors. Risk factors for fatigue were not present. The incident time of day did not suggest an increased risk of fatigue-related impairment. The Student Train Operator reported keeping a regular sleep schedule in the days leading up to the incident. The Student Train Operator performed day and night work in the days leading up to the incident. The Student Train Operator was awake for 6.2666 hours at the time of the incident. The Train Operator reported 7 hours of sleep in the 24 hours preceding the incident. The off-duty period was 15.5 hours which provides an opportunity for 7-9 hours of sleep. The employee reported no issues with sleep.

Post-Incident Toxicology Testing

WMATA's Drug and Alcohol Program determined that the Student Operator was in violation of the Drug and Alcohol Policy and Testing Program 7.7.3/6 as they were not removed from service post-incident. The Train Operator Instructor was post-incident tested, however.

Findings

- Train ID 891 passed an AMF stationed at the eight-car marker of Glenmont Station, track 1.
- Train ID 891 was staffed by the Student Operator and the Train Operator Instructor.
- The Student Operator had never taken a train on to the mainline prior.
- The AMF had deployed across the eight-car makers of both tracks, however, was addressing the train on track 2 at the time of the incident.
- Train ID 119 was oriented facing Train ID 891 as the operators attempted to locate their flashing lunar.
- Both the Student Operator and the Train Operator Instructor failed to observe the flashing amber lantern.
- The TRST RWIC failed to advise their AMF to commence flagging properly.
- The TRST RWIC and crew were in a position of safety and had relinquished foul time at the time that Train ID 891 passed the eight-car marker and their location.
- The Terminal Supervisor was advised by the AMF that they did not see Train ID 891.
- The Instructor was removed from service and post-incident tested, however, the Student Operator was not due to the belief that the Train Operator Instructor was operating Train ID 891 at the time of the incident.
- The Terminal Supervisor Student did not advise the Student Train Operator of Train ID 891 of the AMF positioned at the eight-car marker across both tracks.

Immediate Mitigation to Prevent Recurrence

- The Train Operator Instructor was removed from service for post-incident testing.
- Train ID 891 was removed from service at the end of the line.

Probable Cause Statement

The probable cause probable cause of the Improper RWP event on January 18, 2024, was a human factors error, a lack of experience, and a lack of situational awareness brought on by the

orientation of the oncoming-oriented train lights and the RWIC's failure to advise their AMF to commence flagging which, in-turn contributed to the Terminal Supervisor Student's failure to advise the Student Train Operator of personnel in the roadway.

Recommended Corrective Actions

Corrective Action Code	Description	Responsible Party	Estimated Completion Date
114079MX _SAFE CAPS_RTRA_001	Retraining of the Student Train Operator and Train Operator Instructor.	RTRA SRC	Completed
114079MX _SAFE CAPS_RTRA_002	Retraining of the Terminal Supervisor Student and Terminal Supervisor Instructor.	RTRA SRC	Completed
114079MX _SAFE CAPS_TRST_001	Retraining of the TRST RWIC.	TRST SRC	Completed

Appendices

Appendix A – Interview Summary

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

Train Operator Instructor Train ID 891

The Instructor stated they had been with WMATA for approximately 9 years, 3 of which had been spent as a Training Instructor. The Instructor stated they held an RWP Level 2 that expires on 06/2024.

The Instructor stated they were providing training to the Student Train Operator of Train ID 891 at the time of the incident. The Instructor stated the Student Operator was on their second week of practical train operations and was their first time out of the yard and on to the mainline. The Instructor stated the Student Operator had previously undertaken 5 weeks of classroom study and simulation.

The Instructor stated they started the day by laying up Train ID 891 at approximately 09:30 hours. The Instructor stated they then had the Student operate the train while contacting the Interlocking Operator to Red Signal B11-38 on the Glenmont Yard channel. Once at Red Signal B11-38, the Instructor stated they then had the Student Operator change channels to liaise with the Terminal Supervisor on the Glenmont Terminal channel.

The Terminal Supervisor then instructed the Student Operator to verify their lunars and commence on to the mainline. The Instructor stated they then transitioned over to OPS 1 while leaving Glenmont Station after verifying their lunar signals.

The Instructor stated they did not observe an AMF in position, the amber lantern, or a waving orange flag.

The Instructor stated that the light from a stationary, oncoming-oriented train (Train ID 119), as well as actively verifying the flashing lunar ahead, made observation of any other lights difficult. The Instructor stated they did not observe any personnel in the interlocking prior to their approach of Wheaton Station.

The Instructor stated they felt rushed getting out of Glenmont Station due to the requirements of revenue. The Instructor stated it would have been helpful to plan a stop at the eight-car marker of Glenmont Station, track 1, regardless of the presence of an AMF.

The Instructor stated they were removed from service at Shady Grove Station after completing the run for post-incident testing.

Student Train Operator of Train ID 891

The Student Operator stated they had been with WMATA for approximately 11 years, less than 6 months of which had been spent as a Train Operator. The Student Operator stated they held an RWP Level 2 that expires on 11/2024.

The Student Operator stated they were in control of Train ID 891 at the time of the incident with the Train Operator Instructor. The Student Operator stated prior to the incident, they had recently completed 2 weeks of yard operations. Prior to that, 5 weeks of theoretical training to include approximately 1 hour of simulator time.

The Student Operator stated they did not remember passing Glenmont Station, nor did they remember observing an AMF in position. The Student Operator stated they did remember observing the light of an oncoming-oriented train (Train ID 119) as well as seeing a flashing lunar.

The Student Operator stated they then proceeded to the end of the line at Shady Grove and the Train Operator Instructor was removed from service and submitted to post-incident testing.

The Student Operator stated they were not submitted for post-incident testing. The Student Operator stated they believed they were adequately prepared to operate the train on the mainline.

Appendix B – RTRA Documentation

RTRA SUPERVISOR REPORT

Date	Incident Time	Incident Location (Station Mezzanine #)	Track/Mezzanine #
1/18/24	10:16am	Glenmont Platform B11	Track 1

Equipment Number (Train ID & Car Numbers; Escalator/Elevator #)
891 7076x7077- 7037x7036-7058x7059-7023x7022

Incident Description
At approximately 10:16am train 891 left Glenmont yard and entered mainline without talking to the AMF.

WMATA Personnel Involved	Employee #	Rule Violation?	Home Division	Post Incident
Instructor [redacted]		Yes MOR 8.10.1	CTF	

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

Arrival Time	Unit Number	Person In Charge	Remarks
4:30a	10	Supervisor [redacted]	
4:30a	10	Supervisor [redacted]	

Chronological Account of Incident

At approximately 10:15am I gave training train 891 permission to the platform, stating " 891 verifying your lunar at B11-38 crossing over from track 2 to track 1; you have a permissive block to properly birth Glenmont track 1. Once you get to the 8-car marker verify your lunar at B11-04 you got permission into mainline crossing over from track 1 to track 2 contact central Ops #1 over. "

The student operator [redacted] repeated, " Thats a good copy verifying that lunar at B11-38 crossing over from 2 to 1 to the 8-car mark then picking up that lunar at B11-04 crossing over from track 1 to track 2, contact central how do you copy over? "

There was an AMF at the 8-car marker at track 2 talking with a train operator. He had lanterns at both 8-car markers.

At 10:16am train 891 left Glenmont yard and arrived on Glenmont platform track 1 and continued into mainline.

The 891 train operator did not stop to talk with the AMF prior to entering mainline.

Supervisor [redacted] exited the terminal and asked the AMF if he spoke with train 891 .

The AMF stated that he didn ' t see the train.

[redacted] verified that both lanterns were working and on, which they were.

(Note time for each entry; Include statement of Employee or Witness at conclusion)

Your Arrival Time: 4:30am

Supervisor Submitting Report	(Payroll #)	Date	Report Reviewed By	Date
[redacted]	[redacted]	1/18/24		

Report must be faxed to ROCC 202-962-2808 at end of Tour

Document 1: Written Statement of the Terminal Supervisor Student Page 1 of 2

Key Findings (Detail Below)

Train 891 did not follow MOR 8.10.1 which states " When an Advanced Mobile Flagger is present, Rail Vehicle Operators MUST come to a complete stop at the end of the station platform (eight (8) car marker or end gate area) . When departing from a terminal station Class 1 Rail Vehicle Operators are required to stop at the end of the platform to receive instructions from the Advanced Mobile Flagger regardless of the number of Carson a consist. "

Supervisor Submitting Report (Initials) S.C.	Report Review By (Initials)

Report must be faxed to ROCC 202-962-2808 at end of tour

Document 2: Written Statement of the Terminal Supervisor Student Page 2 of 2

RTRA Supervisors' Report

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

DEPARTMENT OF OPERATIONS-RAIL SERVICE

Office of Rail Transportation

Date:1/18/2024	Incident Time: 10:16 A.M.	Incident Location (Station Mezzanine#) Glenmont	Track/Mezzanine# Track #1

Equipment Number (Train ID & Car Numbers; Escalator/Elevator #, Room #) I.D. 891 Consist 7076-7037-7058-7023

Incident Description: Train 891 did not stop the Train to get briefed from the AMF. Violation of M.O.R. 8.10.1

WMATA Personnel Involved	Employee #	Rule Violation	Home Division	Post Incident
Instructor [redacted]		M.O.R. 8.10.1	CTF	N/A

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

Arrival Time	Unit Number	Person In Charge	Remarks
10:16 A.M.	10	Supervisor [redacted] Supervisor [redacted]	

Chronological Account of Incident

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

10:12 a.m. I went tom use the restroom in Glenmont Terminal. When I came back in Train 819 was in the middle of Glenmont platform track #1 going around 5-10 mph, Train 891 was giving permission to enter mainline by Supervisor [redacted], at that time there was an AMF on the platform at Glenmont on the Shady Grove end of the platform with 2 Lanterns illuminated on Tracks 1 and 2, the AMF was briefing Train 118 that was on Track #2 at Glenmont. Train 891 did not stop to get briefed from the AMF. At that point I asked Supervisor [redacted] if he told 891 to stop to get briefed from the AMF and he replied that he forgot, after that I Exited the Terminal to make sure that the AMF was set up to brief the trains, The AMF had Lanterns Illuminated on tracks 1 and 2, once I saw that I asked the AMF why didn't he brief the Train and he replied by saying that didn't see it, then I returned inside of the Terminal and instructed Supervisor [redacted] to report what had happened to ROCC.

Superv payroll	[redacted]	Date 1/19/2024	Report Reviewed by	Date

50.437 09/ T BE FAXED TO ROCC 301-618-1012 at end of tour

Document 3: Written Statement of the Terminal Supervisor Instructor Page 1 of 1

Appendix C – TRST Documentation

Incident Investigation Form
WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

INCIDENT

[redacted] Name: [redacted]	Risk Rank	Today's Date 1/18/2024

Incident Date	Incident Time	Department	Division	Work Area
1/18/2024				

Location where Incident Occurred:

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.

At around 10:10 am my AMF went over the radio saying clear up because a train is coming.
I tried to respond over radio but I guess I had gotten cut off so my AMF was unable to hear me. My AMF called me on the phone to make sure I heard him and that we were in a safe place.
Central did not notify me of any issue so when was safe to do so we continued our work.

[redacted]

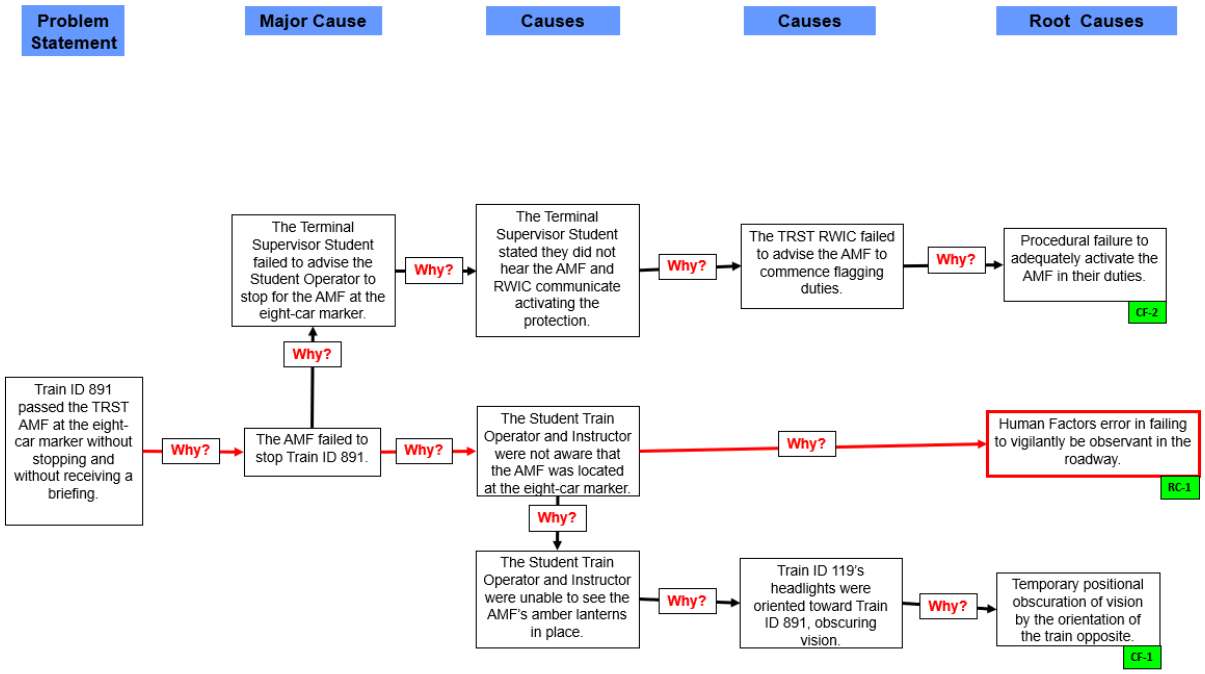
KNOWN FACTS.

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 4: Written Statement of the TRST RWIC Page 1 of 1

Appendix D – Why-Tree Analysis



Root Cause Analysis