



**WMSC Commissioner Brief: W-0110 – Improper Roadway Worker Protection – Naylor Road/Southern Ave stations
– April 28, 2021**

Prepared for Washington Metrorail Safety Commission meeting on September 21, 2021

Safety event summary:

A track inspection crew moved from Naylor Road Station to Southern Avenue Station without required protection from an Advanced Mobile Flagger (AMF).

The AMF was in a shelter on the platform rather than being properly positioned at the end of the platform to speak to train operators. The Roadway Worker In-Charge (RWIC) had begun that segment of the inspection without confirming with the AMF that the AMF was properly positioned. The RWIC had confirmed with this AMF and another AMF that each was properly positioned at Suitland Station and Naylor Road Station for the first portions of the inspection from Branch Avenue Station, but did not confirm that this AMF was in place at Southern Avenue Station for the third segment of the inspection. Both AMFs were Metrorail contractors.

The AMF that moved to Southern Avenue Station did not respond when the inspectors were granted foul time, which would have meant that the AMF would be required to hold trains at the station. The AMF also did not respond when that foul time was relinquished. When the RWIC and inspector arrived on the Southern Avenue Station platform, the AMF remained in the platform shelter as a train was servicing the station. No member of the inspection crew reported this issue.

As the inspectors walked toward Southern Avenue Station, Train 510 approached them without any safety precautions in place. The inspectors had to move to a place of safety as the train passed, and recorded data show that the train slowed as it passed the workers. Neither the Train Operator nor the inspection team reported this safety issue.

A second train was berthed on the platform as the inspectors arrived, with the AMF still in the platform shelter.

The AMF told the RWIC that they were tired from working a 12-hour overnight shift for a different company the night before this event, and the RWIC suggested in an interview that the AMF had dozed off.

The RWIC stated that they planned to report the event after returning to the rail yard, however, the RWIC instead reported the event the following morning when they reported to work. TRST supervision did not immediately report the event at that time. TRST management mentioned the event the next day (two days after the event) to other Metrorail management, and the ROCC then verified the event through CCTV and notified the Safety Department. At that time, the event was formally identified and reported by Metrorail, which led to this investigation.

Metrorail did not have RailPros, the contractor's company, make the contractor available for an interview. RailPros fired the contractor.

Probable Cause:

The probable cause of this event was Metrorail's lack of effective fatigue and fitness for duty policies for all safety sensitive personnel, including contractors serving as AMFs, and Metrorail's practical drift away from written roadway worker protection procedures and associated radio communications protocols.



Corrective Actions:

The Safety Department continues nightly checks of work crews related to safety rules, with findings reported to department managers on morning operations calls.

Track and Structures held a safety stand-down with managers and inspection crew personnel related to RWIC responsibilities and AMF procedures.

The Safety Department distributed a safety alert intended to clarify RWIC responsibilities.

The Safety Department and Rail Transportation issued a Rail Operations Personnel Notice about the importance of reporting unusual occurrences on the roadway.

The RWIC was retrained on RWP Level 4.

WMSC staff observations:

Metrorail is required to address several fatigue-related issues due to open corrective action plans (CAPs) and new CAPs that are required to be proposed to address findings in the WMSC's Fitness for Duty Audit issued on August 31, 2021. The audit also includes a recommendation that Metrorail must address related to contractor fatigue and other oversight.

Particularly given Metrorail's significant use of contractors, it is important that Metrorail conduct significant monitoring and oversight efforts of contracted companies and personnel to ensure that they are held to at least the same standards as Metrorail employees. This may include ensuring there is regular, consistent and frequent oversight and checks of AMFs and other RWP practices; Regular, consistent and frequent oversight of contractors; and Training and other corrective actions for RailPros personnel.

This event also demonstrates the importance of fully utilizing all available data as required by the safety management system (SMS) approach embodied in WMATA's Public Transportation Agency Safety Plan (PTASP). Ongoing access to and review of CCTV video and other information can provide for improved supervisory oversight and monitoring, and can provide another layer of protection to identify safety issues like this one before the hazards result in consequences such as collision or injury.

The investigation also demonstrates that Metro would benefit from increased supervisory oversight of roadway personnel and from proper safety promotion efforts required under Metrorail's Public Transportation Agency Safety Plan (PTASP) to ensure that personnel understand the importance of RWP procedures to their safety. For example, at 9:13:49, the RWIC requested Foul Time for a 1,300-foot stretch of roadway. This Foul Time was granted and acknowledged at 9:14:45. The Foul Time was relinquished at 9:15:47. If the inspection crew moved through this area only during the time that Foul Time was granted to help ensure their safety, that would have been a pace of less than 5 minutes per mile. As noted in the Automatic Train Control and Signaling Audit and as identified in other WMSC oversight work and investigations, many Metrorail personnel do not have a complete understanding of "hot spots" that require Foul Time protection and the importance of following RWP rules to ensure their own safety. Metrorail has hired a safety promotions manager, and is in the process of rewriting RWP rules and procedures.

Staff recommendation: Adopt final report.



Washington Metro Area Transit Authority
Department of Safety and Environmental
Management (SAFE)

FINAL REPORT OF INVESTIGATION A&I

Date of Event:	4/28/2021
Type of Event:	Improper Roadway Worker Protection
Incident Time:	10:49 hours
Location:	Southern Avenue Station, Track 2
Time and How received by SAFE:	4/30/2021 at 09:03 hours SAFE On-Call Phone
WMSC Notification Time:	4/30/2021 at 09:38 hours via Email
Responding Safety Officers:	WMATA SAFE: No WMSC: No Other: N/A
Rail Vehicle:	N/A
Injuries:	None
Damage:	None
SMS I/A Incident Number:	20210429#93062

Southern Avenue Station – Improper Roadway Worker Protection

April 28, 2021

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Abbreviations and Acronyms

AMF	Advanced Mobile Flagger
CAP	Corrective Action Plan
CCTV	Closed-Circuit Television
CM	Chain Marker
FT	Foul Time
MSRPH	Metrorail Safety Rules and Procedures Handbook
NOAA	National Oceanic and Atmospheric Administration
OPMS	Operations Management Services
RTC	Rail Traffic Controller
RTRA	Office of Rail Transportation
ROCC	Rail Operations Control Center
RWIC	Roadway Worker in Charge
RWP	Roadway Worker Protection
SAFE	Department of Safety and Environmental Management
TRST	Track and Structures
WMATA	Washington Metropolitan Area Transit Authority
WMSC	Washington Metrorail Safety Commission

Executive Summary

On Wednesday, April 28, 2021, at approximately 08:57 hours, a Track and Structures (TRST) Roadway Worker in Charge (RWIC) contacted the Radio Rail Traffic Controller (RTC) and requested to perform a track inspection between Branch Avenue Station and Southern Avenue Station on Track 2 utilizing Advanced Mobile Flagging (AMF) protection. AMF personnel were provided by RAILPros Contractors. At the beginning of the track inspection, AMF1 was stationed at Suitland Station and AMF2 was at Naylor Road Station to perform flagging duties.

At approximately 09:00:05 hours, the RWIC requested both AMFs to confirm they were in place and ready to begin their flagging duties. At approximately 09:00:32 hours, the Radio RTC acknowledged positive radio communication that both AMFs were in position for their flagging duties and granted the RWIC permission to perform the requested track inspection. At approximately 09:13:49 hours, the RWIC requested Foul Time (FT) protection between Chain Markers (CM) F2-510+00 and F2-497+00. The Radio RTC acknowledged the request for FT and provided the proper protection, performing a 100% repeat back. A subsequent radio transmission was distorted, so it was unclear if the AMF acknowledged the requested FT. At approximately 09:15:47 hours, the RWIC relinquished FT and informed the Radio RTC they were back under AMF protection. At approximately 09:16:08 hours, AMF1, positioned at Suitland Station, acknowledged FT was relinquished and back under AMF protection.

At approximately 09:25:30 hours, the RWIC contacted the Radio RTC requesting FT from CM F2-477+00 to F2-457+00. At approximately 09:26 hours, the Radio RTC granted FT to the RWIC and advised them to notify Central when FT was relinquished. At approximately 09:27:58 hours, the RWIC relinquished the FT and advised the Radio RTC they would proceed under AMF protection. The Radio RTC acknowledged FT was relinquished and advised the RWIC to remain vigilant. There was a distorted radio transmission after the Radio RTC acknowledged FT was relinquished.

At approximately 09:41:48 hours, the RWIC contacted the Radio RTC to inform them that the crew was safely on the platform at Suitland Station and wanted to continue the track inspection to Naylor Road Station, Track 2. The RWIC informed the Radio RTC that AMF2 was in position and requested FT from CM F2-448+00 to F2-393+00. The Radio RTC granted FT and instructed the RWIC to notify Central when FT was relinquished. At approximately 09:43:02 hours, AMF2 positioned at Naylor Road Station acknowledged FT was granted. The RWIC acknowledged the AMF2's radio transmission. At approximately 09:46:08 hours, the RWIC contacted the Radio RTC to relinquish FT and inform the Radio RTC they would proceed under AMF protection. The Radio RTC acknowledged FT was relinquished and advised the RWIC to remain vigilant. AMF2, at Naylor Road Station, acknowledged FT was relinquished, and the crew was back under AMF protection.

At approximately 10:20 hours, the RWIC notified the Radio RTC that the crew was safely on the platform at Naylor Road Station and wanted to proceed to Southern Avenue Station, Track 2, under AMF protection. The Radio RTC granted the RWIC permission to proceed with the track inspection to Southern Avenue Station and advised to stay vigilant. The RWIC failed to radio AMF1 to confirm they were in place for AMF duties. Prior to the RWIC's arrival at Naylor Road Station, Closed-Circuit Television (CCTV) footage showed that AMF1 arrived at Southern Avenue Station and entered a shelter on the platform. AMF1 remained in the shelter until the inspection

Crew arrived on the platform. At approximately 10:25 hours, Train ID # 510 arrived at Southern Avenue Station, boarded passengers, and proceeded without receiving any instructions from AMF1.

At approximately 10:33:39 hours, the RWIC contacted the Radio RTC to request FT from F2-344+00 to F2-323+00. The Radio RTC granted FT to the RWIC. At approximately 10:34:55 hours, the RWIC radioed to AMF1, "FT, how do you copy?" ARS review did not indicate that AMF1 acknowledged that FT was granted. At approximately 10:36:54 hours, the RWIC contacted the Radio RTC to relinquish FT. ARS review did not indicate that AMF1 acknowledged that FT was relinquished. As observed via CCTV review, at approximately 10:49:35 hours, the RWIC and Inspector arrived and observed AMF1 inside a shelter. On their arrival, a second train was properly berthed at the Southern Avenue Station platform servicing the station. The RWIC contacted the Radio RTC and reported all personnel were clear for the day from Branch Avenue Station to Southern Avenue Station. The RWIC also stated it was a good track inspection.

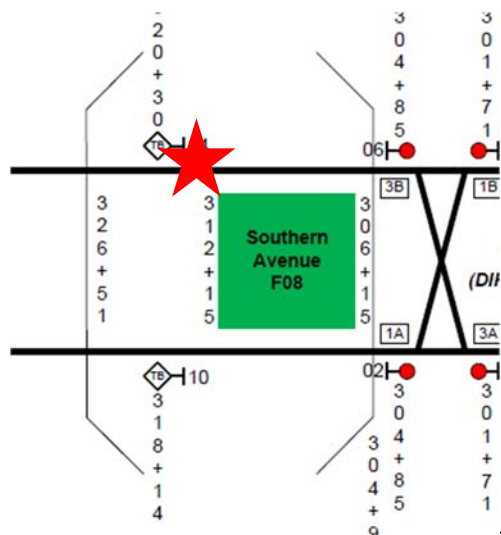
The RWIC did not report AMF1's status to the Radio RTC when the crew arrived at Southern Avenue Station. This caused the 2-day delay of notification of the improper Roadway Worker Protection (RWP) event. After TRST management mentioned this in the days following the event, ROCC verified the AMF1's location through CCTV and notified SAFE.

The probable cause of this Improper RWP event was the RWIC's failure to confirm that AMF1 was in position prior to beginning their inspection to Southern Avenue Station. AMF1 was also not in compliance with Metrorail Safety Rules and Procedures Handbook (MSRPH) Train Roadway Worker Protection, section 5.13.6, "Under the direction of the RWIC, the AMF will position themselves at the next station ahead (in the direction the mobile crew will be walking). The AMF will take their position at the end of the platform (8 car marker or end gate area) in the direction the train is traveling and on the mobile crew is inspecting."

Incident Site

Southern Avenue Station, Track 2

Field Sketch/Schematics



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 via document review

- Formal Interviews – SAFE interviewed one individual as part of this investigation. The interview included persons present at, during, and after the incident, those directly involved in the response process, and representatives from the Washington Metrorail Safety Commission (WMSC). The AMF was terminated by RailPros before an interview could be conducted. SAFE interviewed the following individual:
 - Roadway Worker in Charge (RWIC)

- Documentation Review – Collection of relevant work history information and process documentation contained in WMATA systems of record. These records include:
 - RWIC Training Records
 - RWIC Certifications
 - RWIC 30-Day Work History Review
 - Metrorail Safety Rules and Procedures Handbook (MSRPH)
 - National Oceanic and Atmospheric Administration (NOAA)
 - Rail Operations Control Center (ROCC) Incident Report
 - Contractor Interview Notes of AMF

- System Data Recording Review – Collection of information contained in Metro Data Recording Systems. This data includes:
 - ARS (Audio Recording System) Playback [Radio and Landline Communications]
 - Closed-Circuit Television (CCTV)
 - SPOTS Report
 - Advanced Information Management System (AIMS)

Investigation

On Wednesday, April 28, 2021, at approximately 08:57 hours, a TRST RWIC contacted the Radio RTC and requested to perform a track inspection between Branch Avenue Station and Southern Avenue Station on Track 2 utilizing AMF protection. AMF personnel were provided by RAILPros Contractors. At the beginning of the track inspection, AMF1 was stationed at Suitland Station and AMF2 was at Naylor Road Station to perform flagging duties.

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ensuring a 100% repeat back. A subsequent radio transmission was distorted, so it was unclear if the AMF acknowledged the requested FT. At 09:15:47 hours, the RWIC relinquished FT and informed the Radio RTC they were back under AMF protection. At approximately 09:16:08 hours, AMF1 positioned at Suitland Station, acknowledged FT was relinquished and back under AMF protection.

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At approximately 09:41:48 hours, the RWIC contacted the Radio RTC to inform them that the crew was safely on the platform at Suitland Station and wanted to continue the track inspection to Naylor Road Station, Track 2. The RWIC informed the Radio RTC that AMF2 was in position and requested FT from CM F2-448+00 to F2-393+00. The Radio RTC granted FT and instructed the RWIC to notify Central when FT was relinquished. At approximately 09:43:02 hours, AMF2 positioned at Naylor Road Station acknowledged FT was granted. The RWIC acknowledged the AMF2's radio transmission. At approximately 09:46:08 hours, the RWIC contacted the Radio RTC to relinquish FT and inform the Radio RTC they would proceed under AMF protection. The Radio RTC acknowledged FT was relinquished and advised the RWIC to remain vigilant. AMF2, at Naylor Road Station, acknowledged FT was relinquished, and the crew was back under AMF protection.

At approximately 10:20 hours, the RWIC notified the Radio RTC that the crew was safely on the platform at Naylor Road Station and wanted to proceed to Southern Avenue Station, Track 2, under AMF protection. The Radio RTC granted the RWIC permission to proceed with the track inspection to Southern Avenue Station and advised to stay vigilant. The RWIC failed to radio AMF1 to confirm they were in place for AMF duties. Prior to the RWIC's arrival at Naylor Road Station, CCTV footage showed that AMF1 arrived at Southern Avenue Station and went directly to a shelter on the platform. AMF1 remained in the shelter until the Inspection Crew arrived on the platform. At approximately 10:25 hours, Train ID # 510 arrived at Southern Avenue Station, boarded passengers, and proceeded without receiving instructions from AMF1.

At approximately 10:33:39 hours, the RWIC contacted the Radio RTC to request FT from F2-344+00 to F2-323+00. The Radio RTC granted FT to the RWIC. At approximately 10:34:55 hours, the RWIC radioed to AMF1, "FT, how do you copy?" AMF1 never acknowledged that FT was granted. The RWIC proceeded with the track inspection under FT without confirmation from AMF1. At approximately 10:36:54 hours, the RWIC contacted the Radio RTC to relinquish FT. AMF1 did not acknowledge FT was relinquished. At approximately 10:49:35 hours, the RWIC and Inspector arrived and observed AMF1 inside a shelter. On their arrival, a second train was properly berthed at the Southern Avenue Station platform and about to depart. The RWIC contacted the Radio RTC and reported all personnel were clear for the day from Branch Avenue Station to Southern Avenue Station. The RWIC also stated it was a good track inspection.

The RWIC did not report AMF1's status to the Radio RTC when the crew arrived at Southern Avenue Station. This caused the 2-day delay of notification of the improper Roadway Worker Protection (RWP) event. After TRST management mentioned this in the days following the event, ROCC verified the AMF1's location through CCTV and notified SAFE.

Chronological Event Timeline

A review of ARS playback, i.e., radio communication via Ops. 3, revealed the following timeline:

Time	Description
08:57:22 hours	<u>RWIC</u> : Requested permission to perform a track inspection between Branch Avenue Station and Southern Avenue Station Track-2 utilizing Advanced Mobile Flagging (AMF) Protection. The Job Safety Briefing was completed, and all Hot Spots were identified. AMF1 positioned at Suitland Station, and AMF2 positioned at Naylor Road Station. [Radio]
08:58:05 hours	<u>Radio RTC</u> : Requested clarity on which AMF was stationed at Naylor Road Station. [Radio]
08:58:15 hours	<u>AMF2</u> : Responded they were the AMF at Naylor Road Station. The radio transmission was distorted. [Radio]
08:59:16 hours	<u>AMF1</u> : Informed Radio RTC that they were at Suitland Station, Track 2, at the 8-car marker, ready to flag, and they could barely hear radio transmissions. [Radio]
09:00:05 hours	<u>RWIC</u> : Confirmed with both AMFs that they were ready to flag. [Radio]
09:00:16 hours	<u>AMF1</u> : Confirmed they were in place and ready to flag. [Radio]
09:00:24 hours	<u>AMF2</u> : Confirmed they were at Naylor Road Station, Track 2, standing by. [Radio]
09:00:29 hours	<u>RWIC</u> : Confirmed a good copy to both AMFs and asked Central if they copied. [Radio]
09:00:32 hours	<u>Radio RTC</u> : Granted the RWIC permission to perform their track inspection under AMF protection. Instructed RWIC to notify Central when they clear the interlocking on Track 2. [Radio]
09:00:55 hours	<u>RWIC</u> : Confirmed a good copy from the Radio RTC that permission was granted to enter the roadway, trains were still moving in and out of the area, and power still energized. [Radio]
09:01:25 hours	<u>Radio RTC</u> : Informed all Train Operators that TRST personnel were walking the track Branch Avenue Station to Suitland Station on Track 2 and be on the lookout. Slightly tap your horn, dim lights, and reduce speeds to 15 MPH when passing crew. [Radio]
09:02:45 hours	<u>RWIC</u> : Notified Radio RTC that they cleared the F11-08 signal and were going to proceed under AMF protection. [Radio]
09:02:55 hours	<u>Radio RTC</u> : Acknowledged and informed the RWIC trains were still moving in both directions and power still energized. Notify Central when the RWIC move from station to station, changed locations, or clear. [Radio]
09:13:49 hours	<u>RWIC</u> : Requested FT from F2-510+00 to F2-497+00. [Radio]
09:14:02 hours	<u>Radio RTC</u> : Acknowledged the request for FT. Requested the RWIC to inform Central when one train cleared. [Radio]
09:14:21 hours	<u>Radio RTC</u> : Asked RWIC how long it would take. [Radio]
09:14:27 hours	<u>RWIC</u> : Responded about one minute. [Radio]
09:14:31 hours	<u>Radio RTC</u> : Granted FT to RWIC and instructed RWIC to notify when FT was relinquished. [Radio]
09:14:45 hours	<u>RWIC</u> : Acknowledged FT was granted. [Radio]
09:15:47 hours	<u>RWIC</u> : Relinquished FT and back under AMF protection. [Radio]
09:15:52 hours	<u>Radio RTC</u> : Acknowledged FT was relinquished and to remain vigilant. [Radio]

Time	Description
09:16:08 hours	<u>AMF1</u> : Acknowledged FT was relinquished and back under AMF protection. [Radio]
09:25:30 hours	<u>RWIC</u> : Requested FT from F2 477+00 to F2-457+00. [Radio]
09:25:42 hours	<u>Radio RTC</u> : Asked RWIC how long it would take. [Radio]
09:25:45 hours	<u>RWIC</u> : Responded one minute. [Radio]
09:26 hours	<u>Radio RTC</u> : Granted FT to RWIC and instructed RWIC to notify when FT was relinquished. [Radio]
09:26:11 hours	<u>RWIC</u> : Acknowledged FT was granted.
09:27:58 hours	<u>RWIC</u> : Relinquished FT and back under AMF protection.
09:28:03 hours	<u>Radio RTC</u> : Acknowledged FT was relinquished and to remain vigilant.
09:41:48 hours	<u>RWIC</u> : Informed the Radio RTC that the work crew was safely on the platform of Suitland Station, wanted to continue inspection to Naylor Road Station Track 2, and AMF was in place. Also, I would need FT from F2-448+00 to F2-393+00.
09:42:28 hours	<u>Radio RTC</u> : Granted FT to RWIC and instructed RWIC to notify when FT was relinquished. [Radio]
09:42:41 hours	<u>RWIC</u> : Acknowledged FT was granted. [Radio]
09:43:02 hours	<u>AMF2</u> : Acknowledged FT was granted on Track 2 towards Naylor Road Station. [Radio]
09:43:09 hours	<u>RWIC</u> : Acknowledged AMF2's transmission. [Radio]
09:46:08 hours	<u>RWIC</u> : Relinquished FT and back under AMF protection. [Radio]
09:46:14 hours	<u>Radio RTC</u> : Acknowledged FT was relinquished and to remain vigilant. [Radio]
09:46:22 hours	<u>RWIC</u> : Informed AMF2 they were back under AMF protection. [Radio]
09:46:29 hours	<u>AMF2</u> : Acknowledged they were back under AMF protection and in position at Naylor Road Station, Track 2. [Radio]
10:20:01 hours	<u>RWIC</u> : Notified the Radio RTC that the crew was safely on the platform at Naylor Road Station, wanted to proceed to Southern Avenue Station, Track 2, and AMF in position. [Radio]
10:20:10 hours	<u>Radio RTC</u> : Acknowledged and reminded RWIC to remain vigilant. (audio distorted). [Radio]
10:33:39 hours	<u>RWIC</u> : Requested FT from F2-344+00 to F2-323+00
10:34:19 hours	<u>Radio RTC</u> : Granted FT to RWIC and instructed RWIC to notify when FT was relinquished. [Radio]
10:34:33 hours	<u>RWIC</u> : Acknowledged FT was granted. [Radio]
10:34:55 hours	<u>RWIC</u> : Contacted AMF1 to acknowledge FT was granted. [Radio]
10:36:54 hours	<u>RWIC</u> : Relinquished FT and back under AMF protection. [Radio]
10:37 hours	<u>Radio RTC</u> : Acknowledged FT was relinquished and to remain vigilant. [Radio]
10:49:36 hours	<u>RWIC</u> : Notified the Radio RTC all personnel were cleared for the day from Branch Avenue to Southern Avenue and resulted in a good inspection. [Radio]
10:49:46 hours	<u>Radio RTC</u> : Acknowledged good track inspection and all personnel cleared. [Radio]

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

Advanced Information Management System (AIMS)

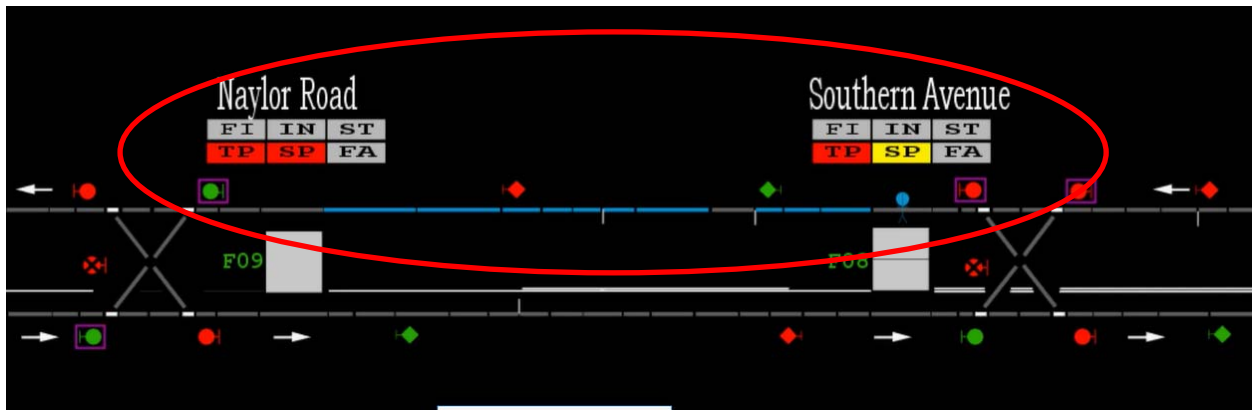


Diagram 1: FT protection provided at Southern Avenue Station.

Closed-Circuit Television (CCTV)

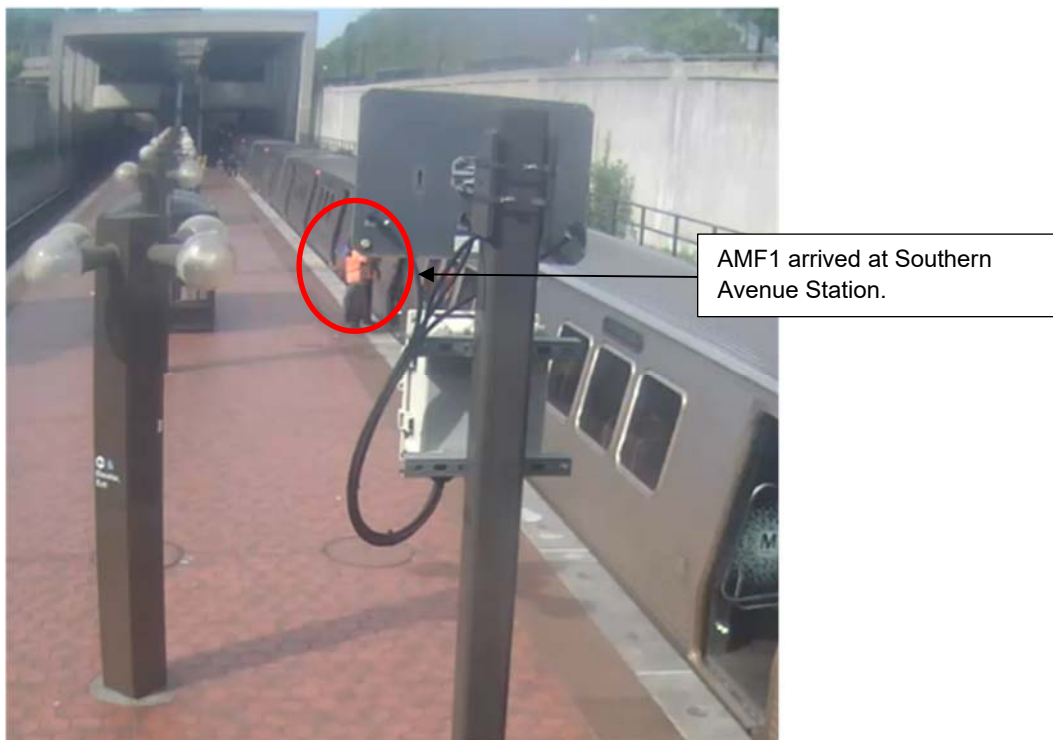


Figure 1: This image shows when AMF1 arrived at Southern Avenue Station at approximately 09:51 hours.



Figure 2: This image shows AMF1 walking into the shelter at approximately 09:52 hours.



Figure 3: This image shows the train that passed at approximately 10:25 hours during the time the AMF was assigned AMF duties.



Figure 4: This image shows the RWIC entered the station platform after completing the track inspection at approximately 10:45 hours and noticing AMF1 exiting the shelter and not positioned at the 8-car marker.

Interview Findings

SAFE interviewed the RWIC via virtual Microsoft Teams. The interview identified the following key findings associated with this event and are as follows:

- The RWIC mentioned both AMFs were alert and responsive during the Job Safety Briefing before they started the track inspection.
- The RWIC stated they did not experience any issues until they started their track inspection from Naylor Road Station to Southern Avenue Station.
- The RWIC failed to get positive radio confirmation from the AMF before starting their track inspection from Naylor Road Station to Southern Avenue Station.
- The RWIC failed to get positive radio confirmation from AMF1 when Central granted them FT and after relinquishing FT.
- There was a train that passed the RWIC and Inspector as they were making their way to Southern Avenue Station.
- The RWIC checked the AMF's radio upon arrival at Southern Avenue Station to make sure they were on the correct channel, and they were.
- RWIC stated AMF1 reported they were tired from working a 12-hour shift for another company the prior night. [Note: RailPros was unable to substantiate this report. RailPros only contractual obligations were for AMF duties.]
- The RWIC acknowledged that it was unsafe to continue the track inspection without positive radio communication to confirm the AMF was in place to provide protection to the inspection crew.

Weather

On April 28, 2021, at the time of the incident, NOAA recorded the temperature as °78 F, with clear skies throughout the afternoon. SAFE has concluded that weather was not a contributing factor in this incident (Weather source: NOAA) – Location: Washington, DC.)

Human Factors

Fatigue

Based on SAFE's review of the RWIC's 7-day work history, the employee's 7-day work schedule leading up to the incident was compliant with WMATA'S Policy/Instruction 10.6/1 Hours of Service Limitations for Prevention of Fatigue. It did not present a risk of impairment due to fatigue.

Evidence of Fatigue

The incident data was evaluated, and no signs or symptoms of fatigue were detected from the available data. The RWIC reported feeling fully alert at the time of the incident. The RWIC reported experiencing no symptoms of fatigue in the time leading up to the incident.

Fatigue Risk

The incident data was evaluated for fatigue risk factors. Risk factors for fatigue were not present. The incident time of day did not suggest an increased risk of fatigue-related impairment. The RWIC was awake for 4.75 hours at the time of the incident. The RWIC reported 8.5 hours of sleep in the 24 hours preceding the incident. The off-duty period was 16 hours, which provides an opportunity for 8 hours of sleep. The RWIC reported no issues with sleep.

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

Post-Incident Toxicology Testing

No post-incident toxicology testing was performed due to the incident being discovered several days after the incident date.

Findings

- The RWIC and the Radio RTC failed to get positive radio communication from the AMF before allowing the RWIC to proceed to Southern Avenue Station from Naylor Road Station.
- The RWIC and the Radio RTC failed to get positive radio communication from the AMF before Radio RTC granted FT to the RWIC.
- The AMF did not position themselves or their equipment at the 8-car marker as required by MSRP Section 5.13.6.
- The RWIC failed to follow proper RWP radio protocol.
- The RWIC did not inform the Radio RTC of AMF1's status when they arrived at Southern Avenue Station.
- A train bypassed the RWIC and Inspector because the AMF was not at the 8-car marker or had the necessary RWP equipment set up at Southern Avenue Station.
- The RWIC and Inspector had to move to a place of safety when they noticed Train ID 510 approaching them.

- The AMF was unable to be interviewed, as Rail Pro terminated their employment.
- There were no observed radio communication issues at Southern Avenue Station.
- AMF provider, RailPros, has a documented fatigue policy. SAFE was not able to substantiate if the AMF was in compliance with RailPros fatigue policy because the AMF was terminated before an interview could be conducted.

Immediate Mitigation to Prevent Recurrence

- The AMF's employment was terminated by RAILPros Contractors.
- The RWIC was suspended for violations of RWP and scheduled to retake the initial RWP Level 4 training course.

Probable Cause Statement

The probable cause of this Improper Roadway Worker Protection (RWP) event was that the RWIC failed to follow proper radio protocol when confirming the AMF's status under AMF protection and FT. Also, AMF1 was not in the proper position to fulfill their duties as an AMF. AMF1 was not in compliance with Metrorail Safety Rules and Procedures Handbook (MSRPH) Train Roadway Worker Protection, section 5.13.6, "Under the direction of the RWIC, the AMF will position themselves at the next station ahead (in the direction the mobile crew will be walking). The AMF will take their position at the end of the platform (8 car marker or end gate area) in the direction the train is traveling and on the mobile crew is inspecting.

SAFE Recommendations/Corrective Actions

Corrective Action Code	Description	Responsible Party	Due Date
SAFE_CAPS_TRST_001	RWIC required to reattend the 5-day initial RWP Level 4 training.	TRST	Employee schedule for training beginning 7/12/2021
SAFE_CAPS_TRST_002	TRST held a virtual stand-down with managers and above to review RWIC responsibilities.	OPMS/TRST	Completed
SAFE_CAPS_TRST_003	TRST holding a Stand-down among inspection crew personnel to highlight and reinforce required procedures, including AMF. A review of this incident and other RWP incidents will be included as part of the curriculum.	OPMS/TRST	7/31/2021
SAFE_CAPS_SAFE_004	Safety Alert issued to clarify and reinforce the RWIC's responsibilities (SA #21-06a).	SAFE	Completed
SAFE_CAPS_SAFE_005	SAFE personnel are conducting nightly checks of mobile crews to make sure they are in compliance with all safety rules. Any findings are reported during daily morning Operations calls.	SAFE	Ongoing

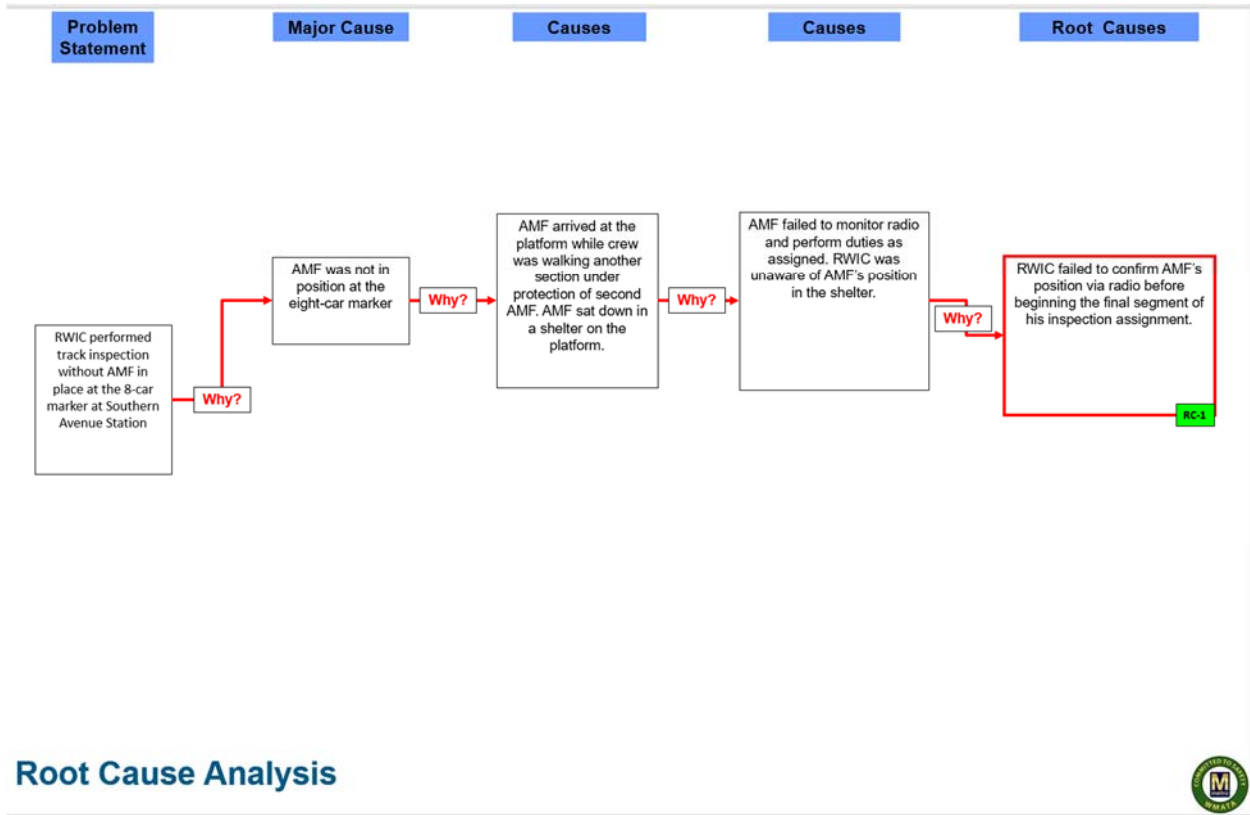
SAFE_CAPS _RTRA_006	SAFE and RTRA developed an updated Rail Operations Personnel Notice regarding the importance of reporting unusual occurrences on the roadway.	RTRA	Completed
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Appendix A – Interview Summary

During the virtual interview, the RWIC gave a detailed overview of the incident that occurred on April 28, 2021. The RWIC stated that at the beginning of the track inspection, everything was going well. Both AMFs were responsive and in place when they were contacted. The RWIC mentioned the issue occurred once they arrived at Naylor Road Station, and it was time for them to proceed to Southern Avenue Station. The RWIC stated they informed Central they were on the platform of Naylor Road Station and wanted to proceed to the next station. The RWIC did acknowledge that they did not know if the AMF confirmed that they were back under AMF protection due to the radio being busy and the Radio RTC moving on to other requests. The RWIC and the Inspector proceeded with their track inspection. Once at the FT location, the RWIC requested FT from Central, and it was granted. The RWIC contacted the AMF but was unsure if the AMF acknowledged or not due to radio transmission being cut off. After the RWIC relinquished FT, there was still no response from the AMF. The RWIC was located at the top of the hill, where they could see the platform of Southern Avenue Station. The RWIC noticed a train at the Southern Avenue Station but did not see the AMF or anything set up. They stated the AMF was in the shelter “asleep.” [NOTE: *This statement could not be confirmed via CCTV review.*] The RWIC stated the AMF did not seem fatigued when they arrived at Suitland Station, where the AMF was initially stationed before advancing to Southern Avenue Station. The RWIC stated when they got to the platform; they were upset because the crew was not protected while conducting the track inspection. The RWIC acknowledged that they did not try to contact the AMF nor Central when they noticed the AMF was not at the 8-car marker and there was nothing set up. The RWIC stated the AMF worked a night job and had worked overnight 12 hours prior to the incident. [NOTE: *This claim was investigated but unable to be substantiated.*] The RWIC stated the AMF had awakened by the time they reached the platform, and it was probably due to the AMF hearing the platform gates closing. The RWIC checked the AMF’s radio to make sure they were on the right Ops channel, and they were. The RWIC mentioned the AMF was fatigued and the Inspector would report the incident when they returned to the yard. The RWIC stated they did not report the incident initially because they were mad and did not return to the office. The RWIC stated they reported the incident the following morning when they reported to work.

During the TRST department interview, the RWIC was asked what is the practice when contacting Central and the AMF for permission to walk an inspection under AMF protection? The RWIC’s response was, “I talk to Central. Normally tell her/him I’m safely on the platform. I ask for permission to walk my next walk (from station to station). Once I get permission from Central, they will advise me to go direct with my AMF. I call for the AMF over the radio. I ask the AMF, are you in place, and are you ready to start your flagging duties. After the AMF confirms, I ask Central if they copied the AMF. Central will then advise me I have permission to walk, permission to perform inspection and I have permission to enter the roadway, with an appropriate warning, and instruct me to contact them when I reach the next platform”. The next question was, in this instance, what were your communications with Central once you reached Naylor Rd? The RWIC’s response was, “Told them we were safely on the platform. Ask Central for permission to continue to Southern Avenue they gave me permission to continue my walk and remain vigilant. They did not ask me to go direct with my AMF. They had already moved on and was talking to someone else”. The RWIC was asked what were their communications with the AMF to confirm they were in place at Southern Ave? The RWIC’s response was, “I tried to reach out to the AMF by the radio, but I couldn’t hear if they responded or not because they were talked over. [Inspector] and I continued the inspection”. The RWIC never tried contacting the AMF by cellphone because they did not have the AMF’s cellphone number. The RWIC acknowledged that it was both unsafe and against RWP protocol to continue an inspection without positive communication over the radio that the AMF was in place to provide protection to the inspection crew. The RWIC stated AMF1 did not have their proper equipment set up on the platform at Southern Avenue Station.

Appendix B – Root Cause Analysis



Root Cause Analysis

