

## WMSC Commissioner Brief: W-0077 – Improper Roadway Worker Protection – West Hyattsville Tie Breaker Station – September 28, 2020

Prepared for Washington Metrorail Safety Commission meeting on April 13, 2021

#### Safety event summary:

After receiving conflicting information from a supervisor and the ROCC, Traction Power Maintenance (TRPM) personnel entered the roadway at the bottom of a shaft without proper Roadway Worker Protection (RWP) in order to access a Tie Breaker Staton between Fort Totten Station and West Hyattsville Station.

A TRPM technician requested access to the roadway at 8:43 a.m. in order to reach the Tie Breaker Station that is not far from the bottom of an emergency exit shaft. Maintenance Operations Control (MOC) told the technician that the TRPM crew would need to wait until after rush hour. However, a TRPM supervisor not located with the work crew heard that transmission, and then instructed the TRPM technician to proceed to the Tie Breaker Station. The supervisor told the technician that MOC had provided separate information via a landline and the five-member work crew (two TRPM technicians, two contractors and one power inspector) could proceed. Phone recordings demonstrate that ROCC told MOC at 8:47 a.m. that this crew had permission to enter the Tie Breaker Station during rush hour.

However, no other steps were taken to obtain the required protection. Only rail controllers – not MOC – can grant the required foul time protection. The technician stated that they assumed their partner had requested and been granted foul time. The crew worked in the Tie Breaker Station for more than an hour, then informed MOC at 10:05 a.m. that they were clear of the Tie Breaker Station. The crew left the Tie Breaker Station without requesting or receiving foul time protection.

Approximately two hours later, the ROCC identified that the other TRPM technician in this work crew had earlier called to request permission to escort contractors into the Tie Breaker Station to conduct work, but that the crew had never requested or been granted foul time to do that. This notification occurred as ROCC controllers were approaching a shift change when paperwork is typically reviewed ahead of the turnover to the following shift.

The investigation identified that there was no clear designation of a Roadway Worker In Charge (RWIC), with each of the TRPM technicians taking parts of that role. The second technician's RWP Level IV certification had expired, so that technician was only certified to RWP Level II.

#### Probable Cause:

The probable cause of this improper RWP event was direction from Metrorail management and compliance of the TRPM crew with the direction, outside of the official track access process, to ignore Roadway Worker Protection requirements, and a lack of shared situational awareness and clear communication among Metrorail personnel. Contributing to this event was confusion in the ROCC related to restrictions on accessing the roadway during rush hour and confusion within the TRPM crew about who was serving as the RWIC.



#### **Corrective Actions:**

Metrorail is developing a lessons learned related to accessing the roadway.

Metrorail also plans refresher training for TRPM personnel related to radio communications.

#### WMSC staff observations:

Addressing communications issues are crucial to safety. This includes communications over the radios, but also communications over landlines or face-to-face in the ROCC.

As required under the Safety Management System (SMS) approach being implemented at WMATA through the Public Transportation Agency Safety Plan (PTASP), Metrorail has committed to identifying and mitigating the root causes of events rather than focusing on individual discipline and blame. This includes identifying the role of supervisors and other managers, and taking appropriate steps to train those supervisors.

Staff recommendation: Adopt final report.



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

## FINAL REPORT OF INVESTIGATION A&I E20366

Date of Event:	9/28/2020		
Type of Event:	Improper Roadway Worker Protection		
Incident Time:	10:05 hrs.		
Location:	West Hyattsville Station - Chain Marker (CM)		
	313+80		
Time and How received by SAFE:	12:35 hrs., On-Call Phone		
WMSC Notification Time:	14:06 hrs.		
Rail Vehicle:	N/A		
Injuries:	None		
Damage:	None		

## West Hyattsville Station – Improper Roadway Worker Protection

## September 28, 2020

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## **Abbreviations and Acronyms**

ARS	Audio Recording System
СМ	Chain Marker
FT	Foul Time
MOC	Maintenance Operations Control
MSRPH	Metrorail Safety Rules and Procedures Handbook
NOAA	National Oceanic Atmospheric Administration
POWR	Power Maintenance Desk
RJSB	Roadway Job Safety Briefing
ROCC	Rail Operations Control Center
RWIC	Roadway Worker In Charge
RWP	Roadway Worker Protection
SAFE	Department of Safety and Environmental Management
TBS	Tie Breaker Station
TRPM	Traction Power Maintenance
WMATA	Washington Metropolitan Area Transit Authority

#### Department of Safety & Environmental Management

#### Executive Summary

On Monday, September 28, 2020, at 10:05 hrs., a Traction Power Maintenance (TRPM) Technician performing Roadway Worker in Charge (RWIC) duties and escorting personnel at the West Hyattsville Tie Breaker Station (TBS) #7 did not request Foul Time (FT) protection to access the roadway.

After the TRPM Technician contacted the Maintenance Operations Control (MOC) Power (POWR) Maintenance desk via landline to request access to the West Hyattsville TBS #7, MOC POWR informed them to contact the Rail Operation Control Center (ROCC) to request FT before entering the roadway. The TRPM Technician acknowledged the directions given by MOC POWR. However, the TRPM Technician accessed the roadway via a locked gate at approximately Chain Marker (CM) 313+80, Track #1, which was approximately 6 (six) feet from the entrance hatch to TBS #7. Upon completion of escorting another TRPM Technician, two contractors and a POWR Inspector to TBS #7 to capture ambient temperature scans of the breakers during normal operations, the TRPM Technician notified MOC POWR they were clear of TBS #7 and the roadway.

The ROCC later notified MOC POWR via phone to inform them the TRPM Technician did not request FT to access the TBS. ROCC instructed the TRPM Technician to call MOC POWR via landline and both TRPM Technicians were subsequently removed from service and transported for post-incident toxicology testing. There were no injuries or damages reported as a result of this incident.

SAFE determined the probable cause of the incident was TRPM Technician was not in compliance with the established WMATA rules and procedures detailed within the Metrorail Safety Rules and Procedures Handbook (MSRPH) or designate another employee to request FT before entering the roadway. TRPM did not verify ROCC granted FT permission. Contributing factors to the incident were communication breakdowns and failures between TRPM Technician 1 (RWIC) and TRPM Technician 2.

Upon analysis of data collected from systems of record and the results of interviews with staff, several procedure violations occurred in this incident. Upon report of clearing the roadway, TRPM Technician was not in compliance with the following MSRPH rules and procedures:

(1) Roadway Worker Protection (RWP) Cardinal Rule 5.2.1.5, "There shall be no fouling of the authority roadway unless it is absolutely necessary to perform your job."

(2) General Rule 1.8, "If any doubt exists regarding the exact meaning of any rule, regulation, special order, procedure, written or verbal instruction or radio transmission, employees shall immediately secure additional information or clarification from their supervisor."

(3) MSRPH 5.13.5 – FT Protection, "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 time. FT is used to safely clear a Red Hot Spot area or when additional RWP is required." As a qualified Level 4 Roadway Worker, TRPM RWIC did not contact ROCC to request FT before entering the roadway to access TBS #7.

(4) MSRPH Safety Rule 4.183, "When it is necessary for employees to walk beyond the platform end gate where the walkway is not protected by a handrail, or to walk or work on tracks around moving train to track equipment, they shall: b. Contact ROCC, before entering the track area, for mainline access and/or the appropriate tower for yard access, indicating the work area to include the beginning and ending station and track number or entry point and track number and the purpose of the work. Permission to enter the roadway is required from the control point."

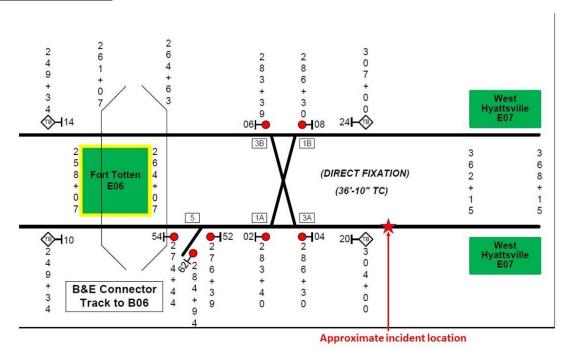
As a result of this investigation, SAFE makes the following recommendations:

SAFE recommends TRPM develop a Lessons Learned with an emphasis on accessing the roadway and requesting FT and TRPM Technicians to attend refresher training with a focus on radio communications.

#### Incident Site

Near West Hyattsville Station, Track #1, CM 313+80

#### Field Sketch/Diagram



#### Purpose and Scope

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

#### **Investigative Methods**

The investigative methodologies included the following:

- Physical Site Assessment
- Formal Interviews SAFE interviewed Two (2) individuals as part of this investigation. Interviews included persons present at, during, and/or after the incident and those directly

involved in the response process.. SAFE interviewed the following individuals:

- TRPM Technician 1 (RWIC)
- TRPM Technician 2
- Documentation Review A collection of relevant work history information and process documentation contained in Metro systems of record. These records include:
  - Employee Training Procedures & Records
  - Certifications
  - The 30-Day work history review
  - MSRPH
  - National Oceanic Atmospheric Administration (NOAA)
  - ROCC Procedures Manual Review
  - Roadway Job Safety Briefing (RJSB)
- System Data Recording Review A collection of information contained in Metro Data Recording Systems. This data includes:
  - Audio Recording System (ARS) playback [Radio and Phone Communications]

#### **Investigation**

Based on investigative findings, the RWP safety violation began when TRPM Technician 1, performing duties as the RWIC, entered the roadway without requesting or receiving permission from the ROCC. According to interviews, the TRPM Technician's work assignment site was located near West Hyattsville Station on Track 1. TRPM Technician 1 was escorting TRPM Technician 2, two contractors and a POWR Inspector to test ambient temperatures on the breakers in TBS #7. After TRPM Technician 1 conducted the Roadway Job Safety Briefing (RJSB), they contacted MOC POWR to request access to TBS #7. MOC POWR informed TRPM Technician 1 they could not access TBS #7 during rush hour and to contact MOC after 10:00 hrs. TRPM, Technician 1 acknowledged. As reported in the SAFE interview, TRPM Technician 1 stated, "the supervisor was contacted and heard the transmission from MOC POWR. The TRPM Supervisor, who was in the office away from the job site, then informed TRPM Technician 1 that MOC POWR had been contacted via landline and the work crew was clear to proceed to TBS #7. The work crew accessed the roadway via an access gate approximately at CM E1 313+80 to enter TBS #7. There was a total of five employees in the work crew including TRPM Technician 1 (RWIC) and TRPM Technician 2.

Based on reported events, TRPM Technician 1 assumed TRPM Technician 2 had requested FT as he was communicating with MOC POWR and ROCC via a landline. TRPM Technician Unit 1 then led the contractors to TBS #7 to perform their work assignment. After work was completed, TRPM Technician 1 contacted MOC and stated, "they were clear of the roadway."

ARS playback review determined, the ROCC contacted MOC POWR to report TRPM Technician 1 did not request FT while accessing TBS #7 at approximately two (2) hours after TRPM Technician 1 called clear of the roadway. MOC POWR responded and stated the TRPM Technician called clear of the roadway at 10:05 hours. The ROCC replied and stated, "the request for FT was not granted since FT was not requested." TRPM Technician 1 and TRPM Technician 2 were both removed from service by ROCC for non-compliance with several safety rules including, not performing a radio check, fouling the roadway without permission, and not requesting FT before entering the roadway.

#### **Chronological Event Timeline**

A review of ARS radio playback revealed:

Time	Description
08:43:55 hrs.	MOC POWR received a request from TRPM Technician 1 to escort contractors to West Hyattsville TBS #7, Track 1.
08:44:20 hrs.	MOC POWR informs TRPM Technician 1 they cannot have access to TBS #7 during rush hour and contact MOC after 10:00 hrs.
08:44:36 hrs.	TRPM 1 informed MOC POWR of the distance to access TBS #7 and reported it is only six (6) feet away on the walkway.
08:45:01 hrs.	MOC POWR informed TRPM Technician 1 to contact after 10:00 hrs.
08:45:11 hrs.	TRPM Technician 1 acknowledged instructions given by the MOC POWR.
08:47:55 hrs.	ROCC received a call from MOC POWR and acknowledged TRPM Technician 1 was granted permission to enter TBS #7 during rush hour.
10:05:04 hrs.	TRPM Technician 1 informed MOC they are clear of TBS #7. (Landline)
12:07:03 hrs.	ROCC contacts MOC POWR and ask about TRPM Technicians location. MOC POWR states TRPM Technician cleared the roadway a long time ago. ROCC asks how they get access to the TBS? MOC POWR stated they received permission from ROCC. ROCC informs MOC POWR the TRPM Technician did not request FT and FT was not granted. (Landline)
12:09:05 hrs.	ROCC Radio Button Controller informed ROCC Assistant Superintendent the TRPM Technician was granted permission to access TBS #7 during rush hour via landline but needed to request FT via radio. ROCC Radio Button Controller stated FT was not requested. (Landline)

#### Interview Findings

Based on the investigation launched into the West Hyattsville Improper RWP incident, SAFE conducted two (2) interviews via phone, including the investigation team and relevant Metro management. These interviews identified the following key findings associated with this event, as follows:

TRPM Technician 1 stated they were escorting contractors to perform scans of the breakers in TBS #7. They reported this type of assignment is normally conducted during non-rush hours but were instructed by the TRPM Supervisor to access TBS #7 during rush hour. Although TRPM Technician 1 gave the RJSB as the RWIC, their duties for the work assignment were to escort the contractors, and TRPM Technician 2 performed RWIC duties, upstairs at the job site only, while TRPM Technician 1 and the rest of the work crew performed duties downstairs in TBS #7. TRPM Technician 2 stated they were certified to the RWP-2 level due to their RWP-4 certification expiring. TRPM Technician 2 was described as having more experience than TRPM Technician 1 and was tasked to perform all RWIC duties except for giving the RJSB.

### <u>Findings</u>

- TRPM Technician 1 entered the roadway without permission. This action is not in compliance with (MSRPH) RWP Cardinal Rule 5.2.1.5, "There shall be no fouling of the authority roadway unless it is absolutely necessary to perform your job" and RWP Rule 5.7 "A verbal radio test must be done to verify the radio receives and transmits clearly."
- TRPM Technician 1 did not adhere to instructions from MOC.
- TRPM Technician 1 accessed the roadway via a locked access gate, which was reported to be approximately 6 (six) feet from the entrance hatch to TBS #7.
- ROCC personnel did not realize the RWIC accessed the roadway without requesting FT until approximately 2 (two) hours passed after the RWIC called clear of the roadway.
- TRPM Supervisor did not assign a dedicated RWIC which contributed to the confusion of RWIC duties between the two TRPM Technicians.

#### <u>Weather</u>

At the time of the incident, the temperature was 68° F with low clouds and 90% humidity. SAFE has concluded that weather was not a contributing factor in this incident (Weather source: NOAA – Location: West Hyattsville, MD.)

#### Human Factors

#### Fatigue

Based on SAFE's interview question related to Fatigue Factors and review of the 30-day work history for TRPM Technician 1 and TRPM Technician 2, SAFE determined, the 30-day work schedules for TRPM Technician 1 and TRPM Technician 2 leading up to the incident were compliant with WMATA's Policy/Instruction 10.7/1 Hours of Service Limitations for Prevention of Fatigue.

#### Post-Incident Toxicology Testing

After reviewing post-incident testing results for TRPM Technician 1 and TRPM Technician 2, SAFE determined the TRPM Technician 1 and TRPM Technician 2 were <u>not in violation</u> of the

### Probable Cause Statement

The probable cause of this improper RWP event was direction from Metrorail management and compliance of the TRPM crew with the direction, outside of the official track access process, to ignore Roadway Worker Protection requirements, and a lack of shared situational awareness and clear communication among Metrorail personnel. Contributing to this event was confusion in the ROCC related to restrictions on accessing the roadway during rush hour and confusion within the TRPM crew about who was serving as the RWIC.

#### **SAFE Recommendations**

As a result of this investigation, SAFE makes the following safety recommendations:

- TRPM Management to develop Lessons Learned with an emphasis on accessing the roadway and requesting FT.
- TRPM Technicians to attend refresher training focusing on radio communications and RWP procedures and requirments.

#### Appendix A – Interview Summaries

#### Interview Details

#### TRPM Technician 1 (RWIC)

This employee is a WMATA "AA" Mechanic with two (2) years of experience and six (6) years of service as a Mechanic Helper. The TRPM Technician last RWP certification was in March 2020 and has no history of sleep issues to report.

Based on the SAFE interview, the TRPM Technician stated, "they worked overnight during regular shift until 06:00." Before finishing his shift, TRPM Technician stated, "direction was received from the supervisor to proceed to Naylor Road to support setting up new transfers." After TRPM completed the task, the TRPM Technician was directed by their management to proceed to West Hyattsville to escort contractors. Before escorting contractors, the TRPM Technician prepared and performed an RJSB as the RWIC. The contractor's work assignment was to take ambient temperature readings of the breakers during normal operations. After the RJSB was conducted, the TRPM Technician contacted MOC for access. MOC denied entry due to rush hour and informed the TRPM Technician to contact after 10:00 hrs.

Next, the TRPM Technician called the TRPM Supervisor and was directed to call MOC again as the issue was already discussed and approved. While talking to the supervisor, the TRPM Technician saw TRPM Technician 2 on the phone with ROCC. After calls were made to MOC and ROCC, TRPM Technician stated they assumed TRPM Technician 2 requested FT and they did not verify. Once the contractors were completed performing scheduled work, the TRPM Technician informed MOC they were clear of the roadway. After the TRPM Technician was off from work, they were contacted and notified of the RWP violation. The TRPM Technician stated they assumed that TRPM Technician 2 received FT from ROCC as they communicated via a landline. ROCC instructed the TRPM Technician to return to work for a post-incident toxicology test. At the time of the incident, the TRPM Technician was RWP-4 level qualified.

#### TRPM Technician 2

This employee is a WMATA Mechanic "D" Helper with fifteen (15) years of experience with TRPM and five (5) years of service as a Mechanic "D" Helper with the Office of Track and Structures. The TRPM Technician last RWP certification was in March 2020 and has no history of sleep issues to report.

Based on the SAFE interview, the TRPM Technician stated, the job that evening was escorting contractors to perform scans of the breakers in TBS #7. This job was a routine work assignment to access a TBS; however, normally, they conduct access during non-rush hour parameters. After the RJSB was conducted by TRPM Technician 1, they contacted MOC for access and was told to contact again after rush hour at 10:00 hrs.

TRPM Technician stated during this time, a POWR Inspector arrived to brief the contractors of the job assignment. The TRPM Technician reported, ROCC gave them permission to access and proceed to TBS #7 with the contractors. While inside TBS #7, the TRPM Technician waited upstairs as the rest of the work crew performed their duties downstairs. After TRPM Technician 1 completed their work, the TRPM Technician stated, "they cleared the roadway, and TRPM Technician 1 informed MOC they were clear at 10:05 hrs." At approximately 12:10 hrs., the TRPM Technician waited proceed to TRPM Technician stated he thought the RWIC (TRPM Technician 1) called for FT, and he did not verify before entering the roadway. The TRPM Technician was

subsequently removed from service and transported for post-incident toxicology testing. At the time of the incident, the TRPM Technician was qualified at the RWP-2 level.

#### Appendix B – Photos



Photo 1: Entrance Gate to TBS #7.

### Appendix B - Photos



Photo 2: Access gate to WMATA Roadway and TBS #7.

WMATA ROA	DWAY JO	B SAFETY BRIEFING FORM	
DATE: 9/28/20	2	TRACK TIME ON/OFF:	D+
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		+	
WORKASSIGNMENT: Contractors testing an			
RAIL LINE: A B C DEFGJKLN TRACK 1.	23	WORK LIMITS CHAIN MARKER(s):	
			/ .
		ETO LOCAL SIGNAL AMF FT 🔽	
REQUEST FROM ROCC: BLOCK CALLS	CANCEL AUT		
RED HOT SPOT(s) TYPE/LOCATION(s):	ED HOT SP	OT HAZARDS · ETS/RADIO OUTAGE	
FOUL TIME PROTECTION CAN E	SE REQUEST	ED IN ALL WORK ZONE CONFIGURATIONS	
POWER OUTAGE: LOCK OUT TAG OUT A	TAG_N	SUPERVISORY NA NO POWER OUTAGE	
RED TAG NUMBER: N/H RED T	AG HOLDE	R:N/A	
ADVANCE MOBILE FLAGGER ASSIGNED: YesNo ADVANCE MOBILE FLAGGER EQUIPPED WITH AMBER LA PIGGY BACK CREW LEADER CALL #(s):/4 PIGGY BACK WORK ASSIGNMENT:	NTERNS/E-F	LARES, ORANGE FLAG, AIR HORN, WHISTLE AND RADIO:	
NUMBER OF RMM(s): RMM OPERATIC	INS IN WOR	KZONE: N/A	
ALL ROADWAY WORKERS MUST EXERCISE GOOD JUDGE PROCEDURES BEFORE ENTERING THE ROADWAY:	MENT AND	CONSIDER THE FOLLOWING POTENTIAL HAZARDS AND	a nas
WEATHER CONDITIONS	V	TRIPPING HAZARDS / UNEVEN WALKING SURFACES	V
RACK GRADE AND VISIBILITY	1	POOR LIGHTING / TUNNEL AND VENT SHAFT(S)	V
AZARDS ASSOCIATED WITH RAIL VEHICLE MOVEMENT		TRAIN / CURVE SPEED(s)	
ORK SITE CONDITIONS AND ACTIVITIES		ETS BOX(s) LOCATIONS	
MERGENCY PROCEDURES	A	EQUIPMENT AND TOOL SAFETY	
DJACENT TRACK PROTECTION		ROTATION AND RELIEF PROCEDURES	V

Rv. 3 WMATA Roadway Job Safety Briefing Form, Date: November 2018

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Date: 9/28/2020 Time: 10:05 hrs. Final Report Rev. 1 – Improper RWP E20366

Rev. 1 Drafted By: SAFE 702 – 03/31/2021 Rev. 1 Reviewed By: SAFE 704 – 03/31/2021 Rev. 1 Approved By: SAFE 02– 03/31/2021

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#### WMATA ROADWAY JOB SAFETY BRIEFING FORM

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

Inspect PPE V Inspect RWP Sticker V Inspect Radio(s) Certification Due Date

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Perform Radio Check(s)

I understand and agree with all aspects of the Roadway Job Safety Briefing I just received. I feel 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 WORKER ACKNOWLEDGEMENT

Roadway Worker Signature	Employee/Contractor ID #	Crew Leader(s) Signature	/ID# Radio Call #
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ELIEVING RWIC:			
	GOOD FAITH CHALLENGE I	NFORMATION	
EMPLOYEE(s) NAME:	EMPLOYEE(s)#_	DATE/	
	EMPLOYEE(s)#		

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