

**WMSC Commissioner Brief: W-0234 – Improper Roadway Worker Protection at Wheaton Station – February 26, 2023**

Prepared for Washington Metrorail Safety Commission meeting on August 8, 2023

Safety event summary:

During a full-scale emergency exercise at Wheaton Station, a Rail Supervisor who was part of the exercise entered the adjacent active passenger track (which was not part of the exercise) without required roadway worker protection. This meant that a train could have struck the Rail Supervisor. WMSC staff on site identified this possible improper roadway worker protection and communicated it to Metrorail personnel. Further investigation determined that the Rail Supervisor had actually entered Track 1 at the direction of the exercise Rail Traffic Controller without required protection in place.

On Sunday, February 26, 2023, WMATA's Office of Emergency Preparedness conducted a full-scale exercise at Wheaton Station that included participants from Montgomery County Fire and Rescue Services and WMATA personnel. Metrorail established a work zone on Track 2 to protect the exercise through the use of exclusive track occupancy. Track 1 remained an active passenger track with trains single-tracking through the station from the time Metrorail opened through the conclusion of the exercise. WMSC staff observed the exercise as part of regular oversight activities. The purpose of these exercises is to provide practice and familiarization through the use of real-world scenarios in a controlled environment to improve response and coordination during a real emergency event. Exercises also include "injects" that create various scenarios to make the situations more like a real event. Personnel participating in the event are unaware of these "injects" until those "injects" are presented to them. These may include information about conditions, additional safety events, or hiccups in response such as ability to control power or communications.

Prior to these exercises, participants are provided instructions on their roles and given a safety briefing that includes exercise boundaries. Briefings occurred at this exercise for personnel on site at Wheaton Station. Ops Channel 11 was designated as the radio channel in use for this exercise. In addition, all transmissions were to begin with the words "exercise, exercise, exercise" for all transmissions among the simulated Rail Operations Control Center and personnel participating in the exercise. This terminology was not used throughout the exercise.

The exercise scenario was a derailment in the tunnel just beyond the platform limits at Wheaton Station on Track 2. The exercise started at 8:56 a.m. when the Train Operator notified the exercise Rail Traffic Controller via Radio Ops 11 that their train had derailed.

During the simulated response, a Warning Strobe and Alarm Device (WSAD) sounded on Track 2 where the exercise was being conducted, indicating that third rail power may have been unexpectedly restored. In response, the exercise Rail Traffic Controller instructed a Rail Transportation Supervisor to confirm third rail power was de-energized on both Track 2 and Track 1. This was not coordinated with the exercise Incident Command or identified by the exercise controllers responsible for the drill. In a real derailment, Metrorail procedures call for power to be de-energized on both tracks, and for personnel to act in accordance with direction from Incident Command. The Rail Supervisor exited the exercise area and entered Track 1, an active track that Metrorail had intended to be off limits to exercise participants, and checked the status of third rail power. The Rail Supervisor reported that the third rail power was energized. The Rail Supervisor did not have foul time or other protection while on the active track that trains were single-tracking on past the exercise.



In an interview for this investigation, the exercise Rail Traffic Controller stated that they did not receive a briefing before the exercise began and that they were not aware that the exercise was restricted to Track 2 only.

The Rail Supervisor stated during an interview that their role in the exercise was switched the day of the exercise and that they received a radio for the exercise that did not have Radio Ops 11 programmed. This resulted in the Rail Supervisor initially not being able to hear exercise transmissions when the exercise commenced. The Rail Supervisor switched to their own assigned WMATA-issued radio to listen to and transmit on Radio Ops 11.

Review of closed-circuit television and other evidence demonstrates that the Rail Supervisor used their key to enter the area of refuge, then accessed Track 1 where they entered the roadway with a hot stick to confirm whether third rail power was energized.

After the exercise Rail Traffic Controller instructed the Rail Supervisor to access Track 1, and the Rail Supervisor reported that power was still energized, the exercise Rail Traffic Controller stated to others in the portion of the Rail Operations Control Center being used for the exercise that they hoped the Supervisor had not gone to the roadway. Metrorail personnel did not take any action to determine whether this safety event occurred. The Rail Traffic Controller had no way of knowing what parts of the activities were simulated or part of the exercise and which parts in the field were actually occurring as radio transmissions throughout the exercise did not consistently utilize "exercise, exercise, exercise."

The Rail Supervisor stated in an interview that they did not remember hearing the Rail Traffic Controller announce "Exercise" and noted some confusion on their part throughout the exercise. The Rail Traffic Controller and Rail Supervisor reported challenges with radio transmission quality during the event.

WMSC personnel observing the exercise heard the radio communications regarding the supervisor and power energization, and heard the WSAD alarm. At the time this occurred, the WMSC staff observing the exercise were on the train that was being treated as derailed and at the incident command post outside the station. WMSC personnel communicated the concern on site regarding the possible entry onto Track 1 to Metrorail's exercise organizers. Due to the WMSC raising the concern, Metrorail and the WMSC conducted further investigation and review that determined the Rail Supervisor had entered Track 1 without protection while train movement through the area was authorized.

Probable Cause:

The probable cause of this improper roadway worker protection was Metrorail's inadequate communication of safety restrictions, inadequate supervisory and planning oversight to ensure that proper exercise protocols such as radio communications protocols were followed, and insufficient protections and supervisory oversight to ensure personnel remained within established working limits.

Corrective Actions:

Metrorail's Office of Emergency Management and Preparedness is reviewing the playbook used for such events to modify procedures for future emergency drill exercises.

Metrorail's Safety Department completed the following corrective actions:

- Initiate review and implement revised instructions in emergency drills.



- Initiate review and implement revised visual and physical barriers/warnings to limit the scope of role players' access.
- Initiate review and implement script instructions and or subject matter experts to monitor and intervene to avoid conflicting instructions or actions at site, simulated control centers and staging areas.

Examples of other related open CAPs

- C-0065 addresses the finding that not all controllers experience emergency drills. If each ROCC controller does not get this experience, it diminishes the value of the drills. (Metrorail providing updated documentation)
- C-0176 addresses the recommendation that Metrorail has opportunities to improve and expand training and training coordination related to fire and life safety and emergency management. (Expected completion date: March 2024)
- Metrorail is implementing corrective action plans C-0214 through C-0224 to address findings and recommendations from the WMSC's Communications Audit issued in September 2022. Metrorail is also implementing other corrective action plans and capital work related to radio communication systems.

WMSC staff observations:

In addition to the improper roadway worker protection, Metrorail did not properly control the area of the exercise. A passenger was able to enter the station and access the platform where the exercise was taking place, despite the station being closed with trains bypassing via single-tracking. In the event of a similar real-life emergency, Metrorail procedures also call for the station to be closed for the response. Event scene control is important to the safety and effectiveness of first responders and to the overall response.

Metrorail's emergency exercises are important learning opportunities as part of Metrorail's continuous improvement process, but must be conducted safely.



Washington Metropolitan Area Transit Authority
Department of Safety (SAFE)
Office of Safety Investigations (OSI)
FINAL REPORT OF INVESTIGATION A&I E23141

Date of Event:	February 26, 2023
Type of Event:	Improper RWP
Incident Time:	09:48 Hours
Location:	Wheaton Station – Track 1 CM B1 625+00
Time and How received by SAFE:	February 27, 2023, at 14:32 Hours Mission Assurance Coordinator (MAC)
WMSC Notification Time:	14:32 Hours
Responding Safety Officers:	None
Rail Vehicle:	N/A
Injuries:	None
Damage:	None
Emergency Responders:	None
SMS I/A Incident Number:	20230307#106680

Wheaton Station – Improper RWP

February 26, 2023

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Abbreviations and Acronyms

AIMS	Advanced Information Management System
AOM	Assistant Operations Manager
CAP	Corrective Action Plan
CCTV	Closed-Circuit Television
CM	Chain Marker
COMR	Office of Radio Communications
FT	Foul Time
MAC	Mission Assurance Coordinator
MCFRS	Montgomery County Fire and Rescue Services
MSRPH	Metrorail Safety Rules and Procedures Handbook
NOAA	National Oceanic and Atmospheric Administration
OEP	Office of Emergency Preparedness
OSI	Office of Safety Investigation
RTC	Rail Traffic Controller
RTRA	Office of Rail Transportation
ROCC	Rail Operations Control Center
RWIC	Roadway Worker In Charge
RWP	Roadway Worker Protection
SAFE	Department of Safety
SMS	Safety Measurement System
SPOTS	System Performance On-Time Summary
WMATA	Washington Metropolitan Area Transit Authority
WMSC	Washington Metrorail Safety Commission

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

Executive Summary

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

On Sunday, February 26, 2023, the Office of Emergency Preparedness (OEP) held a full-scale exercise at Wheaton Station. The exercise involved coordination between the Washington Metropolitan Area Transit Authority (WMATA) and multiple fire department units within Montgomery County Fire and Rescue Service. The exercise was confined to Wheaton Station on track 2. The exercise was set up as a hands-on scenario involving multiple agencies responding to a train derailment scenario within Wheaton Station on track 2. Track 1 was operating in bypass for revenue train service.

Prior to the exercise, all participants received a safety briefing about the exercise boundaries and safety precautions. At 08:56 hours, the exercise commenced with the Train Operator reporting the derailment to the simulated Rail Operations Control Center (ROCC) on the Ops 11 Radio Channel. All communications on Ops 11 were designated to be simulated parts of the exercise. At 09:37 hours, an Office of Rail Transportation (RTRA) Rail Supervisor reported to the simulated Radio Rail Traffic Controller (RTC) that they were located at Wheaton Station. At 09:41 hours, as part of the exercise, the Radio RTC instructed the Rail Supervisor to confirm that third rail power is deenergized on track 1. In response to these instructions, the Rail Supervisor departed the designated exercise scenario area through a locked door and entered onto track 1 without foul time protection and performed hot sticking at chain marker (CM) B1 625+00. At 09:48 hours, they reported third rail power as energized to the Radio RTC. The Rail Supervisor returned to the designated exercise scenario area and continued with the exercise.

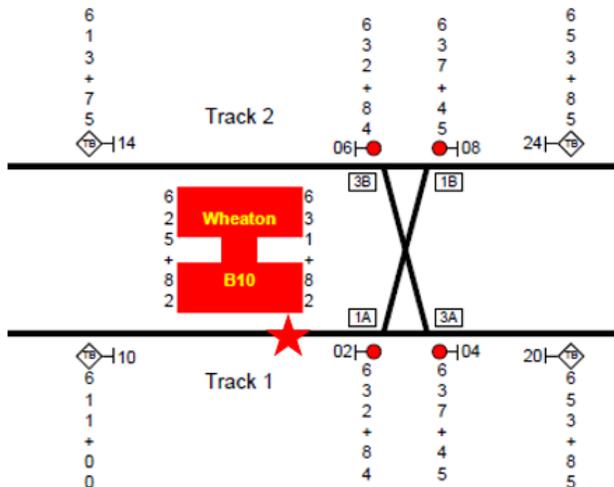
There were no injuries or damage as a result of this event. The deviation from the scenario was not identified until the following day upon receiving an inquiry from the Washington Metrorail Safety Commission (WMSC). After interviewing the involved parties and reviewing available video and audio recordings, the Improper RWP event was confirmed.

The Probable Cause of the event was a loss of Situational Awareness by the Rail Supervisor, which resulted in them deviating from the established boundary limits of the exercise. A Contributing Factor to the event was inadequate oversight of the simulated radio communications between the ROCC and RTRA players.

Incident Site

Wheaton Station, track 1 CM B1 625+00

Field Sketch/Schematics



The above depiction is not to scale.

Purpose and Scope

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

Investigative Methods

The investigative methodologies included the following:

- Physical Site Assessment
- Formal Interviews – SAFE interviewed 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 individual(s):
 - Rail Supervisor
 - Senior Planning & Exercising Specialist
 - Simulated Radio Rail Traffic Controller (RTC)
- Documentation Review – Collection of relevant work history information and process documentation contained in WMATA systems of record. These records include:
 - Metrorail Safety Rules and Procedures Handbook (MSRPH)
 - National Oceanic and Atmospheric Administration (NOAA)
 - Full-Scale Exerciser Controller/Evaluator Handbook
 - Communication Plan for Full Scale Exercise
 - General Orders & Track Systems (GOTORS)
 - OEP After Action Investigative Report-Pending

- System Data Recording Review – Collection of information contained in Metro Data Recording Systems. This data includes:
 - Audio Recording System (ARS) playback, include OPS 11, MTPD 4X,
 - Closed-Circuit Television (CCTV)
 - Advanced Information Management Systems (AIMS)
 - System Performance On-Time Summary (Spots)

Investigation

On Sunday, February 26, 2023, OEP held a full-scale exercise at Wheaton Station. The exercise served to test the operational coordination, interagency communication, and evacuation coordination of WMATA and multiple fire department units within Montgomery County Fire and Rescue Service. The exercise was confined to Wheaton Station on track 2. Track 1 was operating in bypass for revenue train service.

According to the General Orders & Track Rights System (GOTRS) a track rights request for SAFE/OEP Response and Recovery was approved to perform a Full-Scale Exercise with Supervisory Power Outage between CM B2 607+79 and 636+90.

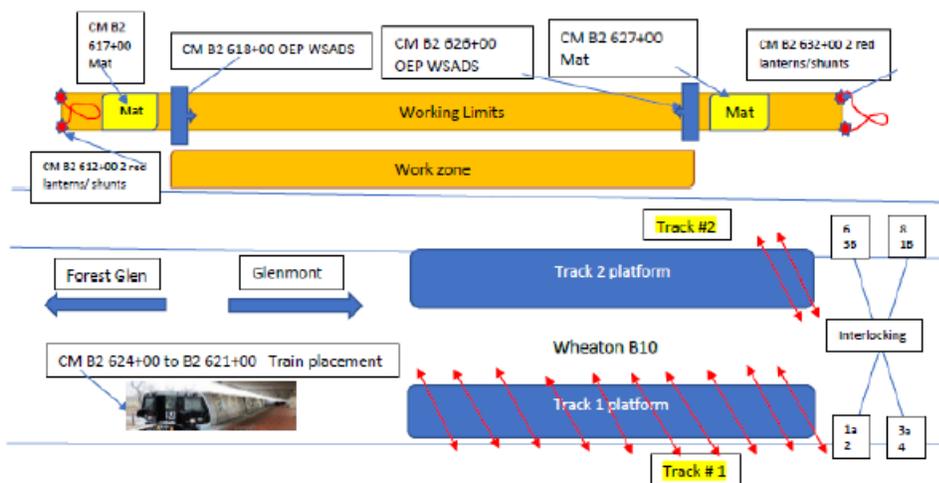


Figure 1 – GOTRS approved track set up during the exercise.

The exercise was set up as a realistic, hands-on exercise scenario requiring multiple agencies and disciplines to respond to and mitigate the impacts of a train derailment scenario within Wheaton Station on track 2.

The exercise required the mobilization of personnel and resources to respond to a simulated event within the station. WMATA Employees, WMSC Members, Montgomery County Fire and Rescue Service Personnel and Volunteers of the public participated in the exercise.



Image 1 – Ariel view of the location of the exercise.

Prior to the full-scale exercise on February 26, 2023, OEP conducted multiple Participant Meetings to discuss the requirements and procedures. According to the Full-Scale Exercise Controller/Evaluator Handbook, there were multiple participant roles including Players¹, Observers, Very Important Persons, Controllers², Evaluators and Support Staff. Participants were only to go to the Track 2 side of Wheaton Station, where there is no access to Track 1. Players could use the Platform Level areas designated for them, including access to the roadway and train. During the exercise all spoken and written communication pertaining to the exercise were designated to begin and end with the statement: “EXERCISE, EXERCISE, EXERCISE.” The Audio Recording System (ARS) revealed that at 08:56 hours, the exercise commenced on Ops 11 with the Train Operator reporting the derailment to the ROCC.

On the day of the exercise, the Rail Supervisor initially signed in as a Controller and was given a “Controller” radio programmed to tac 7 for that role. Later, they advised the Exercise Team that they would be performing as a Player for RTRA and signed in under that role and reported to the Staging Area. During the formal interview, the Rail Supervisor stated that days prior to the exercise they attended a Participant Meeting when they were informed that the exercise would take place at Wheaton Station on track 2 only. On the day of the exercise, they arrived at the site and attended a safety briefing before participating in the scenario. They were advised that the event was a simulation and were handed a handheld radio and instructed to monitor MTPD-4 radio ops. They were directed to the Staging Area,³ located across street at the mall. While at the staging area, they received a phone call from their Supervisor advising that ROCC was

¹ Players are personnel who have an active role in discussing or performing their regular roles and responsibilities during the exercise. Players discuss or initiate actions in response to the simulated emergency.

² Controllers plan and manage exercise play, set up and operate the exercise site, and act in the roles of organizations or individuals that are not playing in the exercise. Controllers direct the pace of the exercise, provide key data to players, and may prompt or initiate certain player actions to ensure exercise continuity. In addition, they issue exercise material to players as required, monitor the exercise timeline, and supervise the safety of all exercise participants.

³ The Incident Staging Area is a designated location to be used at the discretion of the on-scene Incident Commanders. This location can be used to stage additional units and resources for exercise response and is intended to simulate real-world incident staging areas.

attempting to contact them on Radio Channel Ops 11 and were instructed to respond. They had to utilize their assigned handheld radio used during normal duty to contact the simulated ROCC because the assigned handheld radio for Controllers did not include radio ops 11.

At 09:37 hours, the Rail Supervisor reported to the Simulated Radio RTC that they were located at Wheaton Station. At 09:41 hours, the Simulated Radio RTC requested that the Rail Supervisor confirm that third rail power was deenergized on track 1 in response to the simulated Incident Commander's request. At 09:43 hours, the Simulated Radio RTC advised the Rail Supervisor that they were, "protected with red signals, blue block, human form with prohibits" then granted permission to enter the roadway on track 1 to hot stick and confirm that third rail power was deenergized. The Radio RTC did not begin and end their transmission with the required statement, "EXERCISE, EXERCISE, EXERCISE."

The Rail Supervisor then departed the exercise area via track 2 by using a key to enter the locked refuge area located at the end of the platform just beyond the 8-car marker. They used this door to access track 1, an active revenue track, without foul time protection and performed hot sticking at CM B1 625+00.

In order to access the area, the Rail Supervisor interacted with the Roadway Worker In Charge (RWIC) for the exercise on the platform and then proceeded into the tunnel on track 2. Once out of view of the RWIC, they accessed the door and crossed to track 1 without being observed. At 09:48 hours, the Rail Supervisor reported third rail power as energized to the Radio RTC. The Rail Supervisor returned to the designated exercise scenario area and continued with the exercise.

Exercise Support Staff were positioned at both ends of the exercise zone on Track 2. This included at the derailment site and at the opposite end eight-car marker at Wheaton Station. Barriers were erected at the bottom of the mezzanine escalator showing the Track 1 side of the station as off-limits. There were no Support Staff or markings in the area of the door that the Rail Supervisor accessed using their assigned keys.

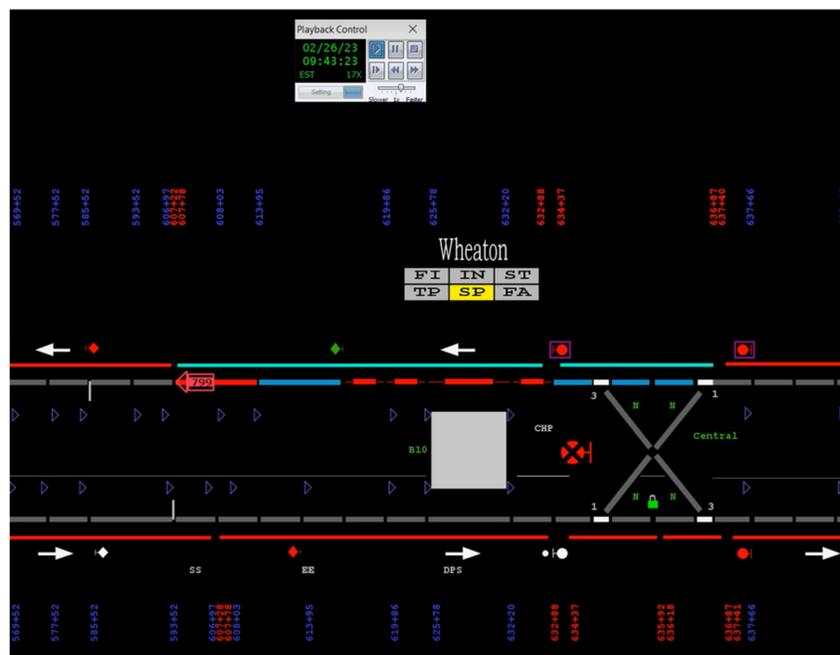


Figure 2 – AIMS depicting third rail power energized on track 1 during the exercise.

During the formal interview, the Simulated Radio RTC stated that they volunteered to participate in the exercise. They did not attend the Participant Meeting and did not receive a briefing the day of exercise. When they arrived at the ROCC Training Lab, they were informed that they would be simulating a derailment and reviewed the MSRPH for reference of the derailment procedures. They were given a handheld radio and a simulated Advanced Information Management System (AIMS) display. After the exercise began, the Assistant Operations Manager (AOM) instructed them to say “exercise, exercise, exercise.” They had difficulty contacting the Rail Supervisor, but the Rail Supervisor eventually responded on the radio. They directed the Rail Supervisor to hot stick on track 1 in accordance with the MSRPH. The Simulated Radio RTC stated that they did not receive a briefing that the exercise was limited to track 2 but were aware that there were trains bypassing on track 1. At the time they received the Chain Markers for hot sticking, the Simulated Radio RTC thought that the Rail Supervisor may have physically hot stuck and made a statement that they, “hope the Supervisor did not go to the roadway; they made the statement loud enough for all to hear, but received no response.”

According to the System Performance On-Time Summary Report (SPOTS), Train ID 106 bypassed Wheaton Station on track 1 at 09:36 hours. Train ID 107 bypassed Wheaton Station on track 1 at 09:52 hours.

ROCS SPOTS REPORT

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

Current date/time: Thu Mar 16 13:11:30 2023

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

Generate Report

ID	Platform	length	dcode	Right door open	Right door close	dwll	Left door open	Left door close	dwll	Head Arrived	Tail cleared	cars	Headway door open to door open
103	B10-1	6	13							09:07:46	09:08:18	3263-3262.3145-3144.2032-2033	-
103	B10-1	6	12							09:17:57	09:18:34	2033-2032.3144-3145.3262-3263	-
105	B10-1	8	13							09:25:15	09:25:47	7440-7441.7173-7172.7344-7345.7233-7232	-
106	B10-1	8	12							09:35:59	09:36:37	7232-7233.7345-7344.7172-7173.7441-7440	-
107	B10-1	8	13							09:52:25	09:52:57	7486-7487.7047-7046.7048-7049.7271-7270	-

Table 1 – SPOTS Reporting depicting Train ID 106 bypassed Wheaton Station on track 1 at 09:36 hours. Train ID 107 bypassed Wheaton Station on track 1 at 09:52 hours.

After the exercise concluded, an observing member of the WMSC reported to the Senior Planning & Exercising Specialist that they thought that someone accessed track 1 during the exercise. After a brief discussion about whether they were referring to a customer that exited a train onto the track 1 platform at the beginning of the exercise, they reported that they weren’t sure and would follow up with more information. On February 27, 2023, the WMSC members that participated in the exercise reported that while they were located on the incident train the Rail Supervisor possibly performed hot sticking at Wheaton Station on track 1.

After OSI confirmed that the Rail Supervisor performed hot sticking on track 1 at Wheaton Station during the exercise, an official notification for an Improper RWP event was sent to the WMSC. OEP and RTRA were also notified of the event.

Chronological ARS Timeline⁴

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

<u>Time</u>	<u>Description</u>
08:08:00 hours	RWIC contacted ROCC RTC to establish working limits. [Radio Ops 1]
08:10:00 hours	Supervisory Tag Execution Authorized. [Radio Ops 1]
08:14:00 hours	De-Energization completed, RWIC notified. [Radio Ops 1]
08:21:00 hours	Permission is granted to setup worksite. [Radio Ops 1]
08:29:00 hours	Radio RTC authorization to start work was given to RWIC. [Radio Ops 1]
08:56:43 hours	Exercise – The Train Operator reported to the Radio RTC that Train ID 101 derailed at Wheaton Station, track 2. [Radio Ops 11]
09:13:36 hours	Exercise – Radio RTC requested a response from a Rail Supervisor. [Radio Ops 11]
09:37:21 hours	Exercise – Rail Supervisor contacted Radio RTC and reported located at Wheaton Station. [Radio Ops 11]
09:36:37 hours	Train ID 106 bypassed Wheaton Station, track 1. [SPOTS]
09:41:29 hours	Exercise – Radio RTC requested the Rail Supervisor to hot stick track 1. [Radio Ops 11]
09:42:20 hours	Radio RTC received a report of an active WSAD on track 2. Radio RTC instructed attendees to clear the roadway. [Radio Ops 11]
09:43:50 hours	Exercise – Radio RTC granted permission to the Rail Supervisor to enter the roadway on track 1 to hot stick. [Radio Ops 11]
09:48:10 hours	Rail Supervisor reported to the Radio RTC that third rail power was energized at B1 625+00. The Radio RTC instructed the Rail Supervisor to hot stick on track 2. [Radio Ops 11]
09:52:25 hours	Train ID 107 bypassed Wheaton Station, track 1. [SPOTS]
10:03:51 hours	Train ID 101 reported an active WSAD to the Radio RTC. [Radio Ops 11]
10:05:30 hours	Radio RTC instructed the Rail Supervisor to hot stick on track 2. [Radio Ops 11]
10:06:30 hours	Train Operator announced that the exercise was placed on hold until third rail power is confirmed deenergized. [Radio Ops 11]
10:07:04 hours	Rail Supervisor reported to the Radio RTC that third rail power was deenergized at B2 624+00. [Radio Ops 11]
10:08:50 hours	Train Operator announced that third rail power was deenergized on track 2 and the exercise could resume. [Radio Ops 11]
10:10:19 hours	Exercise – Radio RTC announced that the exercise was resuming and added the statement “This is an exercise.” [Radio Ops 11]
10:26:23 hours	Rail Supervisor advised the Radio RTC that MTPD requested to replace the Fire Department WSAD with a WMATA WSAD. [Radio Ops 11]
10:27:00 hours to 12:15:00 hours	Exercise transmissions were performed. [Radio Ops 11]
12:16:00 hours	PDC confirmed working limits were clear.
12:17:00 hours	Radio RTC confirmed working limits were clear. [Radio Ops 1]

⁴ Note that all communications on Ops 11 were related to the exercise and were not real. The listed identifiers refer to the simulated role that each party was fulfilling.

<u>Time</u>	<u>Description</u>
12:19:00 hours	Energization by PDC completed. [Radio Ops 1]

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

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

On February 24, 2023, COMR performed radio testing at Wheaton Station and provided to the following:

“COMR Units performed CRCS radio check between Forest Glen Station and Wheaton Station on tracks 1 and track 2. At Forest Glen Station, track 1 in the middle of the tunnel there are Uplink Signal (UL) issues (no push to talk). Between Forest Glen Station and Glenmont Station, track 1 all radio checks were loud and clear. Between Glenmont Station and Wheaton Station, track 2 the radio became intermittent, digitizing, and sometimes unenabled to key up at the middle of the tunnel. Signal plotting is needed, but due to a battery problem COMR couldn't perform UL signal plotting. COMR reported all systems functional.

Related Rules and Procedures

MSRPH Section 5 – RWP Rules, 5.13.5 Foul Time (FT)

5.13.5 Foul Time (FT)

Working limits may be established on controlled track using Foul Time (FT) procedures for the purposes of completing work that will not disturb the track or third rail structure in a manner that would prevent movements at normal speeds. This includes but is not limited to inspection, minor repairs and maintenance, and testing. Work that will result in the inability to clear and allow train movement in a timely manner, (i.e., removal of a section of rail, removal of switch rods making switch inoperable, removal of ties resulting in a reduction in track speed, or wire or circuitry work that cannot be completed before FT must be relinquished) may not be completed under FT.

FT may be issued only by the Rail Traffic Controller and FT information must be recorded by the Rail Traffic Controller issuing the FT and recorded by the employee requesting the FT on the appropriate documents. Employees requesting FT must hold a current Level 2 or Level 4 RWP qualification. FT must be utilized to safely clear Hot Spots.

A. Action Required to Request Foul Time: The person requesting to foul the track must contact the RTC and provide the following information:

1. Department, when applicable, and radio call number of employee requesting FT
2. Track Designation (Line and track number)
3. Track limits (chain marker(s))
4. Reason for requesting FT
5. Time limits

B. Action Required Prior to Issuance: Before issuing or authorizing FT, the Rail Traffic Controller must ensure that no trains or other on-track equipment have been authorized to occupy the track segment to be fouled. In signaled territory, the Rail Traffic Controller must ensure that Stop indications have been displayed and blocking devices (including technological solutions) applied to controls of switches and signals leading to and within the affected track.

C. Permission to Foul: Permission to foul the track must include the following information:

1. Department, when applicable, and radio call number of the employee requesting FT

2. Track Designation (Line and track number)
3. Track Limits (chain marker(s))
4. Time Limits
5. Time Effective

The receiving employee must repeat this permission and the Rail Traffic Controller must then confirm it before FT becomes effective.

Interview Findings

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

Senior Planning & Exercising Specialist

- The purpose of the drill was to test multiple issues: Response, Coordination and Communication between the Train Operator, ROCC Controllers, MTPD and Fire Department personnel. Approximately 150 persons were involved.
- A Safety Briefing held for role players on the March 23, 2023, prior to exercise and on morning of the exercise. There were four groups, including Role Players, Exercise Controllers, Observers and Very Important Persons.
- The information was generally the same. The ROCC role players were located in the simulated ROCC room at Carmen Turner Facility and were given the scenario prior to event beginning with focus on performing their normal functions and roles.
- The Senior Planning & Exercising Specialist recalled providing the Rail Supervisor a safety briefing at Wheaton Station after they signed the roster as a Controller. The Rail Supervisor went to the staging area with an Exercise Controller and signed in as a Player and received an additional safety briefing. They then waited in an MTPD vehicle to respond to Wheaton Station. This was to simulate being transported from another rail station to assist.
- The Rail Supervisor should have been on Radio Ops 11, the only channel for their role.
- They did not hear Radio RTC instruction to the Rail Supervisor, they were on Radio Ops Tac-7.
- The Radio RTC was not in command of the scene, they should not have directed the Rail Supervisor to hot stick. Directions to Rail Supervisor would have come from the Incident Command.
- Initial Command began with the train operator until MTPD and/or MCFRS arrived on scene. MTPD and MCFRS formed a Unified Command until MCFRS turned the scene over to MTPD solely. MTPD then turned the scene over to RTRA.
- Role Players were advised to approach the Exercise Controllers with issues or concerns such as radios not working, confusion with the exercise information.
- Appropriate markings and warnings were positioned throughout the staged derailment.

Rail Supervisor

- Attended two safety briefings prior to exercise and was advised that the event was a simulation.
- Reported the radio transmissions were “choppy” and the handheld radio provided was not working properly and there were no additional radios.
- They were instructed to report to the staging area and monitor MTPD Ops 4.

- They received a call from their supervisor advising them that the Radio RTC was trying to contact them on Ops 11 and to respond to the exercise.
- The handheld radio that was provided did not have Ops 11. They retrieved their assigned handheld radio and contacted the Radio RTC.
- They assumed that they were under the direction of the Radio RTC when they went to hot stick track 1 and confirmed that third rail power was energized.
- They did not remember hearing the Radio RTC announce “exercise” after arriving to the event.
- They utilized the refuge area to gain access to track 1. There were no barriers, the door was locked so they used a key to unlock the door.
- They became confused as they entered the exercise since they were told they would be dispatched to the exercise.
- They were aware that the exercise was on track 2 and that track 1 had trains bypassing the station.

Radio Rail Traffic Controller

- They volunteered for the exercise and did not receive a safety briefing before participating.
- After being advised that the scenario was involving a derailment, they reviewed MSRPH as reference on the derailment procedures.
- The Radio RTC was located at Carmen Turner Facility in the simulated ROCC Training Lab.
- After the exercise began they received an instruction to state “exercise, exercise, exercise.”
- They were unable to reach the Rail Supervisor initially. After making contact with the Rail Supervisor, they instructed them to hot stick according to the procedures.
- They did not receive a briefing that exercise was restricted to track 2. Although, they were aware though that trains were bypassing on track 1.
- When they figured that the Rail Supervisor may have physically hot stucked they said aloud to others in the training lab, “I hope the Supervisor did not go to the roadway.” They did not formally report or confirm the event.

Weather

On February 26, 2023, at the time of the incident, NOAA recorded the temperature as 39°_F, with clear skies, winds SSW 10.6 mph, and 83% humidity. The event occurred within a tunneled section of the rail system. The weather was not a contributing factor in this incident (Weather source: NOAA – Location: Wheaton, MD).

Human Factors

Fatigue Risk

The biomathematical fatigue modeling application (SAFTE-FAST Web SFC) was not applied for this event.

Post-Incident Toxicology Testing

Post-Incident Toxicology Testing was not conducted for this event due to the time elapsed from the event to its confirmation, and when personnel returned to work.

Findings

Incident Date: 02/26/2023 Time: 09:48 hours
Final Report – Improper RWP
E23141

Drafted By: SAFE 709 – 04/25/2023
Reviewed By: SAFE 71 – 04/27/2023
Approved By: SAFE 71 – 04/27/2023

- The Rail Supervisor attended at least two safety briefings regarding the scope of the exercise and the status that track 1 would remain active.
- The Rail Supervisor noticed that the handheld that they were assigned when they signed in as a Controller did not have the Ops 11 radio channel programmed in, which was required for their new role as a Player. They had to retrieve their assigned handheld radio to participate in the exercise in their role as a Player.
- The Rail Supervisor was advised-by their supervisor that the Simulated Radio RTC was attempting to contact them over the radio (Ops 11).
- The Rail Supervisor did not seek clarification from the Incident Commander or an Exercise Controller to resolve questions after being instructed to the Wheaton Station platform.
- After being instructed to hot stick, the Rail Supervisor accessed track 1 through a locked refuge area door utilizing a key to gain access
- The refuge area door was not blocked or marked to prevent its use.
- Prior to the beginning of the exercise, a person that was not a registered volunteer was able to access the station area of the exercise. They were identified and removed from the station.

Immediate Mitigation to Prevent Recurrence

- OEP is reviewing the event playbook to modify procedures for future emergency drill exercises.
- OEP will conduct an independent investigation of this and other findings resulting from the emergency drill exercise.

Probable Cause Statement

The Probable Cause of the event was a loss of Situational Awareness by the Rail Supervisor, which resulted in them deviating from the established boundary limits of the exercise. A Contributing Factor to the event was inadequate oversight of the simulated radio communications between the ROCC and RTRA players.

Recommended Corrective Actions

Corrective Action Code	Description	Responsible Party	Estimated Completion Date
106680_SAFECAPS_OEP_001	Initiate review and implement revised instructions in emergency drills.	OEP	Completed
106680_SAFECAPS_OEP_002	Initiate review and implement revised visual and physical barriers/warnings to limit the scope of role players' access.	OEP	Completed
106680_SAFECAPS_OEP_003	Initiate review and implement script instructions and or subject matter experts to monitor and intervene to avoid conflicting instructions or actions at site, simulated control centers and staging areas.	OEP	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.

Senior Planning & Exercising Specialist

The Senior Planning & Exercising Specialist is a WMATA employee with 22 years of experience and 12.5 years of experience as a Senior Planning & Exercising Specialist. The Senior Planning & Exercising Specialist holds a Roadway Worker Protection (RWP) Level 4 certification that expires in September 2023.

During the formal interview, the Senior Planning & Exercising Specialist stated that the purpose of the drill was to test multiple issues, including response, coordination, and communication of the Train Operator, ROCC Controllers and staff, MTPD, and Fire Department personnel. There were approximately 150 persons were participating in the exercise. Safety Briefings were held for onsite at Wheaton Station and role players also attended Safety Briefing earlier in the week. A briefing for Controllers and Evaluators was also held in the week leading up to the exercise. There were four groups, including Role Players, Exercise Controllers, Observers, and Very Important Persons. The information provided was generally the same. The ROCC Role Players were located in the simulated ROCC Training Lab at CTF. They were given the scenario prior to beginning the event with focus on performing their normal functions and roles. ROCC Role Players were advised that track 1 was being utilized for trains to bypass Wheaton Station. The exercise was held and was restricted to track 2 platform and mezzanine areas.

The Senior Planning & Exercising Specialist stated that, “We specifically told everybody to stay away from that side of the station at the bottom of the escalator, we set up scissor gates, crime scene tape, and signage to indicate that that area was off limits. I recall giving the rail supervisor a briefing at the location that morning, the roster was signed. The supervisor rode over to the staging area with an exercise controller and waited in an MTPD vehicle to respond to the Wheaton Station as if he were being transported from another rail station to assist. The Rail Supervisor should have been on OPS 11. It was the only channel for his role. Did not hear Radio RTC instruction given role as planner stayed on tac 7, the control channel.”

The Senior Planning & Exercising Specialist stated that the Radio RTC direction for the Rail Supervisor to hot stick did not make sense as the Radio RTC was not in command of the scene. Command moved from the Train Operator to MTPD to the Fire Department. The directions would have come from the Fire Department at that time in the exercise. The issues that were brought to their attention in reference to the exercise included radio issues and communication. The Rail Supervisor leaving the incident command post will be addressed in after action investigative report. The Role Players had been advised to approach Exercise Controllers with issues or concerns such as radios not working, confusion with the exercise information, clarification on responding to a track that is known to be live, etc. That wasn't done.

The Senior Planning & Exercising Specialist stated that they had the appropriate markings and warnings throughout the staged derailment. The actual area inside the scene at the tunnel entrance was limited to Role Players who were told the drill was on track 2. The Rail Supervisor crossed into a passageway behind a locked door to access track 1.

The Senior Planning & Exercising Specialist stated that the exercise was operating under SOP 1A since IMF has not taken effect; however, this did not impact the Rail Supervisor's actions as they should have been taking instructions from the Incident Commander under both frameworks.

Rail Supervisor

The Rail Supervisor WMATA employee with 15 years of experience and 8 years of experience as a Rail Supervisor, The Rail Supervisor holds an RWP Level 2 certification that expires in August 2023.

During the interview, the Rail Supervisor confirmed attending the Safety Briefings presented by SAFE/OEP at the mezzanine level of Wheaton Station prior to exercise and was advised event was a simulation. They were assigned a handheld radio and instructed to turn to MTPD 4 Radio Ops. They were transported to the staging area located across the street at the mall. They did not-remember hearing the statement, "exercise, exercise, exercise" after turning to Radio Ops 11. They reported that the radio transmissions were "choppy", the handheld radio was not working, and there were no additional handheld radios to use. While in the staging area they were monitoring Radio Ops MTPD 4 when they received a call from their Supervisor advising them that the Radio RTC was trying to contact them and to report to the Wheaton Station platform. The handheld radio did not have Radio Ops 11, they retrieved their assigned handheld radio and made contact with the Radio RTC.

The Rail Supervisor stated that they were directed by Radio RTC to hot stick on tracks 1 and 2 and to provide chain markers. They were confused when they entered the exercise and did what the Radio RTC instructed them to do. They were confused since they had recently completed the IMF training. They accessed track 1 by going through a locked refuge area on the Shady Grove end of Wheaton Station, there were no barriers. They used their hot stick and gloves to perform the hot sticking.

The Rail Supervisor stated that they attended the Safety Briefing during the week before the exercise and were shown a packet of information and a PowerPoint presentation. They were aware that the exercise was on track 2 and that track 1 was being used for trains to bypass the station- They were surprised and thought that they missed when the Radio RTC had stopped the trains.

Rail Traffic Controller

The Rail Traffic Controller (RTC) is WMATA employee with 25 years of experience and 5 years of experience as a Rail Traffic Controller. The RTC holds an RWP Level 2 certification that expires in July 2023.

During the interview, the RTC stated that they volunteered for exercise. They did not receive a briefing before nor on the day of the event. Upon arrival at the ROCC Training Lab they were made aware that the scenario involved a derailment and began to review the MSRPH to reference the derailment procedures. Initially, there were no handheld radios and they were utilizing a simulated AIMS display. The transmissions from the handheld radio had static and were "choppy." After the exercise began, they were instructed to state, "exercise, exercise, exercise" by the role player of the AOM position. They had difficulty contacting the Rail Supervisor while maintaining clear communication. There were a few other Role Players in the Training Room to observe.

The RTC stated that after the Rail Supervisor provided a situational update, they instructed the Rail Supervisor to hot stick according to the MSRPH procedures. They did not receive a briefing that advised that the exercise was restricted to track 2. However, they were aware that the trains were bypassing Wheaton Station on track 1. They had the understanding that everyone knew it that the exercise was a drill and a simulation. When they realized that the Rail Supervisor may have actually hot stuck they stated, "I hope the Supervisor did not go to the roadway." The RTC stated that they made the statement loud enough for all to hear but received no response.

Appendix B – Scene Photographs

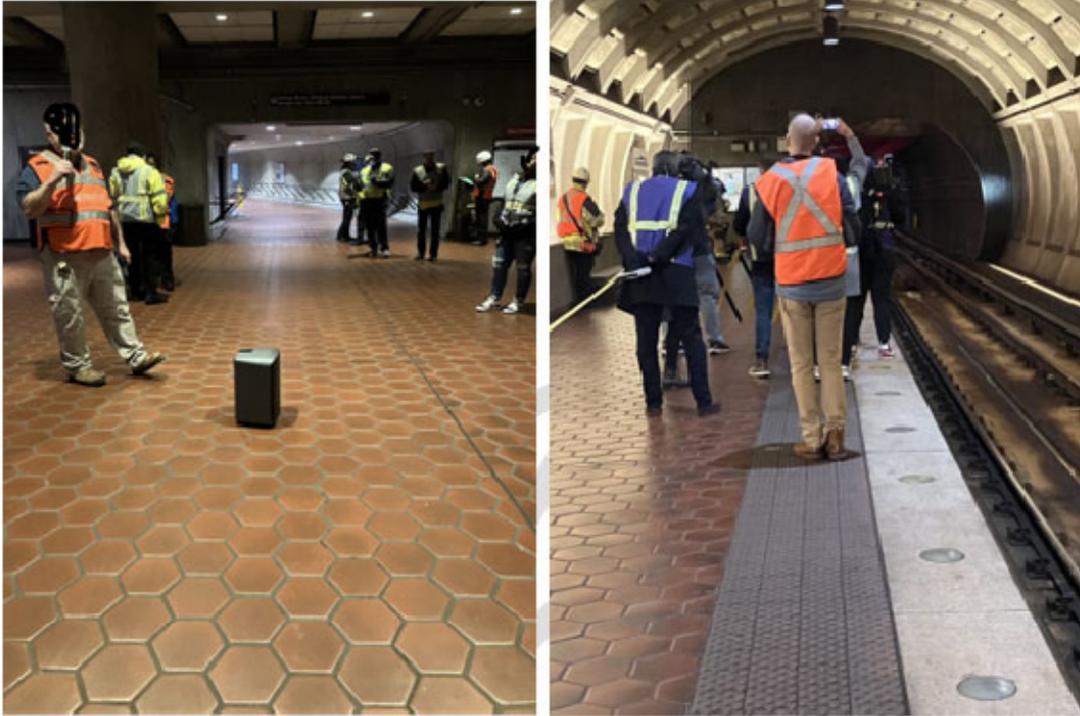


Image 2 - Onsite safety briefing and the exercise in progress at Wheaton Station during the event.

Appendix C – Why-Tree Analysis

Problem Statement	Major Cause	Causes	Causes	Root Causes
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