



WMSC Commissioner Brief: W-0125 – Improper Vehicle Movement – Woodley Park Station – June 21, 2021

Prepared for Washington Metrorail Safety Commission meeting on October 26, 2021

Safety event summary:

Metrorail personnel establishing a work zone near Cleveland Park Station using a Roadway Maintenance Machine (RMM) moved beyond their authorized working limits to Woodley Park Station. The same task had been performed previous days in the same week with a work zone that extended to the Woodley Park Station, however the authorized work zone the day of this event had been shortened to end between Cleveland Park and Woodley Park stations.

The Roadway Worker In-Charge (RWIC) stated the preceding days' chain markers to the Radio Controller in the Rail Operations Control Center (ROCC) when requesting permission to establish their work area. The Radio Controller responded with the correct chain markers. The Radio Controller and RWIC were not consistent in their communication of chain markers during the work zone setup. The RWIC initially requested access using incorrect chain markers. The Radio Controller repeated back and acknowledged those incorrect chain markers, which did not match that night's approved work zone in the General Orders and Track Rights System (GOTRS).

The RWIC had confirmed that power was de-energized at Cleveland Park Station and placed a shunt to indicate that end of the work area. The RWIC then relinquished foul time and received permission to use the RMM, Prime Mover 59, to confirm that power was de-energized on the other segments of third rail and to establish the rest of their work zone protections. The RWIC told the ROCC controller over the radio that they would move to Woodley Park Station to set up the rest of their equipment. This was not corrected by the Radio Controller, and instead was acknowledged.

After the RMM reached Woodley Park Station, the ROCC informed the RWIC that they had moved beyond their authorized work zone, and had entered an area that was assigned as another crew's work zone. The other work area had not yet been established.

The ROCC and a supervisor initially allowed the crew that had passed their working limits to establish a work zone and begin work, before later stopping work and removing the RWIC from service for post-event testing.

The RWIC had not received the entirety of the GOTRS documentation prior to starting work, but did have the first page which included the correct working limits for that night's work. The RWIC stated that it was typical practice to rely only on that first page, which includes all of the information related to the protected work zone.

Probable Cause:

The probable cause of this event was improper and incomplete communication (including insufficient radio repeat backs), complacency, a lack of systems to identify when repetitive practices differ, and a lack of supervisory oversight to ensure compliance with and identify necessary improvements to processes and procedures.

Corrective Actions:

Plant Maintenance is requiring supervisors to perform two quality/compliance checks of work crews per week, at least one of which must include roadway-based work.

Metrorail issued a safety alert related to RWIC responsibilities.



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ROCC issued a lessons learned document related to the importance of proper repeat backs during the establishment of Roadway Worker Protection.

Metrorail is in the process of RWP rule and procedure changes, which will include changes related to the use of RMMs to establish work areas.

WMSC staff observations:

This event involved a Plant Maintenance employee, but could have involved any RWIC. Metrorail should consider taking similar steps related to improving the existing supervisory oversight for all personnel on the roadway.

Staff recommendation: Adopt final report.



Washington Metro Area Transit Authority
Department of Safety and Environmental
Management (SAFE)
FINAL REPORT OF INVESTIGATION A&I E21251

Date of Event:	6/21/2021
Type of Event:	Improper Rail Vehicle Movement (Work Zone)
Incident Time:	00:16 hours
Location:	Woodley Park Station, Track 1
Time and How received by SAFE:	6/21/2021 at 00:35 hours SAFE On-Call Phone
WMSC Notification Time:	00:02 hours via Email
Responding Safety Officers:	WMATA SAFE: No WMSC: No Other: N/A
Rail Vehicle:	Prime Mover 59
Injuries:	None
Damage:	None
SMS I/A Incident Number:	20210820#95142

Woodley Park Station – Improper Rail Vehicle Movement

June 21, 2021

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Abbreviations and Acronyms

AIMS	Automated Information Management System
ARS	Audio Recording System
CAP	Corrective Action Plan
CM	Chain Marker
FT	Foul Time
GOTRS	General Orders Track Rights System
IMO	Incident Management Official
MSRPH	Metrorail Safety Rules and Procedures Handbook
NOAA	National Oceanic and Atmospheric Administration
PLNT	Plant Maintenance
ROCC	Rail Operations Control Center
RTC	Rail Traffic Controller
RTU	Remote Terminal Unit
RWIC	Roadway Worker In Charge
SAFE	Department of Safety and Environmental Management
SMS	Safety Measurement System
WMATA	Washington Metropolitan Area Transit Authority
WMSC	Washington Metrorail Safety Commission

Executive Summary

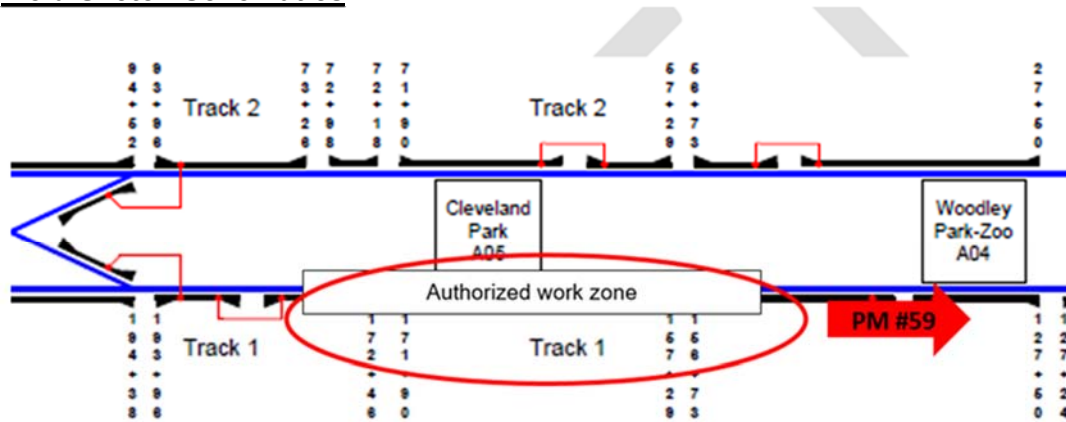
On Monday, June 21, 2021, at approximately 00:35 hours, the Rail Operations Control Center (ROCC) informed the Department of Safety and Environmental Management (SAFE)/Incident Management Official (IMO) that at 00:16 hours, Plant Maintenance (PLNT) Roadway Worker In Charge (RWIC) was aboard Prime Mover (PM)-59 when they moved outside of their requested work zone without authorization. At approximately 23:35 hours, a ROCC Radio Rail Traffic Controller (RTC) informed PLNT RWIC that PM 59 was holding secure at Cleveland Park Station in their work location and granted PLNT RWIC permission to enter the roadway under foul time (FT). The Radio RTC instructed PLNT RWIC to hot stick and confirm third rail power was de-energized and give Central their chain markers (CM). At approximately 23:55 hours, PLNT RWIC contacted the Radio RTC to inform them that third rail power was de-energized at A1 170+00 – A1 173+00, they wanted to relinquish their FT, and use PM 59 to check the remainder of their gaps. At approximately 00:05 hours, PLNT RWIC contacted the Radio RTC to check if they could see the first shunt at Cleveland Park Station. The Radio RTC confirmed one good shunt at Cleveland Park platform. PLNT RWIC informed the Radio RTC that they were moving to Woodley Park Station to set up the rest of their equipment and check the remainder gaps. The Radio RTC acknowledged PLNT RWIC's radio transmission and instructed them to contact them when the second shunt was in place. At approximately 00:16 hours, the Radio RTC contacted PLNT RWIC inquiring where they were placing their shunts. PLNT RWIC informed the Radio RTC there was one on the inbound side of Track 1 at Cleveland Park Station and the other shunt would be at the 8- car marker at Woodley Park Station. The Radio RTC informed PLNT RWIC they were out of their authorized work zone. Their authorized work zone was A1 155+00 – A1 185+00 and PLNT RWIC was at CM 133+00. PLNT RWIC and their work crew were removed from service for the night.

The probable cause of the Improper Rail Vehicle Movement violation event on June 21, 2021, was human error and lack of procedural adherence from PLNT RWIC when they failed to follow Metrorail Safety Rules and Procedures Handbook (MSRPH) section 5.10.2 detailing the responsibilities of the RWIC. SAFE identified several communication errors and non-compliance with written procedures and processes within the MSRPH as contributing factors in this event.

Incident Site

Woodley Park – Zoo Station, Track 1

Field Sketch/Schematics



Note: Authorized Work Zone block is approximate.

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 performed through document review.
- Formal Interview – SAFE interviewed one individual as part of this investigation. Interview included person present at, during, and after the incident. SAFE interviewed the following individual:
 - PLNT RWIC
- Documentation Review – Collection of relevant work history information and process documentation contained in WMATA systems of record. These records include:
 - PLNT RWIC Training Records
 - PLNT 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
 - Roadway Job Safety Briefing Form
- System Data Recording Review – Collection of information contained in Metro Data Recording Systems. This data includes:
 - Audio Recording System (ARS) playback include OPS 1 Radio, Red Line - 12051, ROCC Asst. Sup. - 12063
 - Automated Information Management System (AIMS)

Investigation

On Monday, June 21, 2021, at approximately 00:35 hours, the ROCC informed the SAFE/ IMO that at 00:16 hours, PLNT RWIC was aboard operating PM 59 when they moved outside of their requested work zone without authorization. At approximately 23:35 hours, a ROCC Radio RTC informed PLNT RWIC that PM 59 was holding secure at Cleveland Park Station in their work location and granted PLNT RWIC permission to enter the roadway under FT. The Radio RTC instructed PLNT RWIC to hot stick and confirm third rail power was de-energized and give Central their chain markers. At approximately 23:55 hours, PLNT RWIC contacted the Radio RTC to inform them that third rail power was de-energized at A1 170+00 – A1 173+00, they wanted to relinquish their FT, and use PM 59 to check the remainder of their gaps. At approximately 00:05 hours, PLNT RWIC contacted the Radio RTC to verify the first shunt at Cleveland Park Station. The Radio RTC confirmed a good shunt at Cleveland Park platform. At approximately 00:10 hours, the AIMS showed PM 59 was at Cleveland Park Station. PLNT RWIC informed the Radio RTC that they were moving to Woodley Park Station to set up the rest of their equipment and check the remaining gaps. The Radio RTC acknowledged PLNT RWIC's radio transmission and instructed them to contact them when the second shunt was in place. At approximately 00:16 hours, the Radio RTC contacted PLNT RWIC inquiring where they were placing their shunts. AIMS data indicated PM 59 was at Woodley Park Station when the Radio RTC contacted PLNT RWIC to inquire about placement of their shunts. PLNT RWIC informed them there was one on the inbound side of Track 1 at Cleveland Park Station and the other shunt would be at the 8-car marker at Woodley Park Station. This was when the Radio RTC informed PLNT RWIC they were out of their work authorized work zone according to their GOTRS documentation. The authorized work zone was A1 155+00 – A1 185+00 and PLNT RWIC was at CM 133+00. PLNT RWIC and their work crew was removed from service for the evening.

Chronological Event Timeline

Time	Description
22:55 hours	<u>PLNT RWIC</u> : Contacted Radio RTC to request supervisory power outage under ETO protection on the A Line Track 1 & 2 115+00 – 185+00. PM 59 coming out of A99 and would like to have PM 59 meet them at the platform of Cleveland Park Station. Also, they relinquished rights to Track 2, no personnel would be on Track 2 and all work and personnel would be on Track 1. [Radio]
22:55 hours	<u>Radio RTC</u> : Acknowledged and repeated PLNT RWIC's transmission with CMs 155+00 – 185+00 [Radio]
23:35 hours	<u>Radio RTC</u> : Informed PLNT RWIC that they had A06-02 signal red. [Radio]
23:35 hours	<u>PLNT RWIC</u> : Acknowledged and repeated. [Radio]
23:35 hours	<u>Radio RTC</u> : Blue block human form, prohibit exits in place, PM 59 holding secure at Cleveland Park in work location, has permission to enter the roadway under foul time Track 1, Track 1 only, hot stick and confirm and give Central CMs. [Radio]
23:35 hours	<u>PLNT RWIC</u> : Acknowledged and repeated Radio RTC's radio transmission. [Radio]
23:55 hours	<u>PLNT RWIC</u> : Contacted Radio RTC to inform them that they hot stuck and confirmed that third rail power was de-energized at A1 170+00 – A1 173+00, wanted to relinquish FT, and use PM 59 to check the remainder of their gaps. [Radio]

Time	Description
23:55 hours	<u>Radio RTC</u> : Acknowledged and repeated PLNT RWIC's radio transmission and told them to place their shunts according to SOP and Central would verify. [Radio]
23:56 hours	<u>PLNT RWIC</u> : Acknowledged and informed Radio RTC that they had 3 more gaps to check. [Radio]
23:56 hours	<u>Radio RTC</u> : Stated as per General Orders Track Rights System (GOTRS) track 1 they only had 2 gaps. [Radio]
23:56 hours	<u>PLNT RWIC</u> : Acknowledged and informed the Radio RTC they were going to place their shunts and have Central verify. [Radio]
23:56 hours	<u>Radio RTC</u> : Responded if it made PLNT RWIC feel safe to go ahead and check the gaps, they'll never tell them no on that. [Radio]
00:05 hours	<u>PLNT RWIC</u> : Asked the Radio RTC how did they copy one shunt on the Cleveland Park end. [Radio]
00:05 hours	<u>Radio RTC</u> : Responded one shunt at Cleveland Park platform. [Radio]
00:05 hours	<u>PLNT RWIC</u> : Responded and confirmed Radio RTC's transmission. [Radio]
00:05 hours	<u>Radio RTC</u> : Acknowledged one good shunt. [Radio]
00:05 hours	<u>PLNT RWIC</u> : Acknowledged good copy and they were moving to Woodley Park to set up the rest of their equipment and check in with gaps. [Radio]
00:06 hours	<u>Radio RTC</u> : Acknowledged the transmission and advised to let them know when the second shunt is placed. [Radio]
00:16 hours	<u>Radio RTC</u> : Contacted PLNT RWIC to come back to Central. [Radio]
00:16 hours	<u>PLNT RWIC</u> : Acknowledged Radio RTC request. [Radio]
00:16 hours	<u>Radio RTC</u> : Asked PLNT RWIC where are they placing their shunts? [Radio]
00:16 hours	<u>PLNT RWIC</u> : Responded there was one on the inbound side, track 1 on Cleveland and the other shunt will be on the 8-car maker side of Woodley Park. [Radio]
00:16 hours	<u>Radio RTC</u> : Informed PLNT RWIC that their work zone was A1 155+00 to A185+00 and did not have the platform at Woodley Park Station. [Radio]
00:17 hours	<u>PLNT RWIC</u> : Asked the Radio RTC to stand by. [Radio]
00:17 hours	<u>Radio RTC</u> : Informed PLNT RWIC that they were in somebody else's work zone at that moment. [Radio]
00:17 hours	<u>PLNT RWIC</u> : Acknowledged the Radio RTC's transmission that they were in somebody else's work area and they did not have permission to enter the work area. [Radio]
00:17 hours	<u>Radio RTC</u> : Asked PLNT RWIC if they knew their chain markers? [Radio]
00:17 hours	<u>PLNT RWIC</u> : Responded that they did know their chain markers now. They thought they had the same chain markers that they had all week. [Radio]
00:18 hours	<u>Radio RTC</u> : Stated PLNT RWIC repeated back to them 155 to 185. [Radio]
00:18 hours	<u>PLNT RWIC</u> : Responded it was a good copy and they would be moving out of that location. [Radio]
00:18 hours	<u>Radio RTC</u> : Instructed PLNT RWIC to give Central a landline. [Radio]

Time	Description
00:18 hours	<u>PLNT RWIC</u> : Acknowledged the transmission and would give a landline. [Radio]
00:19 hours	<u>Red Line Sup</u> : Contacted ROCC Assistant Superintendent to inform them that PLNT RWIC went outside of their work zone. Stated PLNT RWIC work zone was CM 155- 185 but went to CM A1 133+00 entering Unit 5128 work area. [Red Line – 12051]
00:19 hours.	<u>Radio RTC</u> : Contacted PM 59 to ask their location. [Radio]
00:20 hours	<u>PM 59</u> : Responds that they were at CM 139+00. [Radio]
00:20 hours.	<u>Radio RTC</u> : Instructed PM 59 to hold their location. [Radio]
00:20 hours	<u>PM 59</u> : Acknowledged Radio RTC instructions to hold location. [Radio]
00:20 hours	<u>Red Line Buttons RTC</u> : Received landline from PLNT RWIC. Stated PLNT RWIC knew their CMs because they repeated them back to the ROCC. PLNT RWIC stated they did look at them but mentally read them backwards. PLNT RWIC stated they had PM 59 and they were going back to their working limits. Red Line Supervisor informed PLNT RWIC that they could not move their unit or PM 59 because they were outside of their working limits that was the reason, they had PM 59 stop. PM 59 was under the authority of ROCC due to being outside of the working limits. Red Line Supervisor informed PLNT RWIC they no longer had permission to move PM 59 and they had to give PM 59 a block back into PLNT RWIC work location. [Red Line – 12051]
00:23 hours	<u>Radio RTC</u> : Contacted PM 59. [Radio]
00:23 hours	<u>PM 59</u> : Responded to the Radio RTC. [Radio]
00:23 hours	<u>Radio RTC</u> : Advised PM 59 to verify personnel group clear, absolute block A1 155+00, 4446 work location, and under their direction. [Radio]
00:24 hours	<u>PM 59</u> : Verified all personnel was cleared, safe to move absolute block is to A1 155+00 and 4446 work location. [Radio]
00:27 hours	<u>Radio RTC</u> : Contacted PM 59 to ask location by CM. [Radio]
00:27 hours	<u>PM 59</u> : Responded holding and secure at A1 155+00 [Radio]
00:27 hours	<u>Radio RTC</u> : Advised Unit that they share CM A1 155+00 with IT Unit and will be setting up an ETO protection. [Radio]
00:28 hours	<u>PLNT RWIC</u> : Repeated they were sharing CM A1 155+00 with track unit but could not remember the unit number. [Radio]
00:28 hours	<u>Radio RTC</u> : Repeated Unit 4446 was sharing CM A1 155+00 with IT Unit and they were using an ETO protection. [Radio]
00:29 hours	<u>PLNT RWIC</u> : Acknowledged they were sharing CM A1 155+00 with IT Unit and they were using ETO protection. [Radio]
00:36 hours	<u>PLNT RWIC</u> : Contacted Radio RTC to verify 2 shunts on the A line. [Radio]
00:37 hours	<u>Radio RTC</u> : Verified there were 2 red shunts in the work location Cleveland Park Track 1 and authorized PLNT RWIC to place the reminder of their safety equipment and go to work. Radio RTC stated they had their clearing time at 04:00 hrs. [Radio]

Time	Description
00:37 hours	<u>PLNT RWIC</u> : Acknowledged and repeated Radio RTC's radio transmission. [Radio]
00:48 hours	<u>Radio RTC</u> : Contacts PLNT RWIC. [Radio]
00:48 hours	<u>PLNT RWIC</u> : Responded to Radio RTC. [Radio]
00:48 hours	<u>Radio RTC</u> : Instructed PLNT RWIC to stop all work and landline 1652. [Radio]
00:48 hours	<u>PLNT RWIC</u> : Acknowledged and repeated Radio RTC's radio transmission. [Radio]
00:48 hours	<u>Radio RTC</u> : Informed PLNT RWIC that they were putting them on delay. [Radio]
00:48 hours	<u>PLNT RWIC</u> : Acknowledged that the Radio RTC was putting them on delay. [Radio]
00:51 hours	<u>On-Call SAFE</u> : Asked PLNT RWIC to explain what happened. PLNT RWIC stated they requested work limits A1 155+00 to 185+00. Noticed they were outside of the work limits at CM 135+00. They provided their supervisor's name and number. They were using their unit PM 59 to set up. [ROCC ASST Sup-12063]
01:12 hours	<u>Radio RTC</u> : Contacts PLNT RWIC. [Radio]
01:14 hours	<u>PLNT Unit</u> : Responds to Radio RTC. [Radio]
01:14: hours	<u>Radio RTC</u> : Instructed PLNT RWIC to give Central a landline. [Radio]
01:14 hours	<u>Radio RTC</u> : Contacted ROCC Assistant Superintendent to ask if they we doing a stop work on PLNT RWIC and the ROCC Assistant Superintendent answered yes due to a safety violation. [ROCC Asst Sup- 12063]
01:15 hours	<u>PLNT RWIC</u> : Contacted Red Line Supervisor and was instructed to clear work location and contact division manager. [Red Line- 12051]
01:16 hours	<u>Radio RTC</u> : Informed PLNT RWIC that they were going to end their delay at 01:16 hours and since the remote terminal of the work location adjacent to them went down they needed to re-hot stick again and provide the CM where they hot stick. [Radio]
01:16 hours	<u>PLNT RWIC</u> : Acknowledged and repeated Radio RTC's radio transmission. [Radio]
01:19 hours	<u>PLNT RWIC</u> : Informed Radio RTC that they hot stick and confirmed third rail power was still de-energized at CM A1 165+00 [Radio]
01:19 hours	<u>Radio RTC</u> : Acknowledged and repeated PLNT RWIC's radio transmission. Informed them to break down the work area and let them know when their personnel were clear so they can provide the time cleared. [Radio]
01:19 hours	<u>PLNT RWIC</u> : Acknowledged and repeated Radio RTC's radio transmission. [Radio]
01:21 hours	<u>PLNT RWIC</u> : Contacted Red Line Supervisor to give them their contact information. Informed Red Line Supervisor that they had talked to their immediate supervisor. Acknowledged it was their mistake since they had been working that track the entire week. Confirmed the name of the operator of the PM. [Red-Line 12051]
01:21 hours	<u>ROCC Assistant Supervisor</u> : Received a call from PLNT RWIC's Supervisor to inquiry about what were the plans with PLNT RWIC and the work crew. [Red-Line 12052]

Time	Description
01:35 hours	<u>PLNT RWIC</u> : Informed Radio RTC that all personnel and equipment were clear and safely on the platform at Cleveland Park Station waiting on a lead back. Track revenue ready and could restore third rail power at Radio RTC discretion. [Radio]
01:35 hours	<u>Radio RTC</u> : Acknowledged and repeated back PLNT RWIC's radio transmission. [Radio]
01:35 hours	<u>PM 59</u> : Contacted Radio RTC. [Radio]
01:35 hours	<u>Radio RTC</u> : Informed PM 59 they were locked out at that time. [Radio]

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

Automated Information management System (AIMS)

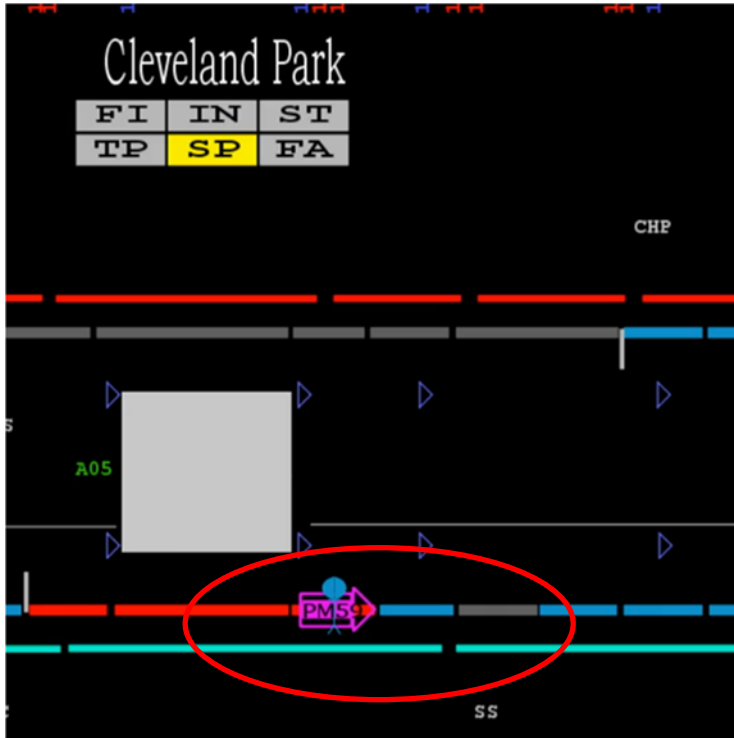


Figure 1: This image shows PM 59 holding the work zone where the RWIC placed the first shunt.

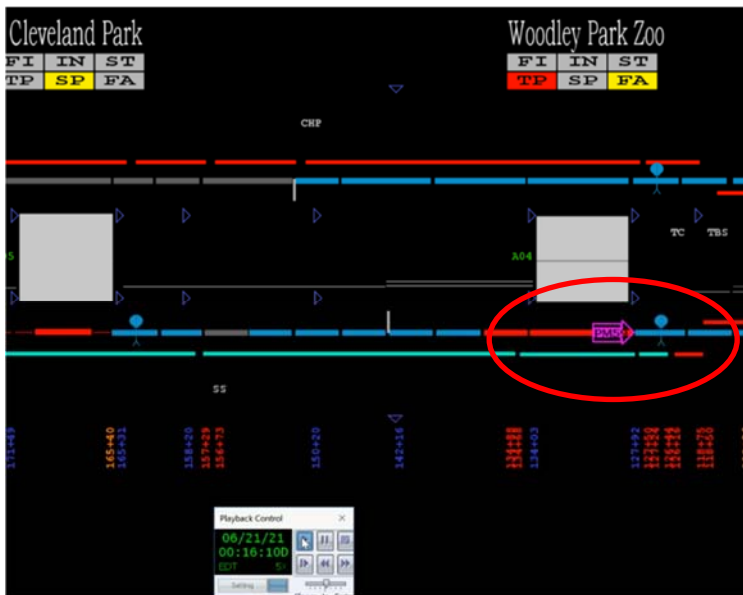


Figure 2: This image shows PM 59 outside of the work zone.

Interview Findings

PLNT RWIC stated they only had one of the four pages of the GOTRS for the workday. The PLNT RWIC reported that was normal practice to receive that it was normal practice to only receive the first page because the first page contains all of their work zone protection information and third rail gaps. PLNT RWIC and their work crew were previously working in the same area. On June 20, 2021, the authorized work zone was shorter than it was previously in the work week. PLNT RWIC stated they authorized PM 59 to move to A1 135+00 for the purpose of continuing to hot stick and finish setting up the work area. ROCC instructed PM 59 to stop and wait until they authorized them to move back into the authorized work zone. PLNT RWIC was granted permission to resume work but was later placed on delay. This assignment was overtime work for PLNT RWIC.

Findings

- PLNT RWIC stated incorrect work zone CMs to the ROCC RTC when they requested permission to establish their work area.
- ROCC RTC repeated back the correct CMs per the GOTRS documentation.
- ROCC RTC and PLNT RWIC used inconsistent language when communicating Chain Markers to each other during work zone set up.
- PLNT RWIC performed work in the same area the previous days, however the Protected Limits on the incident date involved a smaller area.
- PLNT RWIC received the first page of GOTRS rights, which included the Protected Working Limits, before entering the roadway.

Weather

On June 21, 2021, at the time of the incident, NOAA recorded the temperature at 75 ° F. The incident location is within a tunnel section of the roadway. Based on findings, SAFE has concluded that weather was not a contributing factor in this incident (Weather source: NOAA – Location: Washington, DC.)

Human Factors

Fatigue

We evaluated conditions at the time of the incident to distinguish whether evidence of fatigue was present. No sign of fatigue was indicated by the available data. No indications of fatigue were evident from the video. PLNT RWIC reported feeling fully alert at the time of the incident. PLNT RWIC reported experiencing no symptoms of fatigue in the time leading up to the incident.

Fatigue Risk

We evaluated incident data for fatigue risk factors. Risk factors for fatigue were present. The incident time of day did not suggest an increased risk of fatigue-related impairment. PLNT RWIC reported some variation in the sleep schedule in the days leading up to the incident. PLNT RWIC performed day and night work in the days leading up to the incident. The employee was awake for 3.76 hours at the time of the incident. PLNT RWIC reported 8 hours of sleep in the 24 hours preceding the incident. The off-duty period was 16 hours which provides an opportunity for 7-9 hours of sleep. This was a comparable amount of time as PLNT RWIC's usual workday sleep

durations. The employee reported no issues with sleep. PLNT RWIC’s worked day and night shifts in the days leading up to the incident.

Post-Incident Toxicology Testing

After reviewing the PLNT RWIC's post-incident testing results, it was determined that PLNT RWIC was not in violation of the Drug and Alcohol Policy and Testing Program 7.7.3/6.

Mitigations Completed to Prevent Recurrence

- RWIC and work crew were removed from service for post-incident testing.
- In late June, PLNT implemented a requirement for supervisors to perform two quality/compliance checks of work crews per week until further notice. One of the quality/compliance checks must include roadway-based work.
- Safety Alert – SA #21-06a “Roadway-Worker-In-Charge (RWIC) Responsibilities” issued to all WMATA personnel.
- ROCC issued Lessons Learned document, “Improper Repeat Back and Incorrect Work Location,” related to the importance of proper repeat-back at the outset of establishing track rights and RWP Protection.
- Post-incident review and root cause analysis session was conducted on August 18, 2021, among SAFE, PLNT, and ROCC management to review the incident, identify procedural issues and corrective actions taken since the date of the incident.
- Until further notice, Safety Officers are conducting nightly compliance checks of one or more work locations across the WMATA rail system, to include observations of work zone setups and Roadway Job Safety Briefings.

Probable Cause Statement

The probable cause of the Improper Rail Vehicle Movement violation event on June 21, 2021, was human error and lack of procedural adherence with Metrorail Safety Rules and Procedures Handbook (MSRPH) section 5.10.2 detailing the responsibilities of the RWIC. The investigation also identified several communication errors, employee non-adherence to written procedures and processes within the MSRPH as contributing factors in this event.

SAFE Recommendations/Corrective Actions

Corrective Action Code	Description
95142_SAFECAPS_PLNT_001	PLNT should continue their program of requiring supervisors to perform Quality Checks of Work Zones until further notice. One check per week should be roadway-based.
9512_SAFECAPS_CENV_001	CENV and CMNT should identify solutions to capture video playback of interior, forward- and rear-facing viewpoints for Class II rail vehicles.

Appendices

Appendix A – Interview Summary

The below narrative is a summary of the interview with SAFE and represents the statements made by the involved individual. As such, times and details may present a conflict with the data contained in systems of record.

PLNT RWIC is a WMATA employee with eight years of experience as a PLNT Technician. PLNT RWIC has not had any safety infractions since 2013. PLNT RWIC stated they felt fully alert leading up to the PM moving outside of the authorized work zone. PLNT RWIC reported not having any issues with sleep and typically get eight hours of sleep prior to their work shift. PLNT RWIC stated they had been working in the same work area the entire week but on June 20, 2021, their work zone was shorter. PLNT RWIC stated they unintentionally had PM 59 move outside of their authorized work zone for the purpose of continuing to hot stick and confirm third rail power was de-energized in order to finish setting up their work zone. The PLNT RWIC stated they were put on delay due to a remote terminal unit (RTU) being down within their work zone. They mentioned the ROCC instructed them to re-hot stick and confirm third rail power was de-energized.

Appendix B – General Orders Track Rights System (GOTRS)

GOTRS - GENERAL ORDERS & TRACK RIGHTS SYSTEM Track Rights Request

Request Summary

Request Number:	202113104723	Track Access:	True
Dates Requested:	06/21/2021 00:30 to: 06/21/2021 04:00	Clear In Ten:	False
Request Status:	Closed	Equipment on Track:	1
Requestor:	[REDACTED]	Allow Piggybacks:	True
Requestor Organization:	DECO/IRPG	In Piggyback:	No
Switch Order:		Power Outage:	Supervisory
Lock Out / Tag Out:		Additional AC:	
Request Title:	Tunnel Vent Barrier Wall Install/Demo		

Location, Work Type and Description

Location:	Mainline
Non-Wayside Location Type:	
Request Type:	Regular
Charge Job Number:	80985
Contract Number:	FIRPG211104
Maximo Work Order:	
Request Group:	No
Location Description:	
Request Description:	Erection of barrier wall and demo in shaft
Work Type:	Other
Meeting Location:	
PB Meeting Location:	
Tools and Equipment:	Hand tools, PPE, Radio, safety equipment
Equipment on Track:	Prime Mover with Flatcar

	Track 1		Track 2	
Actual Work Area:	A160+00	A180+00	Actual Work Area:	A160+00 A180+00
Protected Work Area:	A155+00	A185+00	Protected Work Area:	A155+00 A185+00

Hot Stick Info. Third Rail Gaps:

From	To	Track ID
A157+29	A171+90	1
A172+46	A193+96	1
A157+29	A171+90	2
A172+18	A172+98	2
A173+26	A193+96	2

Date & Time

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GOTRS - GENERAL ORDERS & TRACK RIGHTS SYSTEM

Track Rights Request

Request Summary

Request Number:	202113104723	Track Access:	True
Dates Requested:	06/21/2021 00:30 to: 06/21/2021 04:00	Clear In Ten:	False
Request Status:	Closed	Equipment on Track:	1
Requestor:	[REDACTED]	Allow Piggybacks:	True
Requestor Organization:	DECO/IRPG	In Piggyback:	No
Switch Order:		Power Outage:	Supervisory
Lock Out / Tag Out:		Additional AC:	
Request Title:	Tunnel Vent Barrier Wall Install/Demo		

Start: 06/21/2021 00:30

End: 06/21/2021 04:00

Contacts

Entered by

[REDACTED]

Work: [REDACTED]

Cell: [REDACTED] **Home:** [REDACTED]

Requestor

[REDACTED]

Work: [REDACTED]

Cell: [REDACTED] **Home:** [REDACTED]

WMATA Manager

[REDACTED]

Work: [REDACTED]

Cell: [REDACTED] **Home:** [REDACTED]

Emergency Contact

[REDACTED]

Work: [REDACTED]

Cell: [REDACTED] **Home:** [REDACTED]

Support

SUPPORT GROUP	Crew Size
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PLNT	2
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Request Change History

Date	Event
05/11/2021 22:06	Request was replicated from Request 202113104700.
06/03/2021 09:26	Request was edited. Field(s) changed: Location. Location: Track 1 Actual: A120+00 A180+00 Protected: A115+00 A185+00, Track 2 Actual: A120+00 A180+00 Protected: A115+00 A185+00 to Track 1 Actual: A155+00 A180+00 Protected: A155+00 A185+00, Track 2 Actual: A155+00 A180+00 Protected: A155+00 A185+00.
06/07/2021 10:00	Request was edited. Field(s) changed: Location. Location: Track 1 Actual: A155+00 A180+00 Protected: A155+00 A185+00, Track 2 Actual: A155+00 A180+00 Protected: A155+00 A185+00 to Track 1 Actual: A150+00 A180+00 Protected: A145+00 A185+00, Track 2 Actual: A150+00 A180+00 Protected: A145+00 A185+00.

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GOTRS - GENERAL ORDERS & TRACK RIGHTS SYSTEM

Track Rights Request

Request Summary

Request Number:	202113104723	Track Access:	True
Dates Requested:	06/21/2021 00:30 to: 06/21/2021 04:00	Clear In Ten:	False
Request Status:	Closed	Equipment on Track:	1
Requestor:	██████████	Allow Piggybacks:	True
Requestor Organization:	DECO/IRPG	In Piggyback:	No
Switch Order:		Power Outage:	Supervisory
Lock Out / Tag Out:		Additional AC:	
Request Title:	Tunnel Vent Barrier Wall Install/Demo		

Request Change History

Date	Event
06/07/2021 10:02	Request was edited. Field(s) changed: Location. Location: Track 1 Actual: A150+00 A180+00 Protected: A145+00 A185+00, Track 2 Actual: A150+00 A180+00 Protected: A145+00 A185+00 to Track 1 Actual: A160+00 A180+00 Protected: A155+00 A185+00, Track 2 Actual: A160+00 A180+00 Protected: A155+00 A185+00.
06/07/2021 17:42	Request status was changed to Approved
06/21/2021 02:14	Work Prep was completed.
06/21/2021 02:56	Request status was changed to Opened
06/21/2021 05:15	Work stopped was reversed in Close-Out.
06/21/2021 05:15	Close-Out step was reversed from "Start work" to "Permission is given to setup worksite".
06/21/2021 05:17	OCC Controller Comment was updated.
06/21/2021 05:17	OCC Controller Comment was updated.
06/21/2021 05:17	OCC Controller Comment was updated.
06/21/2021 05:19	OCC Controller Comment was updated.
06/21/2021 07:06	Request status was changed to Closed

Request Group

Request Number	Description
No active piggybacks found	

Piggyback

No active piggybacks found

Red Tag information

Red Tag #: Request is not Red Tag.

Comments

By	On	Comment
██████████	6/3/2021 5:28:53 AM	REDUCED WORK AREA DUE TO CONFLICT w/202111605200 A04 ROUTER UPGRADE (RTU DOWN)

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GOTRS - GENERAL ORDERS & TRACK RIGHTS SYSTEM

Track Rights Request

Request Summary

Request Number:	202113104723	Track Access:	True
Dates Requested:	06/21/2021 00:30 to: 06/21/2021 04:00	Clear In Ten:	False
Request Status:	Closed	Equipment on Track:	1
Requestor:	██████████	Allow Piggybacks:	True
Requestor Organization:	DECO/IRPG	In Piggyback:	No
Switch Order:		Power Outage:	Supervisory
Lock Out / Tag Out:		Additional AC:	
Request Title:	Tunnel Vent Barrier Wall Install/Demo		

Close-Out Summary

Final Status: Closed

Request To Begin Work: 06/20/2021 22:56

Request to De-Energize: 06/20/2021 23:35

**De-Energization Completed;
RWIC notified:** 06/20/2021 23:35

Hot Stick: 06/20/2021 23:55

From	To	Track ID	Waive(?)	Unit #	Chain Marker	Entered By	Date
A157+29	A171+90	1		██████	A170+00	██████████	06/20/2021 23:55
A157+29	A171+90	2	Waived	Reason: Other Comment: Relinquish track one back to ROCC.		██████████	06/20/2021 23:36
A172+46	A193+96	1		██████	A173+00	██████████	06/20/2021 23:55
A172+18	A172+98	2	Waived	Reason: Other Comment: Relinquish track one back to ROCC.		██████████	06/20/2021 23:36
A173+26	A193+96	2	Waived	Reason: Other Comment: Relinquish track one back to ROCC.		██████████	06/20/2021 23:36

Permission Given To Setup Work Site: 06/21/2021 00:37

Start Work: step not done

Work Site Cleared by Requestor: 06/21/2021 01:35

Work Stopped by OCC: 06/21/2021 05:16

Reason: Poor radio communications

OCC Comments: End delay at 0114. Re-hot stick at CM A1 165+00

**OCC Assistant Superintendent
Comments:**

Requestor Comments:

OCC Delays

Delay #	From	To	Reason	Re-Hot Stick Done
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GOTRS - GENERAL ORDERS & TRACK RIGHTS SYSTEM Track Rights Request

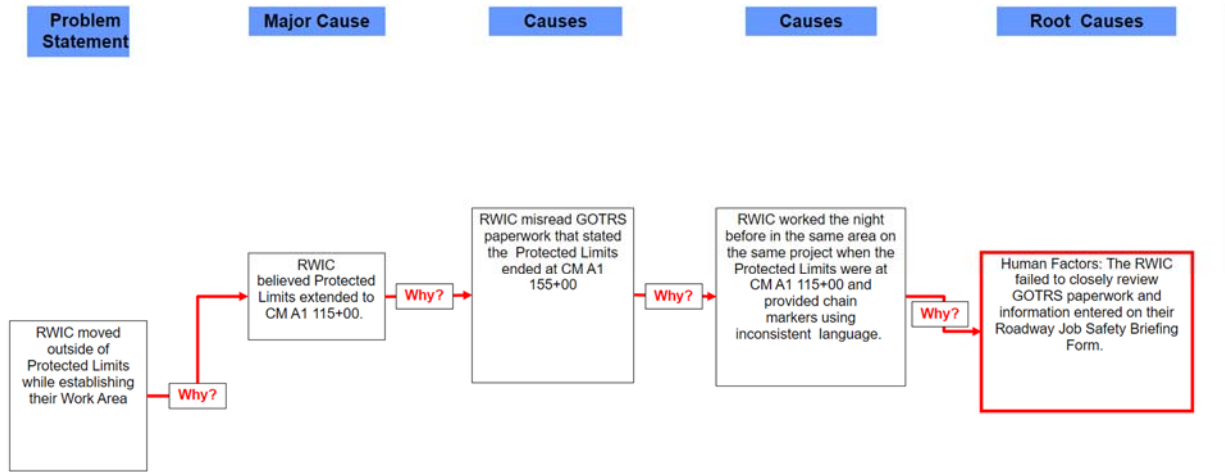
Request Summary

Request Number:	202113104723	Track Access:	True
Dates Requested:	06/21/2021 00:30 to: 06/21/2021 04:00	Clear In Ten:	False
Request Status:	Closed	Equipment on Track:	1
Requestor:	██████████	Allow Piggybacks:	True
Requestor Organization:	DECO/IRPG	In Piggyback:	No
Switch Order:		Power Outage:	Supervisory
Lock Out / Tag Out:		Additional AC:	
Request Title:	Tunnel Vent Barrier Wall Install/Demo		

1 06/21/2021 00:48 06/21/2021 01:14 Contact ROCC Asst Sup.

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Appendix C - Root Cause Analysis



Root Cause Analysis

