750 First St. NE • Ste. 900 • Washington, D.C. 20002

Office: 202-384-1520 • Website: www.wmsc.gov

WMSC Commissioner Brief: W-0227 – Evacuation for Life Safety Reasons – Rosslyn Station – February 8, 2023

Prepared for Washington Metrorail Safety Commission meeting on June 13, 2023

Safety event summary:

A loud bang and smoke from a train approaching Rosslyn Station at approximately 7:14 p.m. on February 8, 2023 led to an evacuation of the train and station for life safety reasons.

Along with riders, the Train Operator heard the loud noise as the train moved through the tunnel before entering the station, later describing it as occurring prior to the train passing through the interlocking. After stopping to service the station, the Train Operator looked out the window as part of the door opening process and saw the smoke coming from the train. CCTV shows the train entered the station with a trail of smoke. The Train Operator then reported the emergency to the Rail Operations Control Center. The Train Operator said they then turned off the environmental (air circulation) system. A Railcar Maintenance Road Mechanic who was in an ancillary room at Rosslyn Station accessed from a door in the tunnel heard the loud noise when the train was passing by that office. The Road Mechanic said they smelled the smoke and went to the platform.

The Rail Operations Control Center Assistant Operations Manager called Arlington County 911 at 7:17 p.m. for an Arlington County Fire Department response, and the Fan Desk activated emergency ventilation fans at 7:18 p.m.

Metrorail personnel on scene focused on the train, and did not establish a unified response and ensure the station was evacuated. When Arlington County Fire Department personnel arrived on scene and established command, Metrorail's response was not clear to the Incident Commander. The Railcar Maintenance Road Mechanic said in an investigative interview that they did not know the station was being evacuated because Metrorail did not make public address announcements and riders continued to enter the station. Metrorail did not place elevators out of service as required by procedure during an evacuation to ensure riders do not inadvertently enter an area evacuated for life safety reasons. This is particularly important at a station such as Rosslyn Station which has elevators from the street level that are accessed for station entry prior to passing a station manager or faregate (the elevator entrance has fare gates and a station kiosk at the station level).

At 7:25 p.m., approximately 10 minutes after the event began (and two minutes after Arlington County Fire Department personnel had arrived outside the station), the Rail Traffic Controller designated the Train Operator as On Scene Commander. The Rail Traffic Controller had not been informed that the fire department was on scene. In addition, Metrorail personnel later explained that they believed that Metro Transit Police Department personnel assumed command from the Train Operator after their arrival, continuing the lack of command and coordination. In addition, there was confusion about the location of the command post, and not all Metrorail personnel reported to the command post. Metrorail did not establish access control and accountability.

Also at 7:25 p.m., the Rail Operations Information Center Information Controller informed the Station Manager that service was suspended and that they needed to evacuate riders from the station. At 7:30 p.m., the Rail Operations Control Center Operations Manager directed the Rail Traffic Controllers to de-energize third rail power under the train, and at 7:31 p.m. directed the Assistant Operations Manager to suspend service in the area. At 7:33 p.m., the Station

Manager reported that all riders had been evacuated from the station, and the Button Rail Traffic Controller stated they were de-energizing third rail power. Third rail power was de-energized at 7:34 p.m.

Third rail power was restored at 8:31 p.m. as some personnel on scene planned to have the train moved, and was subsequently de-energized again at 8:43 p.m. so that the Railcar Maintenance Road Mechanic could perform a ground walk around to inspect the train to determine whether it was safe to move. The Road Mechanic did not inspect the train during the time the track inspection was conducted due to the lack of coordination among personnel on scene.

Metrorail began single-tracking through the station on the other track at approximately 9:43 p.m.[1]

The Railcar Maintenance Road Mechanic inspected the train from the roadway and identified what appeared to the mechanic from their limited view to be a blown collector shoe fuse on car 3255, the second car of the train. The Road Mechanic's inspection was limited due to the train being on the platform in an underground station. A Track and Structures Supervisor serving on the Emergency Response Team inspected a short segment of the roadway approaching the station (approximately 400 feet) and did not find any other visible safety concerns.

Subsequent inspection of the train after it was safely moved to a rail yard showed evidence of electrical arcing/flashing on elements such as the collector shoe fuse bus bar, fuse shunt, brake disc, brake actuator, and shielding around the Front Truck Digitrol unit. The inspection also found the caliper assembly overheated. Vehicle data did not indicate any high or low current events, and the collector shoe fuses were not blown. Metrorail's vehicle incident investigation team determined the most likely cause of the event was an object on the roadway. M

Probable Cause:

The probable cause of this event was Metrorail's insufficient control, monitoring, and prevention of undesired objects and debris on the roadway. Contributing to the deficiencies in response was the lack of incident command, control and coordination due to Metrorail not consistently following the incident command system (ICS) structure. having procedures that do not comply with the National Incident Management System (NIMS)/ICS requirements, and having insufficient training requirements to prepare personnel to respond to and/or manage emergencies within the NIMS/ICS framework.

Corrective Actions:

Metrorail reminded all Station Managers of rules and procedures requiring them to activate fire alarms and place elevators out of service in the event of an evacuation.

Metrorail replaced the damaged truck on the railcar.

Examples of related open CAPs:

- C-0162 was created to address a 2022 emergency management and fire and life safety audit finding that Metrorail does not consistently follow the incident command system (ICS) structure and has procedures that do not comply with National Incident Management System (NIMS)/ICS requirements. For this CAP, which has an expected completion date of January 2025, WMATA has committed to creating and implementing an

[1] At Rosslyn Station, the two tracks are on different levels of the station

Incident Management System Framework in alignment with NIMS/ICS. Metrorail is in the process of training personnel on elements of its new command and control processes, Metrorail plans an initial transition to these updated procedures this summer.

WMSC staff observations:

As in several other events, vehicle data systems were not fully functional. This did not meaningfully impact the data required for this investigation, but continues to be an area the WMSC is monitoring.

Metrorail has the opportunity to improve the efficiency and timeliness of emergency response by better training all personnel to coordinate during emergencies as described in the NIMS/ICS process.

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

FINAL REPORT OF INVESTIGATION A&I E23088

Date of Event:	February 08, 2023
Type of Event:	A-4: Evacuation for Life Safety Reasons
Incident Time:	19:15 hours
Location:	Rosslyn Station, Track 1
Time and How received by SAFE:	19:15 hours Mission Assurance Coordinator (MAC) Desk
WMSC Notification Time:	20:39 hours
Responding Safety Officers:	2 Office of Safety Investigation (OSI) Investigators
Rail Vehicle:	Train ID 403 (**L**3254/55**x**3193/92**x**3098-99**T**)
Injuries:	None
Damage:	Arcing and Flash damage to Car 3254
Emergency Responders:	Metro Transit Police Department (MTPD), Arlington Fire Department, Emergency Response Team (ERT), Office of Emergency Preparedness (OEP)
SMS I/A Number	20230410#107547

February 08, 2023
Table of Contents

Abbreviations and Acronyms

ACFD	Arlington County Fire Department
AOM	Assistant Operations Manager
ARS	Audio Recording System
CAP	Corrective Action Plan
CCTV	Closed-Circuit Television
CMNT	Office of Car Maintenance
ERT	Emergency Response Team
EV	Environmental Control
IIT	Incident Investigation Team
IMF	Incident Management Framework
MAC	Mission Assurance Coordinator
MOC	Maintenance Operations Center
MSRPH	Metrorail Safety Rules and Procedures Handbook
NOAA	National Oceanic and Atmospheric Administration
OEP	Office of Emergency Preparedness
OM	Operations Manager
OSC	On Scene Commander
OSI	Office of Safety Investigations
ROIC	Rail Operations Information Center
RTC	Rail Traffic Controller
RTRA	Office of Rail Transportation
ROCC	Rail Operations Control Center
SAFE	Department of Safety
SMS	Safety Measurement System
WMATA	Washington Metropolitan Area Transit Authority
WMSC	Washington Metrorail Safety Commission

Executive Summary

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

On February 8, 2023, at 19:15 hours, as Train ID 403 was approaching Rosslyn Station on track 1, the Train Operator heard a loud noise and saw smoke towards the trailing end of the train when they opened the doors while berthed at the 8-car marker. The Train Operator immediately reported the event to the Rail Operation Control Center (ROCC) via radio and turned off the Environmental Control (EV) system on the train. A Road Mechanic was at the station and observed the light-colored smoke as well. The Train Operator and Office of Car Maintenance (CMNT) Road Mechanic offloaded the customers from Train ID 403. At 19:16 hours, the Button RTC contacted the Maintenance Operations Center (MOC) to have the fans activated at Rosslyn Station. At 19:17 hours, emergency services were contacted and dispatched to Rosslyn Station. Rosslyn Station was evacuated and closed due to the smoke in the station.

The smoke condition was quickly dissipated by use of the ventilation fans and no smoke detector activated from the amount of smoke present. No anomalies were reported with the fire alarm system.

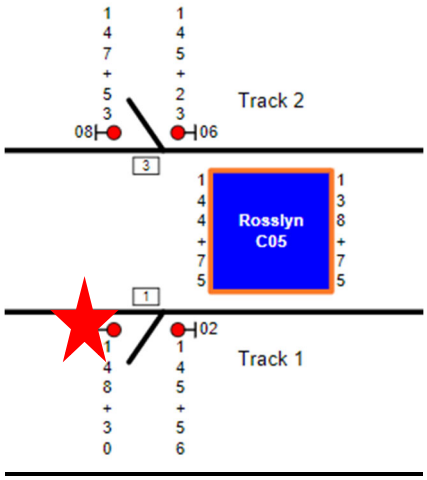
Unified Command was established to manage the event. A bus bridge was established to transport passengers between the closed stations. Emergency Response Team (ERT) personnel conducted a roadway inspection, finding no foreign objects or damaged infrastructure. The CMNT Road Mechanic inspected Train ID 403 and believed a collector shoe fuse on car 3255 was blown. Later train inspections revealed a collector shoe was not blown; however, there was observable flash damage on some components. Test trains found no abnormalities. Normal service resumed at 21:43 hours

The probable cause of the Evacuation for Life Safety Reasons at Rosslyn Station was a mechanical issue with Train ID 403. As Train ID 403 approached Rosslyn Station, the collector shoe assembly on car 3255 contacted an unidentified foreign object, resulting in a smoke condition in the station.

Incident Site

Inbound on Track 1 at Rosslyn Station

Field Sketch/Schematics



Purpose and Scope

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

Investigative Methods

The investigative methodologies included the following:

- Site Assessment through document review

- Formal Interviews – SAFE interviewed 4 individuals as part of this investigation. Interviews included persons present at, during, and after the incident, those directly involved in the response process, and representatives from the Washington Metrorail Safety Commission (WMSC). SAFE interviewed the following individuals:
    - Train Operator
    - ERT Unit
    - CMNT Mechanic
    - Power Unit

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

- System Data Recording Review – Collection of information contained in Metro Data Recording Systems. This data includes:
    - ARS (Audio Recording System) playback [Radio and Landline Communications]
    - The Office of Chief Mechanical Officer (CMOR) Incident Investigation Team (IIT) Vehicle Monitoring System (VMS)
    - Closed-Circuit Television (CCTV)

Investigation

On February 08, 2023, at 19:15 hours as Train ID 403 was approaching Rosslyn Station, the Train Operator heard a loud boom noise and saw smoke when they opened the doors at the 8-car marker. The Train Operator immediately reported the emergency to the ROCC and turned off the EV system on the train. A CMNT Road Mechanic was stationed at Rosslyn Station at the time of the incident and when they heard the noise, they immediately responded to assist. As Train ID 403 passed the CMNT Road Mechanic's location, they smelled the smoke and immediately headed to the platform. At 19:16 hours, the Button RTC contacted the MOC to have the fans activated at Rosslyn Station. The Train Operator and the CMNT Road Mechanic offloaded the customers from Train ID 403. At 19:17 hours, emergency responders were contacted and dispatched to Rosslyn Station. At 19:23 hours, the Arlington County Fire Department (ACFD) arrived on scene and established command. When the Incident Command Post was initially established, all WMATA personnel were on the platform responding to the event. On arrival, the ACFD reported the station did not appear to be evacuating. During the interviews, the CMNT Road Mechanic stated they did not know it was a station evacuation because the fire alarm didn't

activate and there were no evacuation announcements made. At 19:25 hours, the Radio RTC informed the Train Operator they were the On Scene Commander (OSC). At 19:25 hours, the Rail Operation Information Center (ROIC) informed the Station Manager that service was suspended, and they needed to evacuate customers from the station. At 19:33 hours, the Station Manager advised Rosslyn Station was evacuated and closed.

At 19:33 hours, the Button RTC notified the ROCC Operations Manager (OM) that they were de-energizing third rail power. The Train Operator and CMNT Road Mechanic placed the handbrakes on the lead and trailing cars of Train ID 403. At 19:35 hours, the Train Operator informed the Radio RTC that MTPD was on scene. During the interviews, the Train Operator stated once MTPD arrived on scene they became the OSC. The ERT Unit stated when they arrived on the scene, they checked in with a member of the ACFD who identified themselves as the Incident Commander and then walked down to the platform. At 19:44 hours, the ERT Unit advised the Radio RTC they were on the platform, needed to conduct their safety briefing, and wanted to inspect the tracks. The Radio RTC asked the CMNT Road Mechanic if the train could move and if they could complete a ground walk around. The CMNT Road Mechanic initially stated they could not complete a ground walk around because the train was on the platform. At 19:52 hours, the ACFD Battalion Chief informed the ROCC Fire Liaison Officer (FLO) that since this was a maintenance event, they were breaking down command but would leave two units. MTPD became the OSC at this stage. As communications between command units were face-to-face, there was no recorded audio of ACFD and MTPD establishing a Unified Command Post during the event. At 20:08 hours, the OSC gave the ERT Unit permission to enter the roadway to conduct their track inspection. The ERT Unit inspected 300 – 400 feet of track and did not find any damage or foreign objects in the roadway. The CMNT Road Mechanic remained with the Train Operator at the lead end of the train while ERT inspected from the trailing end into the tunnel. At 20:12 hours, the OSC informed the ROCC Liaison that the ACFD had cleared the scene and they were moving the command post inside the station. At 20:26 hours, the OSC informed the Mission Assurance Coordinator (MAC) it was safe to single track on track 2.

At 21:00 hours, following the track inspection, the CMNT Road Mechanic inspected Train ID 403 from the off-platform side of the train and believed a blown collector shoe fuse on car 3255. The Incident Investigation Team (IIT) downloaded the vehicle monitoring and identified there were no high or low current events observed with the trains APS systems nor propulsion. All shoe fuses were inspected, and all checked good for continuity. No fuses were blown. This explains why the data indicates no abnormalities as the train approached Rosslyn. IIT suspects this incident stemmed from foreign object damage, resulting in flashing of 700V various points on the collector assembly and the truck, including the #4 brake disk. At 21:11 hours, the OSC informed the MAC the ground walk around was completed, and they were turning the scene over to a Power Unit. At 21:18 hours, the Power Unit informed the ROCC OM that incident command was turned over to them and power could be restored. At 21:20 hours, the Power Unit informed the Radio RTC that all personnel and equipment were cleared from the roadway and third rail power could be re-energized. At 21:26 hours, the Radio RTC informed the Power Unit that third rail power was restored, and the Power Unit requested permission to hot stick the gaps. At 21:27 hours, the Radio RTC contacted the ERT Unit to ask if the Power Unit had permission to enter the roadway and the ERT Unit granted the permission. At 21:40 hours, a non-revenue test train passed through Rosslyn Station with no issues. At 21:43 hours, normal service resumed.

Chronological Event Timeline

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

Time	Description
19:14:35 hours	CCTV video shows Train ID 403, a legacy fleet train, entering Rosslyn Station with a smoke trail following behind the consist [CCTV]

Time	Description
19:15:23 hours	Train Operator: Stated “Emergency, emergency, emergency” as they were coming to Rosslyn Station, they heard a loud boom and smoke was coming from under the train. [Ops. 2]
19:15:45 hours	Radio RTC: Gave 100% repeat back. [Ops. 2]
19:16:23 hours	CMNT Road Mechanic: Notified the Radio RTC of smoke in the station. *Note: The Road Mechanic came from beyond the end gate and observed smoke trailing the train.* [Ops 2]
19:16:25 hours	Buttons RTC: Contacted MOC to have fans turned on at Rosslyn. [Phone]
19:16:49 hours	MTPD Desk: Notified MTPD Dispatch of event
19:17:15 hours	Train Operator: Advised the Radio RTC that they shut off their EV system and needed further instructions. [Ops. 2]
19:17:21 hours	Radio RTC: Instructed the Train Operator to make good announcements to the customers and offload the train. [Ops. 2]
19:17:28 hours	ROCC AOM: Contacted Arlington County 911 to report the event.
19:17:31 hours	Train Operator: Gave a 100% repeat back. [Ops. 2]
19:17:59 hours	MAC: Contacted and dispatched Primary Responder.
19:18 hours	Fans were activated. [AIMS Playback]
19:18:00 hours	ROIC Controller: Contacted Station Manager to assist with offloading train.
19:18:41 hours	MOC: Contacted ERT Unit and instructed them to head to Rosslyn Station. [Phone]
19:18:54 hours	Train Operator: Advised the Radio RTC that they and the CMNT Road Mechanic walked through the train, and it was all clear. The Operator was instructed to head back to the lead car. [Ops. 2]
19:19:23 hours	MOC: Estimated 20-25 minutes for ERT to arrive.
19:19:46 hours	ROCC OM: Contacted ROIC to ask if the station was being shut down. [Rail 1]
19:19:56 hours	Radio RTC: Instructed an RTRA Supervisor to head towards Rosslyn Station. [Ops. 2]
19:20:06 hours	ACFD Dispatch: Dispatched a full complement of rescue squad personnel to Rosslyn Station. [Open MHz]
19:20:21 hours	Train Operator: Advised the Radio RTC they and the CMNT Road Mechanic were back in the lead car and needed further instructions. [Ops.2]
19:20:39 hours	MAC: Contacted the On Call Director to provide a situational update. [MAC Desk Phone]
19:20:38 hours	Power Desk: Dispatched a unit to respond from C09.
19:20:41 hours	ROIC Lead: Notified BOCC of station shutdown at Rosslyn.
19:20:54 hours	Train Operator: Advised the Radio RTC that they were talking to customers, and they said they heard a loud sound, sparks, and smoke coming from the fourth car. [Ops. 2]
19:21:13 hours	Radio RTC: Asked the CMNT Road Mechanic if the train could be moved. CMNT Road Mechanic: Reported the train was on the platform and it could be moved at a slow pace. They could not conduct a ground walk around as the train was on the platform. [Ops.2]
19:22:26 hours	CMNT Road Mechanic: Advised they were on the fourth car, 3192, but they could not complete a ground walk around because they were on the platform. [Ops. 2]
19:22:52 hours	ROIC Lead: Called BOCC and advised specific stations of shutdown. Foggy Bottom, Pentagon, Clarendon, Court House, Rosslyn. Turnback at Clarendon and Foggy Bottom. Blue line turnback at Pentagon. [ROIC Lead]
19:23:47 hours	ACFD Engine 101: Reported on-scene, and WMATA appeared not to be evacuating. [Open MHz]

Time	Description
19:24:52 hours	ROCC Fire Liaison: Contacted Battalion 112 and reported light haze platform level, no evacuation currently underway, and fans on the exhaust. [Open MHz]
19:25:13 hours	CMNT Road Mechanic: Reported the loud noise was before the consist entered the station. The event occurred in the tunnel location. [Ops.2]
19:25:38 hours	Radio RTC: Informed the Train Operator that they were the On Scene Commander. Train Operator: Gave a 100% repeat back. [Ops.2]
19:25:41 hours	ROIC: Advised the Station Manager of train service being suspended and instructed them to evacuate their station and advise when it was clear. [Ops.5]
19:26:03 hours	ROIC Lead: Contacted the ROCC OM to inform them BOCC was notified of the station closure and was working on a bus bridge. [Rail 1]
19:27:52 hours	ACFD Engine 101 Recon Group: Communicated with command; the station is being evacuated. The customer reported an explosion or boom under the 4th car. I am checking with the Train Operator. [Open MHz]
19:28:27 hours	Train Operator: Advised the Radio RTC that the Fire Department was on scene. [Ops. 2]
19:28:50 hours	ACFD Recon: Reports no fire alarms at the kiosk or any parts of the station and suggests ventilation due to light haze. ACFD Command: Notified ROCC Fire Liaison to stop service to the station on both tracks. One fan on exhaust and supply. [Open MHz]
19:30:05 hours	MAC: Provided responding OEP personnel with the latest intel. [MAC Desk Phone]
19:30:19 hours	ROCC OM: Contacted RTC and informed them to de-energize third rail power under the train. [Rail 1]
19:31:22 hours	Train Operator: Contacted the Radio RTC to inform them the Fire Department wanted to check Track 1 and asked what the plan was. Also, mentioned that they may need third rail power de-energized. [Ops. 2]
19:31:29 hours	ROCC OM: Instructed the ROCC AOM to suspend service. [Rail 1]
19:31:33 hours	Radio RTC: Instructed the Train Operator to apply the hand brakes on the lead and trailing cars. [Ops.2]
19:32:38 hours	ACFD Recon: Notified ACFD Command that the train was evacuated, and the incident may have occurred under the train. [Open MHz]
19:33:02 hours	ACFD Command: Reported MTPD was at the command post and requested if RAIL 1 wanted ACFD to hold off on moving the train until ERT arrived. [Open MHz]
19:33:12 hours	Rosslyn Station Manager: Confirmed station was clear of customers. [Ops. 5]
19:33:25 hours	Buttons RTC: Advised the ROCC OM that they were de-energizing third rail power. [Rail 1]
19:33:44 hours	ROIC Lead: Notified the Bus Operations Control Center of closure extension to McPherson Square. [Phone]
19:34:09 hours	Handbrakes applied on 3254 and 3099. [Ops. 2]
19:35:30 hours	Train Operator: Contacted the Radio RTC and informed them MTPD was on scene. [Ops. 2]
19:35:33 hours	ACFD Command: Notified ROCC Fire Liaison Bus Bays were out of service and ROCC needs additional resources for bus services (bus bridge). [Open MHz]
19:35:25 hours	MTPD Forward Liaison: On the platform with the Fire Department and trying to figure if they are going to move the train or leave it there to inspect. Asked if Rail have any plans yet. [MTPD 2x]
19:35:48 hours	ROCC Liaison: Notified MTPD Forward Liaison that they were bringing down third rail power on track 1 and CMNT will inspect railcar. [MTPD 2x]

Time	Description
19:36:23 hours	CMNT Road Mechanic: Contacted the Radio RTC and informed them the Fire Department wanted to know when power would be de-energized on Track 1. [Ops.2]
19:36:28 hours	Radio RTC: Advised the CMNT Road Mechanic that third rail power was de-energized, and the Fire Department needed to hot stick and confirm. [Ops. 2]
19:36:38 hours	MTPD Personnel on the platform were advised that the Battalion Chief stated since there was a light haze on the platform they should come upstairs and leave the Fire Department with their gear. [MTPD 2x]
19:36:53 hours	ROCC Liaison: Notified ACFD Command third rail power was reported de-energized at Rosslyn Station per Rail 1. [Open MHz]
19:37:21 hours	MTPD Forward Liaison: Advised the OSC that there was no longer any haze in the station and the Fire Department was waiting on ERT before they did any kind of inspection. OSC: Allowed personnel to stay in the station. [MTPD 2x]
19:43:38 hours	ROCC Liaison: Advised the OSC that the Fire Department was requesting power be re-energized on track 1 so the train could be moved so ERT could inspect the train. [MTDP 2x]
19:41:50 hours	ACFD Recon: Reported to ACFD Command ERT requested power restoration to move the train for track inspection. ACFD Command communicated this request to ROCC Liaison. [Open MHz]
19:44:15 hours	ERT: Contacted the Radio RTC to inform them that they were on the platform, needed to conduct a safety briefing, and wanted to conduct a train inspection but asked if they needed to use an Advanced Mobile Flagger (AMF) or conduct it under foul time. Radio RTC: Gave a 100% repeat back and advised they would give them foul time to conduct the train inspection. [Ops.2]
19:46:52 hours	Train Operator: Contacted the Radio RTC because the Fire Department was inquiring if the train would be moved so they could inspect the track. Radio RTC: Advised third rail power was de-energized at that time so the train could not be moved. [Ops. 2]
19:47:06 hours	Ops 2 Desk: Call inquiring about ground walkaround. Confirmed not performed and unsure of how to complete it with train within platform.
19:47:38 hours	ROCC Liaison: Advised OSC that Fire Department wanted to restore power and move the incident train for a track inspection. [MTPD 2X]
19:50:05 hours	ROCC Liaison: Advised OSC that ROCC had no information on an evacuation at Foggy Bottom. [MTPD 2X]
19:52:09 hours	Battalion Chief: Informed the ROCC Liaison they were breaking down Incident Command and was leaving Engine 101 as their point of contact. [Open MHz]
19:55:54 hours	OSC: Advised that Fire Department was clearing. Asked whether ERT can fix maintenance issue. Two FD units will remain. ROCC Liaison: Relayed information that ERT was unsure of cause at the time. Power would be restored and ERT would enter the roadway. [MTPD 2X]
19:56:46 hours	ROCC Liaison: Advised that FD would be turning over the scene to WMATA and ERT was with the MTPD Forward Liaison planning next steps.
19:57:19 hours	MTPD Forward Liaison: Advised the ROCC Liaison there was a RTRA Supervisor at the Command Post but not on the platform. Requested a RTRA Supervisor on the platform. [MTPD 2x]
19:58:16 hours	ERT: Informed the Radio RTC that the safety briefing was completed and was requesting permission to enter the roadway under foul time to complete a track inspection. Radio RTC: Requested the chain markers they would be walking. [Ops. 2]

Time	Description
19:58:26 hours	ROCC OM: Contacted the ROCC AOM to ask if the train operator was identified as the RTRA Forward Liaison since MTPD was on scene. ROCC AOM: Affirmed they were. [Rail 1]
19:58:45 hours	ERT: Advised chain markers C1 144+00 – C1 148+00. [Ops. 2]
19:58:45 hours	Ops 2 Desk: Rail Supervisor at Metro Center reported unable to find an MTPD officer to give a ride to Rosslyn. Advised to call dispatch to request.
20:00:46 hours	MTPD Forward Liaison: Advised that ERT was ready to enter roadway to inspect. [MTPD 2X]
20:02:34 hours	RTRA Supervisor on scene. [Ops. 2]
20:03:56 hours	Ops 2 Desk: ERT called the desk and asked when they would have permission to enter the roadway. Advised that ROCC was waiting for word from the OSC. ERT relayed that OSC instructed them to go to the roadway.
20:04:40 hours	ROCC Liaison: Advised that second Rail Supervisor was on scene and reporting to command post [MTPD 2X]
20:07:12 hours	Radio RTC: Instructed ERT to contact the On Scene Commander for permission to enter the roadway. [Ops. 2]
20:08:00 hours	OSC: Approves ERT to perform inspection. ERT enters the roadway.
20:12:23 hours	OSC: Informed the ROCC Liaison that the Fire Department had left, and they were moving the Command Post to inside the station at the kiosk. [MTPD 2x]
20:13:26 hours	OSC: Informed the MTPD Forward Liaison that there were 3 Power units headed down to the platform. [MTPD 2x]
20:15:03 hours	MAC: Provided the WMSC with a situational update of what happened and what was being done to mitigate the issue. [MAC Desk Phone]
20:17:48 hours	New OSC takes over the Command Post. [MTPD 2x]
20:18:42 hours	ROCC OM: Instructed the ROCC AOM to have the CMNT Road Mechanic check in with MTPD. [Rail 1]
20:19:08 hours	Buttons RTC: Contacted the ROCC OM to inquire where the Incident Command Post was located. ROCC OM was unaware at the time. [Rail 1]
20:20:32 hours	Ops 2: ERT reported in route back to the platform. [Ops.2]
20:21:35 hours	Radio RTC: Informed all personnel at Rosslyn Station that the Incident Command Post was at the kiosk. [Ops 2]
20:21:55 hours	ERT: Advised all personnel were cleared from the roadway and they were going to talk to the On Scene Commander about bringing power back up. [Ops. 2]
20:26:46 hours	OSC: Informed the MAC it was safe to single track on track 2. [MTPD 2x]
20:28:58 hours	ROCC OM: Contacted the ROCC AOM to inform them they were cleared to start single tracking after the test train cleared the area. [Rail 1]
20:32:58 hours	Ops 2 Desk: ERT asked about completing a second inspection after power is restored. Advised to work through on-scene command following power restoration.
20:34:43 hours	ROCC OM: Advised that CMNT Road Mechanic must complete inspection prior to moving the incident train. [Rail 1 Phone]
20:38:00 hours	Radio RTC: Instructed the CMNT Road Mechanic to check the train again to see if it is able to move. [Ops. 2]
20:41:45 hours	Radio RTC: Asked CMNT Road Mechanic what they needed to complete a ground walk around. CMNT Road Mechanic: Stated they would need to open the doors off the platform to look visual or they need to de-energize third rail power so they could on the non-platform side. [Ops. 2]
20:43:22 hours	OSC: Contacted the MAC to request third rail power be de-energized on track 1 to conduct walk around. [MTPD 2x]
20:43:51 hours	Radio RTC: Instructed the CMNT Road Mechanic to contact ERT unit for access to the roadway. [Ops.2]

Time	Description
20:45:44 hours	MAC: Informed the OSC that third rail power was de-energized within the platform limit so the CMNT Road Mechanic could perform their ground walk around. [MTPD 2x]
20:48:58 hours	MAC: Contacted the WMSC to provide an update on the situation. The WMSC provided a scene release at that time. [MAC Desk Phone]
20:49:09 hours	Radio RTC: Asked the CMNT Road Mechanic if they contacted the ERT Unit to get permission to conduct inspection. CMNT Road Mechanic: Informed the Radio RTC they were still waiting permission. [ops. 2]
20:53:00 hours	ERT: Entered the roadway to hot stick and confirm third rail power is de-energized. [Field Observation]
20:54:00 hours	ERT: Confirmed third rail power was de-energized and a Warning Strobe and Alarm Device (WSAD) was installed. [Field Observation]
20:55:45 hours	ROCC OM: Contacted the ROCC AOM to inquire about the status of the ground walk around. [Rail 1]
20:56:21 hours	Radio RTC: Informed the CMNT Road Mechanic they had permission from the ERT Unit to enter the roadway to conduct their ground walk around. [Ops, 2]
21:00:00 hours	CMNT Road Mechanic: Conducted ground walk around and reported that they believed a collector shoe fuse was blown on car 3255. [Field Observation]
21:03:00 hours	ERT: Cleared the roadway and requested a test train [Field Observation]
21:07:00 hours	MTPD Liaison: Conducted a hot wash on the platform. [Field Observation]
21:11:42 hours	OSC: Informed the MAC that the ground walk around had been completed and it was believed that it was a blown collector shoe fuse and the scene was being turned over to Power unit. [MTPD 2x]
21:15:50 hours	ROCC OM: Provided situational update to ROCC Assistant Director and informed them that MTPD turned over Command to Power Unit and they were saying keep power down. [Rail 1]
21:18:25 hours	Power Unit: Contacted the ROCC OM and confirmed Incident Command was turned over to them. ROCC OM: Asked who was saying third rail power needed to stay de-energized. Power Unit: Informed the ROCC OM power could be restored. ROCC OM: Asked the Power Unit to relay that over Ops. 2. [Rail 1]
21:20:47 hours	Power Unit: Advised the Radio RTC that all personnel and equipment were clear from the roadway and third rail power could be re-energized [Ops.2]
21:22:49 hours	Radio RTC: Made third rail re-energization announcement for track 1 at Rosslyn Station. [Ops. 2]
21:26:43 hours	Radio RTC: Informed the Power Unit that third rail power was restored on track 1 at Rosslyn Station. [Ops. 2]
21:26:51 hours	Power Unit: Gave 100% repeat and requested permission to hot stick both sides of the gaps. [Ops. 2]
21:27:08 hours	Radio RTC: Contacted the ERT Unit to ask if the Power Unit had permission to enter the roadway to hot stick the gaps. ERT: Affirmed the Power Unit had permission to enter the roadway to hot stick the gaps. [Ops. 2]
21:27:31 hours	Radio RTC: Informed the Power unit they had permission to enter the roadway to hot stick the gaps. [Ops. 2]
21:28:09 hours	Radio RTC: Asked the Power Unit if it were necessary to hot stick because they could tell when the power of the train came back on. Power Unit: Stated they already started so let them finish. [Ops. 2]

Time	Description
21:30:00 hours	MTPD Liaison: Turned the scene over to RTRA and cleared the scene. [Field Observation]
21:30:29 hours	Power Unit: Informed the Radio RTC that third power was confirmed energized, and all Power personnel were cleared from roadway. [Ops. 2]
21:32:49 hours	Radio RTC: Instructed the Train Operator to let them know when the handbrake was released from the lead car. [Ops. 2]
21:33:11 hours	Radio RTC: Instructed the CMNT Road Mechanic to release the handbrake on the trailing car. [Ops. 2]
21:34:43 hours	Train Operator: Advised the handbrake was released on the lead car, 3254.
21:35:47 hours	CMNT Road Mechanic: Advised the handbrake was released on the trailing car, 3099. [Ops.2]
21:37:00 hours	Incident train began moving, a rolling brake test conducted [Field Observation]
21:38:52 hours	MAC: Provided the On Call Director with an update on the situation. [MAC Desk Phone]
21:40:00 hours	Test Train 788 passed through Rosslyn Station. [Field Observation]
21:42:00 hours	ERT: Confirmed a good test by train 788. [Field Observation]
21:43:00 hours	Normal service resumed. [Field Observation]

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

Digital Images and Photographs

Advanced Information Management System (AIMS)

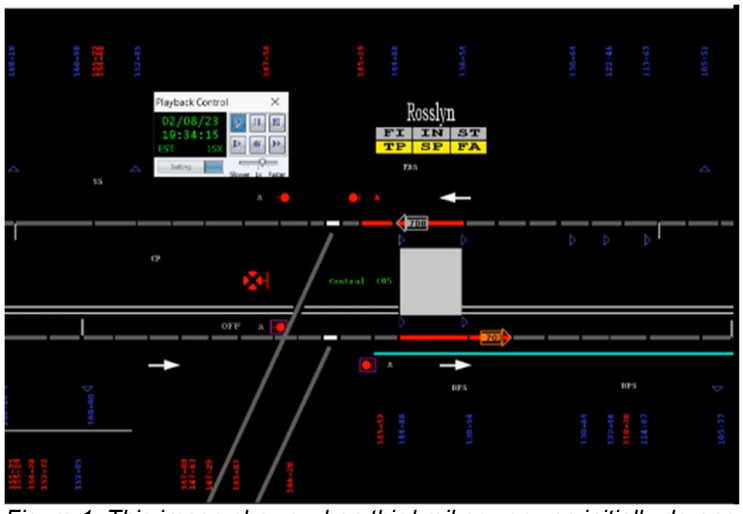


Figure 1: This image shows when third rail power was initially de-energized.

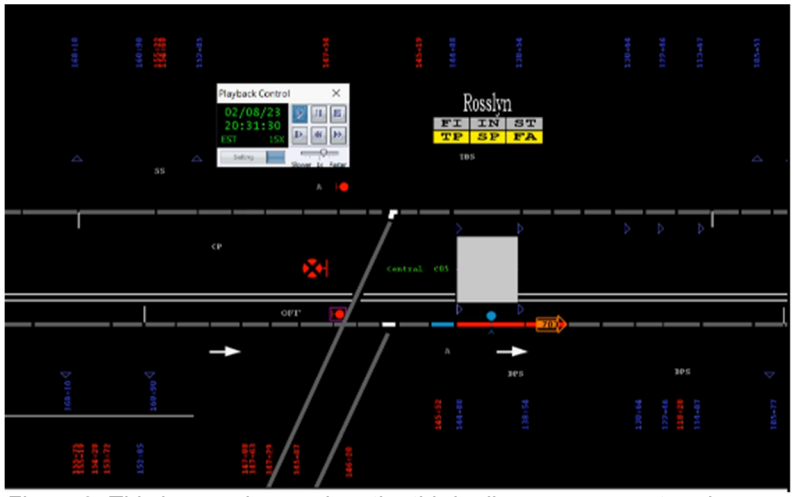


Figure 2: This image shows when the third rail power was restored.

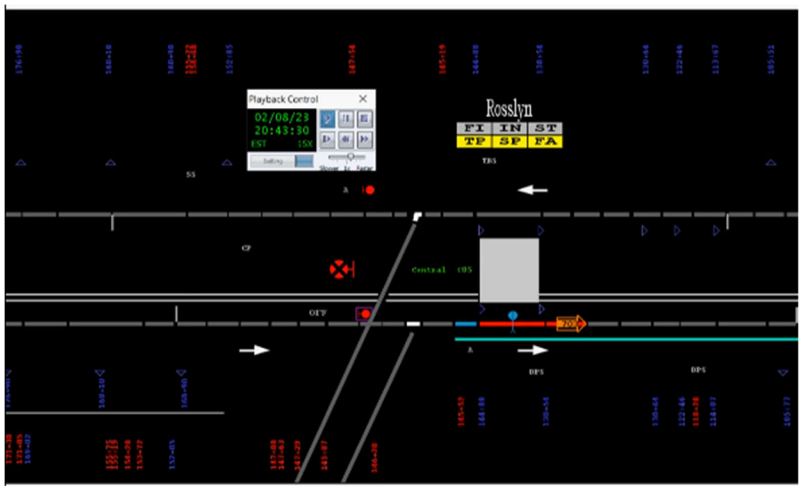


Figure 3: This image shows when third rail power was de-energized so the CMNT Road Mechanic could complete a train inspection.

The Office of Chief Mechanical Officer (CMOR) / Vehicle Monitoring and Diagnostic System (VMDS) Timeline
Adopted from CMOR IIT report:

"IIT observed evidence of flashing on the #2(Front/Left) collector shoe fuse bus bar, the #2 shoe fuse shunt, the #4 Brake Disc, the HP-4 on brake disc #4, and shielding around the Front Truck Digitrol on car 3255. No other apparent damage was observed during the ground walk around.

Undercar Inspection revealed additional flashing to the bottom right bolt of the #2 collector assembly.

Based on the VMS data, there were no High or Low current events observed with the trains APS systems nor propulsion. All shoe fuses were inspected, and all checked good for continuity. **No fuses were blown** [emphasis added]. This explains why the data indicates no abnormalities as the train approached Rosslyn.

IIT suspects this incident stemmed from foreign object damage, resulting in Flashing of 700V various points on the Collector assembly and the truck, including the #4 Brake Disk.

Additional Findings:
Cars 3254 – All Propulsion subsystems NOT communicating with VMS

Cars 3254-55 – 3 out of 4 Friction Brake subsystems NOT communicating with VMS

Cars 3192-93 - All Friction Brake subsystems NOT communicating with VMS
Cars 3192-93 - 3 out of 4 Friction Brake subsystems NOT communicating with VMS

Car 3099 - Propulsion subsystems NOT communicating with VMS
Cars 3098-99 – 3 out of 4 Friction Brake subsystems NOT communicating with VMS

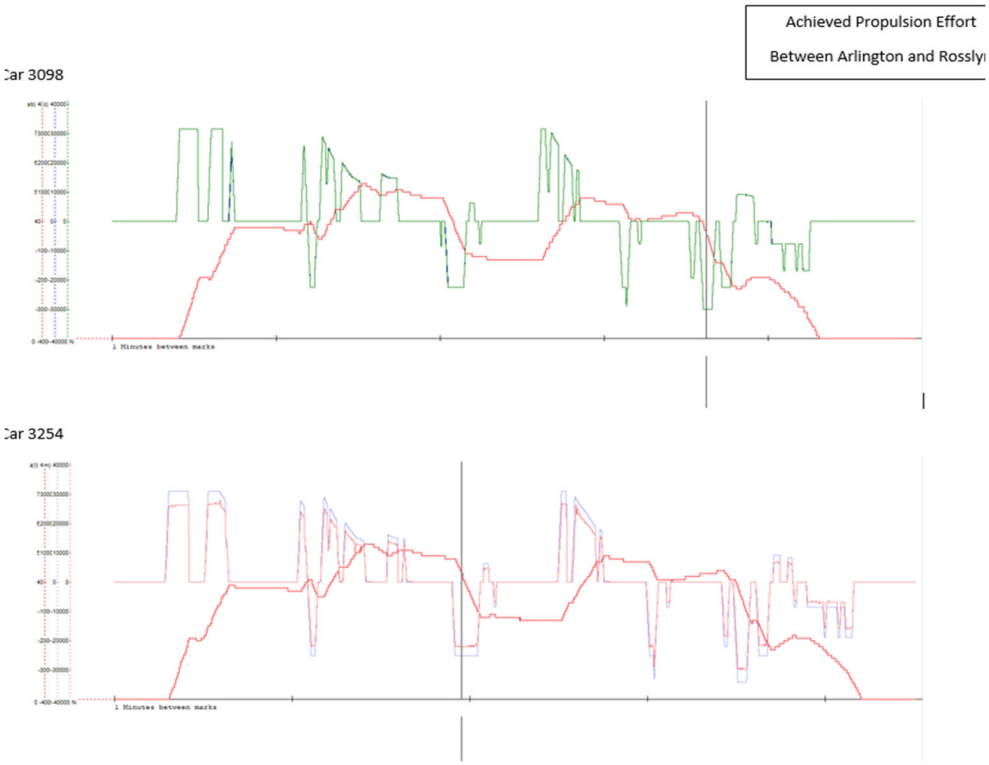
Recommendations:

CMNT

-Perform a complete undercar inspection on entire consist for possible foreign object damage.
-Download Propulsion fault logs from cars 3254-55
-Fully inspect Primary Cable on Car 3255.
-Replace Front Truck due to evidence of flashing on 3255.
-Perform collector shoe height checks cars 3254-55.

Recommendations being made are to be documented on a Maximo Workorder against the vehicle(s) to address the resolution.

IIT releases its hold on these cars pending the above recommendations have been complied with."



Interview Findings

As part of the investigation launched into the event, SAFE interviewed 4 individuals. 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.

Train Operator

During the interviews, The Train Operator mentioned they heard a loud boom as they were approaching Rosslyn Station before they passed through the interlocking. When they pulled to the 8-car marker and opened the doors, they noticed the smoke and immediately contacted the ROCC. The Train Operator mentioned they turned off the EV system and waited for the ROCC's instructions. The Train Operator and the CMNT Road Mechanic offloaded the customers from the train. The Train Operator was assigned as the On Scene Commander. When MTPD arrived on scene, they took over as On Scene Commander. The Train Operator stated they were never assigned as the RTRA Forward Liaison or another role.

CMNT Road Mechanic

The CMNT Road Mechanic stated they were in their office at Rosslyn Station when they heard a loud boom noise. The CMNT Road Mechanic stated when the train passed their office, they smelled the smoke and immediately went to the platform. The CMNT Road Mechanic stated they never knew it was a station evacuation because the fire alarm never activated, there were no evacuation announcements made, and customers were still using the elevators to enter the station. The CMNT Road Mechanic stated they never work with ERT during emergencies and could have completed their ground walk around when ERT was initially granted permission to enter the roadway.

ERT Unit

The ERT Unit inspected about 300 – 400 feet of track and did not find any damage or foreign objects in the roadway. The ERT Unit mentioned there was not a formal transfer of Command from the Fire Department to MTPD that they observed[1]. The ERT Unit stated the CMNT Road Mechanic could have conducted their train inspection simultaneously as they conducted their track inspection. The ERT Unit said they did not find any foreign objects on the roadway they inspected.

Power Unit

During the interview, the Power Unit stated when they arrived to the scene MTPD Officers directed them to the Incident Command Post because there were no indicators to identify its location. The Power Unit stated there seemed to be confusion on the scene when they arrived. The Power Unit mentioned that the OSC was MTPD when they arrived. The OSC was outside and the ERT and Fire Department were in the station. The Power Unit stated that they inspected some of the third rail while ERT was conducting their track inspection. The Power Unit stated they were unsure why MTPD turned the scene over to them and there was no announced exchange of command. The Power Unit expressed their concerns about opening the station and single tracking while the incident train was still on the platform and the cause of the smoke was not yet identified[2].

Weather

On February 8, 2023, at the time of the incident, NOAA recorded the temperature as °60 F, with mostly cloudy skies. Weather was not a contributing factor in this incident (Weather source: NOAA) – Location: Arlington, VA.)

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[1] Note that ERT responded to the platform and communicated through the MTPD Forward Liaison so may not have been aware of the transfer of command.

[2] Track inspections were conducted on track 1 with successful results and the previous OSC authorized single-tracking on the lower level of the station as the smoke condition was no longer present.

Related Rules and Procedures

- SOP 1A – Command Control and Coordination of Emergencies on the Rail System
- SOP 8 – Fire and Smoke in a Station

Human Factors

Fatigue

Train Operator

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. Video of the incident was reviewed for behaviors suggesting fatigue. No indications of fatigue were evident from the video. The Train Operator reported feeling fully alert at the time of the incident. The Train Operator reported experiencing no symptoms of fatigue in the time leading up to the incident.

CMNT Road Mechanic

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. Video of the incident was reviewed for behaviors suggesting fatigue. No indications of fatigue were evident from the video. The CMNT Road Mechanic reported feeling fully alert at the time of the incident. The CMNT Road Mechanic reported no fatigue symptoms leading up to the incident.

ERT Unit

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. Video of the incident was reviewed for behaviors suggesting fatigue. No indications of fatigue were evident from the video. The ERT Unit reported feeling fully alert at the time of the incident. The ERT Unit reported experiencing no symptoms of fatigue in the time leading up to the incident.

Fatigue Risk

Train Operator

We evaluated incident data for fatigue risk factors. No significant risk was identified. The incident time of day did not suggest an increased risk of fatigue-related impairment. The Train Operator reported keeping a regular sleep schedule in the days leading up to the incident. The Train Operator worked the evenings in the days leading up to the incident. The Train Operator was awake for 8.25 hours at the time of the incident. The Train Operator reported 9 hours of sleep in the 24 hours preceding the incident. The off-duty period was 15 hours, an opportunity for 7-9 hours of sleep. This was a comparable amount of sleep the Train Operator's usual workday sleep durations. The employee reported no issues with sleep.

CMNT Road Mechanic

We evaluated incident data for fatigue risk factors. No significant risk was identified. The incident time of day did not suggest an increased risk of fatigue-related impairment. The CMNT Road Mechanic reported keeping a regular sleep schedule in the days leading up to the incident. The CMNT Road Mechanic worked day shift in the days leading up to the incident. The CMNT Road Mechanic was awake for 10.25 hours at the time of the incident. The CMNT Road Mechanic reported 8 hours of sleep in the 24 hours preceding the incident. The off-duty period was 15.18

hours which provides an opportunity for 7-9 hours of sleep. This was a comparable amount of sleep as the CMNT Road Mechanic's usual workday sleep durations. The CMNT Road Mechanic reported no issues with sleep.

ERT Unit

We evaluated incident data for fatigue risk factors. No significant risk was identified. The incident time of day did not suggest an increased risk of fatigue-related impairment. The ERT Unit reported keeping a regular sleep schedule in the days leading up to the incident. The ERT Unit worked the evening shift in the days leading up to the incident. The ERT Unit was awake for 9.25 hours at the time of the incident. The ERT Unit reported 10.25 hours of sleep in the 24 hours preceding the incident. The off-duty period was 49 hours which provides an opportunity for 7-9 hours of sleep. This was more than the ERT Unit's usual workday sleep durations. The ERT Unit reported no issues with sleep.

Post-Incident Toxicology Testing

Post-Incident Toxicology Testing was not conducted for this event.

Findings

- Tunnel Ventilation Fans were activated within a minute of the report of smoke. Tunnel fans were activated and placed in exhaust and supply at Rosslyn Station.
- The amount of smoke generated by the event was not sufficient to activate the fire alarm within the Rosslyn Station.
- The likely source of the smoke was the collector shoe on car 3255 contacting a foreign object.
- Not all personnel checked in to the Incident Command Post prior to entering the station. The initial On-Scene Commander and other personnel were on the platform at the outset of the event.
- A Maintenance Lead was not assigned to coordinate maintenance and inspection tasks as a part of the Incident Command Structure.
- Initial responders (Train Operator, Road Mechanic) on the platform reported that they were unclear as to the command structure in place at the scene.
- The elevators were not manually placed out of service once the station was evacuated and closed.

Immediate Mitigation to Prevent Recurrence

- The incident train was removed from service.
- Walking and riding track inspections were conducted and did not identify any infrastructure defects or foreign objects/obstructions in the roadway.

Probable Cause Statement

The probable cause of the Evacuation for Life Safety Reasons at Rosslyn Station was a mechanical issue with Train ID 403. As Train ID 403 approached Rosslyn Station, the collector shoe assembly on car 3255 contacted an unidentified foreign object, resulting in a smoke condition in the station.

Recommended Corrective Actions

Corrective Action Code	Description	Responsible Party	Estimated Completion Date
104608_SAFECAPS_RTRA_001	RTRA will include a Rule of the Week for Station Managers: Activating fire alarms and placing elevators out of service.	RTRA	Completed
104608_SAFECAPS_TRST_001	TRST all ERT and Supervisors will train on IMF Level 1 and Supervisors are required to take Level 3.	TRST	June 2023

Appendices

Appendix A – Interview Summaries

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

Train Operator

The Train Operator is a WMATA employee with nine (9) years of service with six and a half (6.5) years as a Train Operator. The Train Operator is RWP Level 2 certified and must be recertified in February 2024. The Train Operator mentioned feeling fully alert right before the event. The Train Operator was working the evening shift leading up to the event. The Train Operator stated they did not have any personal or non-work related circumstances interfering with their opportunity to get sleep.

The Train Operator was completing one and a half round trips when the incident happened. The Train Operator did not experience any mechanical issues while operating the train. The Train Operator stated they heard a loud boom noise about 300-400 yards from Rosslyn Station. The Train Operator heard the noise before they passed through the interlocking. They never heard a similar noise in their previous experience. The Train Operator mentioned the pulled the train to the 8-car marker and when they opened the doors, they saw the smoke. At that point, they notified the ROCC and turned off the EV system on the train. They offloaded the train with the assistance of the CMNT Road Mechanic. The Train Operator stated they were never assigned as the RTRA Forward Liaison but were initially assigned as the On Scene Commander until MTPD arrived. The Train Operator was unaware of the new Incident Management Framework (IMF) training but was following SOP 1A. The Train Operator stated the smoke dissipated quickly in the station. The Train Operator stated their main responsibility was to stay with the train after they offloaded the customers. The Train Operator stated there was confusion on the platform on who was filling the role of the On Scene Commander.

CMNT Road Mechanic

The Road Mechanic is a WMATA employee with fifteen (15) years of service with six (6) years as a Road Mechanic. The Rod Mechanic is RWP Level 2 certified and must recertify in January 2024. The Road Mechanic was last certified as a Road Mechanic in January 2023. The Road Mechanic mentioned feeling fully alert right before the event. The Road Mechanic was working their normal shift on the day of the event. The Road Mechanic stated they did not have any personal commitments that might interfere with their opportunity to get a good sleep.

The Road Mechanic was stationed at Rosslyn Station when the incident happened. The Road Mechanic's main duty is when an issue occurs to make sure the trains are moving as safely and efficiently as possible. The Road Mechanic stated they have heard similar noises before as a Road Mechanic so when they heard it, they started looking for the train passing the area. The Road Mechanic opened their office door and smelled the smoke as the train passed by. They immediately went to the platform after hearing the Train Operator report on what happened to the ROCC. The Road Mechanic stated the Train Operator was the On Scene Commander until MTPD arrived on the scene. The Road Mechanic was not sure who was in charge once MTPD arrived on scene. The Road Mechanic stated there was some confusion because they never heard exactly where the Incident Command Post was and there were still customers entering the station. The elevators across the street were still in service and customers were using them to enter the station. The Road Mechanic stated they never knew there was a station evacuation because the fire alarm never activated and there were no evacuation announcements made over the Public Address system. The Road Mechanic stated it may have been their fault not to demand or request the ground walk around when the power was initially de-energized. The Road Mechanic stated they never work with ERT during emergencies and they are the only subject matter experts when it comes to inspecting a train. The Road Mechanic stated when they think of a ground walk around,

it is when they walk a complete 360 degrees around the train to inspect it and the train was on the platform so that was not possible. The Road Mechanic walked to the platform side to look at the collector shoes, but they needed to check the non-platform side of the train as well. The Road Mechanic stated the ROCC gave them permission to inspect the non-platform side and when they inspected that side that is when they believed the issue was a blown collector shoe fuse.

ERT Unit

The ERT Unit is a WMATA employee with twenty-two (22) years of service with twelve (12) years as a Track Supervisor. The Track Supervisor is RWP Level 4 certified and must recertify in August 2023. The ERT Unit was last certified as a Track Supervisor in August 2022. The ERT Unit mentioned feeling fully alert right before the event. The ERT Unit was working their normal shift on the day of the event. The ERT Unit's work schedule included daytime and nighttime shifts in the last week leading to the event. There were no personal or non-work related circumstances affecting their sleep.

The ERT Unit was located near Pentagon City Station when the incident happened. The ERT Unit's main duty is to respond to track emergencies, but they may respond to other emergencies as well. They are the ERT Lead and have up to four members in their crew. When they arrived at Rosslyn Station, they did not see an established Incident Command Post but spoke Fire Department personnel who identified themselves as the Battalion Chief and On Scene Commander. The ERT Unit stated when they went to the platform another Fire personnel stated they were the On Scene Commander as well. They conducted their safety briefing on the platform and were met by the MTPD Forward Liaison who notified the MTPD On Scene Commander that they were on scene. The ERT Unit stated the new Roadway Job Safety Briefing forms take longer to complete and take away time from assessing the emergency. The ERT Unit only conducted a track inspection and never inspected the train. They inspected about 300 - 400 feet of track and did not locate any damage or foreign objects in the roadway. The ERT Unit stated no one advised the CMNT Road Mechanic to enter the roadway at the same time as they were granted permission to conduct their track inspection. The ERT Unit stated there was no communication of when the Fire Department transferred Command to MTPD. The ERT Unit stated the incident scene was not turned over to them during the event.

Power Unit

The Power Unit is a WMATA employee with twenty-five (25) years of service and with thirteen (13) years as a Power Supervisor. The Track Supervisor is RWP Level 4 certified and must recertify in April 2023. The Power Unit mentioned feeling fully alert right before the event. The Power Unit was working their normal shift on the day of the event. The Power Unit's work schedule included daytime and nighttime shifts in the last week leading to the event. There were no personal or non-work-related circumstances affecting their sleep. The Power Unit mentioned they usually get 8 hours of sleep on workdays.

The Power Unit stated as a Power Supervisor their duty is to make sure third rail power was de-energized and re-energized safely. Also, their duty is to complete a track inspection to make sure there are no issues with the third rail and third rail cables. The Power Unit stated they have responded to all types of incidents related to third rail power. The Power Unit stated their Supervisor contacted them on the day of the incident and asked them to report to Rosslyn Station. The Power Unit stated when they arrived on scene, they asked MTPD where the Incident Command Post was, and they directed them to it. They mentioned there were no indicators of where the Incident Command Post was besides the MTPD Officers directing them to it. The Power Unit stated the OSC was MTPD when they arrived on scene.

The Power Unit stated there seemed to be confusion on the scene when they arrived. The Power Unit stated to them the confusion was that ERT and the Fire Department were in the station while

the OSC was outside. MTPD gave command to them once the incident train was inspected and the smoke's cause was identified. The Power Unit was unsure why MTPD turned the scene over to them. There was no formal exchange of command[3]. The Power Unit stated they were confused why MTPD turned the scene over to them because the incident train was still on the platform, the test train had not passed through the area, and they were single tracking allowing people back into the station. The Power Unit stated third rail power was de-energized and re-energized twice during the incident. The Power Unit stated when third rail power was re-energized so the incident train could be removed, there was a light haze of smoke.

[3] The Power Unit acknowledged that command was transferred to them, which implies a change in command.

Appendix B – Maximo Work Order

Washington Metropolitan Area Transit Authority
Maintenance and Material Management System
Work Order Details

Work Order #: 17662835
Type: CM

Status: CLOSE
03/24/2023 08:31

Work Description: REPORT OF SMOKE IN STATION AND LOUD BANG. COLLECTOR SHOE FUSE # 2 BLOWN, 40/140, C05, CMD, PROP, 403
Job Plan Description:

RM [redacted] VERFIED

Work Information

Asset:	R3255 3255, RAIL CAR, BREDA, 3000 AC, B CAR	**Owning Office:**	CMNT-CMNT-CMNT	**Parent:**	
Asset Tag:	R3255	**Maintenance Office:**	CMNT-ALEX-INSP	**Create Date:**	02/08/2023 22:42
Asset S/N:	3255	**Labor Group:**	CMNT	**Actual Start:**	02/08/2023 22:43
Location:	1213 C99, ALEXANDRIA YARD	**Crew:**		**Actual Comp:**	03/22/2023 19:27
Work Location:	1213 C99, ALEXANDRIA YARD	**Lead:**		**Item:**	L18060002
Failure Class:	CMNT009 PRIMARY POWER	**GL Account:**	WMATA-02-33350-50499160-041-**********-*****-OPR**		
Problem Code:	1382 COLLECTOR ASSEMBLY DEFECT FOD	**Supervisor:**	[redacted]	**Target Start:**	
Requested By:		**Requestor Phone:**	55258	**Target Comp:**	
Chain Mark Start:		**Chain Mark End:**		**Scheduled Start:**	
Create-Mileage:	2506440.0	**Complete-Mileage:**	2506850.0		

Task IDs

Task ID						
10	I CHECKED CAR # 3255 FOR A REPORT OF SMOKE AND LOUD BANG, THAT COLLECTOR SHOE # 2 BLOWN . I INSPECTED AND FOUND # 2 COLLECTOR SHOE ASSEMBLY FLASHED. I INSPECTED THE MAIN PR MARY POWER CABLES, CABLES ARE GOOD. OHMS CHECK GOOD ON ALL COLLECTOR SHOE FUSES.					
Component:	000-300-K08-005 FUSE; COLLECTOR ASSY; TRUCK; 2K/3K/6K/7K	**Work Accomp:** CHECKED	**Reason:** FLASHED	**Status:** CLOSE	**Position:** 246	**Warranty?:** N
20	LOUD BANG & FLASH FOUND FOD DAMAGE ALONG # 2 COLLECTOR SHOE ASSEMBLY AND TO COMPONENT SHIELD ASSEMBLY. CHECKED ALL COLLECTOR SHOES FOR HEIGHT AND DID WALK AROUND UNDER 3255 NO OTHER FOD DAMAGE FOUND, COMPLETED.					
Component:	000-300-K08-001 COLLECTOR SHOE; COLLECTOR ASSY; TRUCK; 2K/3K/6K/7K	**Work Accomp:** CHECKED	**Reason:** FOREIGN OBJECT DAMAGE	**Status:** CLOSE	**Position:** 246	**Warranty?:** N
30	SEE DETAILS AT YARD DOWNLOADED THE PROP.LOGS					
Component:	000-300-D00 SUBSYSTEM; PROPULSION; 2K/3K/6K/ 7K	**Work Accomp:** DOWNLOADED	**Reason:** INCIDENT//ACCIDENT	**Status:** CLOSE	**Position:**	**Warranty?:** N
40	IN THE SHOP INSPECTED ALL TRUCKS, COLLECTOR SHOES, FUSES, HIGH VOLTAGE CABLS, TRACTION MOTORS, BRAKE RESISTOR GRIDS, INDUCTANCES, PROPULSION PACKAGE, OK. HOWEVER, FOUND # 2 COLLECTOR SHOE BUSBAR, MOUNTE BOLT, BRAKE PNEUMATIC UNIT GUARD, FLASHED. ALSO, FOUND RH CALIPER ASSEMBLY OVERHEAT. THE TRUCK NEEDS R/R FOR EVALUATION.					
Component:	000-300-D10 PROPULSION: OTHER UNDERCAR EQUIPMENT; 2K/3K/6K/7K	**Work Accomp:** CHECKED	**Reason:** INCIDENT//ACCIDENT	**Status:** CLOSE	**Position:**	**Warranty?:** N

Washington Metropolitan Area Transit Authority
Maintenance and Material Management System
Work Order Details

Work Order #: 17662835
Type: CM

Status: CLOSE
03/24/2023 08:31

Work Description: REPORT OF SMOKE IN STATION AND LOUD BANG. COLLECTOR SHOE FUSE # 2 BLOWN, 40/140, C05, CMD, PROP, 403
Job Plan Description:

Task IDs

Task ID						
50	REMOVED ALL FOUR COLLECTOR SHOES FOR SAFETY. TRAIN TO BE STORED IN THE YARD UNTIL WE GET TRUCK(NO ETA AT THIS TIME)					
Component:	000-300-K03 TRUCK&SUSPENSION: WHEEL & AXLE ASSY; TRUCK; 2K/3K/6K/7K	**Work Accomp:** REMOVED	**Reason:** SAFETY WORK ORDER	**Status:** CLOSE	**Position:** 557	**Warranty?:** N
60	REMOVE FRONT TRUCK 9A4-617 ASSET# 342361					
Component:	000-300-K02 TRUCK&SUSPENSION: TRUCK ASSY; 2K/3K/6K/7K	**Work Accomp:** REMOVED	**Reason:** VOLTAGE HIGH	**Status:** CLOSE	**Position:** 557	**Warranty?:** N
70	INSTALLED FRONT TRUCK 9A4-212 ASSET# 341446, TRUCK CHECKS C/W					
Component:	000-300-K02 TRUCK&SUSPENSION: TRUCK ASSY; 2K/3K/6K/7K	**Work Accomp:** INSTALLED	**Reason:** IMPROVED RELIABILITY	**Status:** CLOSE	**Position:** 557	**Warranty?:** N

Planned Materials

Task ID	Item	Description	Storeroom	Issue Unit	Quantity	Unit Cost	Line Cost
	L18353063	WELDMENT:ZEE,2K/3K,GROUND BUS, TRUCK	255	EA	3	$120.93	$362.79
					Total Planned Materials:		$362.79

Actual Labor

Task ID	Labor		Start Date	End Date	Start Time	End Time	Approved?	Regular Hours	Premium Hours	Line Cost
10	[redacted]	[redacted]	02/09/2023	02/09/2023	00:30	01:00	Y	00:30	00:00	$24.56
20	[redacted]	[redacted]	02/09/2023	02/09/2023	00:30	01:30	Y	01:00	00:00	$49.35
30	[redacted]	[redacted]	02/10/2023	02/10/2023	14:30	16:00	Y	01:30	00:00	$69.90
40	[redacted]	[redacted]	02/13/2023	02/13/2023	09:00	11:00	Y	02:00	00:00	$98.25
50	[redacted]	[redacted]	02/13/2023	02/13/2023	13:00	14:00	Y	01:00	00:00	$47.06
60	[redacted]	[redacted]	03/21/2023	03/21/2023	05:30	09:30	Y	04:00	00:00	$192.83
60	[redacted]	[redacted]	03/21/2023	03/21/2023	05:30	09:30	Y	04:00	00:00	$165.12
70	[redacted]	[redacted]	03/21/2023	03/21/2023	09:30	13:30	Y	04:00	00:00	$165.12
70	[redacted]	[redacted]	03/21/2023	03/21/2023	09:30	13:30	Y	04:00	00:00	$192.83
						Total Actual Hour/Labor:		22:00	00:00	$1,005.01

Washington Metropolitan Area Transit Authority
Maintenance and Material Management System
Work Order Details

Work Order #: 17662835
Type: CM

Status: CLOSE
03/24/2023 08:31

Work Description: REPORT OF SMOKE IN STATION AND LOUD BANG. COLLECTOR SHOE FUSE # 2 BLOWN, 40/140, C05, CMD, PROP, 403

Job Plan Description:

Actual Materials

Task ID	Item	Assetnum	Description	Storeroom	Trans Date	Issue Unit	Quantity	Unit Cost	Line Cost
	L18353063		WELDMENT:ZEE,2K/3K,GROUND BUS, TRUCK	255	03/21/2023	EA	3	$120.93	$362.79

Total Actual Materials: $362.79

Related Incidents

Ticket	Description	Class	Status	Relationship
8651615	REPORT OF SMOKE IN STATION AND LOUD BANG. COLLECTOR SHOE FUSE # 2 BLOWN, 40/140, C05, CMD, PROP, 403	SR	PENDING	ORIGINATOR

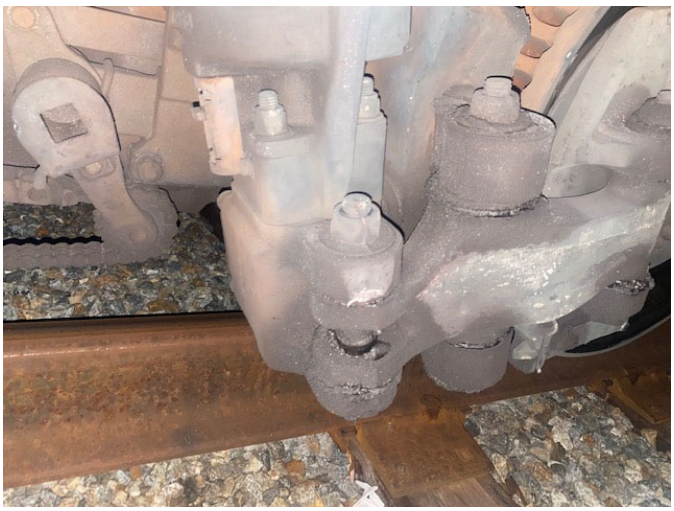
Failure Reporting

Cause		Remedy		Supervisor	Remark Date
1929	FOREIGN OBJECT DAMAGE	0004	REPLACED	[redacted]	03/22/2023

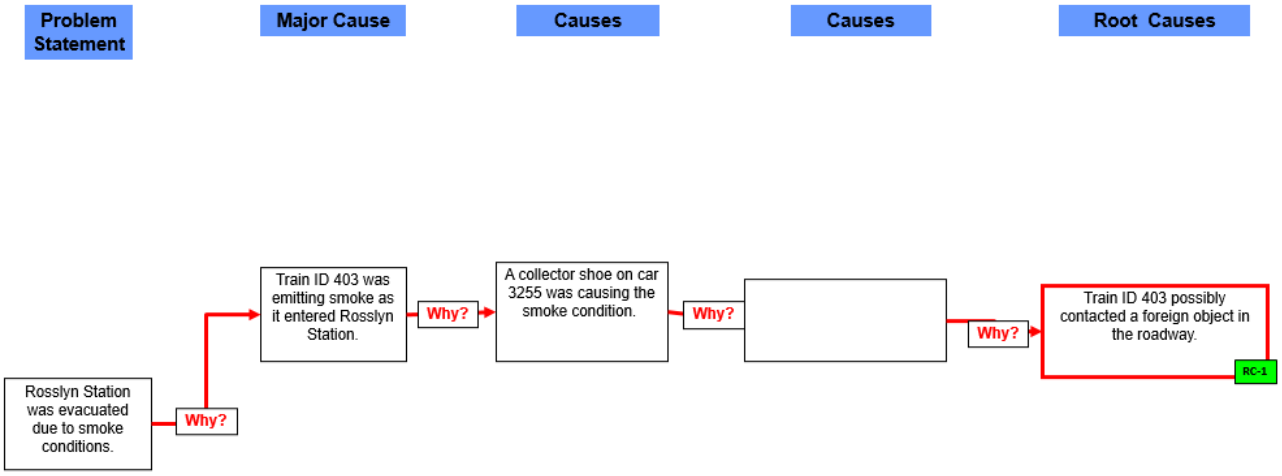
Remarks: CAR WAS INSPECTED DURING A MAJOR INSPECTION, ALL DAMAGES ADDRESSED COMPLIED WITH ITT RECOMMENDATIONS

Appendix C – Scene Photographs

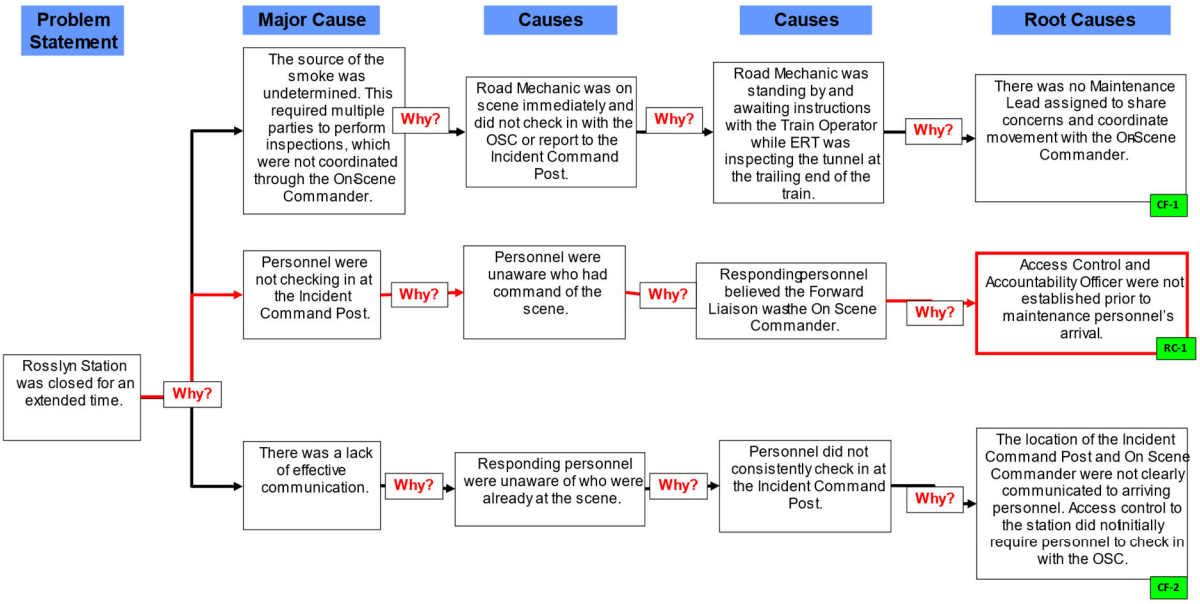

2160



Appendix D - Root Cause Analysis



Root Cause Analysis



Root Cause Analysis