



## **W-0365 Hazardous Materials Spill – near Rosslyn Station – August 7, 2024**

### **Document Purpose**

*This WMSC written report on WMATA Metrorail's safety event investigation and review of Metrorail's findings in accordance with the WMSC Program Standard, in conjunction with the attached Metrorail investigation reports that have undergone WMSC staff review, feedback, and Metrorail revision, describes the investigation activities, identifies factors causing or contributing to the accident, and sets forth ongoing, additional, or upcoming corrective actions and further oversight work (such as inspections and audits) as necessary or appropriate. The WMSC's ongoing oversight during the investigative process, including safety event reporting and verification, participation in investigative interviews, data review, consistent communication with the Metrorail investigations team, and feedback on Metrorail's reports leads to further improvements prior to consideration of the reports by WMSC Commissioners for adoption. The WMSC's safety event investigation oversight assures the sufficiency and thoroughness of Metrorail's investigations. The WMSC Commissioners are considering these documents (the WMSC review and Metrorail's investigation report) as a unified item for adoption at the Washington Metrorail Safety Commission meeting on April 8, 2025.*

*WMSC staff recommend adoption of this investigation.*

### **Safety event summary:**

On Wednesday, August 7, 2024, a contractor-owned Rail Maintenance Machine (RMM), Rail Grinder 8126, experienced a hydraulic fluid leak, causing a hazardous materials spill on the roadway between Rosslyn and Foggy Bottom-GWU stations on track 1. At 12:57 p.m., the Equipment Operator, a contractor, contacted the Control Center and reported an acceleration issue while traveling on an incline toward Foggy Bottom-GWU Station. The Equipment Operator asked and was granted an absolute block from the Rail Traffic Controller in the Control Center to move the unit back towards Rosslyn and then try again to proceed toward Foggy Bottom with the gained momentum and speed. During this move, the unit stalled, at which time the Equipment Operator requested and was granted permission to enter the roadway to troubleshoot the vehicle. The Equipment Operator and Roadway Worker In Charge, who responded to the scene, identified a hydraulic fluid leak. The Maintenance Operations Center within the Control Center was notified, and Rail Grinder 8126 was towed by a Prime Mover (PM-47) to Alexandria Rail Yard.

Further inspection of the vehicle determined the hydraulic hose fitting to the motor was over-pressurized, causing the line to separate and resulting in a hydraulic leak. Due to the defect, about 50 gallons of hydraulic fluid leaked onto the tracks. Office of Track and Structures personnel removed the hazardous fluid from the roadway using rags and spill absorbent. Spill absorbents are used in instances when unintended releases of hazardous materials require quick and safe removal to prevent further damage to the environment, individuals, and infrastructure. No injuries or adverse environmental impacts were reported.

The subsequent investigation found that Rail Grinder 8126 stalled due to the low level of oil being supplied to the motor due to the leak. An investigative review of records showed that the vehicle experienced hydraulic fluid leaks on April 16, 2024, and May 1, 2024. Additionally, the Rail Grinder 8126 failed seven inspections from May 19, 2024, to July 26, 2024. These repeated failures led to a final reinspection, on July 3, 2024, four days prior to this safety event. The RMM passed the inspection and was approved for use.

The cause of this safety event was determined to be a failed hydraulic hose fitting.



As an immediate mitigation, Rail Grinder 8126 was removed from WMATA property and is not authorized to operate within WMATA's system without the contractor performing a major overhaul, and a WMATA inspection conducted.

As a result of these investigations, Metrorail developed the following corrective actions:

- A review of the current maintenance schedule for Rail Grinder hydraulic systems was initiated to identify any gaps that may have contributed to the equipment failure.
- Metrorail instituted more frequent inspections of hydraulic components to prevent future incidents.



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

**FINAL REPORT OF INVESTIGATION A&I E24620**

<b>Date of Event:</b>	August 7, 2024
<b>Type of Event:</b>	I-9 Hazmat Spill
<b>Incident Time:</b>	12:57 Hours
<b>Location:</b>	Chain Marker C1 103+00 to 126+00
<b>Time and How received by SAFE:</b>	12:59 Hours – Safety Information Officer (SIO)
<b>WMSC Notification Time:</b>	02:52 Hours
<b>Responding Safety Officers:</b>	None
<b>Rail Vehicle:</b>	Rail Grinder 8126
<b>Injuries:</b>	None
<b>Damage:</b>	None
<b>Emergency Responders:</b>	None
<b>SMS I/A Incident Number:</b>	20240807#118923

**Chain Marker C1 103+00 to 126+00 – Hazmat Spill**

Incident Date: August 7, 2024 Time: 01:10 hours  
Final Report – Hazmat Spill  
E24620

Drafted By: SAFE 710 – 10/04/2024.  
Reviewed By: SAFE 704 – 10/06/2024  
Approved By: SAFE 707 – 10/11/2024

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August 7, 2024

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## **Abbreviations and Acronyms**

<b>AIMS</b>	Advanced Information Management System
<b>ARS</b>	Audio Recording System
<b>CCTV</b>	Closed-Circuit Television
<b>CENV</b>	Office of Vehicle Program Services, Rail Fleet
<b>CM</b>	Chain Marker
<b>CTEM</b>	Car Truck Equipment and Maintenance
<b>EO</b>	Equipment Operator
<b>MICC</b>	Metro Integrated Command and Communications Center
<b>MOC</b>	Maintenance Operations Center
<b>MOR</b>	Metrorail Operating Rulebook
<b>NOAA</b>	National Oceanic and Atmospheric Administration
<b>RTRA</b>	Office of Rail Transportation
<b>RMM</b>	Roadway Maintenance Machine
<b>ROCC</b>	Rail Operations Control Center
<b>RWIC</b>	Roadway Worker In Charge
<b>SAFE</b>	Department of Safety
<b>SDOC</b>	Safety Director On-Call
<b>SIO</b>	Safety Information Officer
<b>SUDS</b>	Safety Universal Data System
<b>TRST</b>	Office of Track and Structure
<b>WMATA</b>	Washington Metropolitan Area Transit Authority
<b>WMSC</b>	Washington Metrorail Safety Commission

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

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Incident Date: August 7, 2024 Time: 01:10 hours  
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Drafted By: SAFE 710 – 10/04/2024. Reviewed By: SAFE 704 – 10/06/2024 Approved By: SAFE 707 – 10/11/2024
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## **Executive Summary**

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

On Wednesday, August 7, 2024, at 12:57 hours, the Equipment Operator (EO) of Rail Grinder 8126, notified the Metro Integrated Command and Communication Center (MICC) that the Roadway Maintenance Machine (RMM) Rail Grinder 8126 was experiencing accelerating issues uphill from the middle river point towards Foggy Bottom Station. The EO then attempted to ascend RMM Rail Grinder 8126 back towards Rosslyn Station on track 1 to build up speed, but the vehicle stalled within the curve at chain marker (CM) C1 123+00.

The EO requested authorization to enter the track to troubleshoot a failed propulsion circuit. Once permission was granted, the EO observed a hydraulic fluid leak from the rail grinder unit between CM C1 103+00 and C1 126+00 on track 1.

The investigation determined that the hydraulic fluid spill was caused by the failure of a hydraulic hose fitting, which released fluid onto the track. This incident was classified as a Hazardous Material Spill (HMS) due to the release of an estimated 50 gallons of hydraulic fluid onto the track bed, prompting an immediate response from Washington Metro Area Transit Authority (WMATA) and RailWorks personnel.

The Maintenance Operations Center (MOC), Spill Report and Log detailed that the Office of Track and Structures (TRST) Track Supervisor notified MOC that an unknown amount of hydraulic fluid leaked from RMM Rail Grinder 8126 between CM C1 103+00 to C1 126+00 due to a blown hydraulic hose. RMM PM-47 was dispatched and towed RMM Rail Grinder 8126 to Alexandria Rail Yard.

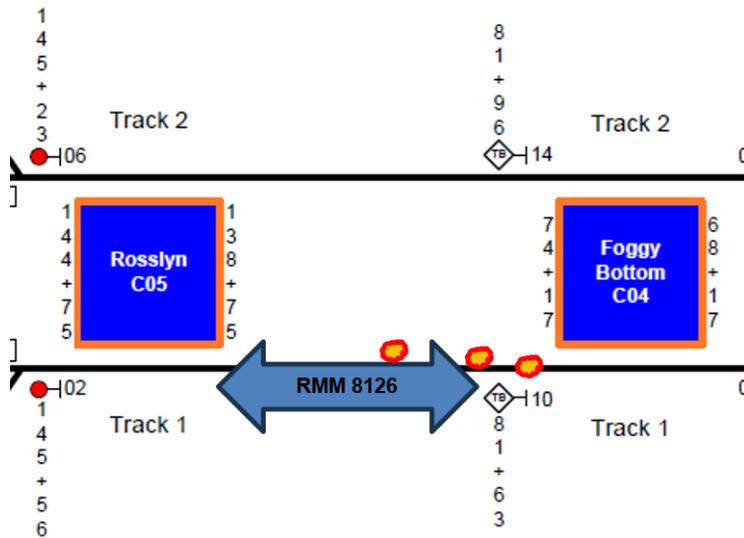
TRST personnel removed the fluid from the roadway utilizing rags and spill absorbent to ensure the safety of the surrounding area while minimizing disruption to revenue service. No injuries or adverse environmental impacts were reported.

The probable cause of the Hazmat Spill on August 7, 2024, between CM C1 103+00 and C1 126+00 on track 1, was a result of a failed 1/4" hydraulic hose fitting connected to the B pressure port of Unit #1's hydraulic drive motor. The failure was due to externally applied stress to the hose. The pump supplying the motor continued operating as the propulsion circuit commanded until a low oil condition forced a stop.

## Incident Site

Chain Marker (CM) C1 103+00 to C1 126+00, Track 1.

## Field Sketch/Schematics



The above depiction is not to scale.

## Purpose and Scope

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

## Investigative Methods

The investigative methodologies included the following:

- Site Assessment through document review.
- Formal Interviews – SAFE interviewed two individuals as part of this investigation. The interview included persons present at, during, and after the incident, those directly involved in the response process, and representatives from the Washington Metrorail Safety Commission (WMSC). SAFE interviewed the following individuals:
  - Equipment Operator
  - RWIC
- Informal Interviews – Collected through conversations with individuals during the investigation to provide background and supporting information. Written statements were reviewed from personnel present during the event.
- Documentation Review – Collection of relevant work history information and process documentation contained in WMATA systems of record. These records include:
  - National Oceanic and Atmospheric Administration (NOAA)
  - MOCC Incident Report
  - Historical Inspection/Incident Report

- System Data Recording Review – Collection of information contained in Metro Data Recording Systems. This data includes:
  - ARS (Audio Recording System) playback [Radio Ops 2 and Landline Communications]

## **Investigation**

On Wednesday, August 7, 2024, the Roadway Worker in Charge (RWIC) reported that hydraulic fluid leaked from RMM Rail Grinder 8126 between CM C1 103+00 and C1 126+00 onto the running rails, on the non-third rail side.

During a formal interview the RWIC reported that Rail Grinder 8126 was to travel to Foggy Bottom Station on track 1, clearing the interlocking, and return to Rosslyn on track 2. Rail Grinder 8126 experienced acceleration issues while traveling uphill from the middle river point to Foggy Bottom Station, track 1. The RWIC requested that they attempt to move back towards Rosslyn Station and then forward towards Foggy Bottom Station build up speed to power the hill. When the unit began to ascend towards Rosslyn Station it stalled. They were then informed that the unit began leaking hydraulic fluid.

The Audio Recording System (ARS) revealed that at 12:30 hours, the EO of RMM Rail Grinder 8126 requested an absolute block to the Rosslyn Station on track 1 in an attempt to build up speed to then ascend the hill towards Foggy Bottom Station. Six minutes later, the EO reported that the RMM Rail Grinder 8126 had stalled on a curve at CM 123+00 while traveling towards Rosslyn Station. At 12:37 hours, the RWIC canceled the track work.

At 00:57 hours, the RWIC arrived on the scene and reported that hydraulic fluid had leaked from the machine, but they could not confirm the amount. The RWIC requested to perform an inspection on track 1 between CM 126+00 and Foggy Bottom Station.

At 12:59 hours, the Assistant Director (Rail 1) of the MICC notified the MOC Controller and the Safety Information Officer (SIO) of the hydraulic fluid leak.

At 01:12 hours, the RWIC confirmed that hydraulic fluid had leaked between CM C1 103+00 and C1 126+00. There were no significant puddles, and hydraulic fluid was observed in the center of the track bed and on the left running rail.

The MOC Spill Report and Log detailed that the TRST Track Supervisor informed MOC that a blown hydraulic hose caused an unknown amount of hydraulic fluid to leak from Rail Grinder 8126 between CM C1 103+00 and C1 126+00. The hydraulic fluid was cleaned up with cloths and spill absorbents.

The Car Track Equipment Maintenance (CTEM) Rail Fleet Assistant Superintendent estimated that 50 gallons of bio-degradable hydraulic oil was spilled.

The hydraulic fluid leak was reported to the Safety Director On-Call (SDOC) at 02:29 hours by the SIO.

At 02:32, RMM PM-47 was dispatched from Arlington Cemetery Station to retrieve and tow RMM Rail Grinder 8126.

At 02:52 hours, the SIO notified the Washington Metropolitan Safety Commission (WMSC) of the fluid spill, and WMSC released the scene a minute later.

At 03:05 hours, RMM PM-47 began towing Rail Grinder 8126 towards Alexandria Rail Yard.

During an internal meeting with the Department of Safety (SAFE), the Office of Vehicle Programs (CENV), and CTEM, it was revealed that RailWorks owns and operated the RMM Rail Grinder 8126. CENV/CTEM reported that a 1/4" hydraulic hose had been removed from a hydraulic propulsion motor pressure port, which had been capped to stop the further release of fluid. The 90° fitting that was connected to the pressure port was broken off. The 1/4" hose, assembled with end fittings, is rated to 5800 PSI working pressure with a 4:1 bursting pressure ratio.



Figure 1 - Field repair cap.

A review of the RMM Rail Grinder 8126's history revealed several problems that led to seven (7) failed inspections between March 19, 2024, and July 26, 2024. On April 16, 2024, RMM Rail Grinder 8126 experienced an oil leak in the engine and a hydraulic leak beneath the axle car. On May 15, 2024, RMM Rail Grinder 8126 experienced a hydraulic leak (transducer hose).

According to a Historical Inspection/Incident Report, RMM Rail Grinder 8126 failed seven (7) inspections between March 19, 2024, and July 26, 2024, due to various issues. On April 16, 2024, Rail Grinder 8166 experienced a hydraulic leak under the axle car, an engine oil leak, and a major hydraulic leak (transducer hose) on May 15, 2024.

The RMM Rail Grinder 8126 was removed from WMATA property and is not authorized to operate within WMATA's system without RailWorks performing a major overhaul, and a WMATA inspection conducted.

### Chronological Event Timeline

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

Time	Description
12:30:05 hours	<u>EO</u> : Requested an absolute block back to Rosslyn Station track 1 and attempted to build up speed to make sure the unit could travel uphill. [Radio, OPS2]
12:36:28 hours	<u>Radio RTC</u> : Requested confirmation if RMM Rail Grinder 8126 was able to make it to Rosslyn Station.

	<u>EO</u> : Reported RMM 8126 stalled out on the curve while traveling towards Rosslyn Station. Advised they were holding at chain marker C1 123+00. [Radio, OPS2]
12:37:08 hours	<u>Button RTC</u> : Reported that RMM Rail Grinder 8126 was having mechanical problems towards Foggy Bottom (stalling out). [Phone]
12:37:58 hours	<u>TRST 695</u> : Reported to Button RTC that they are canceling their work and sending RMM Rail Grinder 8126 to the rail yard. [Phone]
12:38:13 hours	<u>EO</u> : Reported they were going to attempt to move back to the Foggy Bottom Station platform. [Radio, OPS2]
12:39:33 hours	<u>Rail 2</u> : Notified Rail 1 that RMM Rail Grinder 8126 was having mechanical problems. [Phone]
12:41:42 hours	<u>EO</u> : Reported they were still working to move RMM Rail Grinder 8126 and have changed their destination to the Rosslyn Station platform. [Radio, OPS2]
12:45:20 hours	<u>EO</u> : Requested to hold temporarily at C1 126+00. [Radio, OPS2]
12:48:52 hours	<u>RWIC</u> : Arrived at Rosslyn Station and requested permission to walk track 1 towards RMM Rail Grinder 8126 under foul time protection. [Radio, OPS2]
12:57:50 hours	<u>RWIC</u> : Requested mechanical assistance to tow RMM Rail Grinder 8126. Reported a hydraulic leak and requested permission to complete a track inspection from C1 126+00 to the Foggy Bottom Station platform. Radio RTC: Granted the RWIC foul time and requested the fluid leak amount. RWIC: Unable to confirm the fluid amount. [Radio, OPS2]
12:58:17 hours	<u>Rail 2</u> : Notified Rail 1 of the hydraulic leak. [Phone]
12:59:01 hours	<u>Rail 2</u> : Notified MOC of the hydraulic leak. MOC requested that the RWIC contact them with more details about the incident. [Phone]
12:59:26 hours	<u>Button RTC</u> : Reported hydraulic fluid leaked at C1 126+00 to CTEM. (mid-river) [Phone]
12:59:41 hours	<u>Rail 1</u> : Notified SIO of the hydraulic leak. [Phone]
01:00:28 hours	<u>Radio RTC</u> : Instructed RWIC to contact MOC. [Radio, OPS2]
01:05 hours	RWIC notified MOC of the hazmat spill, and a report was generated. [MOC Spill Report and Log]
01:12:50 hours	<u>Button RTC</u> : Requested fluid leak amount and location. <u>RWIC</u> : Reported fluid leaked between chain markers C1 103+00 to C1 126+00, not in large puddles. [Radio, OPS2]
01:15:32 hours	<u>Button RTC</u> : Reported to Rail 1 that the hydraulic fluid leaked from chain marker C1 103+00 to 126+00. [Phone]
01:26:38 hours	<u>RWIC</u> : Reported that hydraulic fluid had leaked on the left running rail in the center of the track bed.
02:05:57 hours	<u>Track Mechanic</u> : Three Track Mechanics and RWIC #2 requested permission to enter the roadway from Rosslyn Station to walk to RMM Rail Grinder 8126. [Radio OPS2]
02:29:41 hours	<u>CTEM</u> : Reported fluid leak to MOC. [Phone]
02:32:31 hours	<u>Button RTC</u> : Dispatched PM-47 from Arlington Cemetery to RMM Rail Grinder 8126. [Radio, Ops2]
02:49:48 hours	<u>SIO</u> : Notified SDOC of the fluid leak. [Phone]
02:52:07 hours	<u>SIO</u> : Notified WMSC of the fluid leak and a scene release was issued as of 02:53 hours. [Phone]
03:05:07 hours	RMM PM-47 began moving towards Alexandria Rail Yard with RMM Rail Grinder 8126 in tow. [Radio, OPS2]

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

## Office of Vehicle Program Services, Rail Fleet (CENV)/Car Track Equipment and Maintenance (CTEM)

The Office of Vehicle Program Services, Rail Fleet and Car Track Equipment and Maintenance investigation concluded that WMATA uses contractors to perform rail head profiling. The current contract, operated by RailWorks, allows two grinders to operate simultaneously through the WMATA system. The Rail Grinders consist of two similar units married together, B-end to B-end (push me pull you). The RMM Rail Grinder 8126, the second grinder, arrived on WMATA property in March 2024. Through the Contractor Inspection Program, ICS 372 was issued on 04/17/2024, due to expire on 10/31/2024.

RMM Rail Grinder 8126 went through several rounds of inspections to receive its first operational authorization. Subsequently, several incidents occurred, resulting in additional inspections. The Contractor Inspection team classified RMM Rail Grinder 8126 as a Repeat-Failure vehicle on 07/26/2024. The RMM Rail Grinder 8126 was inspected again on 08/03/2024 and approved for use, with the stipulation that any additional incidents would result in loss of authorization until the renewal due on 11/01/2024.

The RMM Rail Grinder 8126 arrived at Alexandria Rail Yard. A post-inspection found that a 1/4" hydraulic hose had been removed from a hydraulic propulsion motor pressure port, which had been capped to prevent the further release of fluid.

The removed hose assembly was located and examined. The 90° fitting that was connected to the pressure port was broken off. The 1/4" hose, assembled with end fittings, is rated to 5800 PSI working pressure with a 4:1 bursting pressure ratio. The RMM Rail Grinder drive circuit has a maximum operating pressure of 3900 PSI and a maximum relief setting of 4400 PSI.



*Figure 2 - Failed hose fitting.*

A review of RMM Rail Grinder 8126's historical data shows that the propel B transducer went out of range at 1232 hours. At 1240 hours, both transducers were out of range, and a low hydraulic oil condition was detected. The engine was shut down at 12:42 hours.

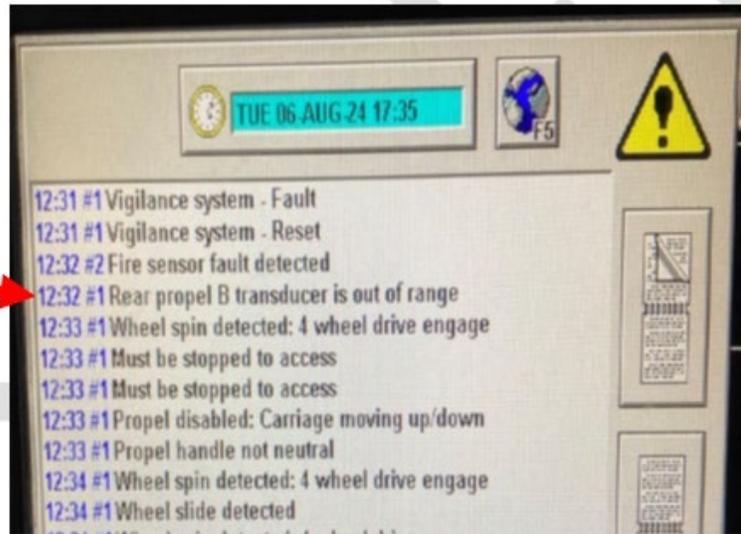


Figure 3 - Propel B transducer out of range as of 1232 hours.

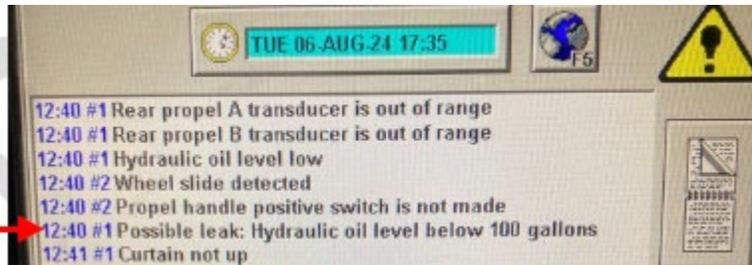


Figure 4 - Possible leak detected as of 1240 hours.

## Interview Findings

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

### Equipment Operator (EO)

- The EO is a contractor for RailWorks.
- The EO stated that RMM Rail Grinder 8126 came to a stop while attempting to ascend the hills towards Rosslyn Station.
- The EO stated that after coming to a stop, they noticed fluid leaking from RMM Rail Grinder 8126.
- The EO stated that the hydraulic hose was removed following the leak and capped.
- The EO stated that following the incident, the RMM Rail Grinder 8126 was removed from WMATA's property.

### RWIC

- The RWIC stated the unit stalled on the hill, and the RWIC requested that they attempt to move back and forth to build up speed to power the hill.
- RWIC stated they cleaned the spill up with cloths and degrees spray.
- They stated that no fluid leaked into the tunnel drains and was contained to the non-third rail side of the track.

## Weather

NOAA recorded the temperature at 80° F. at the time of the incident. Weather was not a contributing factor in this incident (Weather source: NOAA—Location: [Arlington, VA]).

## Human Factors

### Fatigue

#### *Signs and Symptoms of Fatigue*

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

#### *Fatigue Risk*

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

### Post-Incident Toxicology Testing

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

## Findings

- The Rail Grinder owned by Railworks had previously experienced a failed propulsion circuit, prompting the EO to request permission to foul the track for troubleshooting. While troubleshooting the propulsion system, the hydraulic leak was discovered, suggesting the possibility of multiple system failures.
- RMM Rail Grinder 8126 experienced acceleration malfunction before the fluid leak.
- The hydraulic fluid leak was traced to a failed hydraulic hose fitting on Rail Grinder 8126. The fitting failure allowed hydraulic fluid to escape and contaminate the right-of-way. The hydraulic hose fitting to the motor was over-pressurized, causing the line to separate and resulting in a hydraulic fluid leak.
- Review suggests that the hydraulic hose fitting failure may have resulted from equipment wear, indicating a potential gap in the preventive maintenance schedule for hydraulic components. No prior indication of failure was noted in the maintenance records.
- 50 gallons of bio-degradable hydraulic fluid leaked onto the track between CM C1 103+00 to C1 126+00.
- The spill was classified as a Hazardous Material Spill (HMS), requiring immediate containment and cleanup. Despite the leak, there were no reported injuries or significant environmental harm, and disruption to revenue service was minimized. The fluid was cleaned up with cloths and spill absorbents.
- RMM Rail Grinder 8126 was removed from WMATA property for at least 90 days after the completion of repairs.
- RMM Rail Grinder 8126 has had seven (7) failed inspections between 03/19/2024 and 7/26/2024 due to multiple issues.
- RMM Rail Grinder 8126 had a hydraulic leak under the axle car and an engine oil leak on 04/16/2024.
- RMM Rail Grinder 8126 had a major hydraulic leak (transducer hose) on 05/15/2024.

## **Immediate Mitigation to Prevent Recurrence**

- Upon detection of the hydraulic fluid leak, the track area surrounding the Rail Grinder was immediately isolated to prevent further contamination and ensure safety for both personnel and equipment.
- A hazmat response team was deployed to contain the hydraulic fluid spill. Absorbent materials were used to prevent the spread of hydraulic fluid, and the area was thoroughly cleaned to restore it to a safe condition.
- Rail Grinder 8126 was removed from service and transported to a maintenance facility for a comprehensive inspection of all hydraulic systems and components, with a focus on identifying and rectifying the root cause of the hose fitting failure.
- A review of the current maintenance schedule for Rail Grinder hydraulic systems was initiated to identify any gaps that may have contributed to the equipment failure. Adjustments will be made to ensure more frequent inspections of hydraulic components to prevent future incidents.

## **Probable Cause Statement**

The probable cause of the Hazmat Spill on August 7, 2024, between CM C1 103+00 and C1 126+00 on track 1, was a result of a failed 1/4" hydraulic hose fitting connected to the B pressure port of Unit #1's hydraulic drive motor. The failure was due to externally applied stress to the hose. The pump supplying the motor continued operating as the propulsion circuit commanded until a low oil condition forced a stop.

## **Recommended Corrective Actions**

The RMM Rail Grinder 8126 was removed from WMATA property and is not authorized to operate in the WMATA system without a major overhaul, a Contractor Inspection Program, and an ICS renewal inspection.

## Appendices

### **Appendix A – Interview Summaries**

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

#### Equipment Operator

The Equipment Operator (EO) is a contractor for RailWorks. The EO has been an employee of RailWorks for 12 years and holds a level 1 RWP certification that expires in January 2025.

During a virtual interview the EO stated that RMM Rail Grinder 8126 departed from Alexandria Rail Yard and entered a hill in approach to Foggy Bottom Station when the RMM Rail Grinder 8126 stalled. The EO attempted to ascend the hill back towards Rosslyn Station and stopped at CM 116+00, where they noticed a possible fluid leak. They turned the RMM Rail Grinder 8126 off and inspected the leak. They removed the hydraulic fitting and placed a cap to stop the leak. The EO stated that a spike in the pressure caused the fitting of the hydraulic to rupture.

The EO stated that the RMM Rail Grinder 8126 from Alexandria Rail Yard to Rosslyn Station had no acceleration problems. The EO said a pre-trip inspection was completed before the RMM departed the Rail Yard, and no deficiencies were found.

The EO stated that following the incident, the RMM Rail Grinder 8126 was removed from WMATA's property.

#### RWIC

The RWIC is a WMATA employee. During a virtual interview, they stated that RMM Rail Grinder 8126 was supposed to travel to Foggy Bottom Station on track 1, clear the interlocking, and return to Rosslyn on track 2. It was reported that the unit stalled on the hill, and the RWIC requested that they attempt to move back and forth to build up speed to power the hill. They were then informed that the unit began leaking hydraulic fluid.

The RWIC stated that they responded to the incident location and inspected the tracks to verify the spill area. During the track inspection, they located the hydraulic hose on the roadway and made the appropriate notification.

They requested the assistance of an RMM Mechanic and PM-47 assisted with towing the unit back to Alexandria Rail Yard.

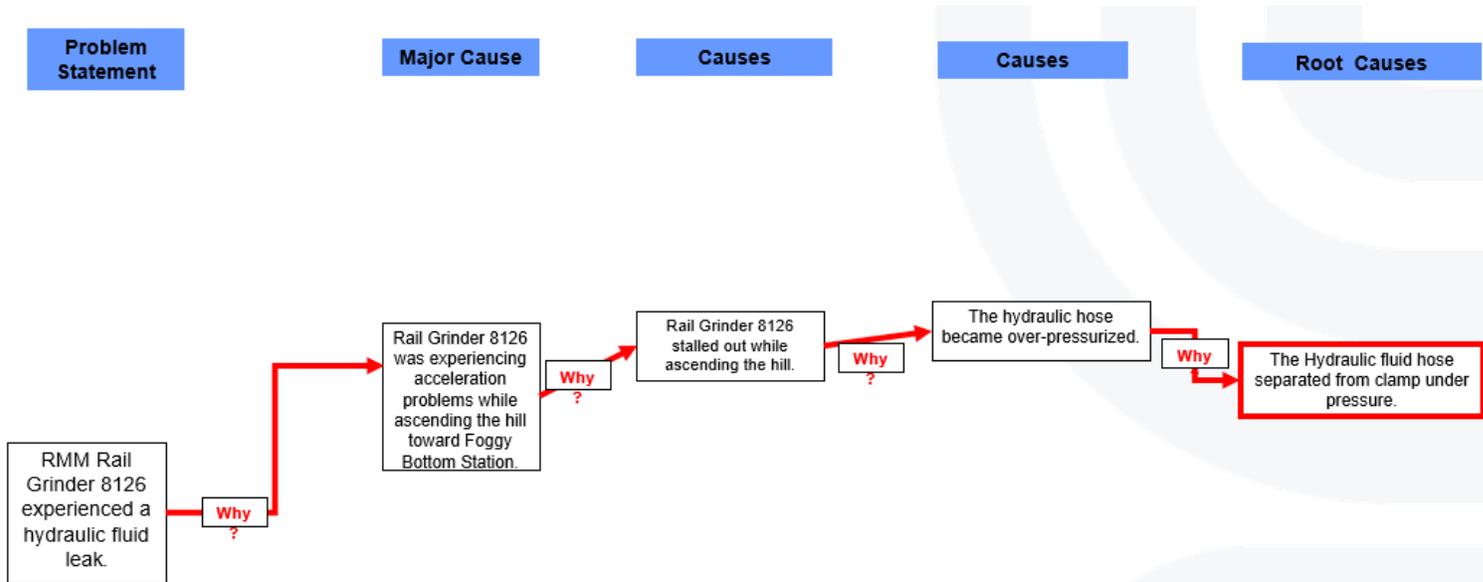
The RWIC stated they cleaned the spill up with cloths and degrees spray. They stated that no fluid leaked into the tunnel drains and was contained to the non-third rail side of the track.

## Appendix B – RMM Rail Grinder 8126 Historical Inspection/Incident Report

Inspection	Failed inspection, Multiple issues, see RailWorks folder for details.	3/19/2024
Inspection	Failed inspection, Multiple issues, see RailWorks folder for details.	4/4/2024
Inspection	Failed inspection, Multiple issues, see RailWorks folder for details.	4/9/2024
Inspection	Failed inspection, Hydraulic leak under axle on car, engine oil leaking.	4/16/2024
Inspection	Passed inspection	4/17/2024
Incident	Major hydraulic leak – transducer hose. ICS removed.	5/15/2024
Inspection	Failed inspection, Preliminary post incident, Follow-up inspection required after cleaning	5/21/2024
Inspection	Failed inspection, hoses rubbing brake linkage, frame, hoses / Windshield wiper system inop/ Air leak / Low system oil / Unsecured cotter pin / Hoses beyond frame unsecured / pressure filter leak / grinder skirt falling off and missing.	6/11/2024
Inspection	Passed inspection, noted hazing windshield will need replacing.	6/18/2024
Incident	Rescued from mainline, engine shutdown due to electrical issue	6/21/2024
Incident	Rescued from mainline, lack of power, travel motor failure.	7/10/2024
Incident	Rescued from mainline, lack of power, contractor still troubleshooting. ICS removed.	7/18/2024
Inspection	Failed inspection, rear unit leaning and one drive hose rubbing wheel. Windshield was replaced. COTR notified next incident would result in Rail Grinder being removed from the property.	7/26/2024
Inspection	Unscheduled inspection to oversee the OEM assessment (Harsco report attached), rear unit still leaning, drive hose had been restrained	7/30/2024
Inspection	Passed inspection. COTR reminded next incident would result in Rail Grinder being removed from the property. SAFE supports this position.	8/6/2024
Incident	Major hydraulic leak – replacement transducer hose from 5/15/24 incident was the cause. ICS removed.	8/7/2024

Figure 5 - RMM Rail Grinder 8126 Historical Incident/Inspection Report.

# Appendix C – Why-Tree Analysis



## Root Cause Analysis

