

**WMSC Commissioner Brief: W-0259 – Collision – near East Falls Church Station – June 5, 2023**

Prepared for Washington Metrorail Safety Commission meeting on March 5, 2024

Safety event summary:

On Monday, June 5, 2023 at approximately 9:59 p.m., two roadway maintenance machines collided inside an area of track shutdown for construction between East Falls Church and Ballston stations. The personnel in charge of the work area on the prior shift and beginning a new shift had not communicated or identified that there was a vehicle (Swingmaster SM-01) laying up (left parked without personnel present) in a blind curve. Workers beginning their shift operated another roadway maintenance machine (RMM) consist (Prime Mover 47 pushing Flat Car 604) into that location, which collided with the parked vehicle. The flagman on Flat Car 604 broke their leg (femur) and was transported to the hospital. Both vehicles were damaged. The investigation identified an office-style chair in the Flagman's booth area, which introduced additional safety risk. There was no train service between Ballston and Vienna Stations on the Orange Line and between Ballston and McLean stations on the Silver Line during this extended shutdown.

At 9:41 p.m., Prime Mover 47 (PM-47), carrying personnel and equipment with Flatcar 604 attached, moved from the East Falls Church Station platform in the direction of Ballston Station toward the assigned work location between the two stations on track 2. Gang Leader #2 instructed the PM-47 Equipment Operator to stop beyond signal K-06-08, leaving room for another prime mover, PM-41, that would also be moving to the same work location. After arriving at their work location, the personnel on PM-47 disembarked the vehicle with their equipment and began their work.

At 9:49 p.m., the operator of PM-41, which was also carrying a crew (including a supervisor and flagman) and was pushing Flatcar 607, requested that PM-47 move up further to Chain Marker 370+00. Metrorail rules require any movement in a work zone to be coordinated with the RWIC (or piggyback crew leader if that crew has established its work area). At 9:59 p.m., as PM-47 was moving up, the Flagman, positioned on the front of Flatcar 604, being pushed by PM-47, yelled on their handheld radio, "Stop, PM-47 stop" just before Flatcar 604 struck Swing Master 01 (SM-01) and derailed. During the collision the Flagman fell to the floor of Flatcar 604. There was no evidence of the emergency brake being activated by the Flagman.

Both the PM-47 Equipment Operator and the Flagman stated that the Flagman told the Equipment Operator to slow down prior to the collision. The Equipment Operator stated they applied braking, but not in time to avoid the collision.

During an interview, the Flagman stated they borrowed the handheld radio from the Track Unit Supervisor aboard the prime mover because theirs was being calibrated. In a separate interview, the Supervisor denied lending their radio, stating that it was inaccessible during the event because it was in their backpack, causing them to yell to alert the Equipment Operator. Gang Leader #3 also stated in an interview that they were on the phone with the Track Unit Supervisor at the time of the collision.

SM-01 had been secured in a blind curve, limiting visibility, at Chain Marker K2 310+00 between East Falls Church and Ballston stations since 10:17 p.m. on Sunday, June 4, 2023. This blind curve was noted in Metrorail's Track Access Guide as a Roadway Worker Protection "hot spot" requiring additional protections for workers on the roadway. Gang



Leader #1, of a previous crew that cleared the roadway in that location at 5:22 p.m. on the day of the event, approximately 1.5 hours before the collision, did not report to mobile command any information regarding work equipment that remained in the work zone after their crew cleared the location.

There was no clear communication regarding where equipment was left by departing crews.

A Track Unit Supervisor said they were told that the Swingmaster was in the work area, but that it was in the tunnel.

Gang Leader #1, who was at the work area on the prior shift, stated in an investigative interview in the days after the collision that they believed SM-01 had been secured on the platform. GPS data reviewed during this investigation show the vehicle was left in the curve.

The Gang Leader also stated that both cell phones and radios are used to coordinate equipment movement due to radio communications issues. Further, Gang Leader #1 stated that gang leaders are not required to walk and observe their assigned work areas. Metrorail rules designate these crew leaders as responsible for all activities within the work area, and ensuring that all work conforms to rules and procedures.

During an interview, a Mobile Command Supervisor stated that sometimes the gang leaders do not provide information on the equipment, status, or location. Metrorail rules treat Mobile Command as the Roadway Worker In Charge, which means that Mobile Command is responsible for safe vehicle movement and activities in the work area.

After the collision, Gang Leader #3, who was located on the platform at East Falls Church Station, notified Mobile Command, who notified the Rail Operations Control Center (ROCC) of the event and an injured employee at 10:15 p.m. Rail Operations Information Center personnel requested a medical response from Arlington County Fire Department at 10:21 p.m.

The Flagman broke their leg and was taken to a hospital. The collision resulted in significant damage to the swing master and flatcar involved.

Probable Cause:

The probable cause of this collision was insufficient protections and execution of safety requirements under Mobile Command, a lack of supervisory oversight, including failure to properly coordinate vehicle movement and storage inside a work zone, and a lack of situational awareness caused by failure to identify and communicate track occupancy and hazards prior to vehicle movement. Contributing to the consequences of this event was the acceptance of unsafe practices such as the positioning of office chairs in flagman's cabs.

Corrective Actions:

Metrorail conducted a Safety Stand Down to address the recent major safety incidents that occurred on the roadway, including recent collisions and derailments of roadway repair and maintenance vehicles.

Track and Structures conducted scheduled inspections of RMMs to verify that unauthorized items (office chairs, trash, stored items, etc.) have been removed from the vehicles.



WMATA conducted a review of the handoff process for projects involving multiple shifts to include sharing knowledge of current work site conditions and roadway hazards to provide at each shift's briefing. Results were included in the Safety Stand Down.

Example of other related open CAP

- CAP C-0181 addresses the finding that elements of Metrorail have a culture that accepts noncompliance with written operational rules, instruction, and manuals (Scheduled completion October 2024).

WMSC staff observations:

The investigation into this event found several issues, including that landline communications to Mobile Command are not recorded.

The WMSC is assessing Metrorail's Mobile Command procedures and practices in an Audit of Roadway/Wayside Worker Protection. The draft report of this audit is being finalized.

Radio communications quality issues have consistently been identified during safety event investigations. Metrorail is currently in the process of upgrading its radio communications systems. The WMSC continues to monitor its progress in this area.



Washington Metropolitan Area Transit Authority
Department of Safety (SAFE)
Office of Safety Investigations (OSI)
FINAL REPORT OF INVESTIGATION A&I E23377

Date of Event:	June 5, 2023
Type of Event:	Collision
Incident Time:	21:59 Hours
Location:	Between East Falls Church and Ballston Stations – CM K2 315+00
Time and How received by SAFE:	22:23 Hours – SAFE/MAC
WMSC Notification Time:	June 6, 2023 - 00:13 Hours
Responding Safety Officers:	WMATA: Office of Emergency Preparedness (OEP) Office of Safety Investigations (OSI) Office of Safety Oversight (OSO) WMSC: None Other: None
Rail Vehicles:	PM-47 x Flat Car 604 and SM-01
Injuries:	Flagman – Tendon and ligament injuries to the leg and bruising to the mid-section
Damage:	Flat Car 604 – Front Body and Step Rung damage. Rear truck replaced; Hand brake damaged. SM-01 – Boom Damage
Emergency Responders:	Metro Transit Police Department (MTPD) Arlington County Fire Department (ACFD)
SMS I/A Incident Number:	20230606#108993

Between East Falls Church and Ballston Stations – CM K2 315+00 – Collision

Incident Date: 06/05/2023 Time: 21:59 hours
Final Report – Collision
E23377

Drafted By: SAFE 709 - 08/03/2023
Reviewed By: SAFE 707 – 08/03/2023
Approved By: SAFE 71 – 08/04/2023

Page 1

June 5, 2023

Table of Contents

Abbreviations and Acronyms----- 3
Executive Summary ----- 5
Incident Site ----- 5
Field Sketch/Schematics ----- 6
Purpose and Scope ----- 6
Investigative Methods----- 6
Investigation ----- 7
 Chronological Event Timeline----- 12
 Advanced Information Management System (AIMS) ----- 14
 Office of Systems Maintenance, Office of Radio Communications (COMR) ----- 14
 Office of Car Track Equipment Maintenance (CTEM) ----- 14
 Office of Track and Structures (TRST) ----- 15
Interview Findings----- 15
 WWPL ----- 15
 TRST ----- 16
Weather ----- 18
Related Rules and Procedures ----- 19
Human Factors ----- 19
 Fatigue----- 19
 Post-Incident Toxicology Testing ----- 22
Findings ----- 22
Immediate Mitigation to Prevent Recurrence ----- 22
Probable Cause Statement----- 23
Recommended Corrective Actions ----- 23
Appendices ----- 24
 Appendix A – Interview Summaries ----- 24
 WWPL ----- 24
 TRST ----- 26
 Appendix B – MTPD Event Report ----- 34
 Appendix C – CTEM Post-Derailment Inspection Form----- 38
 Appendix D – Maximo Work Orders----- 44
 Appendix E – Safety Stand Down Bulletin – Mitigation Actions----- 45
 Appendix F – Mobile Command Incident Report----- 46
 Appendix G – Roadway Job Safety Briefing – Toolbox Talk----- 47
 Appendix H – Map of Shutdown Work Area----- 51
 Appendix I – Why-Tree Analysis ----- 52

Abbreviations and Acronyms

ACFD	Arlington County Fire Department
AIMS	Advanced Information Management System
AOM	Assistant Operations Manager
ARS	Audio Recording System
ATCM	Automatic Train Control Maintenance
CAP	Corrective Action Plan
CCTV	Closed-Circuit Television
CM	Chain Marker
COMR	Office of Radio Communications
CTEM	Office of Car Track Equipment Maintenance
MTPD	Metro Transit Police Department
MSRPH	Metrorail Safety Rules and Procedures Handbook
NOAA	National Oceanic and Atmospheric Administration
OEP	Office of Emergency Preparedness
OSI	Office of Safety Investigations
OSO	Office of Operations Safety Oversight
PM	Prime Mover
RJSB	Roadway Job Safety Briefing
ROIC	Rail Operations Information Center
RMM	Roadway Maintenance Machine
RTC	Rail Traffic Controller
RTRA	Office of Rail Transportation
ROCC	Rail Operations Control Center
SAFE	Department of Safety

SM	Swing Master
SMS	Safety Measurement System
TRST	Office of Track and Structures
WMATA	Washington Metropolitan Area Transit Authority
WMSC	Washington Metrorail Safety Commission
WWPL	Office of Wayside Work Planning

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

Executive Summary

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

On Monday, June 5, 2023, at 18:51 hours, Gang Leader #2 contacted the Wayside Work Planning (WWPL) Mobile Command and advised they had 50 personnel with 12 units to perform rail renewal and welding between Chain Marker (CM) K1 and K2 415+00 to 300+09, which was within an established shutdown area. After Mobile Command granted permission, Gang Leader #2 began transmitting instructions to the crew members over Radio Ops 12.

Gang Leader #2 instructed and positioned Roadway Maintenance Machine (RMM) units at East Falls Church Station platform with assistance from the Office of Automatic Train Control Maintenance (ATCM) personnel. After equipment and personnel were loaded onto Prime Mover 47 (PM-47) with Flat Car 604 at 21:37 hours, Gang Leader #2 instructed the Equipment Operator to depart East Falls Church Station, clearing signal K06-08, and to leave room for PM-41 with a Flat Car to clear signal K06-08.

At 21:49 hours, Gang Leader #2 advised the units that they could begin their work. Seconds later a Crew Member on PM-41 requested PM-47 to move further to CM K2 370+00. The vehicles proceeded away from the platform further into the work zone towards Ballston Station with multiple crew members and a supervisor on board. As it departed the platform, the Flagman was positioned on Flat Car 604 at the lead end. Ten minutes later, the Flagman on PM-47 yelled for the unit to stop. Flat Car 604, which was connected to PM-47, collided with Swing Master 01 (SM-01), which was secured at CM K2 315+00, then derailed. The Flagman sustained leg injuries from the collision. No other injuries were reported. There was significant body damage to the front end of F604 and damage to the boom of SM-01.

Gang Leader # 3 called Mobile Command Supervisor #2 of the event. Mobile Command Supervisor # 2 then notified the Rail Operations Control Center (ROCC) of the event. Multiple WMATA personnel responded to the scene to investigate the event and rerail the equipment.

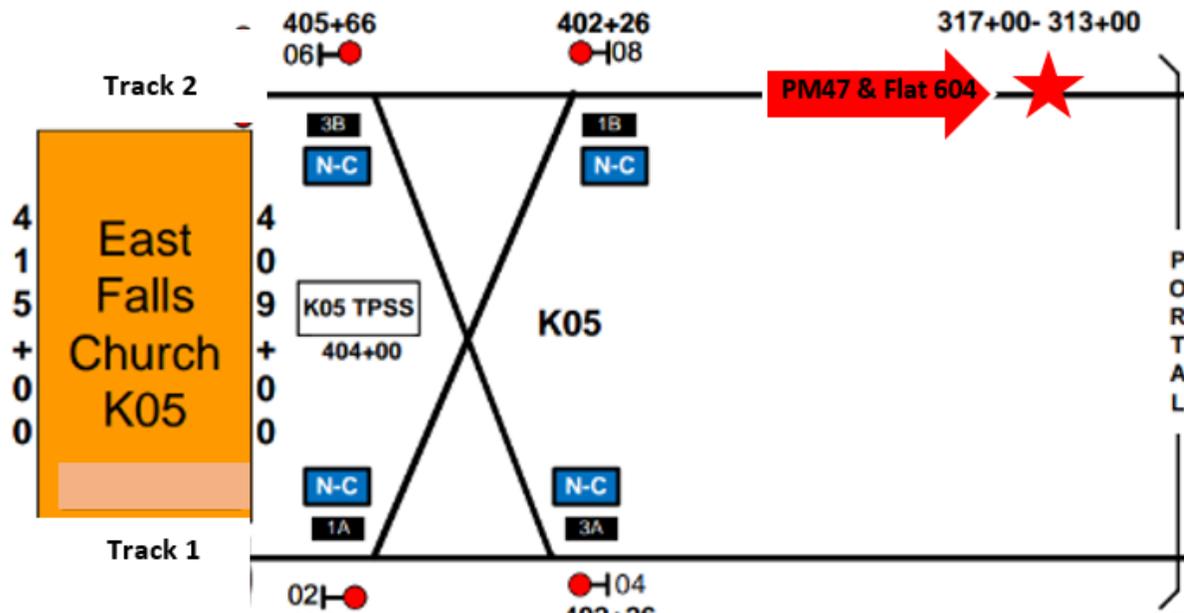
Mobile Command Supervisor # 2 requested medical assistance via ROCC Buttons RTC. The ROIC called and requested ACFD respond. Emergency medical personnel were contacted and dispatched to East Falls Church Station. Flagman #1 was transported to Virginia Hospital Center.

The probable cause of the Collision event on June 5, 2023, between East Falls Church Station and Ballston Station at CM K2 315+00 was the limited visibility of SM-01, which was secured in a blind curve. A contributing factor was the speed at which PM-47 was being operated prior to the collision. While not operating in excess of 15 mph, PM-47 was not being operated at a restricted speed, as the unit was unable to stop within half the range of vision to avoid the collision. An additional Contributing Factor to the event was inadequate communications between shifts, as the outgoing personnel failed to notify Mobile Command or the oncoming Gang Leader of SM-01's position in the work area.

Incident Site

Between East Falls Church Station and Ballston Station – CM K2 315+00

Field Sketch/Schematics



The above depiction is not to scale.

Purpose and Scope

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

Investigative Methods

The investigative methodologies included the following:

- Physical Site Assessment
- Formal Interviews – SAFE interviewed nine individuals as part of this investigation. The 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:
 - Mobile Command Supervisor #1
 - Mobile Command Supervisor #2
 - Track Unit Supervisor (PM-47)
 - Gang Leader #1
 - Gang Leader #2
 - Gang Leader #3
 - Equipment Operator (PM-47)
 - Flagman #1 (PM-47)
 - Flagman #2 (PM-41)
- 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.
 - Crew Members aboard PM-47 (Written Statements)

- Documentation Review – Collection of relevant work history information and process documentation contained in WMATA systems of record. These records include:
 - Employees' 30-Day work history review
 - Mobile Command Incident Report
 - Metrorail Safety Rules and Procedures Handbook (MSRPH)
 - National Oceanic and Atmospheric Administration (NOAA)
 - Office of Car Track Equipment Maintenance (CTEM) Inspection Report
 - MTPD Event Report
 - Maximo Data
- System Data Recording Review – Collection of information contained in Metro Data Recording Systems. This data includes:
 - Audio Recording System (ARS) playback
 - Advanced Information Management System (AIMS)
 - Closed-Circuit Television (CCTV)

Investigation

On Saturday, June 3, 2023, the Orange and Silver Line Extended Shutdown (Summer Construction) began. During this shutdown, there was no rail service from Ballston Station to Vienna Station and Ballston Station to McLean Station.

On Sunday, June 4, 2023, at 22:16 hours, Gang Leader #2 instructed the Equipment Operator of SM-01 to depart East Falls Church Station on track 1, cross over to track 2, and continue to CM K2 310+00¹. At 22:17 hours, SM-01 departed East Falls Church Station. SM-01 remained parked at that location within the work area and did not return to the platform for storage.

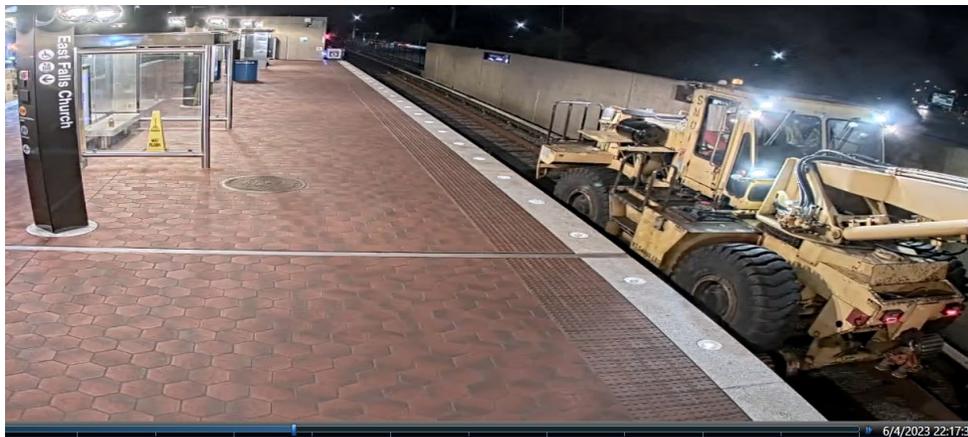


Image 1 – SM-01 departing East Falls Church Station on Sunday, June 4, 2023, at 22:17 hours.

On Monday, June 5, 2023, at 17:22 hours, Gang Leader #1 contacted Mobile Command and reported that their 40 crew members were clear of the roadway from CM K1 and K2 310+00 to East Falls Church Station. They made no transmissions related to the positioning of work equipment within the work zone.

¹ The Track Access Guide denotes CM K2 310+00 as a Blind Curve.

At 18:51 hours, Gang Leader #2 contacted Mobile Command and advised that their 50 crew members and 12 work units wanted to perform rail renewal and welding between CM K1 and K2 415+00 to 300+09. After Mobile Command granted permission, Gang Leader #2 began transmitting communications to the crew members over Radio Ops 12.

The Audio Recording System (ARS) revealed that at 21:19 hours, Gang Leader #2 instructed and positioned PM-47 at East Falls Church Station platform with assistance from ATCM personnel. After work equipment was loaded onto PM-47, the Gang Leader instructed the Equipment Operator to depart East Falls Church Station at 21:41 hours, clearing signal K06-08, and to leave room for PM-41 with a Flat Car 608 to also clear signal K06-08. At 21:49 hours, Gang Leader #2 instructed the units that they could begin their work. Seconds later, a Crew Member on PM-41 requested PM-47 to move to further to CM K2 370+00. The vehicles then moved toward Ballston Station to their work locations. Flagman #1 was positioned on F604's lead end of the unit as it departed the platform area. Multiple members of the work crew were sitting or standing on F604 and PM-47.

At 21:59 hours, Flagman #1 on PM-47 called out on Radio OPS 12 for PM-47 to stop. There was no indication Flagman # 1 attempted to use the Flat Car 604's handbrake. Flat Car 604, which was connected to PM-47, collided with SM-01, which was secured within a red hot spot² at CM K2 315+00, Flat Car 604 derailed, striking the concrete cable tray adjacent to the running rail.

East Falls Church Station	K-05	K-05	415+00	409+00	75	
Clear View	K-05	K-04	409+00	406+00	75	
Clear View: Interlocking	K-05	K-04	406+00	402+00	75	
Clear View	K-05	K-04	402+00	360+00	75	
Restricted View: Curve	K-05	K-04	360+00	345+00	75	
Clear View	K-05	K-04	345+00	325+00	75	
Blind Curve	K-05	K-04	325+00	311+00	65	
Portal	K-05	K-04	311+00	311+00	55	
Restricted View: Curve	K-05	K-04	311+00	302+00	55	
Restricted View: Curve	K-05	K-04	302+00	283+00	55	
Ballston Station	K-04	K-04	283+00	277+00	55	

Table 1 – Track Access Guide denoting that CM 315+00 where SM-01 was secured is located within a Blind Curve.

The initial report stated that the Flagman #1 sustained a fracture to the right femur and bruising to the mid-section. They were released from the hospital the same night and injuries were reported as tendon and ligament damage, along with bruising to the mid-section.

At 22:15 hours, Mobile Command Supervisor #2 contacted the Ops 4 Button Rail Traffic Controller (RTC) and reported that PM-47 was pushing a flat when it collided with SM-01 causing damage to the boom, and an employee was injured.

² Hot spots are locations on the Roadway where additional Roadway Worker Protection is required.

1. Hot Spot locations include a variety of conditions, including:

- No Clearance Zones • Curves with limited visibility
- Tunnels with limited and close clearance
- Track locations with heavy outside noise
- Track locations with limited or no visibility due to obstructions
- All Portals



Image 2 – Photos of the damage and derailment on Flat Car 604 and SM-01 after the collision.

At 22:16 hours, the Button RTC notified the Rail Operations Information Center (ROIC) of the event and requested they contact emergency services to respond to East Falls Church Station.

At 22:19 hours, Mobile Command contacted the Assistant Operations Manager (AOM) and notified them of the event.

At 22:21 hours, an ROIC Controller contacted Arlington County Fire County (ACFD) to respond to East Falls Church Station. At 22:22 hours, an ROIC Controller contacted Metro Transit Police Department (MTPD) to respond to East Falls Church Station.

At 22:26 hours, MTPD dispatched units to East Falls Church Station. At 22:41 hours, MTPD arrived at East Falls Church Station.

Work was stopped at the jobsite.

Closed-Circuit Television (CCTV) revealed that at 21:20 hours, PM-41 arrived at East Falls Church Station on track 1. Two minutes later, PM-47 arrived at East Falls Church Station on track 1. Crew Members began loading equipment on the unit. At 21:42 hours, PM-47 with approximately 15 crew members aboard departed East Falls Church Station on track 1, then crossed over to track 2.

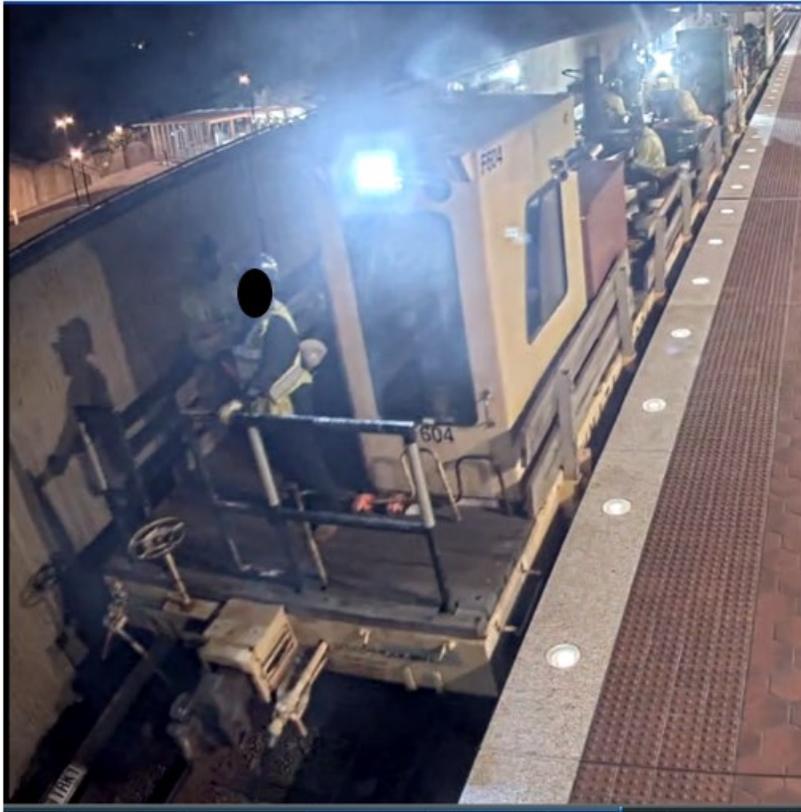


Image 3 – PM-47 with Flat Car 604 departing East Falls Church Station at 21:42 hours.

At 21:44 hours, PM-47 departed East Falls Church Station on track 1, then crossed over to track 2. At 21:46 hours, both units stopped after passing K05-08 signal. At 21:50 hours, both units continued moving until they were no longer within camera view.

At 22:28, ACFD arrived at East Falls Church Station. At 22:51 hours, the Office of Safety Oversight (OSO) personnel arrived at East Falls Church Station. At 23:12 hours, the Office of Emergency Preparedness (OEP) personnel arrived at East Falls Church Station. At 23:20 hours, ACFD departed East Falls Church Station with the injured employee. At 23:21 hours, the Office of Safety Investigations (OSI) personnel arrived at East Falls Church Station.

Following the field investigation, SAFE and the Office of Track and Structures (TRST) developed immediate mitigations to discuss with the crew of Equipment Operators on-site. The items that were discussed were used to develop a Stand-Down Bulletin drafted by TRST and shared with all oncoming crew members.

On Tuesday, June 6, 2023, at 03:25 hours, all responding personnel departed East Falls Church Station.

During the formal interview, Flagman #1 stated that they did not have a handheld radio when reporting for work and their issued radio was being calibrated. Flagman #1 reported borrowing the Supervisor of PM-47's handheld radio. While on Ops 12, Flagman #1 communicated directly with PM-47's Equipment Operator. Flagman #1 stated they were stationed at the front of the flatcar when they departed East Falls Church Station with PM-47 pushing the flatcar with the Supervisor and 10 workers aboard. Flagman #1 stated that they felt as though the unit was travelling too fast and advised the Equipment Operator via radio to slow down. Flagman #1 stated that the unit did not appear to slow down. Flagman #1 stated the curve was well lit, but they did

not see SM-01 parked in the curve. Flagman #1 stated that when they observed SM-01 they yelled on the handheld for the unit to stop, the collision occurred before the flatcar and PM stopped. Flagman #1 stated that they were injured, falling to the floor of the flatcar, and was transported by another PM to East Falls Church Station.

During the formal interview, the Equipment Operator stated that they were unaware of SM-01 being secured on the roadway. The Equipment Operator stated that they departed East Falls Church Station, and the Flagman was at the front on Flatcar 604. The Equipment Operator stated that as the unit approached the area of CM 370+00, they transmitted to the Flagman inquiring, "How are we looking back there?" The Equipment Operator stated that the Flagman responded slow down. The Equipment Operator stated that they began to slow down and then felt a slight downgrade. The Equipment Operator stated that the next thing they heard was the crew members telling them to stop. The Equipment Operator stated that they did not hear a horn and did not hear the transmission on the radio. The Equipment Operator stated that they applied the brakes but not in time to avoid colliding with the SM-01.

During the formal interview, the Track Unit Supervisor stated they met with the Gang Leader and RWIC for the evening shift Roadway Job Safety Briefing (RJSB) and to receive work directions for the evening. Their group's assignment was to install stringers (rail) at CM 300+00 and back toward East Falls Church Station.

The Track Unit Supervisor stated they sat on PM-47's generator near the Equipment Operator as they left the platform. The Track Unit Supervisor stated they were observing the track when they heard someone yell, "Stop, stop." The Track Unit Supervisor stated that they stood up and yelled to alert the Equipment Operator, who dumped the brakes. The Track Unit Supervisor stated they exited the PM and went to the Flatcar to check for injuries. The Track Unit Supervisor stated they called for an ambulance and for the RWIC to make notifications. The Track Unit Supervisor stated they did not feel as though the PM was traveling at a high rate of speed, and they were observing the roadway as the unit was moving. The Track Unit stated that they were told by the Track Maintenance Supervisor during the briefing that SM-01 was located in the tunnel.

During the formal interview, Gang Leader #3 stated they visually inspected the immediate work area of the platform and had discussions with day shift crew supervisors to determine project status, including progress and equipment status. Gang Leader #3 stated that they attended the Roadway Job Safety Briefing with the entire group of work crews before attending a smaller briefing specifically for the crew under their supervision. Gang Leader #3 stated that they were on the platform assisting with the movements of crews and equipment up until the collision involving PM-47 and Flatcar 604 occurred. Gang Leader #3 stated that they were on the phone with the Track Unit Supervisor aboard PM-47 when the collision occurred at 22:00 hours. Gang Leader #3 stated that they called Mobile Command to ensure the notifications were made and emergency medical assistance was requested.

Chronological Event Timeline

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

Time	Description
June 4, 2023	
22:16:08 hours	<u>Gang Leader #2</u> : Instructed the Equipment Operator of SM-01 to depart East Falls Church Station on track 1, cross over to track 2, and continue to CM K2 310+00. [Radio Ops 12]
22:17:42 hours	SM-01 departed at East Falls Church Station on track 1. [CCTV]
June 5, 2023	
17:22:36 hours	<u>Gang Leader #1</u> : Reported a party of 40 was clear of the roadway from CM K1 and K2 310+00 to East Falls Church Station. <u>Mobile Command</u> : Acknowledged and repeated. [Radio Ops 12]
18:51:08 hours	<u>Gang Leader #2</u> : Contacted Mobile Command and requested to enter the roadway at East Falls Church platform. Advised they had 50 personnel with 12 units in the work area working from CM K1 and K2 415+00 to 300+09. <u>Mobile Command Supervisor #2</u> : Acknowledged and repeated, for rail renewal and welding. Granted permission, requested to advise when clear. Inquired if they see anyone working between the portal and platform. <u>Gang Leader #2</u> : Acknowledged and repeated. <u>Mobile Command Supervisor #2</u> : Requested to let anyone observed know to contact Mobile Command, advised they should be clear. [Radio Ops 12]
21:19:24 hours	<u>Gang Leader #2</u> : Instructed PM-47 to East Falls Church Station on track 1. <u>Equipment Operator (PM-47)</u> : Acknowledged and repeated. [Radio Ops 12]
21:20:03 hours	PM-41 arrived at East Falls Church Station on track 1. [CCTV]
21:22:17 hours	PM-47 arrived at East Falls Church Station on track 1. [CCTV]
21:22 hours – 21:41 hours	Equipment was being loaded onto the units. [CCTV]
21:37:47 hours	<u>Gang Leader #2</u> : Granted permission to PM-47 to cross over from track 1 to 2 and clear K06-08 signal. <u>Equipment Operator (PM-47)</u> : Acknowledged and repeated. Advised that items were being loaded onto the unit. [Radio Ops 12]
21:41:53 hours	<u>Equipment Operator (PM-47)</u> : Advised ready to move. <u>Gang Leader #2</u> : Granted permission to PM-47 to cross over from track 1 to 2 and clear K06-08 signal, leaving room for PM-41. <u>Equipment Operator (PM-47)</u> : Acknowledged and repeated. [Radio Ops 12]
21:42:30 hours	PM-47 departed at East Falls Church Station on track 1. [CCTV]
21:44:22 hours	PM-41 departed at East Falls Church Station on track 1. [CCTV]
21:46:37 hours	PM-47 and PM-41 stopped after passing K05-08. [CCTV]
21:47:15 hours	<u>Gang Leader #2</u> : Inquired if PM-47 would need to return to the platform. <u>Equipment Operator (PM-47)</u> : Responded that the unit did not need to return to the platform. [Radio Ops 12]
21:49:18 hours	<u>Gang Leader #2</u> : Granted permission to PM-47 to begin work. <u>Equipment Operator (PM-47)</u> : Acknowledged and repeated. [Radio Ops 12]
21:49:48 hours	<u>Unknown (PM-41)</u> : Requested PM-47 to move to CM 370+00. [Radio Ops 12]
21:50:25 hours	PM-47 and PM-41 continued to move on track 2. [CCTV]
21:59:21 hours	<u>Flagman #1</u> : Exclaimed, "Stop, PM-47 stop!" [Radio Ops 12]

Time	Description
22:15:35 hours	<u>Mobile Command Supervisor #2</u> : Reported that PM-47 collided with SM-01 and an employee was injured. Requested medical response. <u>ROCC Button RTC</u> : Acknowledged and repeated. [Phone Silverline 067]
22:16:56 hours	<u>ROCC Button RTC</u> : Notified ROIC of the event. Requested to contact emergency services. [Phone Silverline 067]
22:19:04 hours	<u>Mobile Command Supervisor #2</u> : Reported that PM-47 was pushing a flat when it collided with SM-01 causing damage to the boom, entered an area where the rail was removed, and an employee was injured. Requested medical response. <u>ROCC AOM</u> : Acknowledged. [Phone Rail 2]
22:21:19 hours	<u>ROCC ROIC</u> : Contacted ACFD to respond to East Falls Church Station. [Phone ROIC PA]
22:22:36 hours	<u>ROCC ROIC</u> : Contacted MTPD to respond to East Falls Church Station. [Phone ROIC PA]
22:23:36 hours	<u>Mobile Command Supervisor #2</u> : Notified the MAC of the event. [Phone MAC]
22:26:25 hours	<u>MTPD Dispatch</u> : Instructed units to respond to East Falls Church Station. [Radio MTPD 1X]
22:27:57 hours	<u>MAC</u> : Dispatched OEP unit to East Falls Church. [Phone MAC]
22:28:11 hours	ACFD arrived at East Falls Church Station. [CCTV]
22:36:32 hours	<u>MOC CMNT</u> : Dispatched CTEM personnel to East Falls Church Station. [Phone CMNT 2]
22:41:53 hours	<u>MTPD Unit</u> : Reported located at East Falls Church Station with ACFD on site. [Radio MTPD 1X]
22:51:25 hours	OSO personnel arrived at East Falls Church Station. [CCTV]
22:59:36 hours	<u>MAC</u> : Notified the WMSC. [Phone MAC]
23:12:12 hours	OEP personnel arrived at East Falls Church Station. [CCTV]
23:20:59 hours	ACFD departed East Falls Church Station. [CCTV]
23:21:44 hours	OSI personnel arrived at East Falls Church Station. [CCTV]
June 6, 2023	
03:25:00 hours	All responding personnel departed East Falls Church Station. [CCTV]

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

Advanced Information Management System (AIMS)

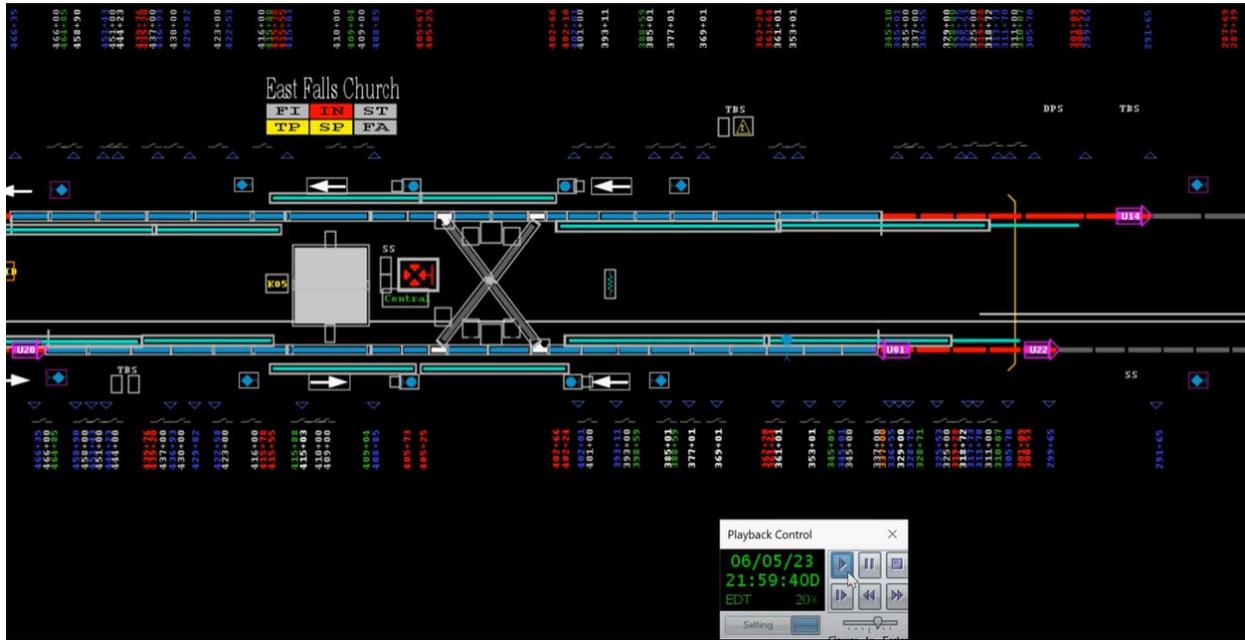


Figure 1 - AIMS depiction of the work area at East Falls Church Station at the time of the event at 21:59 hours.

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

On June 16, 2023, COMR performed radio checks at East Falls Church Station platform on tracks 1 and 2. All radio checks performed were loud and clear.

Office of Car Track Equipment Maintenance (CTEM)

CTEM conducted a Post-Derailment and Accident Inspection of PM-47, F604 and SM-01.

Prime Mover 47 (PM-47)

- No reported no issues were found, and the unit was returned to service.

Flat Car #604

- Minor damage to the side frame. The ride control spring had to be reset in the holder. Center pin had fallen out due to bolster retaining plate breaking. All damage was on B-End Truck. Recommend truck replacement.
- Damaged brake dead lever weldment damaged, End bulkhead suffered severe damage, Job box had shifted beyond the deck, deck damage near flagman's booth.
- The brake beam was broken where the hand brake is attached, noted old damage/weld to brake piping, hand brake inoperative, see note in chassis. No indication of any defective parts. Last PM completed December 12, 2022.

Swing Master 01 (SM-01)

- Mechanics performed functionality test on SM01 and confirmed that the vehicle functioned and operated normally.
- The major damage observed on SM01 was the auxiliary hydraulic components on the boom, which is not utilized by TRST for regular duty.
- Other minor damages include paint scratches and scrapes on the boom which won't affect the function of the machine.

Office of Track and Structures (TRST)

Following the field investigation, SAFE and TRST developed immediate mitigations to discuss with the crew of Equipment Operators on-site. The items that were discussed were used to develop a Stand-Down Bulletin drafted by TRST and shared with all oncoming crew members. TRST's internal investigation concurred with the findings in this report. See Safety Stand Down (attachment Appendix E for specifics.)

Interview Findings

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

WWPL

Mobile Command Supervisor #1

- Mobile Command Supervisor #1 stated that the night started at 18:00 hours by checking in with the safety briefing.
- Mobile Command Supervisor #1 stated they heard the radio transmission in reference to PM-47 being directed to stop. Then there was a telephone call about the collision and derailment.
- Mobile Command Supervisor #1 stated that they responded to the scene.

Mobile Command Supervisor #2

- Mobile Command Supervisor #2 stated they arrived on duty at 18:00 hours and began the shift with the safety briefing.
- Mobile Command Supervisor #2 stated that Mobile Command Supervisor #1 answered the phone call regarding a collision and derailment.
- Mobile Command Supervisor #1 stated they heard the radio transmission in reference to PM-47 being directed to stop.
- Mobile Command Supervisor #2 confirmed that they contacted ROCC and requested emergency medical assistance.
- Mobile Command Supervisor #2 stated that the Gang Leaders report that whatever units are left have been chocked and secured either at the platform or on the roadway and provide chain markers for locations.
- Mobile Command Supervisor #2 stated that sometimes the Gang Leaders do not provide information on the equipment, status, or location.

TRST

Track Unit Supervisor (PM-47)

- The Track Unit Supervisor stated they arrived for work at 17:00 hours and began signing in their crew.
- The Track Unit Supervisor stated they met with the Gang Leader and RWIC for the evening shift RJSB and to receive work directions for the evening. Their group's assignment was to install stringers at CM 300+00 and back toward East Falls Church Station
- The Track Unit Supervisor stated they sat on PM-47's generator near the Equipment Operator as they left the platform.
- The Track Unit Supervisor stated they were observing the track when they heard someone yell, "Stop, stop."
- The Track Unit Supervisor stated that they stood up and yelled to alert the Equipment Operator, who then dumped the brakes.
- The Track Unit Supervisor stated they did not have a radio accessible and it was in their backpack and they had not lent their radio to the Flagman.
- The Track Unit Supervisor stated they exited the PM and went to the Flatcar to check for injuries. The Track Unit Supervisor stated they called for an ambulance and for the RWIC to make notifications.
- The Track Unit Supervisor stated they did not feel as though the PM was traveling at a high rate of speed and they were observing the roadway as the unit was moving.
- The Track Unit Supervisor stated that they were told that SM-01 was located in the tunnel.

Gang Leader #1

- Gang Leader #1 stated that his crew of six had started at 06:00 hours that morning (Monday) and reported to the Gang Leader-RWIC. Gang Leader #1 recalled bringing equipment back to the platform and parking when securing at the end of the shift at 17:00 hours and added that some equipment not being used may have been left out in the work area.
- Gang Leader #1 stated that SM-01 was left at the platform because storing it nearby made it more accessible to the next crew and reduced delays in retrieving it from the yards.³
- Gang Leader #1 stated that during the turnover, they would inform the other supervisor(s) of the work status, hand over the work, letting them know what their crew did and what they can continue working on.
- Gang Leader #1 stated that if they did not bring a piece of equipment back to the platform, they would relay the information to the relief face-to-face.
- Gang Leader #1 confirmed at the time of securing at 17:00 hours on Monday that SM-01 was secured at the platform and gave a status briefing to the oncoming Gang Leader-RWIC.
- Gang Leader #1 stated that when addressing requests for equipment moves within the area, they would use both cell phones and radios due to radio communications issues.
- Gang Leader #1 stated that when arriving at the work area, the Gang Leaders are not required to walk and observe their assigned areas and that it depends on the Supervisor.

³ Currently available information does not support this statement. GPS records indicate SM-01 was left at the collision site since the morning of June 5, 2023.

The verbal update from the securing Supervisor should provide information about equipment locations and work status.

- Gang Leader #1 stated that their crew had utilized SM-01 and returned it to the platform at the end of their shift at 17:00 hours on Monday.

Gang Leader #2 (Night RWIC)

- Gang Leader #2 stated that they instructed PM-47 to depart the platform and leave room for PM-41, which had one flat attached.
- Gang Leader #2 stated that they were providing a safety briefing to the crew members that reported for duty at 22:00 hours when they received notification that PM-47 had a collision with SM-01.
- Gang Leader #2 stated that there are times when the radio communication is spotty, and they must click the radio a couple of times to transmit.
- Gang Leader #2 stated that sometimes units may need to contact them via cell phone and on the day of the event, they did not require the use of the cell phone too many times.

Gang Leader #3

- Gang Leader #3 stated that the night began on arrival at 17:00 hours at the East Falls Church Station platform area.
- Gang Leader #3 stated that they visually inspected the immediate work area of the platform and had discussions with day shift crew supervisors to determine project status, including progress and equipment status.
- Gang Leader #3 stated that they attended the Roadway Job Safety Briefing with the entire group of work crews before attending a smaller briefing specifically for the crew under their supervision.
- Gang Leader #3 stated that they were on the platform assisting with the movements of crews and equipment up until the collision involving PM-47 and Flatcar 604 occurred.
- Gang Leader #3 stated that they were on the phone with the Track Unit Supervisor aboard PM-47 when the collision occurred at 22:00 hours.
- Gang Leader #3 stated that they disconnected the call while the Track Unit Supervisor addressed the collision.
- Gang Leader #3 stated that they called Mobile Command to ensure the notifications were made and emergency medical assistance was requested.

Equipment Operator (PM-47)

- The Equipment Operator stated that were unaware of SM-01 being secured on the roadway.
- The Equipment Operator stated that they departed East Falls Church Station, and the Flagman was at the front on Flatcar 604.
- The Equipment Operator stated that as the unit approached the area of CM 370+00, they transmitted to the Flagman inquiring, "How are we looking back there?"
- The Equipment Operator stated that the Flagman responded slow down.
- The Equipment Operator stated that they began to slow down and then felt a slight downgrade.
- The Equipment Operator stated that the next thing they heard were the crew members telling them to stop.
- The Equipment Operator stated that they did not hear a horn and did not hear the transmission on the radio.

- The Equipment Operator stated that they applied the brakes but not in time to avoid colliding with the SM-01.

Flagman #1 (PM-47)

- Flagman #1 (PM-47) stated that they did not have a handset radio when reporting to work as the issued radio was being calibrated.
- Flagman #1 stated that they borrowed their supervisor's handset.
- Flagman #1 stated they departed East Falls Church Station with PM-47 pushing the Flatcar along with the Equipment Operator, Supervisor and 10 workers aboard.
- Flagman #1 states that they were on the front of the Flatcar.
- Flagman #1 stated that they observed the roadway having unfinished work and exposed metal.
- Flagman #1 stated that they unit was travelling fast and they advised the Equipment Operator over the radio to slow down.
- Flagman #1 stated that the area appeared to be well lit, but they did not see SM-01 parked in the curve on roadway
- Flagman #1 stated that when they noticed SM-01 they transmitted on Ops 12 to for the Equipment Operator to stop. The collision occurred before the Flatcar and PM could stop.
- Flagman #1 stated that they were injured when they fell to the floor on the Flatcar.

Flagman #2 (PM-41)

- Flagman #2 (PM-41) stated that they were part of a work crew that started at the platform with the PM-41 pulling the flat towards the work location. Flagman #2 was on the rear of the flat looking backward.
- Flagman #2 stated they were too far from the PM-47 derailment to observe the collision.
- Flagman #2 identified the movement of pushing the equipment through the blind curve as a safety concern. Flagman #2 did not believe speed itself was an issue as they travel slow in work areas.
- Flagman #2 noted observing what they believed to be a floodlight on the flat that dispersed the illumination over a wider area instead of a spotlight that might extend the illumination to 200 feet.
- Flagman #2 identified the availability of dump valves to quickly reduce speed and stop⁴.
- Flagman #2 noted that PM41 did not appear to have exceeded the area they were directed to travel to set up.
- Flagman #2 stated that they did not recall a radio transmission requesting PM-47 to travel to CM 370+00.
- Flagman #2 states that SM-01 did not have any illumination, flags or warning indicator displayed and that the unit was chocked.

Weather

At the time of the incident, NOAA recorded the temperature at 72° F. Weather was not a contributing factor in this incident (Weather source: NOAA – Falls Church, VA)

⁴ CTEM confirmed that a dump valve is available in the Operator's booth and outside of the Flatcar.

Related Rules and Procedures

MSRPH Section 3 – Operating Rules, 3.96 Whenever a Class I or Class II rail vehicle is operated from other than the lead car/end a qualified employee shall be assigned as a flag person. Positive communications shall be established between the operator and the vehicle flag person. The Operator shall confirm that the flag person clearly understands each authorized move before proceeding. If communication is lost, the operator shall bring the vehicle to a stop.

3.175 Use and Operation of Roadway Maintenance Machines (RMM)

3.175.1 Responsibilities; Roadway Maintenance Machines Operator or employee-in-charge of a Roadway Maintenance Machine shall be responsible for its safe movement and proper operation. Operators shall maintain a constant lookout in the direction of travel.

3.175.7 Speed of Roadway Maintenance Machines (emphasis added, all Flat Cars are equipped with brake levers that personnel are trained to use.)

a) **Roadway Maintenance Machines shall at all times be prepared to stop within half the range of vision.**

b) Passenger type Hi-Rail vehicles 10,000 lbs. or less gross vehicle weight (GVWR), must not exceed 35 MPH. Other Roadway Maintenance Machines must not exceed 30 MPH.

c) Use of cruise control is prohibited when operating Roadway Maintenance Machines on the rail.

d) Speed shall be adjusted when stopping distance is affected by conditions such as grade, load, rain, frost, or grease on the rail. e) Care shall be taken to avoid striking anything lying on or across the rail.

MSRPH Section 5 – RWP, 5.2 Cardinal Rules

7. Class 2 rail vehicles shall operate at Restricted Speed⁵ within any working limits.

Human Factors

Fatigue

WWPL

Mobile Command Supervisor #1

Evidence of Fatigue

Conditions were evaluated at the time of the incident to distinguish whether evidence of fatigue was present. The Mobile Command Supervisor reported feeling fully alert at the time of the

⁵ A method of operation that permits stopping within half the range of vision short of:

- Other trains or railroad equipment occupying or fouling the track,
- Obstructions on or fouling the track,
- Switches not properly lined for movement,
- Derails set in the derailing position,
- Employees working in the foul of the track,
- The end of track, • Any signal requiring a stop, and
- Looking out for broken rail or misaligned track.

Movements made at restricted speed must not exceed 15 MPH. This restriction applies to the entire movement, unless otherwise specified in the rule or instruction that requires Restricted Speed.

incident. The Mobile Command Supervisor reported experiencing no symptoms of fatigue in the time leading up to the incident.

Fatigue Risk

The incident data was evaluated for fatigue risk factors for the Mobile Command Supervisor. Risk factors for fatigue were not present for the Mobile Command Supervisor. Since fatigue evidence and risk factors were absent, the biomathematical fatigue modeling application (SAFTE-FAST Web SFC) was not applied.

Mobile Command Supervisor #2 Evidence of Fatigue

Conditions were evaluated at the time of the incident to distinguish whether evidence of fatigue was present. The Mobile Command Supervisor (Crew Support) reported feeling fully alert at the time of the incident. The Mobile Command Supervisor (Crew Support) reported experiencing no symptoms of fatigue in the time leading up to the incident.

Fatigue Risk

The incident data was evaluated for fatigue risk factors for the Mobile Command Supervisor (Crew Support). Risk factors for fatigue were not present for the Mobile Command Supervisor (Crew Support). Since fatigue evidence and risk factors were absent, the biomathematical fatigue modeling application (SAFTE-FAST Web SFC) was not applied.

TRST

Track Unit Supervisor (PM-47) Evidence of Fatigue

Conditions were evaluated at the time of the incident to distinguish whether evidence of fatigue was present. The Track Unit Supervisor reported feeling fully alert at the time of the incident. The Track Unit Supervisor reported experiencing no symptoms of fatigue in the time leading up to the incident.

Fatigue Risk

The incident data was evaluated for fatigue risk factors for the Track Unit Supervisor. Risk factors for fatigue were not present for the Gang Leader. Since fatigue evidence and risk factors were absent, the biomathematical fatigue modeling application (SAFTE-FAST Web SFC) was not applied.

Gang Leader #1 Evidence of Fatigue

Conditions were evaluated at the time of the incident to distinguish whether evidence of fatigue was present. The Gang Leader reported feeling fully alert at the time of the incident. The Gang Leader reported experiencing no symptoms of fatigue in the time leading up to the incident.

Fatigue Risk

The incident data was evaluated for fatigue risk factors for the Gang Leader. Risk factors for fatigue were not present for the Gang Leader. Since fatigue evidence and risk factors were absent, the biomathematical fatigue modeling application (SAFTE-FAST Web SFC) was not applied.

Gang Leader #2
Evidence of Fatigue

Conditions were evaluated at the time of the incident to distinguish whether evidence of fatigue was present. The Gang Leader reported feeling fully alert at the time of the incident. The Gang Leader reported experiencing no symptoms of fatigue in the time leading up to the incident.

Fatigue Risk

The incident data was evaluated for fatigue risk factors for the Gang Leader. Risk factors for fatigue were not present for the Gang Leader. Since fatigue evidence and risk factors were absent, the biomathematical fatigue modeling application (SAFTE-FAST Web SFC) was not applied.

Equipment Operator (PM-47)
Evidence of Fatigue

Conditions were evaluated at the time of the incident to distinguish whether evidence of fatigue was present. The Gang Leader reported feeling fully alert at the time of the incident. The Gang Leader reported experiencing no symptoms of fatigue in the time leading up to the incident.

Fatigue Risk

The incident data was evaluated for fatigue risk factors for the Gang Leader. Risk factors for fatigue were not present for the Gang Leader. Since fatigue evidence and risk factors were absent, the biomathematical fatigue modeling application (SAFTE-FAST Web SFC) was not applied.

Flagman #1 (PM-41)
Evidence of Fatigue

Conditions were evaluated at the time of the incident to distinguish whether evidence of fatigue was present. The Flagman reported feeling fully alert at the time of the incident. The Flagman reported experiencing no symptoms of fatigue in the time leading up to the incident.

Fatigue Risk

The incident data was evaluated for fatigue risk factors for the Flagman. Risk factors for fatigue were not present for the Flagman. Since fatigue evidence and risk factors were absent, the biomathematical fatigue modeling application (SAFTE-FAST Web SFC) was not applied.

Flagman #2 (PM-47)
Evidence of Fatigue

Conditions were evaluated at the time of the incident to distinguish whether evidence of fatigue was present. The Flagman reported feeling fully alert at the time of the incident. The Flagman reported experiencing no symptoms of fatigue in the time leading up to the incident.

Fatigue Risk

The incident data was evaluated for fatigue risk factors for the Flagman. Risk factors for fatigue were not present for the Flagman. Since fatigue evidence and risk factors were absent, the biomathematical fatigue modeling application (SAFTE-FAST Web SFC) was not applied.

Post-Incident Toxicology Testing

WMATA's Drug and Alcohol Program determined that the Equipment Operator (PM-47) complied with the Drug and Alcohol Policy and Testing Program 7.7.3/6.

WMATA's Drug and Alcohol Program determined that the Track Maintenance Supervisor (PM-47) complied with the Drug and Alcohol Policy and Testing Program 7.7.3/6.

Findings

Inadequate Warning Devices of Secured Vehicle:

- There were no E-flares, shunt lights, or any advanced warning measures to alert that a vehicle was secured ahead.

Communication Breakdowns:

- The location of the secured vehicle was not effectively communicated to Mobile Command. Mobile Command did not confirm with the crews that were reporting off duty where units were secured.
- A Gang Leader on the previous shift reported clear of the roadway from tracks 1 and 2 between CM 310+00 to East Falls Church Station without mention of the status of SM-01.
- Lack of Communication (Radio Communication and Hand Signaling) and Coordination between the Equipment Operator and Flagman on PM-47.

Securing Vehicles within a Work Zone:

- SM-01 was secured within a blind curve, a Hot Spot in the Track Access Guide.
- The boom attached to SM-01 was propped against the wall and one wheel chock was utilized to prevent SM-01 from moving.
- SM-01 sustained damage to the boom.
- Flat 604 sustained damage to the front body and step rung.

Other Concerns:

- Per GPS, PM-47 was moving at 12 mph just prior to the time of the collision.
- The Equipment Operator of PM-47 was recently certified for solo operations.
- An office-style chair was observed in the Flagman's booth area.
- Landline communications to Mobile Command are not recorded or available for audit.
- PM-41 was observed departing East Falls Church Station prior to the event with the boom unsecured and extended, outward and over Flat Car 608.

Immediate Mitigation to Prevent Recurrence

- TRST removed the Equipment Operator from service for post-incident toxicology testing.
- SAFE and TRST immediately developed mitigations to discuss and review with onsite personnel and oncoming shifts.
- The PM-47, Flat Car 604, and SM-01 were removed from service for inspection.

- TRST in coordination with the Office of Safety Assurance developed and distributed a Maintenance and Safety Bulletin – MB/SB#: 20230606-57, dated June 6, 2023.
- After the event, TRST provided additional Supervisory support at the work location.
- OSO incorporated the work location into their routine observation schedule.

Probable Cause Statement

The probable cause of the Collision event on June 5, 2023, between East Falls Church Station and Ballston Station at CM K2 315+00 was the limited visibility of SM-01, which was secured in a blind curve. A contributing factor was the speed at which PM-47 was being operated prior to the collision. While not operating in excess of 15 mph, PM-47 was not being operated at a restricted speed, as the unit was unable to stop within half the range of vision to avoid the collision. An additional Contributing Factor to the event was inadequate communications between shifts, as the outgoing personnel failed to notify Mobile Command or the oncoming Gang Leader of SM-01's position in the work area.

Recommended Corrective Actions

Corrective Action Code	Description	Responsible Party	Estimated Completion Date
108993_SAFE CAPS_TRST_ 001	Conduct a Safety Stand Down to address the recent major safety incidents that have occurred on the roadway, including recent collisions and derailments of roadway repair and maintenance vehicles. See attachment for full listing.	TRST/SAFE	Completed
108993_SAFE CAPS_TRST_ 002	The Equipment Operator will attend refresher training emphasizing the safe operation of RMMs to include areas of limited visibility.	TRST	Completed
108993_SAFE CAPS_TRST_ 003	The Flagman will attend refresher training emphasizing the safe operation of RMMs to include areas of limited visibility.	TRST	Completed
108993_SAFE CAPS_TRST_ 004	Conduct scheduled inspections of RMMs to verify that unauthorized items (office chairs, trash, stored items, etc.) have been removed from the vehicles.	TRST	Completed
108993_SAFE CAPS_SAFE_ 001	Conduct a review of the handoff process for projects involving multiple shifts to include sharing knowledge of current work site conditions and roadway hazards to provide at each shift's briefing. Results included in Safety Stand Down.	SAFE	Completed

Appendices

Appendix A – Interview Summaries

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

WWPL

Mobile Command Supervisor #1

Mobile Command Supervisor #1 stated that they are a WMATA employee with 16 years of service and have been in their current position for 6 years and work out of the Eisenhower Headquarters. Mobile Command Supervisor #1 stated the exact title of his position may be more identified as a Wayside Work Planning Supervisor. Mobile Command Supervisor #1 identified as having worked 8 years as an Equipment Operator for TRST, then 2 years as a Training Instructor before this current position 6 years as a Track Maintenance Supervisor. Mobile Command Supervisor #1 stated that they hold an RWP Level 4 Certification that expires in January 2024.

Mobile Command Supervisor #1 stated that the night started off the same way the night before starting at 18:00 hours. The Mobile Command Supervisor #1 started the beginning the shift by checking in with the safety briefing sign in. The role involves taking incoming information regarding personnel calling in for duty, people changing shifts, receiving information reference working zones which are all logged in.

Mobile Command Supervisor #1 began reviewing information regarding the activities during the day and what events were happening. Mobile Command Supervisor #1 then checked with the scribe report and the previous shift is handed off to the relieving shift's supervision. Mobile Command Supervisor #1 then signed in and logged on. The work area is broken down into smaller work crew areas. Then they give the overall briefing, get the Chain Markers and number of crewmembers, and handled the red tags. The Mobile Command then grants permission for the crews to go to work. The Mobile Command is located at the G Building of the K99 yard. The Mobile Command Center uses radio communications, a landline and a cellphone to communicate with the field and other parties.

Mobile Command Supervisor #1 stated that around 22:00 hours the units were working, and a call came in advising there had been a derailment. Mobile Command Supervisor #1 stated that they heard radio chatter in reference to PM-47 being directed to stop. It was a telephone call a minute or two later that alerted the Mobile Command of the derailment that the PM-47 had contact with SM-01. The call was answered by Mobile Command Supervisor #2 working in the Mobile Command, but it was on speakerphone. Mobile Command Supervisor #1 confirmed that Central Control had been notified, and emergency medical assistance was requested and en route.

Mobile Command Supervisor #1 then proceeded to the scene from K99. The Track Maintenance Supervisor stated they inquired about any injuries or need for medical attention and what the Chain Markers were. Mobile Command Supervisor #2 made a notification to Central Control. The injured employee was brought to the East Falls Church Station platform and transported by the EMS prior to Mobile Command Supervisor #1's arrival.

Mobile Command Supervisor #2

The Mobile Command Supervisor # 2 stated that they are a WMATA employee with 9 years in their current position as Supervisor Crew Support and 10.5 years of total service. They work out of the Eisenhower Headquarters and hold an RWP Level 4 that expires in September 2023.

Mobile Command Supervisor #2 stated they arrived earlier that the night which started off similar to night before starting at 18:00 hours. Mobile Command Supervisor #2 stated they began the shift with the safety briefing. They then processed incoming information regarding personnel calling in for duty, people changing shifts, receiving information reference working zones which are all logged in.

Mobile Command Supervisor #2 began reviewing information regarding the activities during the day and what events were happening. Mobile Command Supervisor #2 worked with the Mobile Command Supervisor #1 in the Mobile Command located at G Building in the West Falls Church Yard. The Mobile Command authorizes units to work area in assigned areas and coordinates movement outside and between the individual work areas. The activity within an area is supervised by gang or work leaders. The Mobile Command Center uses radio communications, a landline and a cellphone.

Mobile Command Supervisor #2 stated there was an incoming telephone call around 22:00 hours regarding a collision and derailment. Mobile Command Supervisor #2 stated that they heard radio chatter in reference to PM-47 being directed to stop. It was a telephone call a minute or two later that alerted the Mobile Command of the derailment that the PM-47 had contact with SM-01. Mobile Command Supervisor #2 stated that later the Mobile Support Crew picked up on the call and gathered information. Mobile Command Supervisor #2 confirmed that Central Control had been notified, and emergency medical assistance was requested and en route.

Mobile Command Supervisor #2 stated that once the evening relief came in sometime after 22:00 hours the Mobile Command Supervisor #1 then went to the scene at East Falls Church Station. Mobile Command Supervisor #2 stated that they remained at the Mobile Command Center getting information, additional updates and completing the incident report sheet.

Mobile Command Supervisor #2 identified that the process of communicating with the securing gang leaders involved them advising that their units have cleared from the site and are off duty. Generally, they describe whatever units (equipment) they left have been chocked and secured either at the platform or on the roadway and provide chain markers for locations. Sometimes the gang leaders do not provide information on the equipment, status, or locations. Mobile Command Supervisor #2 confirmed it is a deviation not to provide the information.

Mobile Command Supervisor #2 stated that it is not required to notify or request anything from Mobile Command if the movement of equipment, like SM-01, is moved strictly within the confines of that group's work area. The Mobile Command would not be notified. If the Gang Leaders do identify any equipment's status and location to the Mobile Command as they secure and go off duty it is noted on the spreadsheet and a video screen in the office. Mobile Command Supervisor #2 could not recall if any movements had been reported for this event but would try to research.

Mobile Command Supervisor #2 identified the requirement of the equipment operator to control the speed to ensure it can stop within half the distance of seeing an obstruction. They commented that at some point and time field personnel have to be accountable for their actions. Here the unit was chocked in a hot zone, and you have a flagman and operator. It goes back to the RWP, how fast was the unit operating and was it operating in a safe manner for it to come up on it so fast?

Mobile Command Supervisor #2 stated hearing the radio traffic of stop, stop, stop. The Mobile Command then got the telephone call a few minutes later advising them of the collision. Mobile Command Supervisor #2 repeated that the Mobile Command Supervisor #1 took the call initially, put it on hold and the Crew Support picked it up and processed it.

Mobile Command Supervisor #2 discussed the benefit of better reporting of equipment locations but that ultimately it was a RWIC's responsibility to know what is on the work site and where it is. Referring to the derailment the night before, they mentioned that running rails had been pulled up, yet equipment still drove over the area.

Mobile Command Supervisor #2 clarified an earlier comment regarding checking on any workers in the portal to platform area. This meant to check on crews that were still listed on site but left without clearing. This is how the Mobile Command has someone verify they are actually clear before Mobile Command clears them. The Crew Support had made a radio transmission asking 613 to verify units were clear. If the earlier shift hasn't cleared, Mobile Command asks oncoming RWIC or Gang Leader to advise if any other units are still there from earlier shift. Mobile Command Supervisor #2 could not recall what, if any, response was received from Gang Leader #2. If it was not given on the radio it could have been by telephone.

The Mobile Command Supervisor #2 identified the phones as being two desk models with both phone lines 3500 and 3501. There is also a cell phone that rolls over from the desk lines but is not positive. The cell phone rarely, if ever, rang. The telephones travel with the Mobile Command team.

TRST

Track Unit Supervisor (PM-47)

The Track Unit Supervisor stated that they are a WMATA employee with 3 years in their current position as Track Maintenance Supervisor and 9 years of total service. They work out of the New Carrollton Region and hold an RWP Level 4 that expires in June 2023.

The Track Unit Supervisor stated they arrived for work at 17:00 hours and began signing in their crew. They then met with the Gang Leaders and TRST RWIC for the evening shift RJSB and to receive work directions for the evening. Their group's assignment was to install stringers from Chain Marker 300+00 back towards East Falls Church Station. The crew planned on riding PM-47 to the work area and disembarking. Another Alexandria Crew would take the PM further to their work area.

The Track Unit Supervisor stated they sat on the PM-47's generator platform near the Equipment Operator as they left the platform. The PM was pushing the Flatcar with the Flagman on the front. The Track Unit Supervisor faced the rear of the PM observing the track where they would later be stringing. The PM went onto track 2 once they crossed East Falls Interlocking.

As the Track Unit Supervisor was observing the track when they heard someone yell, "Stop, stop." The Track Unit Supervisor said they stood up and yelled to alert the Equipment Operator who then dumped the brake. The Flatcar the PM was pushing was unable to stop before colliding with the SM-01.

The Track Unit Supervisor did not have a radio accessible as they described it as being in the backpack. The Track Unit Supervisor advised they had not lent their radio to the Flagman. The Track Unit Supervisor believed the yelling was not a radio transmission that was heard. The Track Unit Supervisor did not recall talking on his cell phone when the collision occurred.

The Track Unit Supervisor left the PM and went to the Flatcar to check on injuries. The Flagman was injured. The Track Unit Supervisor called for an ambulance and to the RWIC to make notifications.

The Track Unit Supervisor responded they did not believe the PM was traveling at a high rate of speed as they were observing the roadway they were passing. The changing conditions they were entering were not part of their observations. The Track Unit Supervisor felt confident the Equipment Operator and Flagman were adequately handling the movement.

The Track Unit Supervisor stated that the briefings concerning the SM-01 location would have been from the day shift to the RWIC. The Track Unit Supervisor and others had been told the SM-01 was in the tunnel but no mention of the curve or hot spot location. They believed it was clear to where this first crew would be dropped off while the Alexandria crew would continue aboard PM-47 further.

The Track Unit Supervisor stated they thought if the information had been relayed correctly from the day shift the information content was not relayed correctly to the evening shift. They thought the content was mixed with the tunnel and hot spot curve so it was not clear as it could be.

The Track Unit Supervisor was specific when they advised the SM-01 was out of the platform area before they moved the PM-47 and Flatcar from the station. It was the first piece of equipment evenings moved. The SM-01 had to be in place in the curve and hot spot prior to evening shift beginning work.

The Track Unit Supervisor clarified that PM-47 went first followed by PM-41 which was scheduled to complete fastener work. PM-47 cleared the interlocking and PM-41 came up behind PM-47. After clearing interlocking PM-47 went to track 2 side one while PM-41 was directed by someone to go to Chain Marker 370. PM-47 was planning to stop at Chain Marker 310. PM-47 would then continue on with the Alexandria crew. The SM-01 was in the area of Chain Marker 315.

The Track Unit Supervisor recalled a Track Maintenance Supervisor relayed the information at the briefing of SM-01 status.

The Track Unit Supervisor stated they felt their radio being their backpack while traveling to a fixed work location was ok but now having it readily available makes more sense. The Track Unit Supervisor also confirmed being present at the Safety Briefing and recalls signing the form with others that attended.

The Track Unit Supervisor commented that the lighting could be improved with LED pop up stands and lights on Flatcars that give a better view. Using warning devices on equipment left on roadway and not leaving in blind or hot spots would be beneficial. The Track Unit Supervisor said they are unaware of any specific requirement for walking or physically observing a work area before starting work. Generally, the briefing from the outgoing crew covers it. Some areas are too large to walk all of it. When practical it is the best practice to physically observe the area.

Gang Leader #1 (Day Shift)

The Track Maintenance Supervisor stated that they are a WMATA employee with 25 years of service and have been in their current position for 10 years and work out of the Brentwood Division. The Track Maintenance Supervisor stated they hold an RWP Level 4 Certification that expires in April 2024.

The Track Maintenance Supervisor stated that his crew of six had started at 06:00 hours that morning and was out installing rail using a Pettibone. The Gang Leader handle the smaller groups doing particular types of work. The Track Maintenance Supervisor reported to the Gang Leader-RWIC.

The Track Maintenance Supervisor recalled bringing equipment back to the platform and parking when securing at the end of shift. Some equipment not being used would be left out in the work area.

The Track Maintenance Supervisor advised the equipment was left at the platform and storing nearby on track made it more accessible to next crew and reduced delays retrieving from the yards. They don't have to look for it and they move from there for whatever they need to do with it. The Track Maintenance Supervisor confirmed it was normal to leave it on the roadway without warning lights, and lanterns.

At turnover, the Track Maintenance Supervisor would usually tell the other supervisor(s) the work status, hand over the work, letting them know what my crew did today and what they can continue working on. If the Track Maintenance Supervisor did not bring a piece of equipment back to the platform, they would relate the message to the relief face-to-face saying that equipment is out there.

The Track Maintenance Supervisor confirmed at the time of securing at 17:00 hours on Monday the SM-01 was secured at the platform. The Track Maintenance Supervisor gave a status briefing to the oncoming Gang Leader-RWIC. The briefing was not always done, particularly if all of the Track Maintenance Supervisor's units were secured and at the platform.

The Track Maintenance Supervisors stated that when addressing requests for equipment moves within their area, they were using both cell phone and radios due to radio communications issues. The Track Maintenance Supervisor also stated that when arriving for work the Track Maintenance Supervisors are not required to walk and observe their assigned areas. It depends on the Supervisor. The update from the securing Supervisor should provide the information about equipment locations and work status.

The Track Supervisor confirmed once again that their crew had used the SM-01 and returned it to the platform at the end of their shift 17:00 hours on Monday.

Gang Leader #2 (Night Shift)

Gang Leader #2 stated that they are a WMATA employee with 6 years of service and have been in their current position for four months and work out of the Branch Avenue Division. Gang Leader #2 stated that they hold an RWP Level 4 Certification that expires in November 2023.

Gang Leader #2 stated that the night started off the same way the night before (when the derailment occurred). We had to make multiple yard moves in order to get certain units where we needed them to be so that we could work, then the crews began work.

Gang Leader #2 stated that around 21:45 hours the units where they needed them to be. Gang Leader #2 stated that they were a part of the crew on PM-39 and they were waiting until 22:00 hours for additional crew members to arrive.

Gang Leader #2 stated that the other units were instructed to begin their work. Gang Leader #2 stated that from the time that they made yard moves and the crews were permitted to go to work, walking from the interlocking to the platform, then downstairs to perform the safety briefing and greet the crew members that came in at 22:00 hours; they received a call that PM-47 had a collision with SM-01.

Gang Leader #2 stated that they were usually with their crew conducting rail renewal and PM-47 work crew was to cut up the old rail that they had already taken out the days before and perform welding.

Gang Leader #2 stated PM-39, utilizes Ops 6 when they use a Flagman on the unit because there's less radio traffic. All of the other units utilize Ops 12. Gang Leader #2 stated that they had just finished giving the units proceed signals and allowing them to switch over and at that time they were on Ops 12. Gang Leader #2 stated that the others were reporting that the Flagman was telling the Operator to stop.

Gang Leader #2 stated that when the units are entering the platform, they will contact them (Mobile Command) before going through the interlocking to confirm with them that there haven't been any adjustments to any of the switches. So, when they come into the platform, they're talking to them.

Gang Leader #2 stated that when the units are going to their work location the Supervisor would know where to let the operator know where to stop and begin work.

Gang Leader #2 stated that they instructed PM-47 to depart the platform and leave room for PM-41 which had one flat attached.

Gang Leader #2 stated that they did not hear any transmissions from PM-41 to PM-47 over the radio.

Gang Leader #2 stated that there are times when the radio communication is spotty, and they must click the radio a couple of times to transmit.

Gang Leader #2 stated that sometimes units may need to make contact via cell phone, and they did not require the use of the cell phone too many times during the event Gang Leader #2 stated that they were able to get good radio communication with all of the operators.

Gang Leader #2 stated that they conducted two Toolbox Talks since they experienced a collision the day before.

Gang Leader #2 stated that they recommended placing shunts on the rail since it's dark and visibility is low.

Gang Leader #3 (Field Supervisor)

Gang Leader #3 stated that they are a WMATA employee with 11.5 years of service and have been in their current position for 5 years and work out of the Branch Avenue Division. Gang Leader #3 stated that they hold an RWP Level 4 Certification that expires in September 2023.

Gang Leader #3 stated that the night began on arrival at 17:00 hours at the East Falls Church Station platform area. Gang Leader #3 stated that they visually inspected the immediate work area of the platform and had discussions with day shift crew supervisors to determine project status including progress and equipment status. Gang Leader #3 stated that they attended the Roadway Job Safety Briefing with the entire group of work crews before attending a smaller briefing specifically for the crew under their supervision.

Gang Leader #3 stated that they were on the platform assisting with the movements of crews and equipment up until the time that PM-47 and Flatcar 604 collision occurred. Gang Leader #3 stated that they were on the phone with the Track Unit Supervisor aboard PM-47 when the collision occurred at 22:00 hours.

Gang Leader #3 stated that they disconnected the call while the Track Unit Supervisor addressed the collision. Gang Leader #3 stated that they called Mobile Command to ensure the notifications were made and emergency medical assistance was requested.

Gang Leader #3 stated that they had another conversation with the Track Unit Supervisor and confirmed the injured employee was able to return to the platform to meet the ambulance. Gang Leader #3 stated that they rode aboard another PM to the area of the collision and retrieved the injured employee and returned to East Falls Church platform where the medical personnel assisted the injured employee.

Gang Leader #3 stated that the Equipment Operator and Track Unit Supervisor were removed from service.

Gang Leader #3 stated that all work was ceased at the job site and crews returned to the platform to meet with supervisors and to complete written statements. Gang Leader #3 stated that Safety officials responded to the scene and all work was suspended for the duration.

Gang Leader #3 stated that there are poor radio communications which can lead to increased risks of delays in giving or receiving directions or warnings.

Gang Leader #3 stated that the brake dump valves are available at both the interior and exterior booth locations on the flat cars and PM.

Equipment Operator (PM-47)

The Equipment Operator stated that they are a WMATA employee with 6 months in their current position as Equipment Operator and 6 months of total service. They work out of the New Carrollton Division and hold an RWP Level 2 that expires in February 2024.

The Equipment Operator stated that they attended the RJSB at the beginning of the shift, and there was no mention of any SM-01 or other vehicles left on the roadway. The Equipment Operator stated that they departed East Falls Church Station platform with the Flagman on the front of Flatcar 604, PM-47 was pushing the Flatcar, with 10-15 track workers and a supervisor aboard.

The Equipment Operator stated that as the unit approached the area of CM 370+00, they transmitted to the Flagman inquiring, "How are we looking back there?" The Equipment Operator stated that the Flagman responded slow down. The Equipment Operator stated that they put the A9 on the first click to slow down as they felt the slight downgrade and began watching the chain markers. (This describes placing the brake valve in the console armrest into the 1st graduated position, which is the least applied braking setting.) The Equipment Operator stated that the next thing they heard was the crew members telling them to stop.

The Equipment Operator stated that they did not hear a horn and did not hear the transmission on the radio. The Equipment Operator stated that they applied the brakes but not in time to avoid colliding with the SM-01.

The Equipment Operator stated that they stopped the unit and began checking for any injuries and waited for assistance. The Equipment Operator stated that it was dark and that SM-01 and Flat 604 collided with no visible warnings.

Flagman #1 (PM-47)

The Flagman stated that they are a WMATA employee with 13.5 years in their current position as Track Repairer and 13.5 years of total service. They work out of the New Carrollton and hold an RWP Level 2 that expires in January 2024.

Flagman #1 (PM-47) advised not having a handheld radio when reporting to work as their issued radio was being calibrated. Flagman #1 reported borrowing the Supervisor of PM-47's handset. The Supervisor did not appear to have a handset for their use since loaning theirs to Flagman #1. While using Radio-OPS 12 Flagman #1 communicated directly with the PM-47 Equipment Operator. The work zone was from East Falls Church Station to Chain Marker 311+00.

Flagman #1 stated they departed East Falls Church Station with PM-47 pushing Flatcar with 10 workers aboard. Flagman #1 was on the front of the Flatcar. Flagman #1 reported observing the roadway having unfinished work and exposed metal. Flagman #1 stated they believed the equipment was traveling too fast. Flagman #1 stated they advised the Equipment Operator via radio to slow down. The Equipment Operator did not appear to slow down. Flagman #1 stated that the curve appeared well-lit but did not see SM-01 parked in the curve on the roadway at Chain Marker 314+00. Once it was observed, Flagman #1 called on Radio OPS 12 to stop, but the collision occurred before the Flatcar and PM could stop.

Flagman #1 advised being injured when falling to the floor of the Flatcar. Flagman #1 was transported by another PM to the East Falls Church platform and transferred from there to an ambulance and eventually a hospital. Flagman #1 reported injuring tendons and ligaments in his knee and leg. Flagman #1 advised there were no fractures as earlier reported.

Flagman #2 (PM-41)

Flagman #2 (PM-41) stated that they are a WMATA employee with 4.5 years of service and have been in their current position of Equipment Operator for four and a half years and work out of the Shady Grove Division. The WMATA employee stated that they hold an RWP Level 2 Certification that expires in November 2023.

On this assignment the employee performed the duties of Flagman for PM-41 and an attached flat car. This equipment was not involved in the derailment.

Flagman #2 was part of a work crew that along with other crews received a briefing from the Gang Leader #2. The overview instructions were given at that briefing and the work crew was turned over to a gang leader, a supervisor from the Shady Grove Division. The work started at the platform with the PM-41 pulling the flat towards the work location. Flagman #2 was on the rear of the flat looking backward.

Flagman #2 stated they were too far from the PM-47 derailment to observe it occur. As the PM-47 was beginning to set up for a welding assignment Flagman #2 heard some radio traffic and learned of the derailment. Flagman #2 advised the supervisor aboard PM-41 of the event and they stopped set up to facilitate emergency crews access to PM-47's location. The supervisor received additional information and cleared the welding equipment set up.

Flagman #2 identified the movement of pushing the equipment through the blind curve as a safety concern. Flagman #2 did not believe speed itself was an issue as they travel slow in work areas. Even if they had the PM pulling the flat on exiting the PM would still end up pushing the flat through a blind curve.

Flagman #2 noted observing what he believed was a floodlight on the flat that dispersed the illumination over a wider area instead of a spotlight that might extend the illumination to 200 feet. Still given the situation with the blind curve the change might not have made much of a difference. Flagman #2 identified the availability of dump valves to quickly reduce speed and stop.

Flagman #2 did not observe the emergency response efforts related to retrieving the injured Flagman #1 from PM-47 since Flagman #2 had left PM-41 to use the restroom and was not in the area. Another worker had relieved the Flagman for flag duties temporarily.

Flagman #2 noted that PM-47 did not appear to have exceeded the area they were directed to travel to set up. Flagman #2 stated leaving the SM around a blind curve was not appropriate and unsafe. Flagman #2 advised normally when the crew secures their radios get turned off so any situational updates that might be given by supervisors from the Gang Leader are not heard by workers checking out.

Flagman #2 advised they were operating on Radio Ops 12 and the transmissions were "not the greatest." Flagman #2 advised not recalling a radio transmission for PM-41 to travel to CM 370. That would not have been unusual for a request to move further to clear a signal and allow another unit access.

Flagman #2 recalled the SM-01 did not have any illumination, flags or warning indicator displayed. It was chocked and secured though. It was not unusual for a piece of equipment to be left for the next shift or several shifts for a crew to use when they are ready. Most times crews would try to move it out of the way while not in use.

Appendix B – MTPD Event Report



Event Report			
Metro Transit Police Department		ORI-DCMTP0000	
Type of Report Closed	MTPD CCN 2023-05890-001	Local Jurisdiction Arlington, VA	Local CCN

Event Location					
Street 2001 N Sycamore St	Station Acronym EAFC - EAST FALLS CHURCH	City, State FAIRFAX, VA 22205	County ARL- Arlington County	MTP District District 2	Local District ARL-Arlington County
Date and Time of Event From To 6/5/2023 10:25:00 PM			Date and Time Reported 6/5/2023 10:25:32 PM		
Category					
Rail Station, Line or Right-of-Way EAFC - EAST FALLS CHURCH Orange	On Bus	Property Rail Station	Other MSA3		
Specific Location (Foot Bridge, Kiosk, Platform, Tracks, Etc.) Rail/Tracks/In Tunnel			For Burglary or B&E Only If Hotel Rule Applies, #Premises or Facilities Entered:		
Location Description Rail Station					

Event Information		
If Incident Use This Block	Offense #	INJURED/SICK PERSON TO THE HOSPITAL
Incident Classification	Offense Classification	
Incident Description	Description	INJURED/SICK PERSON TO THE HOSPITAL
	Weapon/Force Type of Activity	/
Entry Type:	Number Premises Entered:	
Hate Crime Motivation: None (no bias) (mutually exclusive)		
Bias Motivation None (no bias) (mutually exclusive)		
Offender Suspected of Using:	Modus Operandi (MO):	
Case Status Information Case Status (Completed by the Official who signs this report):	If Case Cleared Exceptionally,	Clearance Date
Reporting Officer (Print) Badge #	Second Officer (Print) Badge #	
Supervisor's Name (Electronically Approved)		
	Teletype #	Investigator Notified ID#

MTPD CCN:
ORI-DCMTP0000

Event Report Page 1 of 5

Document 1 – MTPD Report page 1 of 4

Incident Date: 06/05/2023 Time: 21:59 hours
Final Report – Collision
E23377

Drafted By: SAFE 709 - 08/03/2023
Reviewed By: SAFE 707 – 08/03/2023
Approved By: SAFE 71 – 08/04/2023

Page 34

Victim Information				
Other Person Information				
Last Name, First MI		Entity Type	DOB	
[REDACTED]		Injured	[REDACTED]	
Address Type	Address (Street) City, State Zip			
H - Home	[REDACTED]			
Type Phone	Phone Number			
M - Mobile	[REDACTED]			
Work/School Address - Addl. Contact Info				
Age	Sex	Race	Ethnicity	DL State/Number
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

MTPD CCN:
ORI-DCMTP0000

Event Report Page 2 of 5

Document 2 – MTPD Report page 2 of 4

Incident Date: 06/05/2023 Time: 21:59 hours
Final Report – Collision
E23377

Drafted By: SAFE 709 - 08/03/2023
Reviewed By: SAFE 707 – 08/03/2023
Approved By: SAFE 71 – 08/04/2023

Page 35

Has a DVR been requested? <i>Narrative Information</i>	
R/O responded to EAFC for the report of a collision between two work vehicles on the tracks. One employee was injured and transported to the hospital for non life threatening injuries.	
If second CCN is available, insert here:	Additional Narrative on Supplemental Report

MTPD CCN:
ORI-DCMTP0000

Event Report Page 3 of 5

Document 3 – MTPD Report page 3 of 4

Incident Date: 06/05/2023 Time: 21:59 hours
Final Report – Collision
E23377

Drafted By: SAFE 709 - 08/03/2023
Reviewed By: SAFE 707 – 08/03/2023
Approved By: SAFE 71 – 08/04/2023

Page 36

Additional Narrative

I, Officer [REDACTED], report on Monday June 5th, 2023 responding to the East Falls Church Metro Station for the report of two rail work vehicles that collided resulting in injuries to one WMATA employee.

Upon my arrival at approximately 2225 hours, Arlington Engine and Ambulance 106 were already on scene staging on the platform. A while later, the rail vehicles in arrived on the platform. The injured employee, [REDACTED] was helped onto the stretcher by Arlington medics and taken to the ambulance.

Upon conducting an interview with [REDACTED] in the back of the ambulance, he stated that he was flagging on a flat work vehicle when another track work vehicle collided with the flat track work vehicle [REDACTED] was standing on, causing [REDACTED] to fall onto both [REDACTED], causing injury to both [REDACTED].

[REDACTED] was transported to Virginia Hospital Center by Arlington ambulance 106 for non life threatening injuries.

WMATA safety personnel, OEP and the WRIC/ Gang Leader [REDACTED] were also on scene.

All these events did occur in the Commonwealth of Virginia.

MTPD CCN:
ORI-DCMTP0000

Event Report Page 4 of 5

Document 4 – MTPD Report page 4 of 4

Incident Date: 06/05/2023 Time: 21:59 hours
Final Report – Collision
E23377

Drafted By: SAFE 709 - 08/03/2023
Reviewed By: SAFE 707 – 08/03/2023
Approved By: SAFE 71 – 08/04/2023

Page 37

Appendix C – CTEM Post-Derailment Inspection Form



CTEM Post-derailment & Accident Damage Inspection Form

(1 Form per Unit)

DATE: 06/07/2023 INSPECTOR: [Redacted] UNIT #: PM47
 INCIDENT #: 8674770 INCIDENT LOCATION: R04 CMR RD 514 F00

GUIDELINES:

- This form is to be used for all rail vehicles involved in derailments, accidents.
- This form is to function as a guide to assist in ensuring that all vehicles are inspected to ensure that they still meet standards for operation.
- Some reference to codes and standards may be required to complete this inspection form.
- All inspection items on this form are to be marked as:
 - ✓ = Passed
 - X = Failed
 - NA = Not Applicable
 - UC = Unable to Check

NOTE: Any items that have failed are to be documented in the "Inspection Fault Report" field included on this form.

Incident Information: (NOTE: Use blank field under each question for additional information if answered Yes.)

Did the unit contact the 3rd rail? (If Yes, where was the contact on the unit?) Yes No

Did the unit contact infrastructure such as a wall or platform? (If Yes, what was contacted?) Yes No

Did the unit contact another unit? (If Yes, what unit and where was the contact on the unit?) Yes No
 F004 was involved ~~to~~ to PM47 and the flat hit SMO1

Truck Inspection:

Roller bearings - no visual damage and in accordance with Rule 36 ✓

Roller bearings - no unusual noises; hand spun or run-by test ✓

Bearing Adapters - within wear limits and in accordance with Rule 37 ✓

Drive systems - no visual damage or leaks ✓

Side frames and bolsters - no visual damage and in accordance with Rule 47 & 48 ✓

Ride control - friction shoes & bearing adapters within limits and in accordance with Rule 46 ✓

Springs - no damage, correctly seated and in accordance with Rule 50 ✓

General - no visual damage, all components secured and in accordance with Rule 74 ✓

NOTES:

Chassis Inspection:

Chassis and sub-frames - no cracks, twists, other visual damage ✓

Center plates and side bearing - no visual damage and in accordance with Rule 60, 61, and 62 ✓

Body & decking - no structural, cladding, or decking damage ✓

Loading - load is balanced and secure ✓

Coupler and draft arrangement - no visual damage and in accordance with Rule 16 ✓

General - no visual damage, all components secured and in accordance with Rule 74 ✓

NOTES:

Document 5 – CTEM Inspection Report – PM-47, Page 1 of 2

Incident Date: 06/05/2023 Time: 21:59 hours
 Final Report – Collision
 E23377

Drafted By: SAFE 709 - 08/03/2023
 Reviewed By: SAFE 707 – 08/03/2023
 Approved By: SAFE 71 – 08/04/2023



CTEM Post-derailment & Accident Damage Inspection Form

Wheel Inspection:	
Wheels - Discoloration, cracks, spalling, and signs of movement	<input checked="" type="checkbox"/>
Gauging - Back to back measurement and in accordance with Rule 43	<input checked="" type="checkbox"/>
Gauging - Flanges & tread, and in accordance with Rule 41	<input checked="" type="checkbox"/>
General - no visual damage	<input checked="" type="checkbox"/>
NOTES:	

Brake Inspection:	
Brake rigging & cylinders - no visual damage or apparent leaks	<input checked="" type="checkbox"/>
Brake hoses & trunk lines - no visual damage or apparent leaks	<input checked="" type="checkbox"/>
Brake piping, valving and cocks - no visual damage or apparent leaks	<input checked="" type="checkbox"/>
Brake operation - passes functional test	<input checked="" type="checkbox"/>
Friction shoes - greater than 3/8" and accordance with Rule 12	<input checked="" type="checkbox"/>
Rolling brake test - unit stop as designed without locking up wheels	<input checked="" type="checkbox"/>
Hand brake - no visual damage and applies as designed	<input checked="" type="checkbox"/>
General - no visual damage, all components secured and in accordance with Rule 74	<input checked="" type="checkbox"/>
NOTES:	

Miscellaneous Equipment Inspection:	
Horn - operational	<input checked="" type="checkbox"/>
Lighting - operates as designed	<input checked="" type="checkbox"/>
Radio - perform radio check, operates as designed	<input checked="" type="checkbox"/>
Propulsion and braking controls - all controls operate as designed	<input checked="" type="checkbox"/>
Cameras - clear picture, operates as designed	<input checked="" type="checkbox"/>
Emergency equipment - Interlocks emergency valves, E-stops, etc., operate as designed	N/A
Locks & restraints - mechanical locks and restraints are in place and operate as designed	<input checked="" type="checkbox"/>
NOTES:	

Inspection Fault Report:

Can unit be returned to service? Yes No

Inspector's Signature:

Document 6 – CTEM Inspection Report – PM-47, Page 2 of 2

Incident Date: 06/05/2023 Time: 21:59 hours
 Final Report – Collision
 E23377

Drafted By: SAFE 709 - 08/03/2023
Reviewed By: SAFE 707 – 08/03/2023
Approved By: SAFE 71 – 08/04/2023



CTEM Post-derailment & Accident Damage Inspection Form

Print

(1 Form per Unit)

DATE: Jun 15, 2023	INSPECTOR: [REDACTED]	UNIT #: SM01
INCIDENT #: 8674770	INCIDENT LOCATION: K04 CM K2 314+00	

GUIDELINES:

- This form is to be used for all rail vehicles involved in derailments, accidents.
- This form is to function as a guide to assist in ensuring that all vehicles are inspected to ensure that they still meet standards for operation.
- Some reference to codes and standards may be required to complete this inspection form.
- All inspection items on this form are to be marked as:
 - ✓ = Passed
 - X = Failed
 - NA = Not Applicable
 - UC = Unable to Check

NOTE: Any items that have failed are to be documented in the "Inspection Fault Report" field included on this form.

Incident Information: (NOTE: Use blank field under each question for additional information if answered Yes.)	
Did the unit contact the 3rd rail? (If Yes, where was the contact on the unit?)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the unit contact infrastructure such as a wall or platform? (If Yes, what was contacted?)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the unit contact another unit? (If Yes, what unit and where was the contact on the unit?)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Flatcar F604 contact was on the tote boom	

Truck Inspection:	
Roller bearings - no visual damage and in accordance with Rule 36	✓ ▾
Roller bearings - no unusual noises; hand spun or run-by test	✓ ▾
Bearing Adapters - within wear limits and in accordance with Rule 37	✓ ▾
Drive systems - no visual damage or leaks	✓ ▾
Side frames and bolsters - no visual damage and in accordance with Rule 47 & 48	✓ ▾
Ride control - friction shoes & bearing adapters within limits and in accordance with Rule 46	✓ ▾
Springs - no damage, correctly seated and in accordance with Rule 50	✓ ▾
General - no visual damage, all components secured and in accordance with Rule 74	✓ ▾
NOTES:	

Chassis Inspection:	
Chassis and sub-frames - no cracks, twists, other visual damage	✓ ▾
Center plates and side bearing - no visual damage and in accordance with Rule 60, 61, and 62	✓ ▾
Body & decking - no structural, cladding, or decking damage	✓ ▾
Loading - load is balanced and secure	✓ ▾
Coupler and draft arrangement - no visual damage and in accordance with Rule 16	✓ ▾
General - no visual damage, all components secured and in accordance with Rule 74	✓ ▾
NOTES:	

Document 7 - CTEM Inspection Report SM-01, Page 1 of 2

Incident Date: 06/05/2023 Time: 21:59 hours
 Final Report – Collision
 E23377

Drafted By: SAFE 709 - 08/03/2023
 Reviewed By: SAFE 707 – 08/03/2023
 Approved By: SAFE 71 – 08/04/2023



CTEM Post-derailment & Accident Damage Inspection Form

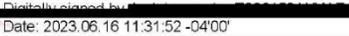
Wheel Inspection:	
Wheels - Discoloration, cracks, spalling, and signs of movement	√
Gauging - Back to back measurement and in accordance with Rule 43	√
Gauging - Flanges & tread, and in accordance with Rule 41	√
General - no visual damage	√
NOTES:	

Brake Inspection:	
Brake rigging & cylinders - no visual damage or apparent leaks	√
Brake hoses & trunk lines - no visual damage or apparent leaks	√
Brake piping, valving and cocks - no visual damage or apparent leaks	√
Brake operation - passes functional test	√
Friction shoes - greater than 3/8" and accordance with Rule 12	√
Rolling brake test - unit stop as designed without locking up wheels	√
Hand brake - no visual damage and applies as designed	√
General - no visual damage, all components secured and in accordance with Rule 74	√
NOTES:	

Miscellaneous Equipment Inspection:	
Horn - operational	√
Lighting - operates as designed	√
Radio - perform radio check, operates as designed	√
Propulsion and braking controls - all controls operate as designed	√
Cameras - clear picture, operates as designed	NA
Emergency equipment - Interlocks emergency valves, E-stops, etc., operate as designed	√
Locks & restraints - mechanical locks and restraints are in place and operate as designed	√
NOTES:	

Inspection Fault Report:
SM01 post inspection has been completed at Alexandria shop today. Mechanics performed functionality test on SM01 and confirmed that the vehicle functioned and operated normal. The major damage observed on SM01 was the auxiliary hydraulic components on the boom, which is not utilized by TRST for regular duty. Other minor damages include paint scratches and scrapes on the boom which won't affect the function of the machine.

Can unit be returned to service? Yes No

Inspector's Signature:  Digitally signed by  Date: 2023.06.16 11:31:52 -04'00'



CTEM Post-derailment & Accident Damage Inspection Form

Print

(1 Form per Unit)

DATE:	06/12/2023	INSPECTOR:	[REDACTED]	UNIT #:	F604
INCIDENT #:	8674770	INCIDENT LOCATION:	K Line Shutdown K04		

GUIDELINES:

- This form is to be used for all rail vehicles involved in derailments, accidents.
- This form is to function as a guide to assist in ensuring that all vehicles are inspected to ensure that they still meet standards for operation.
- Some reference to codes and standards may be required to complete this inspection form.
- All inspection items on this form are to be marked as:
 - ✓ = Passed
 - X = Failed
 - NA = Not Applicable
 - UC = Unable to Check

NOTE: Any items that have failed are to be documented in the "Inspection Fault Report" field included on this form.

Incident Information: (NOTE: Use blank field under each question for additional information if answered Yes.)	
Did the unit contact the 3rd rail? (If Yes, where was the contact on the unit?)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the unit contact infrastructure such as a wall or platform? (If Yes, what was contacted?) Contact was made with the wire cable walkway	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Did the unit contact another unit? (If Yes, what unit and where was the contact on the unit?) PM47 pushed flatcar F604 into SM01 which was unmanned.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Truck Inspection:	
Roller bearings - no visual damage and in accordance with Rule 36	<input checked="" type="checkbox"/> <input type="checkbox"/>
Roller bearings - no unusual noises; hand spun or run-by test	<input checked="" type="checkbox"/> <input type="checkbox"/>
Bearing Adapters - within wear limits and in accordance with Rule 37	<input checked="" type="checkbox"/> <input type="checkbox"/>
Drive systems - no visual damage or leaks	NA <input type="checkbox"/>
Side frames and bolsters - no visual damage and in accordance with Rule 47 & 48	X <input type="checkbox"/>
Ride control - friction shoes & bearing adapters within limits and in accordance with Rule 46	<input checked="" type="checkbox"/> <input type="checkbox"/>
Springs - no damage, correctly seated and in accordance with Rule 50	X <input type="checkbox"/>
General - no visual damage, all components secured and in accordance with Rule 74	X <input type="checkbox"/>
NOTES:	
Damaged was noted to side frame but was minor. Ride control spring had to be reset in holder. Center pin had fallen out due to bolster retaining plate breaking. All damage was on B-End Truck. Recommend truck replacement.	

Chassis Inspection:	
Chassis and sub-frames - no cracks, twists, other visual damage	X <input type="checkbox"/>
Center plates and side bearing - no visual damage and in accordance with Rule 60, 61, and 62	X <input type="checkbox"/>
Body & decking - no structural, cladding, or decking damage	X <input type="checkbox"/>
Loading - load is balanced and secure	X <input type="checkbox"/>
Coupler and draft arrangement - no visual damage and in accordance with Rule 16	<input checked="" type="checkbox"/> <input type="checkbox"/>
General - no visual damage, all components secured and in accordance with Rule 74	X <input type="checkbox"/>
NOTES:	
Damaged brake dead lever weldment damaged, End bulkhead suffered severe damage, Job box had shifted beyond the deck, deck damage near flagmans booth.	



CTEM Post-derailment & Accident Damage Inspection Form

Wheel Inspection:

Wheels - Discoloration, cracks, spalling, and signs of movement	√
Gauging - Back to back measurement and in accordance with Rule 43	UC
Gauging - Flanges & tread, and in accordance with Rule 41	√
General - no visual damage	X

NOTES:

Minor scuff marks to wheels noted.

Brake Inspection:

Brake rigging & cylinders - no visual damage or apparent leaks	X
Brake hoses & trunk lines - no visual damage or apparent leaks	√
Brake piping, valving and cocks - no visual damage or apparent leaks	X
Brake operation - passes functional test	X
Friction shoes - greater than 3/8" and accordance with Rule 12	√
Rolling brake test - unit stop as designed without locking up wheels	√
Hand brake - no visual damage and applies as designed	X
General - no visual damage, all components secured and in accordance with Rule 74	X

NOTES:

Brake beam was broken where hand brake is attached, noted old damage to brake piping, hand brake inoperative, see note in chassis.

Miscellaneous Equipment Inspection:

Horn - operational	√
Lighting - operates as designed	√
Radio - perform radio check, operates as designed	NA
Propulsion and braking controls - all controls operate as designed	X
Cameras - clear picture, operates as designed	NA
Emergency equipment - Interlocks emergency valves, E-stops, etc., operate as designed	√
Locks & restraints - mechanical locks and restraints are in place and operate as designed	√

NOTES:

K04, CM K2 314+00, REPORT OF PM 47 COLLIDED WITH SM01 FLAG MAN INJURED. Hand brake damaged.

Inspection Fault Report:

Can unit be returned to service? Yes No

Inspector's Signature: [REDACTED]

Document 10 - CTEM Inspection Report F604 - Page 2 of 2

Incident Date: 06/05/2023 Time: 21:59 hours
 Final Report – Collision
 E23377

Drafted By: SAFE 709 - 08/03/2023
 Reviewed By: SAFE 707 – 08/03/2023
 Approved By: SAFE 71 – 08/04/2023

Appendix D – Maximo Work Orders



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

Page 1 of 1
MX76PROD

Work Order #: 17943384
Type: CM



Status: COMP
06/14/2023 21:01

Work Description: K04/K05 Safety request Radio Operational Test on K05 Platform, extend test to K05 both Tracks
Job Plan Description:

Work Information										
Asset: 60335	RADIO, CRCS, REMOTE SITE, T38	Owning Office: COMM-TSSM-RADO	Parent:							
Asset Tag:		Maintenance Office: COMM-TSSM-RADO	Create Date: 06/14/2023 13:54							
Asset S/N: CRCRST38		Labor Group: COMMR3RADO	Actual Start: 06/14/2023 21:01							
Location: 3952	T38, CARMEN TURNER FACILITY, BUILDING (G) SVMT BODY, 2ND FLOOR	Crew:	Actual Comp: 06/14/2023 21:01							
Work Location:		Lead: [REDACTED]	Item: N60040086							
Failure Class: COMR003	RADIO COMMUNICATIONS SYSTEMS	GL Account: WMATA-02-33540-50499280-042-*****-OPR**	Target Start:							
Problem Code: 3541	NO TX AUDIO	Supervisor:	Target Comp:							
Requested By: 55385		Requestor Phone: [REDACTED]	Scheduled Start:							
Chain Mark Start:		Chain Mark End:								
Create-Mileage: 0.0		Complete-Mileage: 0.0								
Task IDs										
Task ID										
10	RADIO CHECKS									
TECHS: [REDACTED] PERFORMED RADIO CHECKS AT K05 PLATFORM TRACK 1 AND 2 SIDES OF PLATFORM ALL RADIO CHECKS PERFORMED WERE LOUD AND CLEAR.										
Component:	Work Accomp:	Reason:	Status: COMP	Position:	Warranty?: N					
Actual Labor										
Task ID	Labor	Start Date	End Date	Start Time	End Time	Approved?	Regular Hours	Premium Hours	Line Cost	
10	[REDACTED]	06/14/2023	06/14/2023	18:00	20:00	Y	02:00	00:00	\$93.20	
10	[REDACTED]	06/14/2023	06/14/2023	18:00	20:00	Y	02:00	00:00	\$96.41	
							Total Actual Hour/Labor:	04:00	00:00	\$189.61
Failure Reporting										
Cause	Remedy	Supervisor	Remark	Date						
2500	NO PROBLEM FOUND	3191	TESTED - NO TROUBLE FOUND	06/14/2023						
Remarks: RADIO CHECKS LOUD AND CLEAR										

Document 11 – COMR Work Order – 17943384

Incident Date: 06/05/2023 Time: 21:59 hours
Final Report – Collision
E23377

Drafted By: SAFE 709 - 08/03/2023
Reviewed By: SAFE 707 – 08/03/2023
Approved By: SAFE 71 – 08/04/2023

Appendix E – Safety Stand Down Bulletin – Mitigation Actions



OFFICE OF TRACK AND STRUCTURES MAINTENANCE MAINTENANCE BULLETIN/SAFETY BULLETIN

MB/SB#: 20230606-57
TITLE: Critical Reminder of Safety Rules and Procedures to Prevent Roadway Safety Incidents
PURPOSE: To notify personnel of mitigation actions developed following the recent collisions and derailments on the roadway.
APPLIES TO: All Office of Track and Structures Maintenance

This Safety Bulletin addresses the recent major safety incidents that have occurred on the roadway, to include recent collisions and derailments of roadway repair and maintenance vehicles. This Safety Bulletin provides required mitigation actions developed following these safety incidents.

As a reminder: All personnel when working on the roadway are required to adhere to the rules, standard operation procedures and safety precautions documented in the WMATA Metrorail Safety Rules and Procedures Handbook (MSRPH). Due to the recent safety incidents, this Safety Bulletin serves as a critical reminder to adhere to the following specific mitigation actions, safety procedures and precautions.

1. Maintain positive communication between the Advanced Mobile Flagger Action (Flag Man) and the equipment operator by using hand signaling. If the operator does not receive positive communication, they are to **STOP AND HOLD** until communication is received.
2. Bring back all equipment to the platform or primary briefing area at the end of each shift.
3. If vehicles cannot be returned to the platform, they are to be secured by wheel chocks and lighted using a strobe or other means of visual indication.
4. Chain Marker Location of any parked vehicles must be shared during Roadway Worker In Charge (RWIC) handoff, and then shared at the daily work briefing.
5. No vehicles shall be parked in a **HOT SPOT**, unless personnel are actively working.
6. Chairs and other distractions shall be removed from the Flag Man cab. Each cab is equipped with a bench positioned by the brake dump valve.
7. Cut rail should be visually marked, with paint and strobe lights 150 feet in advance of the cut.

The impending shutdown requires that roadway workers maintain a maximum level of safety awareness and extra care and alertness due to the increased number of roadway projects.

Adherence to all safety procedures, especially the above mitigation actions, will prevent injuries, save lives and prevent damage to roadway equipment. Failure to adhere to safety rules and procedures may result in disciplinary action, to include termination.

TRST-MB/SB-20230606-57

Document 12 – Safety Stand-Down Bulletin – Mitigation Actions, Page 1 of 1

Appendix F – Mobile Command Incident Report

<h2 style="margin: 0;">MCC Incident Information Sheet</h2>		
MCC Supervisor: [REDACTED]	Date: 5-Jun	
Reported incident: Vehicle Collision		
Reported By: [REDACTED] Unit # [REDACTED]		
Chain Marker: 314+20		
Track: 2		
Closest Station: East Falls Church (K05)		
Time: 22:01		
Injuries? Y/N: Y		
Nature of Injuries: Knee injury		
Medical Requested? Y/N: Y		
Was Medical Treatment Declined? Y/N: N		
Was Individual Transported? Y/N: Y		
Name of Hospital: Virginia Hospital Center		EMS Unit Number: 106
Supervisor(s) on scene: [REDACTED]		
Equipment Involved: PM-47 with a flat car attached and SM-01		
Notifications:		Chain of Command Notifications:
ROCC (Asst. Super): [REDACTED]	Time: 22:15	[REDACTED] Time: 23:01
Medical (ROIC): [REDACTED]	Time: 22:11	[REDACTED] Time: N/A
MOC (Asst. Super): [REDACTED]	Time: 22:30	[REDACTED] Time: N/A
On Call Safety Officer: [REDACTED]	Time: 22:35	[REDACTED] Time: N/A
Name and Unit # [REDACTED]		[REDACTED] Time: N/A
Incident Chronology:		
At 22:01 Track Unit # [REDACTED] reported PM-47 was pushing a flat car when it collided with SM-01 which		
was stationary and unmanned at chain marker K2 314+20. The operator aboard PM-47 [REDACTED] was removed		
from service and transported for a post incident urine analysis. The flagman for PM-47 [REDACTED] sustained		
an injury to both knees and was transported by ambulance to Virginia Hospital Center for treatment. Track Unit [REDACTED] also		
reported the collision damaged SM-01's boom, the flat sustained front end damage and the rear axel was pushed into a		
section of running rail that was removed. All concerned personnel have been notified.		

Document 13 – Mobile Command Incident Report, Page 1 of 1

Incident Date: 06/05/2023 Time: 21:59 hours
 Final Report – Collision
 E23377

Drafted By: SAFE 709 - 08/03/2023
 Reviewed By: SAFE 707 – 08/03/2023
 Approved By: SAFE 71 – 08/04/2023

Appendix G – Roadway Job Safety Briefing – Toolbox Talk

WMATA Roadway Job Safety Briefing Form

This form must be completed legibly and accurately and be retained and made available for inspection for a period of 90 days.

Part 2: RWP Briefing, continued:

12	Power Outage: Red Tag <input checked="" type="checkbox"/> Supervisory <input type="checkbox"/>	Hot Sticking Chain Markers:		
	Red/Supervisory Tag #: [REDACTED]			
	Red/Supervisory Tag Holder: <i>Mobil Command</i>			
Insulated Mat(s) Color				
Blue <input type="checkbox"/> Red <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Yellow <input type="checkbox"/>				
WSAD Certification Due		WSAD Serial #/Asset ID	WSAD Certification Due	WSAD Serial #/Asset ID
/ /			/ /	
/ /			/ /	
Will a Piggyback Crew(s) be Working Within Your Working Limits? Yes <input type="checkbox"/> No <input type="checkbox"/>				
13 Crew Leader/EIC Call #(s):			Piggyback Work Area Chain Markers:	

Part 3: Good Faith Challenge: The following must be read aloud by the RWIC to the Roadway Workers.
 "WMATA guarantees each Roadway Worker the right to challenge, in good faith, the effectiveness of the Roadway Worker Protection being provided. The Roadway Worker making the challenge, and those that are sympathetic to the challenge, shall remain clear of the roadway until the challenge has been resolved."

RWP Issues:	Worker Name(s):
Was the GFC Issue Resolved? Yes <input type="checkbox"/> No <input type="checkbox"/>	

Part 4: Roadway Worker Acknowledgement
 "I understand and agree with all aspects of the Roadway Job Safety Briefing I just received. I am adequately protected from any train movement or roadway hazards. I understand I have a responsibility to conduct myself in a safe manner at all times."
ROADWAY WORKERS HAVE THE RIGHT AND RESPONSIBILITY TO INITIATE A GOOD FAITH CHALLENGE WHEN NECESSARY

Roadway Worker Signature	Employee ID #	Crew Leader/EIC Signature	Crew Leader/EIC Employee ID #
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

Part 5: RWIC Signature(s)

Additional RWIC Comments:

RWIC Signature:	RWIC Employee ID #:	Date: / /
Relieving RWIC Name:	Relieving RWIC Employee ID #:	
Relieving RWIC Signature:	Date/Time: / / , :	
Relieving RWIC Call #:	Relieving RWIC Cell Phone #:	

FORM SAFY-SRM-001-00

Document 14 - Roadway Job Safety Briefing – Toolbox Talk Form, Page 1 of 4

Incident Date: 06/05/2023 Time: 21:59 hours
 Final Report – Collision
 E23377

Drafted By: SAFE 709 - 08/03/2023
 Reviewed By: SAFE 707 – 08/03/2023
 Approved By: SAFE 71 – 08/04/2023

WMATA Roadway Job Safety Briefing Form

This form must be completed legibly and accurately and be retained and made available for inspection for a period of 90 days.



Part 2: RWP Briefing, continued:

12	Power Outage: Red Tag <input checked="" type="checkbox"/> Supervisory <input type="checkbox"/>	Hot Sticking Chain Markers:		
	Red/Supervisory Tag #:			
	Red/Supervisory Tag Holder: <i>Mobile Command</i>			
	Insulated Mat(s) Color Blue <input type="checkbox"/> Red <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Yellow <input type="checkbox"/>			
	WSAD Certification Due	WSAD Serial #/Asset ID	WSAD Certification Due	WSAD Serial #/Asset ID
	/ /		/ /	
	/ /		/ /	
13	Will a Piggyback Crew(s) be Working Within Your Working Limits? Yes <input type="checkbox"/> No <input type="checkbox"/>			
	Crew Leader/EIC Call #(s):	Piggyback Work Area Chain Markers:		
	Piggyback Work Assignment(s):			

Part 3: Good Faith Challenge: The following must be read aloud by the RWIC to the Roadway Workers.
 "WMATA guarantees each Roadway Worker the right to challenge, in good faith, the effectiveness of the Roadway Worker Protection being provided. The Roadway Worker making the challenge, and those that are sympathetic to the challenge, shall remain clear of the roadway until the challenge has been resolved."

RWP Issues:	Worker Name(s):
	Was the GFC Issue Resolved? Yes <input type="checkbox"/> No <input type="checkbox"/>

Part 4: Roadway Worker Acknowledgement

"I understand and agree with all aspects of the Roadway Job Safety Briefing I just received. I am adequately protected from any train movement or roadway hazards. I understand I have a responsibility to conduct myself in a safe manner at all times."
ROADWAY WORKERS HAVE THE RIGHT AND RESPONSIBILITY TO INITIATE A GOOD FAITH CHALLENGE WHEN NECESSARY

Worker Signature	Employee ID #	Crew Leader/EIC Signature	Crew Leader/EIC Employee ID #
[Redacted Signature Area]			

Part 5: RWIC Signature

Additional RWIC Comments:

RWIC Signature:	RWIC Employee ID #:	Date: / /
Relieving RWIC Name:	Relieving RWIC Employee ID #:	Date/Time: / / , :
Relieving RWIC Signature:	Relieving RWIC Cell Phone #:	
Relieving RWIC Call #:		

WMATA SAFETY-SRM-001-00

Document 15 - Roadway Job Safety Briefing – Toolbox Talk Form, Page 2 of 4

Incident Date: 06/05/2023 Time: 21:59 hours
 Final Report – Collision
 E23377

Drafted By: SAFE 709 - 08/03/2023
 Reviewed By: SAFE 707 – 08/03/2023
 Approved By: SAFE 71 – 08/04/2023

WMATA Roadway Job Safety Briefing Form

This form must be completed legibly and accurately and be retained and made available for inspection for a period of 90 days.



Part 2: RWP Briefing, continued:

12	Power Outage: Red Tag <input type="checkbox"/> Supervisory <input type="checkbox"/>	Hot Sticking Chain Markers:		
	Red/Supervisory Tag #:			
	Red/Supervisory Tag Holder:			
	Insulated Mat(s) Color Blue <input type="checkbox"/> Red <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Yellow <input type="checkbox"/>			
	WSAD Certification Due	WSAD Serial #/Asset ID	WSAD Certification Due	WSAD Serial #/Asset ID
	/ /	/ /	/ /	/ /
	/ /	/ /	/ /	/ /
Will a Piggyback Crew(s) be Working Within Your Working Limits? Yes <input type="checkbox"/> No <input type="checkbox"/>				
13	Crew Leader/EIC Call #(s):	Piggyback Work Area Chain Markers:		
	Piggyback Work Assignment(s):			

Part 3: Good Faith Challenge: The following must be read aloud by the RWIC to the Roadway Workers.

"WMATA guarantees each Roadway Worker the right to challenge, in good faith, the effectiveness of the Roadway Worker Protection being provided. The Roadway Worker making the challenge, and those that are sympathetic to the challenge, shall remain clear of the roadway until the challenge has been resolved."

RWP Issues:	Worker Name(s):
Was the GFC Issue Resolved? Yes <input type="checkbox"/> No <input type="checkbox"/>	

Part 4: Roadway Worker Acknowledgement

"I understand and agree with all aspects of the Roadway Job Safety Briefing I just received. I am adequately protected from any train movement or roadway hazards. I understand I have a responsibility to conduct myself in a safe manner at all times."

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

Roadway Worker Signature	Employee ID #	Roadway Worker Signature	Employee ID #	Crew Leader/EIC Signature	Crew Leader/EIC Employee ID #

Part 5: RWIC Signature(s)

Additional RWIC Comments:		
RWIC Signature:	RWIC Employee ID #:	Date: / /
Relieving RWIC Name:	Relieving RWIC Employee ID #:	Date/Time: / / : :
Relieving RWIC Signature:	Relieving RWIC Cell Phone #:	
Relieving RWIC Call #:		

FORM-SAFE-SRM-001-00

FORM-SAFE-SRM-001-00

Document 16 - Roadway Job Safety Briefing – Toolbox Talk Form, Page 3 of 4

WMATA Roadway Job Safety Briefing Form



This form must be completed legibly and accurately and be retained and made available for inspection for a period of 90 days.

Part 2: RWP Briefing, continued:

12	Power Outage: Red Tag <input type="checkbox"/> Supervisory <input type="checkbox"/>		Hot Sticking Chain Markers:	
	Red/Supervisory Tag #:			
	Red/Supervisory Tag Holder:			
	Insulated Mat(s) Color Blue <input type="checkbox"/> Red <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Yellow <input type="checkbox"/>			
	WSAD Certification Due	WSAD Serial #/Asset ID	WSAD Certification Due	WSAD Serial #/Asset ID
	/ /		/ /	
	/ /		/ /	
13	Will a Piggyback Crew(s) be Working Within Your Working Limits? Yes <input type="checkbox"/> No <input type="checkbox"/>			
	Crew Leader/EIC Call #(s):		Piggyback Work Area Chain Markers:	
	Piggyback Work Assignment(s):			

Part 3: Good Faith Challenge: The following must be read aloud by the RWIC to the Roadway Workers.

"WMATA guarantees each Roadway Worker the right to challenge, in good faith, the effectiveness of the Roadway Worker Protection being provided. The Roadway Worker making the challenge, and those that are sympathetic to the challenge, shall remain clear of the roadway until the challenge has been resolved."

RWP Issues:	Worker Name(s):
	Was the GFC Issue Resolved? Yes <input type="checkbox"/> No <input type="checkbox"/>

Part 4: Roadway Worker Acknowledgement

"I understand and agree with all aspects of the Roadway Job Safety Briefing I just received. I am adequately protected from any train movement or roadway hazards. I understand I have a responsibility to conduct myself in a safe manner at all times."

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

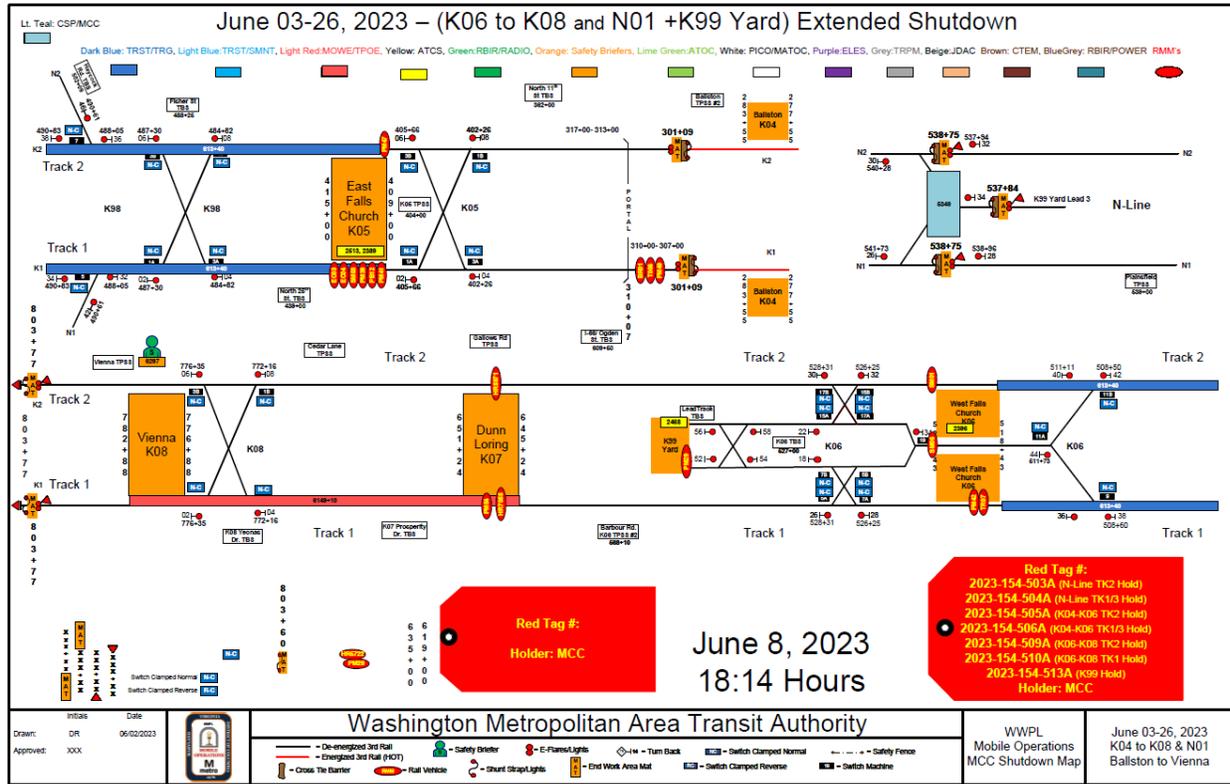
Roadway Worker Signature	Employee ID #	Roadway Worker Signature	Employee ID #	Crew Leader/EIC Signature	Crew Leader/EIC Employee ID #
[Redacted]					

Part 5: RWIC Signature(s)

Additional RWIC Comments:			
RWIC Signature:		RWIC Employee ID #:	Date: / /
Relieving RWIC Name:		Relieving RWIC Employee ID #:	
Relieving RWIC Signature:		Date/Time: / / , :	
Relieving RWIC Call #:		Relieving RWIC Cell Phone #:	

WMATA SAFE 58M-001-00

Appendix H – Map of Shutdown Work Area

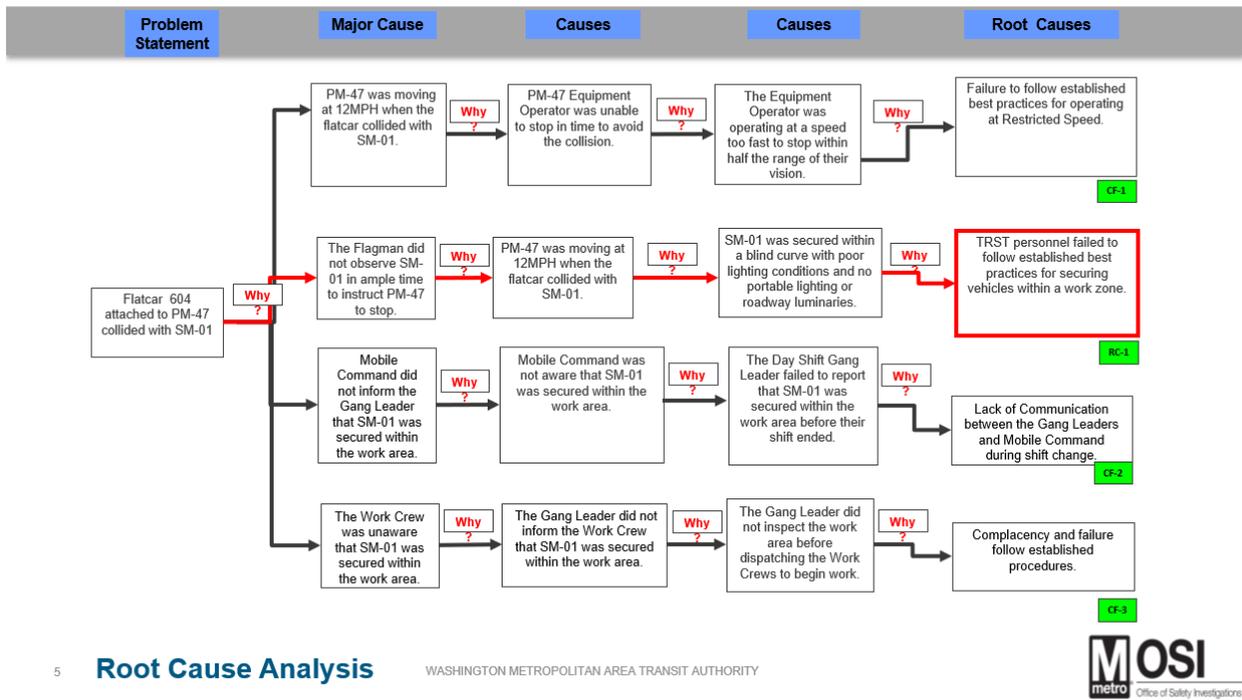


Document 18 - Map of the Orange and Silver Line Extended Shutdown (Summer Construction) work area

Incident Date: 06/05/2023 Time: 21:59 hours
 Final Report – Collision
 E23377

Drafted By: SAFE 709 - 08/03/2023
 Reviewed By: SAFE 707 – 08/03/2023
 Approved By: SAFE 71 – 08/04/2023

Appendix I – Why-Tree Analysis



5

Root Cause Analysis

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

