



WMSC Commissioner Brief: W-0135 – Red Signal Overrun – Cheverly Station – July 30, 2021

Prepared for Washington Metrorail Safety Commission meeting on December 7, 2021

Safety event summary:

An Equipment Operator operating Prime Mover (PM) 47 as part of a convoy block overran a red signal outside Cheverly Station at approximately 12:25 a.m. on July 30, 2021. This triggered an alarm in the Rail Operations Control Center (ROCC), however the Equipment Operator initially stated when contacted by a ROCC controller approximately 14 minutes later that they had not passed the red signal. Metrorail Safety Department personnel responded to the scene and confirmed that the vehicle had overran the signal. Metrorail requires operators to stop no closer than 10 feet from a red signal. This vehicle stopped with the front of the vehicle beyond the red signal, and the front wheel beyond the insulated joint that delineates the track circuit area protected by the signal.

Analysis of track circuit occupancy data demonstrates that PM 47, the trailing unit in the convoy block, was moving an average of 20 mph prior to the red signal overrun. Even this average is 33 percent faster than the maximum authorized speed in a convoy block of 15 mph. Operators in a convoy block are also required to be prepared to stop within half the distance of vision. Other vehicles in the convoy block were moving at similar speeds.

A convoy block allows a group of Roadway Maintenance Machines (RMMs) to travel together with adequate spacing between them.

As the last vehicle in the block, the Equipment Operator of PM 47 was required to report when clear of each interlocking and station. At each interlocking, each vehicle had to wait for the signal to return from red, or stop, to lunar, or proceed, prior to continuing. Outside Cheverly Station, the Equipment Operator stated in an interview that they accelerated to approximately 25 mph to 30 mph, looked at their gauges and looked back at the flatcar attached to their vehicle, then looked up and saw the red signal due to the vehicle in front of them still being in the interlocking. The Equipment Operator stated that they applied emergency brakes and stopped the vehicle abruptly. The Equipment Operator stated that they did not know the maximum speed in a convoy block.

When the ROCC grants permission to move in a convoy block, the ROCC controller typically provides a reminder of “safe speed and safe traveling distance,” this does not include specific speeds (15 mph) or a reference to procedures.

Metrorail did not perform post-event drug and alcohol testing of the Equipment Operator as required by its policies, despite the operator being removed from service and sent to the testing site. Testing site personnel identified a paperwork error with a box incorrectly checked that the operator was discounted from contributing to the event, and did not test the operator under WMATA’s authority as required by Metrorail policy despite the written comments on the form clearly stating that the supervisor did not have enough information to determine that the employee’s performance could be completely discounted.

Probable Cause:

The probable cause of this event was Metrorail’s lack of supervisory oversight and efficiency testing to ensure that convoy block procedures are understood and consistently followed.



Corrective Actions:

Metrorail's Safety Department distributed a safety bulletin on convoy block movement.

The Equipment Operator received refresher training on convoy block movement.

Track and Structures is developing a departmental procedure to ensure drug and alcohol testing is completed as required by Metrorail policy.

Metrorail is required to address its inconsistent implementation of post-event testing in response to WMSC Fitness for Duty Audit Finding 7 issued on August 31, 2021.

Metrorail must also address Equipment Operator training in response to RMM Audit findings issued in 2021, and fatigue policy compliance in response to other findings in the Fitness for Duty Audit and other open CAPs.

WMSC staff observations:

Metrorail could consider speed reminders when granting convoy blocks, and additional, recurring training, supervisory oversight and compliance monitoring to ensure safety procedures such as speed in convoy blocks are consistently followed.

The investigation identified potential performance risks related to fatigue for the Equipment Operator over the days leading up to this event. Metrorail is required to address fatigue policy compliance under existing CAPs.

A ROCC Assistant Superintendent improperly stated that the vehicle could be moved prior to required investigative activities. This improper movement outside of Metrorail's investigation procedures was prevented due to Safety Department personnel on scene and additional communications between the WMSC and SAFE personnel.

Staff recommendation: Adopt final report.



Washington Metro Area Transit Authority
Department of Safety and Environmental
Management (SAFE)
FINAL REPORT OF INVESTIGATION A&I E21332

Date of Event:	07/30/2021
Type of Event:	Red Signal Overrun
Incident Time:	00:25 hours
Location:	Outside of Cheverly Station at D11-08 Signal.
Time and How received by SAFE:	00:25 hours. SAFE/IMO In-Person Notification
WMSC Notification Time:	02:23 hours
Responding Safety Officers:	WMATA: Yes WMSC: Yes Other: No
Rail Vehicle:	Prime Mover (PM) 47 - Flatcar (F) 608
Injuries:	No
Damage:	No
Emergency Responders:	TRST, ATC, SAFE, WMSC
SMS I/A Incident Number:	20210730#94743MX

Outside of Cheverly Station at D11-08 Signal
Red Signal Overrun
July 30, 2021
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Abbreviations and Acronyms

AIMS	Advanced Information Management System
ARS	Audio Recording System
ATC	Automatic Train Control
ATCE	Automatic Train Control Engineering
ATCM	Automatic Train Control Maintenance
CAP	Corrective Action Plan
CCTV	Closed-Circuit Television
COMM	Office of Systems Maintenance Communication Section
CTEM	Car Track Equipment Maintenance
ESR	Event Scene Release
FTA	Federal Transit Administration
IJ	Insulated Joint
IMO	Incident Management Official
ITSS	Office of IT Systems & Software
MSRPH	Metrorail Safety Rules and Procedures Handbook
NOAA	National Oceanic and Atmospheric Administration
OHAW	Office of Occupational Health and Wellness
PM	Prime Mover
RTC	Rail Traffic Controller
RTRA	Office of Rail Transportation
ROCC	Rail Operations Control Center
SAFE	Department of Safety and Environmental Management
SAFTE-FAST	Sleep Activity Fatigue Task Effectiveness-Fatigue Avoidance Scheduling Tool
SMS	Safety Measurement System
SOP	Standard Operating Procedure
TRST	Office of Track and Structures
WMATA	Washington Metropolitan Area Transit Authority
WMSC	Washington Metrorail Safety Commission

Executive Summary

On Friday, July 30, 2021, at approximately 00:25 hours, on the D-Line Line Track 2, Office of Track and Structures (TRST) PM 47 Equipment Operator operating Prime Mover 47 (PM 47) pulling Flatcar 608 (F608) overran the D11-08 signal displaying a red aspect. As a result, the Rail Operations Control Center (ROCC) initiated emergency notifications to the respective internal departments for support during investigative efforts. Personnel responded to the incident scene, including representatives from Automatic Train Control Maintenance (ATCM) and the Department of Safety and Environment Management (SAFE).

Upon further investigation, Audio Recording System (ARS) playback revealed that at approximately 00:39 hours, the ROCC Radio Rail Traffic Controller (RTC) contacted PM 47 Equipment Operator and asked, "Have you passed the D11-08 signal displaying a red aspect?" The PM 47 Equipment Operator stated they were on the Insulated Joint (IJ) but did not pass the signal. At approximately 01:32 hours, personnel from ATCM and SAFE arrived to investigate. At approximately 01:57 hours, the ROCC Assistant Superintendent notified a TRST Supervisor and reported that SAFE is on scene and classified this incident as a Red Signal Overrun. There were no injuries or equipment damage reported as a result of this incident. SAFE's Incident Management Official (IMO) notified the Washington Metropolitan Safety Commission (WMSC) and obtained an Event Scene Release (ESR) on Friday, July 30, 2021, at approximately 02:16 hours.

The probable cause of the Red Signal Overrun event on July 30, 2021, was human performance difficulty and lack of procedural adherence from the PM 47 Equipment Operator. The PM 47 Equipment Operator involved in this incident experienced a lack of situational awareness and failed to reduce their speed and keep their vehicle under control, subsequently resulting in the rail vehicle crossing the IJ and violating the D11-08 signal displaying a red aspect. A contributing factor to this incident was failure to comply with convoy block procedures stated in the Metrorail Safety Rules, and Procedures Handbook (MSRPH), Standard Operating Procedure (SOP) 15.5.9.10, which states, "Operators shall travel at restricted speed, i.e., speed not to exceed 15 mph, prepared to stop within half the distance of vision."

Incident Site

The incident area is located at CM 430+70 at D11-08 Signal, in approach to Cheverly Station, Track 2.

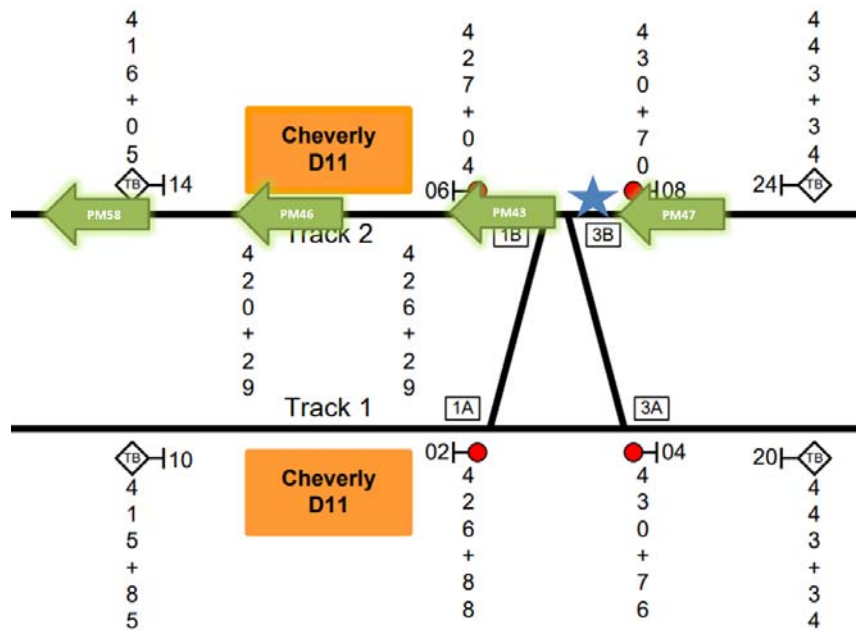


Diagram 1 – PM 47 was the last unit in a convoy block with PM58, PM46 and PM 43.

Purpose and Scope

The purpose of this incident 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.

Investigation Methods

The investigative methodologies included the following:

- Site assessment on the night of the incident
- Formal Interview – SAFE performed one interview as part of this investigation. SAFE interviewed:
 - TRST-Equipment Operator A
- Informal Interviews – Collected through conversations with individuals during the investigation to provide background and supporting information.
- Documentation Review – A collection of relevant work history information and process documentation in Metro systems of record. These records include:
 - Employee Training Procedures & Records
 - Certification
 - The 7-Day work history review
 - Metrorail Safety Rules and Procedures Handbook (MSRPH)
 - National Oceanic and Atmospheric Administration (NOAA)

- Rail Operations Control Center (ROCC) Procedures Manual Review
 - Office of Systems Maintenance Communication Section (COMM)
 - Automatic Train Control Maintenance (ATCM) Data Review
 - Automatic Train Control Engineering (ATCE) Data Review
 - Office of IT Systems & Software (ITSS) Data Review
 - Car Track Equipment Maintenance (CTEM) Inspection Data Review
 - Office of Track and Structures (TRST) Inspection Data Review
 - Maximo
- System Data Recording Review – A collection of information contained in WMATA Data Recording Systems. This data includes:
 - Audio Recording System (ARS) playback [Radio and Phone Communications]
 - Advanced Information Management System (AIMS)
 - General Orders and Track Rights System (GOTRS)
 - Closed-Circuit Television (CCTV)

Investigation

On Friday, July 30, 2021, at approximately 00:25 hours EDT, on Track D2, PM 47 Equipment Operator operating PM 47 pulling Flatcar 608 violated D11-08 signal displaying a red aspect. There were no injuries or equipment damage reported as a result of this incident.

Based on the Advanced Information Management System (AIMS) display, at approximately 00:19 hours, PM 58 was leading convoy block plus three, with PM 47 being the last unit coming from New Carrollton Yard, traveling to Benning Road Station, Track 2. As the last unit in the convoy, the PM 47 Equipment Operator was responsible for reporting clear of each interlocking and station. As designed, each time a rail vehicle passed D11-08 displaying a lunar signal, the D11-08 signal changed to a red signal until the previous unit cleared the interlocking, requiring each unit to stop until the signal reset to a lunar. Once the signal reset, another vehicle would be allowed to proceed. The second and third units in the convoy stopped and waited for the signal to reset to a lunar aspect (*see AIMS display diagrams 1 through 3*). Due to a switch problem in the area, the switches associated with the D11-08 signal were clamped in the normal position.

The Office of IT Systems & Software (ITSS) track circuit occupancy chart revealed a calculation of the average speed of PM 47 before it violated the red signal D11-08. Based on the AIMS display, PM 47 was shunting reliably, and occupancy data showed the unit traveled 5,187 feet in 187 seconds, for an average speed of 20 mph. (*see Diagram 4*). **Note:** A speed calculation for PM 58, PM 46, and PM 43 was requested; only the speed calculation for the incident vehicle PM 47 was provided.

ATCM personnel conducted a visual inspection of the incident area and determined there was no damage to any ATCM equipment. Based on Automatic Train Control Engineering (ATCE) data analysis, the Automatic Train Control (ATC) system confirmed that PM 47 violated D11-08 signal displaying a red aspect. Additionally, track circuit 3BAT showed occupied, as PM 47 crossed the IJ at D11-08 signal displaying a red aspect and occupied the Cheverly Station interlocking.

During the virtual interviews, the PM 47 Equipment Operator stated that they saw the rail vehicle in front of them, PM 43, going through the interlocking and had a lunar signal at D11-08. The PM 47 Equipment Operator said they released the brake and returned to operating speed between 25 mph to 30 mph. The PM 47 Equipment Operator stated that they checked their gauges and looked back at the flat to make sure nothing was moving, and when they turned around, the D11-

08 signal was red. The PM 47 Equipment Operator stated they dumped the brakes to put the rail vehicle brakes in an emergency application, causing PM 47 to stop abruptly. When the unit came to rest, their first set of wheels on the rail vehicle crossed the IJ.

As a result of this event, Car Track Equipment Maintenance (CTEM) performed a post-incident inspection of the affected PM 47, found no anomalies, and reported that all systems were functioning as designed. The ROCC removed the PM 47 Equipment Operator from service for post-incident toxicology testing. There were no injuries or equipment damage reported as a result of this incident. SAFE's Incident Management Official (IMO) notified the Washington Metropolitan Safety Commission (WMSC) and obtained an Event Scene Release (ESR) on Friday, July 30, 2021, at approximately 02:16 hours.

Chronological Event Timeline

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

Time	Description
23:09:01 hours	<u>PM 43 Equipment Operator</u> : Notified the New Carrollton Interlocking Operator and reported they were holding behind the D99-82 signal and were ready to enter the mainline to operate to their work location. <u>New Carrollton Interlocking Operator</u> : Acknowledged. [Yard Ops]
23:12:17 hours	<u>PM46 Equipment Operator</u> : Notified the New Carrollton Interlocking Operator and reported they were holding behind the D99-82 signal and ready to enter the mainline to operate to their work location at D98 D&G Junction Track 2. <u>New Carrollton Interlocking Operator</u> : Acknowledged. [Yard Ops]
23:21:23 hours	<u>PM 47 Equipment Operator</u> : Notified the New Carrollton Interlocking Operator and reported they were holding behind the D99-82 signal and were ready to enter the mainline to operate to their work location. <u>New Carrollton Interlocking Operator</u> : Acknowledged. [Yard Ops]
23:31:49 hours	<u>PM58 Equipment Operator</u> : Notified the New Carrollton Interlocking Operator and reported they were holding behind the D99-82 signal and ready to enter mainline and requested a lead to operate to Eastern Market Station work location. <u>New Carrollton Interlocking Operator</u> : Acknowledged. [Yard Ops]
23:51:11 hours	<u>New Carrollton Interlocking Operator</u> : Notified PM58 Equipment Operator and stated "verify your lunar at the D99-82 signal with an absolute block to clear the D99-20 signal." <u>PM58 Equipment Operator</u> : Acknowledged. [Yard Ops]
23:54:42 hours	<u>PM58 Equipment Operator</u> : Notified the New Carrollton Interlocking Operator and reported they cleared the D99-20 signal. <u>New Carrollton Interlocking Operator</u> : Acknowledged. [Yard Ops]
23:55:03 hours	<u>New Carrollton Interlocking Operator</u> : Notified PM46 Equipment Operator and instructed them to "verify your lunar at D99-86 signal with an absolute block to clear the D99-20 signal." <u>PM46 Equipment Operator</u> : Acknowledged. [Yard Ops]
23:58:28 hours	<u>PM58 Equipment Operator</u> : Notified the ROCC Radio RTC and reported PM58 plus three are holding at New Carrollton Station, Track 2 requesting a lead to Eastern Market Station, Track 2 work location. <u>ROCC Radio RTC</u> : Acknowledged and instructed PM58 to standby. [Ops 2]

Time	Description
23:59:41 hours	<u>PM46 Equipment Operator:</u> Notified the New Carrollton Interlocking Operator and reported they cleared the D99-20 signal. <u>New Carrollton Interlocking Operator:</u> Acknowledged. [Yard Ops]
00:00:01 hours	<u>New Carrollton Interlocking Operator:</u> Notified PM 43 Equipment Operator and instructed them to “verify your lunar at D99-82 signal with an absolute block to clear the D99-20 signal.” <u>PM 43 Equipment Operator:</u> Acknowledged. [Yard Ops]
00:00:26 hours	<u>PM46 Equipment Operator:</u> Notified the ROCC Radio RTC and reported they were holding as the second unit in convoy block at New Carrollton Station, Track 2, requesting a lead to the D&G Junction D98 work location. <u>ROCC Radio RTC:</u> Responded, “are you comfortable being the second unit in a convoy block following convoy procedures.” <u>PM46 Equipment Operator:</u> Responded, “yes.” [Ops 2]
00:03:30 hours	<u>PM 43 Equipment Operator:</u> Notified the New Carrollton Interlocking Operator and reported they cleared the D99-20 signal. <u>New Carrollton Interlocking Operator:</u> Acknowledged. [Yard Ops]
00:03:52 hours	<u>New Carrollton Interlocking Operator:</u> Notified PM 47 Equipment Operator and instructed them to “verify your lunar at D99-82 signal with an absolute block to clear the D99-20 signal.” <u>PM 47 Equipment Operator:</u> Acknowledged. [Yard Ops]
00:04:26 hours	<u>PM 43 Equipment Operator:</u> Notified the ROCC Radio RTC and reported they were holding as the third unit in the convoy block at New Carrollton Station, Track 2, requesting a lead to the work location. <u>ROCC Radio RTC:</u> Responded, “are you comfortable being the third unit in a convoy block following convoy procedures?” <u>PM 43 Equipment Operator:</u> Responded, “yes.” [Ops 2]
00:09:46 hours	<u>PM 47 Equipment Operator:</u> Notified the New Carrollton Interlocking Operator and reported they cleared the D99-20 signal. <u>New Carrollton Interlocking Operator:</u> Acknowledged. [Yard Ops]
00:10:23 hours	<u>PM 47 Equipment Operator:</u> Notified the ROCC Radio RTC and reported they are holding at New Carrollton Station, Track 2, and will be the last unit in the convoy block at requesting a lead to the work location. <u>ROCC Radio RTC:</u> Responded, “are you comfortable being the trailing unit in a convoy block following convoy procedures?” <u>PM 47 Equipment Operator:</u> Responded, yes. <u>ROCC Radio RTC:</u> Responded, “it will be PM58 plus three, no units have permission to pass red signals. Keep a safe traveling distance, calling clear of all station platforms and lunars as you move.” The ROCC Radio RTC then instructed PM58 to verify lunar at D13-08 signal with a convoy block to Deanwood Station, Track 2. <u>PM 47 Equipment Operator:</u> Acknowledged. [Ops 2] Note: Using the ARS playback, SAFE could not confirm if the ROCC Radio RTC announced the maximum speed when giving a convoy block to the Equipment Operators.
00:18:50 hours	<u>PM 47 Equipment Operator:</u> Notified Radio RTC and reported PM58 plus three cleared D13-06 signal. <u>ROCC Radio RTC:</u> Acknowledged. [Ops 2]
00:21:43 hours	<u>PM 47 Equipment Operator:</u> Notified Radio RTC and reported PM58 plus three cleared Landover Station, Track 2. <u>ROCC Radio RTC:</u> Acknowledged. [Ops 2]

Time	Description
00:22:11 hours	<u>ROCC Radio RTC:</u> Notified PM58 plus three and indicated “your convoy block has changed to D98-42 signal red no closer than 10 feet.” <u>PM58 Equipment Operator:</u> Acknowledged. [Ops 2]
00:28:55 hours	<u>ROCC Radio RTC:</u> Notified PM 47 TRST Equipment Operator and asked, “are you moving?” <u>PM 47 Equipment Operator:</u> Responded, “the D11-08 signal is displaying a red aspect.” <u>ROCC Radio RTC:</u> Acknowledged and stated “have you passed the D11-08 signal?” <u>PM 47 Equipment Operator:</u> Responded, “no, I am sitting behind the signal.” <u>ROCC Radio RTC:</u> Responded, “are you sitting adjacent to the signal? Can you look at the cab window and see the signal?” <u>PM 47 Equipment Operator:</u> Responded, “the signal is in front of the window.” <u>ROCC Radio RTC:</u> Acknowledged and instructed the PM 47 Equipment Operator to standby. [Ops 2]
00:29:51 hours	<u>ROCC Radio RTC:</u> Notified PM 47 Equipment Operator and stated, “it looks like you already passed D11-08 signal PM 47.” <u>PM 47 Equipment Operator:</u> Responded, “confirm I will continue with my absolute block.” <u>ROCC Radio RTC:</u> Responded, “that is a negative. I said it looks like you already passed the D11-08 signal.” <u>PM 47 Equipment Operator:</u> Responded, “confirm.” [Ops 2]
00:38:30 hours	<u>ROCC Radio RTC:</u> Notified PM 47 Equipment Operator and asked, “what is your current CM?” <u>PM 47 Equipment Operator:</u> Responded, “my current location is CM D2-431+00.” [Ops 2]
00:39:31 hours	<u>ROCC Radio RTC:</u> Notified PM 47 Equipment Operator and asked, “have you passed the D11-08 signal?” <u>PM 47 Equipment Operator:</u> Responded “I am on the Insulated Joints (IJ) but did not pass the signal.” <u>ROCC Radio RTC:</u> Acknowledged and asked, “when you look out your cab window on the right side, where is your unit in relation to the D11-08 signal?” <u>PM 47 Equipment Operator:</u> Responded, “if I look out the right window, I see Amtrak. If I look out the window on the left, I see the signal.” <u>ROCC Radio RTC:</u> Acknowledged and asked, “so where is your unit in relation to the D11-08 signal?” <u>PM 47 Equipment Operator:</u> Responded, “right behind it.” <u>ROCC Radio RTC:</u> Responded, “so your unit is right behind the D11-08 signal?” <u>PM 47 Equipment Operator:</u> Responded, “yes.” [Ops 2]
00:41:57 hours	<u>ROCC Radio RTC:</u> Notified PM 47 Equipment Operator and instructed them to hold at their current location and not move the unit. <u>PM 47 Equipment Operator:</u> Responded, “confirm will not move the unit.” [Ops 2]

Time	Description
00:43:43 hours	<u>ROCC Radio RTC</u> : Notified PM 47 Equipment Operator and stated, “at this time your unit is under investigation,” and instructed them to landline the ROCC. <u>PM 47 Equipment Operator</u> : Acknowledged. [Ops 2]
00:43:57 hours	<u>ROCC Radio RTC</u> : Notified TRST RWIC and stated, “you are placed on delay due to PM 47 being under investigation.” <u>TRST RWIC</u> : Acknowledged. [Ops 2]
00:45:45 hours	<u>PM 47 Equipment Operator</u> : Contacted the ROCC Assistant Superintendent via landline. <u>ROCC Assistant Superintendent</u> : Stated that the ROCC Radio RTC informed them that they have a possible red signal overrun and, “according to the indication on the AIMS display, it looks like PM 47 passed the D11-08 signal.” <u>PM 47 Equipment Operator</u> : Responded, “I passed the IJ but not the signal.” <u>ROCC Assistant Superintendent</u> : Responded, “we dispatched ATC to verify, and SAFE will be coming out to take pictures.” <u>PM 47 Equipment Operator</u> : Responded, “when I got close to the area, I stopped, dumped the unit, and rolled to the IJ.” <u>ROCC Assistant Superintendent</u> : Acknowledged. [Phone]
00:52:59 hours	<u>ROCC Radio RTC</u> : Notified TRST RWIC and asked, “can you work without PM 47?” <u>TRST RWIC</u> : Responded, “that is a negative.” [Ops 2]
00:58:15 hours	<u>SAFE</u> : Notified ROCC Assistant Superintendent and asked, “do we have an incident at D11-08 signal?” <u>ROCC Assistant Superintendent</u> : Responded, “SAFE and ATC are en route to confirm because they did not get an alarm, and the Equipment Operator said they are on top of the IJ.”
01:32:51 hours	<u>ATC</u> : Notified ROCC Radio RTC and requested for themselves, plus three ATC personnel and two SAFE personnel, to enter the roadway to perform their assessment at the incident location. [Ops 2] <u>ROCC Radio RTC</u> : Acknowledged and indicated “standby while we set up your protection and where you would be entering the roadway.” <u>ATC</u> : Responded, “we will be entering the roadway on Track 2.” [Ops 2]
01:40:05 hours	<u>ROCC Radio RTC</u> : Notified ATC and stated, “I copy you plus three want permission to enter the roadway under ETO local signal control to investigate PM 47.” <u>ATC</u> : Responded, “we will take control of the panel.” <u>ROCC Radio RTC</u> : Responded, “hotspots have been identified, you had your safety briefing, and all personnel have the proper Personal Protective Equipment (PPE).” The ROCC Radio RTC instructed ATC to contact the ROCC to take control of the panel. <u>ATC</u> : Acknowledged.
01:43:38 hours	<u>ATC</u> : Notified ROCC Radio RTC and reported, “we have control of the panel.” <u>ROCC Radio RTC</u> : Acknowledged and responded, “you have permission to enter the roadway Track 2 and exit by Track 1. Third rail power is hot and energized, advise the ROCC when all personnel and equipment are clear of the roadway.” <u>ATC</u> : Acknowledged. [Ops 2]

Time	Description
01:57:02 hours	<p><u>ROCC Assistant Superintendent:</u> Notified TRST Supervisor and reported that SAFE is on scene and classified this incident as a Red Signal Overrun. The ROCC Assistant Superintendent stated that the Equipment Operator is being removed from service.</p> <p><u>TRST Supervisor:</u> Responded, “can you drop the Equipment Operator off at Cheverly Station where a supervisor will be waiting and allow the unit to continue to the work area with another operator?”</p> <p><u>ROCC Assistant Superintendent:</u> Responded, “yes, the unit can continue.” [Phone]</p>
02:12:01 hours	<p><u>ROCC Assistant Superintendent:</u> Notified ROCC RTC and asked who was PM 47 moving in a convoy with.</p> <p><u>ROCC RTC:</u> Responded, “PM58, PM 47, PM 43, and PM 47 were the last unit coming from New Carrollton Yard.” [Phone]</p>
02:14:20 hours	<p><u>ROCC Assistant Superintendent:</u> Notified ROCC RTC and instructed them not to move the unit because WMSC needs to take pictures.</p> <p><u>ROCC RTC:</u> Acknowledged. [Phone]</p>
02:05:13 hours	<p><u>ROCC Radio RTC:</u> Notified TRST RWIC and stated, “PM 47 is still under investigation. Will you be able to perform your work without the unit and clear by 04:00 hours?”</p> <p><u>TRST RWIC:</u> Responded, “I will give you a landline. They cannot perform their work without their unit,” and indicated, “let me check the area for my other unit.” [Ops 2]</p>
02:16:46 hours	<p><u>TRST RWIC:</u> Contacted the ROCC Assistant Superintendent.</p> <p><u>ROCC Assistant Superintendent:</u> Stated the unit cannot move because the WMSC wants to take pictures.</p> <p><u>TRST RWIC:</u> Responded, “SAFE just told them to move to the platform.”</p> <p><u>ROCC Assistant Superintendent:</u> Responded, “we were told not to move the unit due to the WMSC conducting their investigation.”</p> <p><u>TRST RWIC:</u> Acknowledged. [Phone]</p>
02:18:32 hours	<p><u>ROCC Assistant Superintendent:</u> Stated to the TRST RWIC that the WMSC just released the unit to get the unit moving. [Phone]</p>
02:23:50 hours	<p><u>ROCC Radio RTC:</u> Notified the TRST RWIC and reported, “once ATC clears the roadway, we can get PM 47 down to the work location, but will you be able to clear by 04:00 hours?”</p> <p><u>TRST RWIC:</u> Responded, “yes, we will be able to clear.” [Ops 2]</p>
02:26:20 hour	<p><u>ATC:</u> Notified ROCC Radio RTC and reported that all personnel and equipment are clear of the roadway, and the ROCC can take control of the panel.</p> <p><u>ROCC Radio RTC:</u> Acknowledged and instructed them to board PM 47 when it gets to Cheverly Station platform and go down to the D&G, clamp some switches, and then instructed ATC to give the ROCC a landline. [Ops 2].</p>
02:30:35 hours	<p><u>ROCC Radio RTC:</u> Notified PM 47 Equipment Operator Two, verifying that all personnel and equipment are clear, and “it is safe for you to move. Also, you have already passed the D11-08 signal, and you have an absolute block to Cheverly Station, Track 2, to pick up ATC personnel. Once you arrive at Cheverly Station, have PM 47 Equipment Operator standby for their supervisor.”</p> <p><u>Equipment Operator Two:</u> Acknowledged. [Ops 2].</p>

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

Advanced Information Management System (AIMS)



Diagram 2 - At 00:19:16 hours, PM58 was leading a convoy block on Track 2 plus three, with PM 47 being the last unit coming from New Carrollton Yard. D11-08 signal was fledted green (lunar).

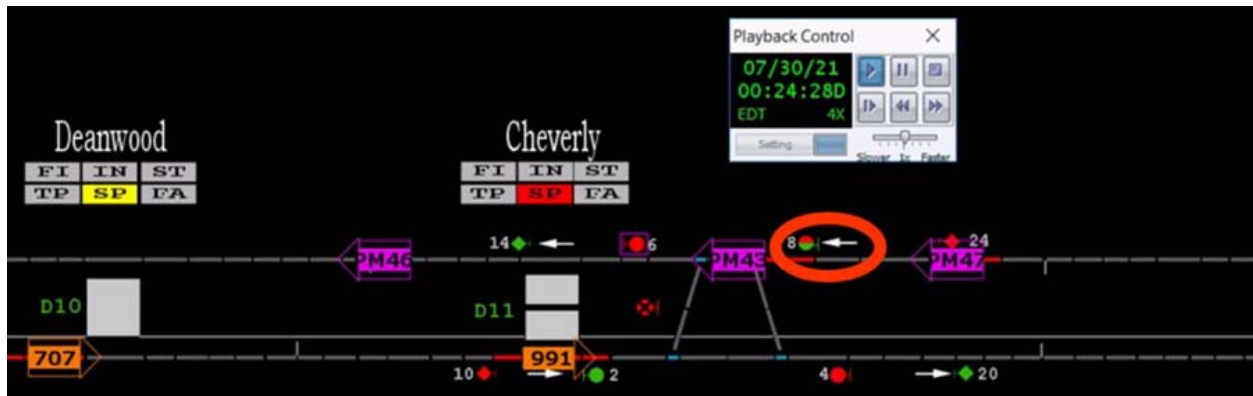


Diagram 3 – At 00:24:28 hours, D11-08 signal changed to fledted stop, which means red over green (red signal) after PM 43 passed D11-08 displaying a green (lunar) aspect.

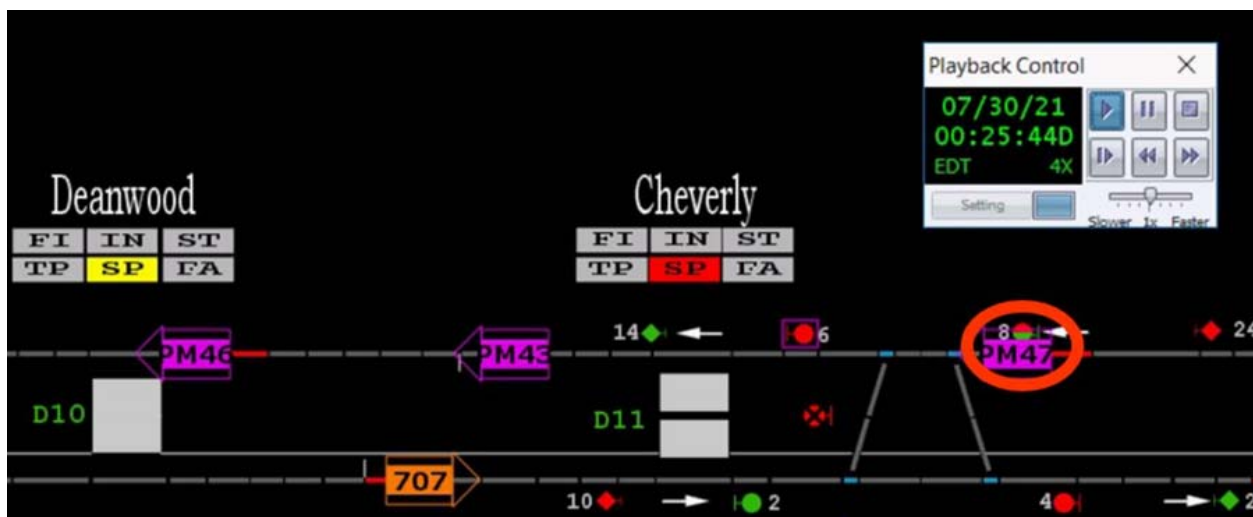


Diagram 4 – At 00:25:44 hours, PM 47 overran D11-08 displaying a red aspect.



Figure 1 – D11-08 displaying a red aspect.



Figure 2 - PM 47 front of the vehicle passed D11-08 displaying a red aspect.



Figure 3 - PM 47 front wheel passed D11-08, IJ.

Automatic Train Control Maintenance (ATCM)

ATCM conducted an inspection of the incident area and determined no damage to any ATCM equipment. Based on the ATCM Compliance review of the area and of the event, ATCM has determined there was no ATCM equipment in the area to be a contributing factor to the reported event.

Automatic Train Control Engineering (ATCE)

Automatic Train Control Engineering (ATCE) data analysis of the ATC system revealed PM 47 violated the D11-08 signal displaying a red aspect. See *Appendix B*. Details from the data analysis are as follows:

ATCE Analysis:

Time	Description
00:24:24 hours	D11-08 signal changed to red due to the interlocking being occupied by PM 43.
00:24:42 hours	Track circuit D2-426 showed vacant, which indicated that PM 43 had cleared the interlocking.
00:24:58 hours	Track circuit D2-437 showed occupied, as PM 47 approached the interlocking.
00:25:43 hours	Track circuit 3BAT showed occupied, as PM 47 crossed the IJ at D11-08 signal displaying a red aspect and occupied the interlocking.

Car and Track Equipment Maintenance (CTEM)

As a result of this event, CTEM performed a post-incident inspection of PM 47, found no anomalies, and reported that all systems were functioning as designed. **Note:** The unit was not equipped with a video monitoring system or Event Recorder. See *Appendix C*

Interview Findings

SAFE conducted one interview via Microsoft Teams. This virtual interview identified the following key findings associated with this event and are as follows:

During the virtual interview, the PM 47 Equipment Operator stated they were assigned to operate PM 47 in convoy. The PM 47 Equipment Operator stated that the nature of work was thermite welding near Benning Road Station under ETO protection. After the safety meeting was conducted, the PM 47 Equipment Operator performed an interior and exterior walk-around pre-trip inspection using a checklist on PM 47 and performed a standing and rolling brake test on the flat prior to initiating general operation of the vehicle. There were no deficiencies to report. The PM 47 Equipment Operator stated that they were pulling the unit to the work area before the incident. As they were coming down the hill, they had their A9 brake slightly engaged to assist with traveling at a safe speed. The PM 47 Equipment Operator stated that they saw the unit in front of them, PM 43, going through the interlocking and had a lunar signal at D11-08. The PM 47 Equipment Operator said they released the A9 brake and continued operating at 25mph to 30mph. The PM 47 Equipment Operator stated that they checked their gauges and looked back at the flat to make sure nothing was moving and, when they turned around, the D11-08 signal was red. The PM 47 Equipment Operator stated they dumped the brakes to put the unit's brakes in an emergency application, causing PM 47 to stop abruptly. As they attempted to stop, their first set of wheels on the unit touched the IJ. The PM 47 Equipment Operator stated that they did not

remember the maximum allowable speed for a Class 2 Vehicle in a convoy block. They believed the practice required them to travel at a safe following distance.

Weather

At the time of the incident, National Oceanic and Atmospheric Administration (NOAA) recorded the temperature as 75° F and passing clouds with 81% humidity. Weather was determined to not be a contributing factor to this incident. Weather source: NOAA – Location: Cheverly, MD.)

Human Factors

Fatigue

Equipment Operator A

Evidence of fatigue:

Conditions at the time of the incident were evaluated to distinguish whether evidence of fatigue was present. No evidence of fatigue was indicated by the available data. Video of the incident was reviewed for behaviors suggesting fatigue. No evidence of fatigue was evident from the video. The Operator reported feeling Fully Alert at the time of the incident. The Employee reported experiencing no symptoms of fatigue in the time leading up to the incident.

Fatigue Risk:

Incident data was evaluated for fatigue risk factors. The incident time of day did not suggest an increased risk of fatigue-related impairment, however risk factors for fatigue were identified. The employee worked overnight shifts (e.g. 22:00 – 06:00) in the days leading up to the incident, including a 14-hour overnight shift (within a 16-hour workday window from 22:00 – 14:00) the day before the incident. The employee was awake for 3.4 hours at the time of the incident. Based on the employee's reported bed and wake times the day before the incident, the employee slept a total of 5.75 hours in the 24 hours preceding the incident. The off-duty period preceding the incident was 8 hours long which, given the employee's reported 30-minute commute, may have curtailed the opportunity for 7-9 hours of sleep. The employee reported having no issues with sleep and usually getting about 8.5 hours of sleep on workdays.

A biomathematical fatigue modelling application Sleep Activity Fatigue Task Effectiveness-Fatigue Avoidance Scheduling Tool (SAFTE- FAST) was used to further evaluate fatigue risk factors that may have been present in the Equipment Operator's schedule. The analysis was based on the Operator's work schedule, bed and wake times from the day before the incident and reported habitual sleep durations. Estimated performance effectiveness at the time of the incident was 95.3%. The analysis identified short sleep duration in the last 24 hours, and the circadian effects of night work as contributing to an increased risk of fatigue at the time of the incident.



Modeling analysis output shows estimated performance effectiveness during the incident work shift and for the week leading up to the work shift, based on the employee work and reported sleep schedule. Estimates were based on the Operator's work schedule, bed and wake times from the day before the incident, and reported habitual sleep durations (8.5 hours a day). Bold portions of the modeled curve show work (in black) and sleep times (in blue). Effectiveness is shown on the vertical axis, with colored fields in the chart background signifying ranges of effectiveness scores including high effectiveness (>90%) in green, and low effectiveness (<65%) in red. Time is shown on the horizontal axis. Markers for work and sleep times are shown in the lanes above the time of day on the horizontal axis. **Note:** while the modeling output shows estimated performance effectiveness for both the week leading up to the incident and at the time of the incident time, effectiveness and fatigue factors at the time of the incident is pinned in the chart output to highlight the combination of metrics related to fatigue at the time of the incident.

Findings

- The PM 47 Equipment Operator failed to comply with MSRP SOP 15.5.9.10, which states, "Operators shall travel at restricted speed, i.e., speed not to exceed 15 mph, prepared to stop within half the distance of vision."
- The PM 47 Equipment Operator failed to follow MSRP Operating Rules (OR) 3.67, which states, "Rail vehicles shall not be operated past or closer than a point of ten (10) feet in the approach of any interlocking signal or lamp displaying a red aspect. A red flag, or a dark interlocking signal, unless authorized by ROCC or the I/O and the move is consistent with customer safety as specified in Rule 3.1."
- The PM 47 Equipment Operator completed Equipment Operator recertification training on August 20, 2020. Refresher training is not specific for each piece of equipment used but does include hands-on modules.
- PM 47 Equipment Operator was removed from service for post-incident testing, however they were not tested due to an error in the testing paperwork. The supervisor completing the report indicated that the Operator was completely discounted from contributing to the event, so the post-incident test was denied by the site collector. **Note:** TRST Management reported they noted the discrepancy in the Supervisor's handling of the Drug and Alcohol Screening Form/Process. In response, TRST provided information to the Supervisory staff as part of the Division's morning meeting. This was performed as a temporary measure until a full training can be performed, scheduled to be a part of TRST's next Safety and Information Session. Additionally, the site collector will declare a person ineligible to take a post-incident test based on the Post Incident/Accident Form not being completed

accurately. The departments must ensure that their managers understand and enforce the proper departmental policies when required to determine if testing is required. Additionally, they must clearly document the events that occurred and accurately respond to the questionnaire.

- There is no video monitoring system or Event Recorder onboard PM 47.
- No Closed-Circuit Television (CCTV) video was available at D11-08 signal incident location.
- PM 47 was traveling an average of 20 mph leading up to the signal per ITSS track circuit occupancy speed calculation. **Note:** The speed provided was an average. An exact speed calculation at the time brakes were applied is not known.
- ATCM conducted a visual inspection of the incident area and determined no damage to any ATCM equipment.
- On July 29, 2021, the Remote Terminal Unit (RTU) went offline due to a total loss of power. As a result, the ROCC could not set routes due to a Track Circuit Malfunction affecting the signals at the interlocking. Cheverly Station interlocking switches were clamped in the normal position. The RTU is back online. Power has been restored, and all track components are functioning as designed (see Appendices H and I).
- Instead of providing refresher training to all Equipment Operators focusing on whether they do not physically go past the signal, being aware of their territory characteristics will aid in their awareness that if the wheels pass the IJ into another block, they have run a red signal. TRST Management reported they are proposing a Maintenance Bulletin to be issued to all TRST supervisory personnel and equipment operators addressing this issue.

Immediate Mitigation to Prevent Recurrence

- The PM 47 Equipment Operator was removed from service for post-incident testing; however, the operator was not tested based on the form responses completed by the supervisor.
- The PM 47 was removed from service for post-incident investigation process. No anomalies were discovered
- ATCM conducted track and switch inspections and verified the area was safe for service.

Probable Cause Statement

The probable cause of the Red Signal Overrun event on July 30, 2021, was human performance difficulty and lack of procedural adherence from the PM 47 Equipment Operator. The PM 47 Equipment Operator involved in this incident experienced a lack of situational awareness and failed to reduce their speed and keep their vehicle under control, subsequently resulting in the rail vehicle crossing the IJ and overrunning the D11-08 signal, displaying a red aspect. Additional contributing factors to this event was a failure to comply with convoy block procedures, Metrorail Safety Rules, and Procedures Handbook (MSRPH), Standard Operating Procedure (SOP) 15.5.9.10, which states, "Operators shall travel at restricted speed, i.e., speed not to exceed 15 mph, prepared to stop within half the distance of vision." Lastly, the lack of training/oversight to ensure understanding of convoy block rules may have contributed to this event.

SAFE Recommendations/Corrective Actions

The following are the recommendations and corrective actions identified as a result of this investigation. These recommendations and corrective actions are tracked using WMATA's Safety Measurement System Incidents/Accidents (SMS I/A) Module and are verified by SAFE upon completion. The responsible department is identified in the corrective action code, and the respective departmental Safety Risk Coordinator (SRC) will manage the mitigation. Refer to the SMS I/A Module for additional information.

Corrective Action Code	Description	Due Date
94743_SAFECAPS_TRST_001	(RC-1) Provide refresher training for the Equipment Operator AA. The refresher training will focus on the proper operation and movement of Class 2 vehicles in a convoy block. Note: the Equipment Operator AA completed refresher training on 9/28/2021.	Completed
94743_SAFECAPS_SAFE_001	(RC-1) SAFE developed and distributed a Safety Bulletin to emphasize the proper operation and movement of Class 2 vehicles in a convoy block.	Completed
94858_SAFECAPS_TRST_003 (from E21333)	Develop a Standard Operating Procedure consistent with Policy/Instruction 7.7.3 that details specific incidents and circumstances that require TRST personnel to be removed from service for drug/alcohol screening, including a method to ensure the screening is completed. Note: TRST is currently consulting with WMATA's Labor Relations department about the appropriateness of developing an SOP addressing Drug and Alcohol procedures.	01/30/2022

Appendices

Appendix A – Interview Summary

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

Office of Track and Structures (TRST)


Equipment Operator A

The PM 47 Equipment Operator is a WMATA employee with eight years of service and approximately two years of experience as an Equipment Operator A. The WMATA employee's RWP Level 4 certification expires in April 2022. The employee's last Rail Certification was in January 2021. This employee has no history of sleep issues to report.

Based on the SAFE interview, the PM 47 Equipment Operator stated they arrived at New Carrollton Yard at approximately 22:00 hours, and their manager conducted a safety meeting. The PM 47 Equipment Operator was assigned to operate PM 47 in convoy. The PM 47 Equipment Operator stated the nature of work was thermite welding near Benning Road Station under ETO protection. After the safety meeting was conducted, The PM 47 Equipment Operator performed an interior and exterior walk-around pre-trip inspection using a checklist on PM 47 and performed a standing and rolling brake test on the flat prior to initiating general operation of the vehicle. There were no deficiencies to report.

At approximately 24:00 hours, the ROCC asked if they were comfortable being the last unit in convoy. The PM 47 Equipment Operator stated that they responded to the ROCC saying "yes." The PM 47 Equipment Operator stated that they were pulling the unit to the work area before the incident. As they were coming down the hill, they had their A9 brake slightly engaged to assist with traveling at a safe speed. The PM 47 Equipment Operator stated that they saw the unit in front of them, PM 43, going through the interlocking and had a lunar signal at D11-08. The PM 47 Equipment Operator said they released the A9 brake and continued operating at 25mph to 30mph. The PM 47 Equipment Operator stated that they checked their gauges and looked back at the flat to make sure nothing was moving, and when they turned around, the D11-08 signal was red. The PM 47 Equipment Operator then stated they dumped the brakes to put the unit's brakes in an emergency application, causing PM 47 to stop abruptly. As they attempted to stop, their first set of wheels on the unit touched the IJ. The PM 47 Equipment Operator stated that the unit did not physically pass the signal, but the AIMS display showed that its wheel crossed the IJ, causing it to show as a red signal overrun. The PM 47 Equipment Operator stated that they did not remember the maximum speed for a Class 2 Vehicle in a convoy block. They thought the directive was to just keep a safe traveling distance. **Note:** Using the ARS playback, SAFE could not confirm if the ROCC Radio RTC announced the maximum speed when giving a convoy block to the Equipment Operators, per convoy block procedures MSRP SOP.

Appendix B – ATCE Data Analysis

	Washington Metropolitan Area Transit Authority ENGA-ATCE		Request:		
			Date:	2021 Aug 2	
			From:		
			To:		
Reported Data:		Time:		Train ID	
Description:	Red Signal Overrun by PM 47 at D11		Interlocking Control: [Central]		PM 47
Requested Analysis: Investigate Incident; SAFE/WMSC request					
INITIAL STATE AS OF: 00.24.05					
Name	STATE	AUTO	NAME	STATE	AUTO
[Signal 8]	[CLEAR]	[Y]	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
RECORDED EVENT DATA					
TIME	LOCATION	STATUS/ CONTROL	AIMS DESCRIPTION		COMMENTS
00.24.23	D11	Status	Track Circuit 3BBT Occupied		PM crosses IJ and enters interlocking
00.24.24	D11	Status	Signal State 8 STOP (Red)		Signal 8 goes red due to interlocking being occupied
00.24.25	D11	Status	Track Circuit 3BAT Occupied		PM travels through interlocking
00.24.26	D11	Status	Track Circuit D2-430 Vacant		
00.24.29	D11	Status	Track Circuit 3BBT Vacant		
00.24.30	D11	Status	Track Circuit 1BAT Occupied		
00.24.31	D11	Status	Track Circuit 1BBT Occupied		
00.24.33	D11	Status	Track Circuit 3BAT Vacant		
00.24.35	D11	Status	Track Circuit 1BAT Vacant		
00.24.36	D11	Status	Track Circuit 3BBT Vacant		
00.24.36	D11	Status	Track Circuit D2-426 Occupied		PM clears interlocking
00.24.42	D11	Status	Track Circuit D2-426 Vacant		
00.24.58	D11	Status	Track Circuit D2-437 Occupied		
00.25.19	D11	Status	Track Circuit D2-430 Occupied		
00.25.24	D11	Status	Track Circuit D2-437 Vacant		
00.25.43	D11	Status	Track Circuit 3BAT Occupied		2 nd PM crosses IJ at Signal 8 and occupies the interlocking

Circuit Power Failure: Yes ☐ No ☒ Processor Failure: Yes ☐ No ☒ Power Transfer: Yes ☐ No ☒

CONCLUSION

2nd PM (PM 47) did overrun D11 Signal 08 while Red.

Original
08/02/2021

Incident Report 0.1
Page 1 of 1
Incident Analysis Report 0.0-080221 Theo.docx

Attachment 1 – Page 1 of 1. **Note:** See the downloaded ATCE data analysis of the ATC system from PM 47 governing each section of territory showing movement in time. The completed event data revealed PM 47 violated the D11-08 signal displaying a red aspect.

Date: 07/30/2021 Time: 00:25 hours.
Final Report Rev. 1 – Red Signal Overrun
E21332

Drafted By: SAFE 705 – 09/13/2021
Reviewed By: SAFE 71 – 09/28/2021
Approved By: SAFE 70 – 11/26/2021

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Appendix C – CTEM Work Order Details



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

Page 1 of 1
MX76PROD

Work Order #: 16487720
Type: CM



Status: COMP
08/02/2021 09:16

Work Description: Signal overrun in the yard
Job Plan Description:

Work Information			
Asset: MPM47	PM47, PRIME MOVER, HARSCO, 354C, S/ N 6111211, 4	Owning Office: TRST	Parent:
Asset Tag: MPM47		Maintenance Office: CTEM-NCAR-HVYR	Create Date: 08/02/2021 06:28
Asset S/N: 6111211		Labor Group: CTEM-NCAR-HVY	Actual Start: 08/02/2021 06:34
Location: 1230	D99, NEW CARROLLTON YARD	Crew:	Actual Comp: 08/02/2021 09:16
Work Location: 13938	D91, NEW CARROLLTON YARD, BUILDING (D) FIELD BASE TEST, 1ST FLOOR, CTEM SHOP	Lead:	Item: CTEM49200006
Failure Class: CTEM001	GENERAL	GL Account: WMATA-02-33380-50499070-041-*****-OPR**	
Problem Code: 2907	SAFETY INSPECTION	Supervisor: [REDACTED]	Target Start:
Requested By:		Requestor Phone: [REDACTED]	Target Comp:
Chain Mark Start:		Chain Mark End:	Scheduled Start:
Create-Mileage: 0.0		Complete-Mileage: 0.0	

Task IDs	
Task ID	
10	perform signal overrun inspection
	Performed general inspection of unit, and could not find any problems. checked brake system-ok checked wheels-ok checked electrical-ok checked chassis/cab-ok checked air system-ok see attachment for further information
Component:	000-400-ABZ INSPECTION; PRIME MOVER
Work Accomplished:	INSPECTED
Reason:	INSPECTION
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]	08/02/2021	08/02/2021	07:30	08:00	Y	00:30	00:00	\$20.88
10	[REDACTED]	08/02/2021	08/02/2021	07:30	08:00	Y	00:30	00:00	\$18.95
Total Actual Hour/Labor:							01:00	00:00	\$39.83

Failure Reporting			
Cause	Remedy	Supervisor	Remark Date
3432 PERFORMED SAFETY INSPECTION	1474 INSPECTED	[REDACTED]	08/02/2021
Remarks: Performed inspection for red signal overrun. All systems working as designed. Return to service.			

WT_plust_woprint.rptdesign

08/2/2021 10:29

Attachment 2 – Page 1 of 1.

Date: 07/30/2021 Time: 00:25 hours.
Final Report Rev. 1 – Red Signal Overrun
E21332

Drafted By: SAFE 705 – 09/13/2021
Reviewed By: SAFE 71 – 09/28/2021
Approved By: SAFE 70 – 11/26/2021

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Appendix D – TRST General Orders & Track Rights System

GOTRS - GENERAL ORDERS & TRACK RIGHTS SYSTEM Track Rights Request

Request Summary

Request Number:	202118802702	Track Access:	True
Dates Requested:	07/30/2021 00:30 to: 07/30/2021 04:30	Clear In Ten:	False
Request Status:	Closed	Equipment on Track:	1
Requestor:	[REDACTED]	Allow Piggybacks:	True
Requestor Organization:	TRST/TRACK/MAINTN	In Piggyback:	No
Switch Order:		Power Outage:	Supervisory Supervisory Power Outage
Lock Out / Tag Out:		Additional AC:	
Request Title:	G01 Trk.2 Open Joint Elimination		

Location, Work Type and Description

Location:	Mainline
Non-Wayside Location Type:	
Request Type:	Regular
Charge Job Number:	
Contract Number:	
Maximo Work Order:	
Request Group:	No
Location Description:	G01 Trk.2 Open Joint Elimination
Request Description:	Personnel will remove Open joints with Thermite welding
Work Type:	Rail renewal
Meeting Location:	D99 (New Carrollton Yard)
PB Meeting Location:	
Tools and Equipment:	Hand tools & PPE
Equipment on Track:	Prime Mover with Flatcar

Track 2

Actual Work Area:	G288+26	G310+00
Protected Work Area:	G283+26	G315+00

Hot Stick Info. Third Rail Gaps:

From	To	Track ID
G283+26	G311+52	2

Date & Time

Start:	07/30/2021 00:30	End:	07/30/2021 04:30
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Contacts

Entered by	Requestor
------------	-----------

As of 08/05/2021 20:42
1 of 3

Attachment 3 – Page 1 of 3.

GOTRS - GENERAL ORDERS & TRACK RIGHTS SYSTEM

Track Rights Request

Request Summary

Request Number:	202118802702	Track Access:	True
Dates Requested:	07/30/2021 00:30 to: 07/30/2021 04:30	Clear In Ten:	False
Request Status:	Closed	Equipment on Track:	1
Requestor:	[REDACTED]	Allow Piggybacks:	True
Requestor Organization:	TRST/TRACK/MAINTN	In Piggyback:	No
Switch Order:		Power Outage:	Supervisory Supervisory Power Outage
Lock Out / Tag Out:		Additional AC:	
Request Title:	G01 Trk.2 Open Joint Elimination		

Work:	[REDACTED]	Work:	[REDACTED]
Cell:	[REDACTED]	Cell:	[REDACTED]
Home:	[REDACTED]	Home:	[REDACTED]

WMATA Manager	Emergency Contact
[REDACTED]	[REDACTED]
Work:	[REDACTED]
Cell:	[REDACTED]
Home:	[REDACTED]

Support

SUPPORT GROUP	Crew Size
---------------	-----------

TRST/TRACK	7
------------	---

ESCORT GROUP	Crew Size
--------------	-----------

ATCM	5
------	---

Request Change History

Date	Event
07/07/2021 16:04	Request was replicated from Request 202118802700.
07/12/2021 15:25	Request status was changed to Approved
07/30/2021 01:47	Work Prep was completed.
07/30/2021 02:51	Request status was changed to Opened
07/30/2021 08:21	Request status was changed to Closed

Request Group

Request Number	Description
----------------	-------------

Piggyback

No active piggybacks found

As of 08/05/2021 20:42
2 of 3

Attachment 3 – Page 2 of 3.

GOTRS - GENERAL ORDERS & TRACK RIGHTS SYSTEM

Track Rights Request

Request Summary

Request Number:	202118802702	Track Access:	True
Dates Requested:	07/30/2021 00:30 to: 07/30/2021 04:30	Clear In Ten:	False
Request Status:	Closed	Equipment on Track:	1
Requestor:	[REDACTED]	Allow Piggybacks:	True
Requestor Organization:	TRST/TRACK/MAINTN	In Piggyback:	No
Switch Order:		Power Outage:	Supervisory Supervisory Power Outage
Lock Out / Tag Out:		Additional AC:	
Request Title:	G01 Trk.2 Open Joint Elimination		

Red Tag information

Red Tag #: Request is not Red Tag.

Close-Out Summary

Final Status:	Closed
Request To Begin Work:	07/29/2021 22:51
Request to De-Energize:	07/30/2021 03:29
De-Energization Completed; RWIC notified:	07/30/2021 03:29
Hot Stick:	07/30/2021 03:32

From	To	Track ID	Waive(?)	Unit #	Chain Marker	Entered By	Date
G283+26	G311+52	2		[REDACTED]	G299+00	[REDACTED]	07/30/2021 03:32

Permission Given To Setup Work Site: 07/30/2021 03:32

Start Work: 07/30/2021 03:41

Work Site Cleared by Requestor: 07/30/2021 04:00

OCC Comments:

**OCC Assistant Superintendent
Comments:**

Requestor Comments:

OCC Delays

Delay #	From	To	Reason	Re-Hot Stick Done
1	07/30/2021 01:42	07/30/2021 03:29	On delay due to PM47 possibly over running D11 08 signal. Under investigation.	

As of 08/05/2021 20:42
3 of 3

Attachment 3 – Page 3 of 3.

Appendix E – TRST Roadway Job Safety Briefing Form

WMATA ROADWAY JOB SAFETY BRIEFING FORM

DATE: 7-29-21

RWIC NAME: [REDACTED] CALL#: [REDACTED] TRACK TIME ON/OFF: 1

RWIC'S CELL PHONE NUMBER: [REDACTED] RADIO OPS CHANNEL: 2 EMPLOYEE #: [REDACTED]

SAFETY RULE OF THE DAY: MSRPH 2-20 Rwd 2

WORK ASSIGNMENT: Thermitte Welding DIRECTION OF TRAFFIC: INBOUND ☒ OUTBOUND ☐

RAIL LINE: A B C D E F G J K L N TRACK 1 2 ☒ 3 WORK LIMITS CHAIN MARKER(S): 288+26 - 310+00

PLACE OF SAFETY: Catwalk

TYPE OF PROTECTION(S): IT ☐ ETO AUTHORITY ☒ ETO LOCAL SIGNAL ☐ AMF ☐ FT ☐

REQUEST FROM ROCC: BLOCK CALLS ☒ CANCEL AUTOMATIC SIGNALS ☐ PROHIBIT EXITS ☒

RED HOT SPOT(S) TYPE/LOCATION(S): ☐ RED HOT SPOT HAZARDS ☐ ETS/RADIO OUTAGE ☐

FOUL TIME PROTECTION CAN BE REQUESTED IN ALL WORK ZONE CONFIGURATIONS

POWER OUTAGE: LOCK OUT TAG OUT ☐ RED TAG ☐ SUPERVISORY ☒ NO POWER OUTAGE ☐

RED TAG NUMBER: _____ RED TAG HOLDER: _____

WATCHMAN/LOOKOUT ASSIGNED: Yes ☒ No ☐ WATCHMAN/LOOKOUT NAME(S): [REDACTED]

WATCHMAN/LOOKOUT EQUIPPED WITH AIR HORN AND WHISTLE ("W" Warning Disc required for fixed work zones): ☐

WATCHMAN/LOOKOUT MUST BE PROPERLY SPACED AND HAVE SUFFICIENT SIGHTING DISTANCE TO PROVIDE AMPLE WARNING

ADVANCE MOBILE FLAGGER ASSIGNED: Yes ☐ No ☐ ADVANCE MOBILE FLAGGER CALL #(s): _____

ADVANCE MOBILE FLAGGER EQUIPPED WITH AMBER LANTERNS/E-FLARES, ORANGE FLAG, AIR HORN, WHISTLE AND RADIO: ☐

PIGGY BACK CREW LEADER CALL #(s): _____ PIGGY BACK WORKZONE CM(s): _____

PIGGY BACK WORK ASSIGNMENT: _____

NUMBER OF RMM(s): 2 RMM OPERATIONS IN WORK ZONE: 47, 43

ALL ROADWAY WORKERS MUST EXERCISE GOOD JUDGEMENT AND CONSIDER THE FOLLOWING POTENTIAL HAZARDS AND PROCEDURES BEFORE ENTERING THE ROADWAY:

WEATHER CONDITIONS	<input checked="" type="checkbox"/>	TRIPPING HAZARDS / UNEVEN WALKING SURFACES	<input checked="" type="checkbox"/>
TRACK GRADE AND VISIBILITY	<input checked="" type="checkbox"/>	POOR LIGHTING / TUNNEL AND VENT SHAFT(S)	<input checked="" type="checkbox"/>
HAZARDS ASSOCIATED WITH RAIL VEHICLE MOVEMENT	<input checked="" type="checkbox"/>	TRAIN / CURVE SPEED(S)	<input checked="" type="checkbox"/>
WORK SITE CONDITIONS AND ACTIVITIES	<input checked="" type="checkbox"/>	ETS BOX(S) LOCATIONS	<input checked="" type="checkbox"/>
EMERGENCY PROCEDURES	<input checked="" type="checkbox"/>	EQUIPMENT AND TOOL SAFETY	<input checked="" type="checkbox"/>
ADJACENT TRACK PROTECTION	<input checked="" type="checkbox"/>	ROTATION AND RELIEF PROCEDURES	<input checked="" type="checkbox"/>

v. 3 WMATA Roadway Job Safety Briefing Form, Date: November 2018

Attachment 4 – Page 1 of 2. **Note:** Four PMs were listed in convoy, and only two PMs were listed on the Roadway Job Safety Briefing Form. PM47 and PM43 were assigned to work at the exact location. Based on ARS playback, PM58 was assigned to work at the Eastern Market Station work location, and PM46 was assigned to the D&G Junction D98 work location.

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

ROADWAY WORKER ACKNOWLEDGEMENT

[illegible]

PPE at all times, sound horn prior to unit movement, keep all cords and hoses away from all hot material. Closest Washington Hospital Center

GOOD FAITH CHALLENGE INFORMATION

Rv. 3 WMATA Roadway Job Safety Briefing Form, Date: November 2018

Track and Structures

Daily Equipment Movement and Request Log

Operator's Name [REDACTED] Call Number [REDACTED]

Equipment Number Dm 47 Location of Equipment D99

Did you make yard moves? NO Main work location? D98 52

Time you requested lead to mainline (tower)? 23:27

What time did you receive a lead to mainline? 00:05

What time did you request a lead to ROCC? 00:10

What time did you receive a lead from ROCC? 00:11

Arrival time to work area? _____ Equipment pre-trip complete? _____

What time did you request a lead to depart work location? _____

What time did you receive a lead to depart work location? _____

Departure time from work area? _____

Time cleared mainline? _____ Final location of your equipment? D99

Was equipment held up in route to work location? Yes or No _____

Does unit have an emergency tow bar? Yes or No _____

Operator's Signature [REDACTED] Date 7-29-21

Supervisor (Print) [REDACTED]

Start Fuel Level $\frac{1}{4}$ $\frac{1}{2}$ $\frac{3}{4}$ Full End Fuel Level $\frac{1}{4}$ $\frac{1}{2}$ $\frac{3}{4}$ Full

Comments _____

Document# 201503-003

Attachment 5 – Page 1 of 3.

WMATA CLASS 2 RAIL VEHICLE PRIOR TO USE INSPECTION

Initials (Operator /Flag Person)

JS	1. Check for wheel chocks and that the required quantity for unit(s) in consist are present.
JS	2. Check angle cocks, train line seals, air tool and drain valves. (Open or close as required).
JS	3. Check main engine for proper oil level.
JS	4. Check for any loose, broken, torn, cracked, or leaking components as you make your walk around inspection.
JS	5. If using auxiliary components such as cranes, generators and compressors, check all controls, movements, fluid levels, and safety devices.
JS	6. Start machine and check all switches, gauges, and warning indicators.
JS	7. Check for sufficient air pressure and if equipped with A-9, make sure it is at 90 psi in the release position.
JS	8. Check transmission for correct oil level and any abnormal sounds or functions.
JS	9. Ensure all equipment, tools, supplies or loose debris are secured on decks and not posing any safety hazards.
JS	10. If equipped and scheduled for use, inspect work head assemblies for wear, out of adjustment and damage. Check oil fill reservoirs and grease all fittings.
JS	11. If equipped, inspect E-couplers, tow bars, and revenue train couplers. Make sure all tools are properly stored and secured while maintaining proper housekeeping of materials and equipment.
JS	12. Gas cylinders should be secured and in their proper location.
JS	13. Ensure all work heads and components such as crane booms, outriggers, measuring buggies, clamp frames, plows, turn tables and extension arms are pinned and locked with safety devices prior to travel.
JS	14. Check fuel and hydraulic tanks for proper level.
JS	15. Check all wheels, brakes, visible linkage, and suspension on all rolling stock vehicles.
JS	16. Check for cracked, broken, missing windows and side boards. Make sure there are no bent or loose railings, steps, or cabinet enclosures that are missing safety chains, locks or latches.
JS	17. Turn on and inspect all lighting on unit(s) in consist for any defects or problems.
JS	18. Check that back up alarms and horns sound.
JS	19. Fire extinguishers should be charged and secured. Sign the monthly inspection log (if not already signed).
JS	20. Verify the radio(s) is/are able to transmit and receive clearly.
JS	21. Inspect all items in flagman's booth for proper operation and functionality.
JS	22. Ensure loads are secure, evenly distributed and are not hanging over the side or ends of flat car.
JS	23. Check all Flat Car emergency dump valves and hand brakes.
JS	24. Inspect hi-rail components for thin flanges, leaking cylinders, safety pins, tires, shunts, and proper tuck when on hi-rail.
JS	25. Perform a stretch test. <input checked="" type="checkbox"/> Successful Test <input type="checkbox"/> N/A
JS	26. Perform a rolling brake test (all class 2 vehicles).
JS	27. Perform standing brake test (all flatcars, PM26-PM53 only).
JS	28. Verify the intercom headsets are able to transmit and receive clearly (if applicable).
JS	29. Operators and Pilots have reviewed, and have in their possession, mainline and yard maps showing their intended routing, curves and interlockings and restrictions and other vital information.

Note: When transporting units for PMI, make sure cabs, decks, platforms and operating stations are clear and free from trash, debris, tools, materials and supplies.

Notes/Comments:

Print Name(s):	[Redacted]	ID# (s):	[Redacted]
Signature(s):	[Redacted]	Equipment#:	PM 4/7
Yard or location where inspection is performed:	New Carrollton		
Date:	7-29-21	Time of Inspection:	22:45

TRST-CMP-FRM-C2RVPUIC-REV.5.2 | 04122021

WMATA CLASS 2 RAIL VEHICLE PRIOR TO USE INSPECTION

Initials (Operator /Flag Person)

1. Check for wheel chocks and that the required quantity for unit(s) in consist are present.
2. Check angle cocks, train line seals, air tool and drain valves. (Open or close as required).
3. Check main engine for proper oil level.
4. Check for any loose, broken, torn, cracked, or leaking components as you make your walk around inspection.
5. If using auxiliary components such as cranes, generators and compressors, check all controls, movements, fluid levels, and safety devices.
6. Start machine and check all switches, gauges, and warning indicators.
7. Check for sufficient air pressure and if equipped with A-9, make sure it is at 90 psi in the release position.
8. Check transmission for correct oil level and any abnormal sounds or functions.
9. Ensure all equipment, tools, supplies or loose debris are secured on decks and not posing any safety hazards.
10. If equipped and scheduled for use, inspect work head assemblies for wear, out of adjustment and damage. Check oil fill reservoirs and grease all fittings.
11. If equipped, inspect E-couplers, tow bars, and revenue train couplers. Make sure all tools are properly stored and secured while maintaining proper housekeeping of materials and equipment.
12. Gas cylinders should be secured and in their proper location.
13. Ensure all work heads and components such as crane booms, outriggers, measuring buggies, clamp frames, plows, turn tables and extension arms are pinned and locked with safety devices prior to travel.
14. Check fuel and hydraulic tanks for proper level.
15. Check all wheels, brakes, visible linkage, and suspension on all rolling stock vehicles.
16. Check for cracked, broken, missing windows and side boards. Make sure there are no bent or loose railings, steps, or cabinet enclosures that are missing safety chains, locks or latches.
17. Turn on and inspect all lighting on unit(s) in consist for any defects or problems.
18. Check that back up alarms and horns sound.
19. Fire extinguishers should be charged and secured. Sign the monthly inspection log (if not already signed).
20. Verify the radio(s) is/are able to transmit and receive clearly.
21. Inspect all items in flagman's booth for proper operation and functionality.
22. Ensure loads are secure, evenly distributed and are not hanging over the side or ends of flat car.
23. Check all Flat Car emergency dump valves and hand brakes.
24. Inspect hi-rail components for thin flanges, leaking cylinders, safety pins, tires, shunts, and proper tuck when on hi-rail.
25. Perform a stretch test. ☐ Successful Test ☐ N/A
26. Perform a rolling brake test (all class 2 vehicles).
27. Perform standing brake test (all flatcars, PM26-PM53 only).
28. Verify the intercom headsets are able to transmit and receive clearly (if applicable).
29. Operators and Pilots have reviewed, and have in their possession, mainline and yard maps showing their intended routing, curves and interlockings and restrictions and other vital information.

Note: When transporting units for PMI, make ensure cabs, decks, platforms and operating stations are clear and free from trash, debris, tools, materials and supplies.

Notes/Comments:

Print Name(s)

ID# (s):

Signature(s):

Equipment#: FLAT 608

Yard or location where inspection is performed:

Date:

Time of Inspection:

TRST-CMP-FRM-C2RVUIC-REV.5.2 | 04122021

Attachment 5 – Page 3 of 3.

Date: 07/30/2021 Time: 00:25 hours.
Final Report Rev. 1 – Red Signal Overrun
E21332

Drafted By: SAFE 705 – 09/13/2021
Reviewed By: SAFE 71 – 09/28/2021
Approved By: SAFE 70 – 11/26/2021

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Appendix G – TRST Work Assignment Sheet

July 29, 2021

Mech: [REDACTED]

Yard Supervisor: [REDACTED]

Call#: [REDACTED]

Cell#: [REDACTED]

Off: [REDACTED]

ROCC: [REDACTED]

MOC: [REDACTED]

ATC: [REDACTED]

Supervisor/Lead Men	Units	Operators	Track Repairers	Laborers/Welders	Locations/Chain Marker	Description of Work			
	PM47				G01 Trk.2 CM: 283+26-315+00 Supervisory 00:30-04:30	Thermite Welding RID: 202118802702 WO: 16433436			
	PM43				G01 Trk.2 CM: 283+26-315+00 Supervisory 00:30-04:30	Thermite Welding RID: 202118802702 WO: 16433436			
Vacation	Sick/Injured	Training/On Loan	OOS/Yard Duties	Equipment Storage	D99	C99	K99	A99	PMI
				PM43 (D99) PM47 (D99)					PM56

Attachment 6 – Page 1 of 1.

Appendix H – ATC Work Order Details



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

Page 1 of 1
MX76PROD

Work Order #: 16478286
Type: CM



Status: CLOSE
07/29/2021 22:02

Work Description: D11, ROCC NOT ABLE TO SET ROUTES BETWEEN D98, D11 AND D13
Job Plan Description:

Work Information									
Asset: 22233	ATCS, D11 POWER SYSTEMS	Owning Office: ATCS-TSSM-DRFO	Parent:						
Asset Tag:		Maintenance Office: SAMS-TSSM-SHOP	Create Date: 07/29/2021 17:57						
Asset S/N: D11, POWER SYSTEMS		Labor Group: ATCSD3D99	Actual Start: 07/29/2021 22:01						
Location: 8325	D11, CHEVERLY, STATION, PLATFORM #2, ROOM 114, TRAIN CONTROL ROOM (D11 IB BT)	Crew:	Actual Comp: 07/29/2021 22:01						
Work Location:		Lead:	Item:						
Failure Class: ATCS012	POWER SYSTEMS	GL Account: WMATA-02-33530-50499270-042-*****-OPR**							
Problem Code: 1013	AC POWER PROBLEM	Supervisor:	Target Start:						
Requested By: [REDACTED]		Requestor Phone: 21797	Target Comp:						
Chain Mark Start:		Chain Mark End:	Scheduled Start:						
Create-Mileage: 0.0		Complete-Mileage: 0.0							
Actual Labor									
Task ID	Labor	Start Date	End Date	Start Time	End Time	Approved?	Regular Hours	Premium Hours	Line Cost
		07/29/2021	07/29/2021	18:00	21:00	Y	03:00	00:00	\$127.14
		07/29/2021	07/29/2021	18:00	21:00	Y	03:00	00:00	\$112.07
		07/29/2021	07/29/2021	18:00	21:00	Y	03:00	00:00	\$112.07
		07/29/2021	07/29/2021	18:00	21:00	Y	03:00	00:00	\$109.34
		07/29/2021	07/29/2021	18:00	21:00	Y	03:00	00:00	\$112.07
		07/29/2021	07/29/2021	18:00	21:00	Y	03:00	00:00	\$112.07
Total Actual Hour/Labor:							18.00	00:00	\$684.78
Related Incidents									
Ticket	Description	Class	Status	Relationship					
8551217	D11AC2 LOSS OF FEEDER 14111 & D11AC1 14108 MISSING C PHASE	SR	CLOSED	RELATED					
Failure Reporting									
Cause	Remedy	Supervisor	Remark Date						
4465	NO AC POWER- RUNNING ON BATTERY	3431	POWER RESTORED	07/29/2021					
Remarks: Expand 7/29/2021 Eve Our techs walked in the TCR and there was no power at all in the station. Power unit 150 came to the TCR and tried to flip the bypass switch on the our transfer panel to no avail. Eventually the battery back up came on on Power's side and we started getting power in the TCR. Power unit 150 warned us that power was draining from the batteries quickly. Some of the other Power technicians informed us that there was no gas in their generator. MOC called and recommended us to turn off our power as well and since we just had an issue at D04 where we lost power and it damaged the mercs box, it made sense for us to turn everything off until we had stable power coming into our room. After a few minutes unit 150 asked us if our equipment was off and we told him that it was off and why we turn it off. MOC called and wanted to find out if they could see the RTU so we turned the power back on. We then unclamped the interlocking to initialize it so that routes could be set, and immediately clamped it again. We then heard what sounded like the generator activate on the power side.									

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08/12/2021 13:59

Attachment 7 – Page 1 of 1.

Date: 07/30/2021 Time: 00:25 hours.
Final Report Rev. 1 – Red Signal Overrun
E21332

Drafted By: SAFE 705 – 09/13/2021
Reviewed By: SAFE 71 – 09/28/2021
Approved By: SAFE 70 – 11/26/2021

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Appendix I – ATC Work Order Details



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

Page 1 of 1
MX76PROD

Work Order #: 16478388
Type: MOD



Status: CLOSE
08/04/2021 01:15

Work Description: D11, SWITCH 1A/B AND 3A/B CLAMP NORMAL DUE TO POWER LOSS ISSUE
Job Plan Description:

Work Information									
Asset: ATCSD11		D11, ATCS, TRAIN CONTROL ROOM, INTERLOCKING, VE		Owning Office: ATCS-TSSM		Parent:			
Asset Tag: ATCSD11				Maintenance Office: ATCS-TSSM-DRFO		Create Date: 07/29/2021 19:30			
Asset S/N: TCRD11				Labor Group: ATCSD3D99		Actual Start: 07/30/2021 17:43			
Location: 8325		D11, CHEVERLY, STATION, PLATFORM #2, ROOM 114, TRAIN CONTROL ROOM (D11 IB BT)		Crew:		Actual Comp: 08/04/2021 01:15			
Work Location:				Lead:		Item: ATCSV0984			
Failure Class: ATCS001		SWITCH MACHINES		GL Account: WMATA-02-33530-50499270-042-*****-OPR**		Target Start:			
Problem Code: 1163		BLOCKED/CLAMPED		Supervisor:		Target Comp:			
Requested By: [REDACTED]				Requestor Phone:		Scheduled Start:			
Create-Mileage: 0.0				Complete-Mileage: 0.0					
Task IDs									
Task ID									
10 Clamped Interlocking Switches in Normal									
MOC requested that interlocking remained clamped during revenue after power incident at D11 station.									
Component:		Work Accompl:		Reason:		Status: CLOSE		Warranty?: N	
20		08/01/21--- ATC MIDS UNCLAMPED							
Component:		Work Accompl:		Reason:		Status: CLOSE		Warranty?: N	
Actual Labor									
Task ID	Labor	Start Date	End Date	Start Time	End Time	Approved?	Regular Hours	Premium Hours	Line Cost
	[REDACTED]	07/29/2021	07/29/2021	20:00	21:00	Y	01:00	00:00	\$37.36
	[REDACTED]	07/29/2021	07/29/2021	20:00	21:00	Y	01:00	00:00	\$37.36
Total Actual Hour/Labor:							02:00	00:00	\$74.72
Failure Reporting									
Cause		Remedy		Supervisor		Remark Date			
Remarks:									

WT_plust_woprnt.rptdesign

08/12/2021 14:01

Attachment 8 – Page 1 of 1.

Date: 07/30/2021 Time: 00:25 hours.
Final Report Rev. 1 – Red Signal Overrun
E21332

Drafted By: SAFE 705 – 09/13/2021
Reviewed By: SAFE 71 – 09/28/2021
Approved By: SAFE 70 – 11/26/2021

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Appendix J – Post Accident-Post Incident Determination Form

DISCOUNT By Supervisor
NO TEST

OCCUPATIONAL HEALTH AND WELLNESS' DRUG AND ALCOHOL COMPLIANCE PROGRAM POST-ACCIDENT/POST-INCIDENT DETERMINATION REFERRAL FORM			
Federal Transit Administration (FTA) regulations and WMATA's drug and alcohol policy require employees involved in an accident/incident to submit to testing for prohibited drugs and alcohol as soon as possible following the occurrence. FTA regulations and WMATA's policy also require the testing of any other individual whose performance may have contributed to the accident/incident.			
EMPLOYEES MUST BE ESCORTED <i>(Testing will not commence without supervisory escort.)</i>			
GENERAL INFORMATION (Please Print)			
Employee Name	Employee ID Number	Job Title	
Superintendent	Supervisor	Phone #	Dept./Location
ACCIDENT / INCIDENT INFORMATION			
Accident / Incident Date		Accident / Incident Time	
Reported to Supervisor Date		Reported to Supervisor Time	
Please provide a brief description of what happened:			
<p>Report for Duty 29-Jul-21 Actual 30-Jul-21 0030</p> <p>30-Jul-21 0040</p> <p>Alleged signal overrun, operator stated that upon attempting to stop at D11-V8 signal unit began to slide. Operator stated that he did "dump" AA to stop.</p>			
DECISION MAKER QUESTIONNAIRE			
Select One:	DOT Safety Sensitive	Non-Safety Sensitive (Non-DOT test ONLY)	
1. Did the occurrence involve the <u>operation of a revenue service vehicle</u> ?	YES <input type="radio"/>	NO <input checked="" type="radio"/>	
2. Was there a fatality?	YES <input type="radio"/>	NO <input checked="" type="radio"/>	
3. Has any individual suffered bodily injury and immediately received medical treatment away from the scene of the accident/incident?	YES <input type="radio"/>	NO <input checked="" type="radio"/>	
4. If the vehicle involved was a bus, van, or automobile was there disabling damage as a result of the occurrence and any vehicle removed from the scene by a tow truck or other vehicle?	YES <input type="radio"/>	NO <input checked="" type="radio"/>	
5. If the vehicle was a railcar, was the vehicle removed from revenue service as a result of the occurrence?	YES <input type="radio"/>	NO <input checked="" type="radio"/>	
If you responded "NO" to question number one, please proceed with Non-DOT testing as appropriate.			
Escorting Supervisor (Print Clearly)	ID Number	Phone Number	
Please Continue to Next Page			

Attachment 9 – Page 1 of 2.

TESTING INFORMATION

FTA regulations and WMATA policy require alcohol testing as soon as possible following an accident/incident. If alcohol testing is not conducted within 2 hours after the accident/incident, you **MUST** document the reason for the delay on this form. If the alcohol test is not administered within 8 hours, and the drug test within 32 hours, you **MUST CEASE** all efforts to administer these tests and document the reason(s) why the tests were not administered within the FTA and WMATA policy prescribed time frames.

Was the alcohol test completed within 2 hours of the accident/incident?

YES ☐

NO ☒

If no, please explain: Unit and Operator were delayed on scene due to Safe and ATC investigation

Was the alcohol test completed within 8 hours of the accident/incident?

YES ☒

NO ☐

If no, please explain: _____

Was the drug test completed within 32 hours of the accident/incident?

YES ☒

NO ☐

If no, please explain: _____

Could any other employee's performance have contributed to this accident/incident?

YES ☐

NO ☒

If yes, were they tested?

YES ☐

NO ☐

If no, please explain: operator was moving in forward direction

If you determine, using the best information available at the time of this decision, that the employee's performance can be completely discounted as a contributing factor to the accident/incident **TESTING IS PROHIBITED**. If a fatality occurred as a result of the accident/incident you **MUST NOT** discount the employee as a contributing factor.

Based on the information available at this time, can the employee's performance be **COMPLETELY** discounted as a contributing factor?

YES ☒

NO ☐

Please explain: I don't have enough information to make this conclusion other than the Operator's statement which states

Additional Comments: he wasn't speeding and attempted to stop. The unit didn't stop as he began to slide so he engaged the AT.

Printed Name of Supervisor Completing Form

Phone Number of Supervisor Completing Form

Official Dept. Signature: _____

Date: 30-Jul-21

Revised Mar. 2020

Attachment 9 – Page 2 of 2. **Note:** The site collector will declare a person ineligible to take a post-incident test based on the Post Incident/Accident Form not being completed accurately. The departments must ensure that their managers understand and enforce the proper departmental policies when required to determine if testing is required. Additionally, it is their responsibility to clearly document the events that occurred and accurately respond to the questionnaire.



Washington Metropolitan Area Transit Authority
Department of Safety and Environmental Management

Safety Bulletin

SB #21-08b

August 2021

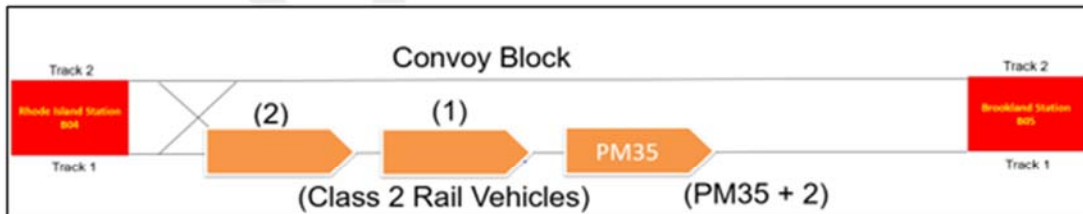
Safe Operation of Class 2 Rail Vehicle and Work Train Convoys

During the morning hours of July 30, 2021, a Class 2 Rail Vehicle traveling in a Convoy Block overran a red signal at the Cheverly Station Interlocking. The vehicle was travelling at an average speed of 20 mph, which was a contributing factor. This Safety Bulletin highlights specific rules that aim to reduce the risk while travelling in a convoy.

A convoy is a pre-determined series of consists (each being either an individual Class 2 Vehicle or a work train), with one lead consist, one tail consist, and any number of vehicles or work trains between them. The convoy is intended to proceed to the same work area destination as a single unit sharing a convoy block. To mitigate the risk of an incident or an accident while operating in a convoy block, it is critical that personnel are aware of, and adhere to, convoy block procedures as defined by the Metrorail Safety Rules and Procedures Handbook (MSRPH) in SOP #15.5.9.

Specific rules for attention are highlighted below:

- Only trained and certified Operators and Vehicle Flag Persons are permitted to perform convoy operations.
- A list of the consists comprising the convoy shall be provided to ROCC by the lead consist operator or by the supervisor prior to establishment of the Convoy Block. The list shall sequentially identify each work train in the series from lead consist to tail consist, and the destination.
- Verify operational brake lights, if equipped. A consist without brake lights shall flash running direction lights to indicate when the vehicle is stopping. Radio announcement shall be made when any unit within a convoy is coming to a stop.
- Each Operator shall perform a radio check with ROCC. Additionally, communication between Operators and Vehicle Flag Persons shall be established before movement.
- Operators at the tail end of the convoy shall announce when they are clear of each Interlocking and Station to the ROCC.
- Operators shall travel at a restricted speed (i.e., speed not to exceed 15 mph), and be prepared to stop within half the distance of vision.



For more information, review Metrorail Safety Rules and Procedures Handbook (MSRPH), Standard Operating Procedure (SOP) 15.5.9 through 15.5.9.11, "Convoy Block for Movement of a Convoy."

For questions not addressed within this Safety Bulletin, please contact the SAFE Department via the Safety Hotline at 202-249-SAFE (7233).

Attachment 10 – Page 1 of 1. **Note:** As the tail unit in the convoy, the PM 47 Equipment Operator was responsible for reporting clear of each interlocking and station, an action to which they complied. However, using the ARS playback, SAFE could not confirm if radio announcements were made when units within the convoy came to a stop.

Appendix L – TRST Equipment Operator Completed Refresher Training



Class Details

RE-INSTRUCTION FOR WMATA EMPLOYEES (TRST)

★★★★★ (0)

You can view further details about the Class by selecting the various links. You can enroll in the class by selecting the Enroll button or add the class to your Learning Plan by selecting the Add to Plan button.

Class Code	OPRTREINSTRUCT-20210928ILT	Class Name	RE-INSTRUCTION FOR WMATA EMPLOYEES (TRST)
Type	Classroom	Contact	--
Price Per Seat	--	Drop Charge	--
Start Date	09/28/2021	End Date	09/28/2021
Last Enrollment Date	--	Last Drop Date	--
Available Seats	--	Available Waitlist	0
Language	English		

[Overview](#) [Objectives Met](#) [Schedule](#) [Prerequisites](#) [Notes and Attachments](#)

Description This is designed to re-instruct WMATA's TRST employees on various rules, policies and procedure.

Instructor [REDACTED]

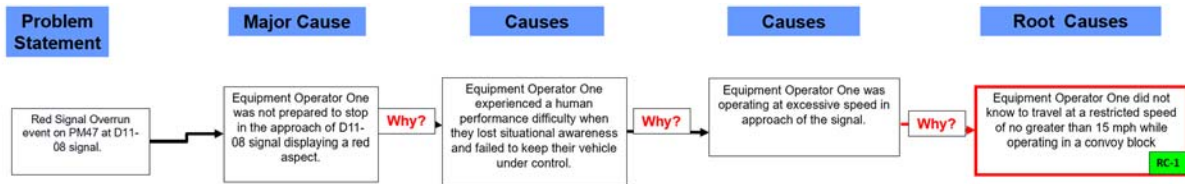
Class Syllabus

To receive credit for this class you must complete all required tasks.

- 1 RE-INSTRUCTION FOR WMATA EMPLOYEES (TRST)
Required Sessions

Attachment 11 – Page 1 of 1.

Appendix M - Root Cause Analysis



Root Cause Analysis

