



WMSC Commissioner Brief: W-0277 – Red Signal Overrun – West Falls Church Rail Yard – July 21, 2023

Prepared for Washington Metrorail Safety Commission meeting on May 14, 2024

Safety event summary:

A newly certified train operator who had never before operated a train out of the West Falls Church Rail Yard, moved an out-of-service train past a red signal and into West Falls Church Station at approximately 5:20 a.m. on July 21, 2023. Switch 17A was trailed, and had been slightly bent.

The West Falls Church Rail Yard Interlocking Operator provided the Train Operator of Train 904 with permission to move to Signal K06-22 at the entrance to mainline tracks, and instructed the Train Operator to then contact the Rail Operations Control Center for permission to enter the mainline and go into passenger service toward Vienna Station.

The Train Operator contacted the Ops 4 Rail Traffic Controller, then entered Stop and Proceed mode and moved past Signal K06-22 while the signal was red. This signal K06-22 is on the right side of the train. The Train Operator, who had been certified about two weeks before the event, believed the signal that they were supposed to be waiting for was on the left side (and had on-the-job training notes that indicated as such). The signal on the left side at this location, K06-30, governs movement of vehicles on the adjacent track, Track 2. Forward-facing video from the train showed Signal K06-30 flashing lunar, indicating to a rail vehicle on the adjacent track that it was clear to proceed for a diverging move into the interlocking to access the center track at West Falls Church Station. The Train Operator of Train 904 reported that signal, K06-30, as their location to the Rail Traffic Controller. The Rail Traffic Controller responded that the Train Operator was at K06-22. There was no emphasis on the correction or repeat back of the correction. The Train Operator of Train 904 entered Stop and Proceed mode and moved into and through the interlocking and into the center track at the station platform.

Probable Cause:

The probable cause of this event was Metrorail's lack of territory familiarization and physical characteristics training and qualification requirements.

Corrective Actions:

Metrorail directed Rail Supervisors to discuss with train operators requirements for operation near red signals at interlockings.

Metrorail provided training to the Train Operator regarding yard operation and approaching red signals.

Examples of other related open CAPs

- CAP C-0183 addresses a finding that Metrorail creates safety risks by not requiring and conducting territory familiarization and physical characteristics training, and not assessing knowledge of physical characteristics prior to assigning operations personnel work on a line, in a terminal, or in a yard. (Current scheduled completion September 2025). Metrorail has created physical characteristics training materials and is rolling out a pilot program to test the efficiency of the materials before rolling out organization wide.



WMSC staff observations:

Metrorail is evaluating the use of its Automatic Train Operation system in specific operational conditions, with rules prohibiting the use of ATO in specific circumstances based on known hazards. Even if Automatic Train Operation were being utilized in certain circumstances at the time of this event, this is not a scenario where the ATO system would be used. Therefore, Metrorail's Automatic Train Operation would not have prevented or reduced the severity of this event. The WMSC continues to oversee Metrorail's safety certification work related to Automatic Train Operation.



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

FINAL REPORT OF INVESTIGATION A&I E23504

Date of Event:	07/21/2023
Type of Event:	O-8 - Red Signal Overrun
Incident Time:	05:20 hours
Location:	West Falls Church Yard, Signal K06-22
Time and How received by SAFE:	05:28 hours via MAC
WMSC Notification Time:	05:32 hours
Responding Safety Officers:	WMATA SAFE: Yes WMSC: No Other: No
Rail Vehicle:	Train ID 904 [L7252-7253.7575-7574.7450-7451.7659-7658T]
Injuries:	None
Damage:	None
Emergency Responders:	None
SMS I/A Incident Number:	20230726#110200

West Falls Church Yard – Red Signal Overrun

July 21, 2023 Table of Contents

Abbreviations and Acronyms-----	3
Executive Summary -----	4
Incident Site -----	5
Field Sketch/Schematics -----	5
Purpose and Scope -----	5
Investigative Methods-----	5
Investigation -----	6
Closed-Circuit Television (CCTV)-----	9
Advanced Information Management System (AIMS) -----	9
Chronological Event Timeline-----	11
Office of Chief Mechanical Officer (CMOR) / Vehicle Monitoring and Diagnostic System (VMDS) -----	12
Office of Car Maintenance (CMNT) -----	13
Office of Automatic Train Control Engineering (ATCE) -----	13
Office of Rail Transportation (RTRA) -----	13
Interview Findings-----	14
Train Operator -----	14
Weather -----	14
Related Rules and Procedures-----	14
Human Factors -----	14
Evidence of Fatigue -----	14
Fatigue Risk -----	14
Post-Incident Toxicology Testing -----	15
Work History-----	15
Certifications -----	15
Findings -----	16
Immediate Mitigation to Prevent Recurrence -----	16
Probable Cause Statement-----	16
Recommended Corrective Actions -----	16
Appendices -----	17
Appendix A – Interview Summary -----	17
Appendix B – Operator's Statement and RTRA Investigative Documents (Abridged) -----	18
Appendix C – Rail Operations Control Center (ROCC) Incident Report -----	20
Appendix D – CMNT Maximo Inspection Report-----	23
Appendix E – Automatic Train Control Engineering (ATCE) Report -----	25
Appendix F – Why-Tree Analysis -----	28

Abbreviations and Acronyms

AIMS	Advanced Information Management System
ARS	Audio Recording System
ATCE	Office of Automatic Train Control Engineering
ATCM	Office of Automatic Train Control Maintenance
CAP	Corrective Action Plan
CCTV	Closed-Circuit Television
CENV	Office Vehicle Program Services
CMNT	Office of Car Maintenance
CMOR	Office of Chief Mechanical Officer
I/A	Incidents/Accidents Module (SMS)
IIT	Incident Investigation Team
MAC	Mission Assurance Coordinator
MC	Master Controller
MSRPH	Metrorail Safety Rules and Procedures Handbook
NOAA	National Oceanic and Atmospheric Administration
OAP	Operations Administrative Policy
OPS	Operations (Radio Channel Identifier)
OSI	Office of Safety Investigations
RSDAR	Rail Supervisor Daily Activity Report
RTC	Rail Traffic Controller
RTRA	Office of Rail Transportation
ROCC	Rail Operations Control Center
SAFE	Department of Safety
SRC	Safety Risk Coordinator
SMS	Safety Measurement System
VMDS	Vehicle Monitoring and Diagnostic System
WMATA	Washington Metropolitan Area Transit Authority
WMSC	Washington Metrorail Safety Commission

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 Friday, July 21, 2023, at 05:20 hours, a West Falls Church Division Train Operator operating non-revenue Train ID 904 [L7252-7253.7575-7574.7450-7451.7659-7658T] overran Signal K06-22 displaying a red aspect at West Falls Church Yard, Yard Lead 2. The Interlocking Operator granted the Train Operator of Train ID 904 a permissive block up to Signal K06-22 and instructed the Train Operator to contact the Rail Operations Control Center (ROCC) Radio Rail Traffic Controller (RTC) via Operations (Ops) Channel 4. The Train Operator of Train ID 904 contacted the ROCC after arriving at the Signal K06-22, then proceeded past the red signal and into the West Falls Church platform limits on Track 3. The Radio RTC subsequently dispatched an Office of Rail Transportation (RTRA) Supervisor to assist with the incident scene. Automatic Train Control Maintenance (ATCM) personnel inspected the interlocking and found that switch 17A was trailed.

The Train Operator involved was certified approximately two weeks prior to this event. During their interview, the Operator provided copies of their field notes from training, which included a note that the K06-22 signal was a left-handed signal. Signal K06-22 is a right-handed signal. The forward-facing camera captured Signal K06-30 on the left-side of the train flashing a lunar aspect at the time of the event. It was also raining at the time and pre-dawn.

In adherence to Standard Operating Procedure 102-1, which outlines the protocol for Removing an Employee from Service for involvement in an operational safety event, the Radio RTC dispatched a Rail Supervisor to relieve the Train Operator from duty for post-incident testing.

In accordance with the Office of the Chief Mechanical Officer (CMOR) Incident Investigation Team (IIT) Operations Administrative Policy (OAP) 102.06, the Rail Operations Control Center (ROCC) promptly initiated the removal of Train ID 904 from revenue service for post-incident investigative measures. This action adhered to the Rail Vehicle Event Investigation Policy, ensuring a comprehensive examination of the incident.

No injuries were reported. Switch 17A was reported to have sustained a slight bend at the tip of the point.

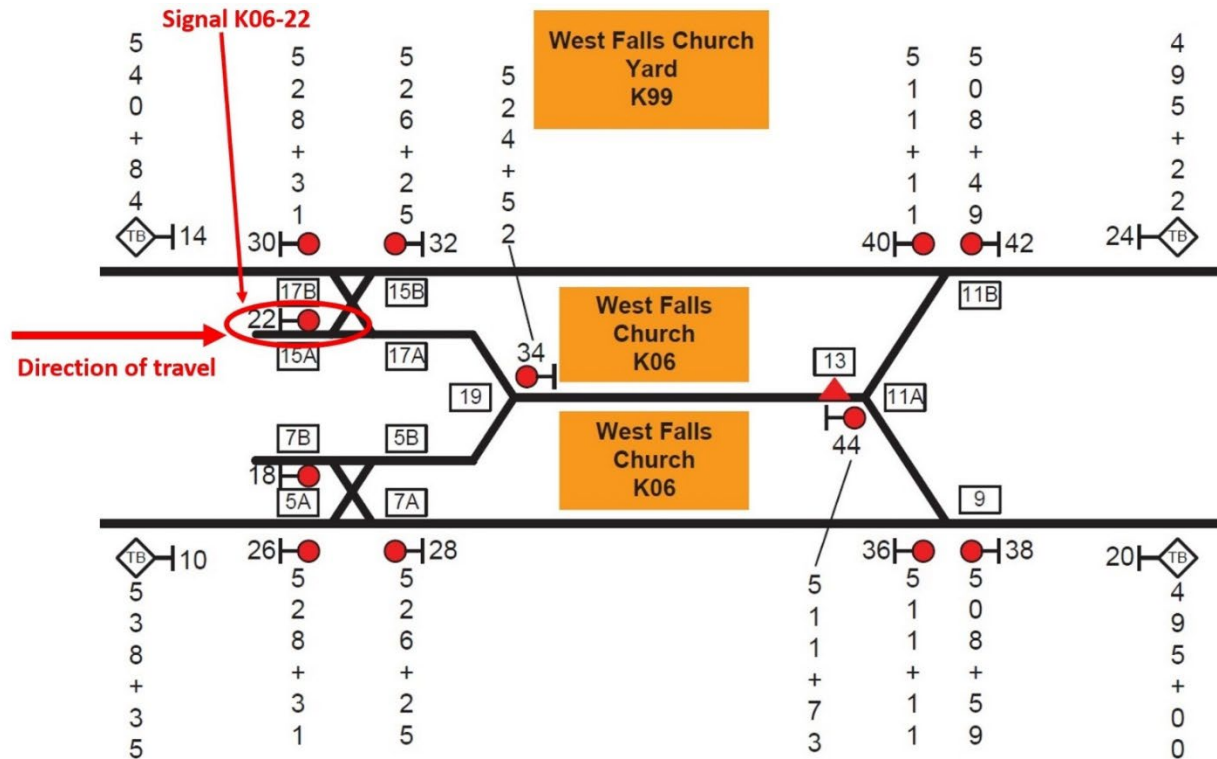
The probable cause of the signal overrun was a human factors error of the Train Operator. The Operator had an incorrect understanding of the signal placement, which likely contributed to the incident. Rainy conditions and darkness at the time of the event also likely affected visibility and made it challenging for the Train Operator to identify the correct yard signals to follow accurately. There were no vehicle or infrastructure deficiencies identified. All systems operated as designed.

A Contributing Factor to the event was the adjacent mainline signal K06-30 displaying a flashing lunar aspect. Signal K06-30 is a mainline signal and was displaying a flashing lunar aspect to the train operator's left as they approached Signal K06-22, which was on their right. An additional Contributing Factor to the event was the Train Operator entering Stop and Proceed Mode while at the red signal, which is located at the start of ATC-controlled territory.

Incident Site

This is an above-ground station with split platforms. West Falls Church is a Direct Fixation Track governed by Yard Lead 1 Signal K06-18 and Yard Lead 2 Signal K06-22 ; Mainline Signals K06-30, K06-32, K06-26, and K06-28; Track 3 Signal K06-34 and K06-44. Two interlockings connect the yard leads to the mainline tracks.

Field Sketch/Schematics



The above depiction is not to scale.

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.

Investigative Methods

The investigative methodologies included the following:

- Physical Site Assessment
- Formal Interview – SAFE interviewed one individual as part of this investigation. The interview included persons present at, during, and after the incident, those directly involved in the response process, and representatives from the Washington Metrorail Safety Commission (WMSC). SAFE interviewed the following individuals:
 - Train Operator

- Documentation Review – Collection of relevant work history information and process documentation contained in WMATA systems of record. These records include:
 - Train Operator Incident Statement
 - Train Operator Training Record
 - Train Operator 30-day Work History
 - Management Incident Report
 - Metrorail Safety Rules and Procedures Handbook (MSRPH)
 - National Oceanic and Atmospheric Administration (NOAA)

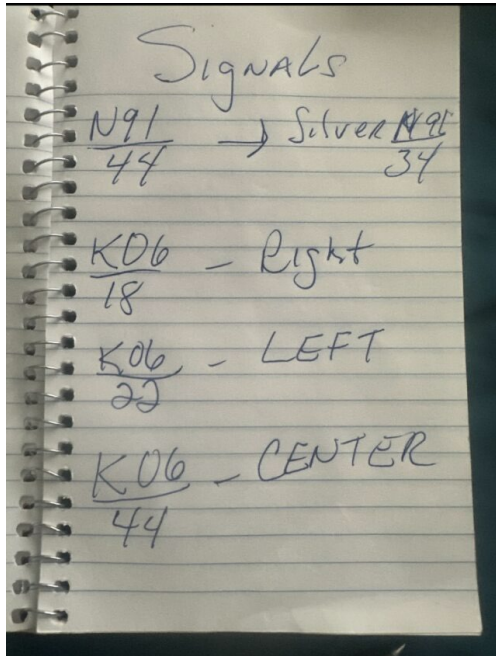
- System Data Recording Data – Collection of information contained in Metro Data Recording Systems. This data includes:
 - Audio Recording System (ARS) playback
 - Closed-circuit television (CCTV)
 - Advanced Information Management System (AIMS)
 - Office of Car Maintenance (CMNT) Maximo Inspection Report
 - Automatic Train Control Engineering (ATCE) Report

Investigation

On Friday, July 21, 2023, at 05:22 hours, a Train Operator operating non-revenue Train ID 904 overran Signal K06-22, displaying a red aspect at West Falls Church Yard, Yard Lead 2. Prior to the event, the Train Operator was instructed to bring the train out of the West Falls Church Yard and proceed to the West Falls Church Station for revenue service in the direction of Vienna Station. The Interlocking Operator granted the Train Operator of Train ID 904 a permissive block up to Signal K06-22 and instructed the Train Operator to contact the ROCC via Ops 4. Train ID 904 Train Operator contacted the ROCC at 05:20 hours and reported they were at Signal K06-30 and standing by. The Radio RTC corrected and instructed the Train Operator to stand by at Signal K06-22. After entering Stop and Proceed mode, the Train Operator of Train ID 904 then proceeded beyond Signal K06-22 without permission from ROCC and entered the West Falls Church platform limits on Track 3. The Radio RTC subsequently dispatched the RTRA Supervisor in the area due to the interlocking on Yard Lead 1 out of correspondence. The Train Operator was removed from service for post-incident testing. No injuries were reported as a result of this incident. Switch 17A was trailed in the process and reported to have sustained a slight bend at the tip of the point.



Photograph 1 – Yard Lead 2 with Signal K06-30 on the left and Signal K06-22 on the right. The Start ATC sign and “S” marker are pictured on the right side of Yard Lead 2, adjacent to Signal K06-22.



Photograph 2 – Train Operator’s handwritten notes from on-the-job training. They noted that Signal K06-22 was aligned on their left, which is incorrect.

A review of the front-facing camera on Lead Car 7252 found that Signal K06-22 on the Train Operator's right side displayed a red aspect and Signal K06-30 on the operator's left had a flashing lunar aspect. The windshield wipers were operating due to the rainy weather conditions. At 05:21 hours, CCTV playback observed Train ID 904 entering the West Falls Church platform limits on Track 3.



Photograph 3 – Switch 17A was not tucked during the red signal overrun and sustained a slight bend at the tip of the point.

Closed-Circuit Television (CCTV)



Photograph 4 – Train ID 904 forward-facing camera showing the train operator's view of Signals K06-22 and K06-30 on Yard Lead 2 at approximately 05:20 hours.



Photograph 5 – Train ID 904 entered West Falls Church platform limits on Track 3 at approximately 05:21 hours.

Advanced Information Management System (AIMS)

Incident Date: 07/21/2023 Time: 05:20 hours
Final Report – O-8 - Red Signal Overrun
E23504

Rev.1 Drafted By: SAFE 702 – 04/3/2024
Rev. 1 Reviewed By: SAFE 704 – 04/04/2024
Rev.1 Approved By: SAFE 704 – 04/04/2024

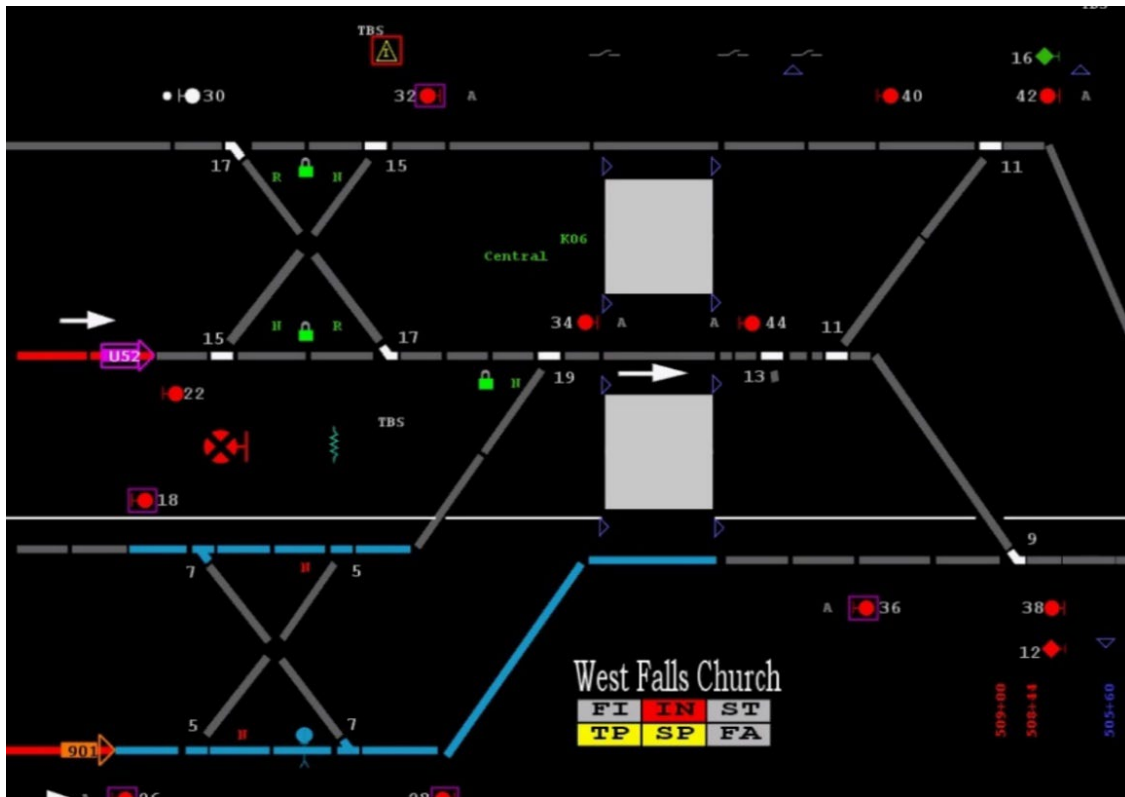


Figure 1 – Train ID 904 at Signal K06-22 (Red) on Yard Lead 2 at approximately 05:20 hours.

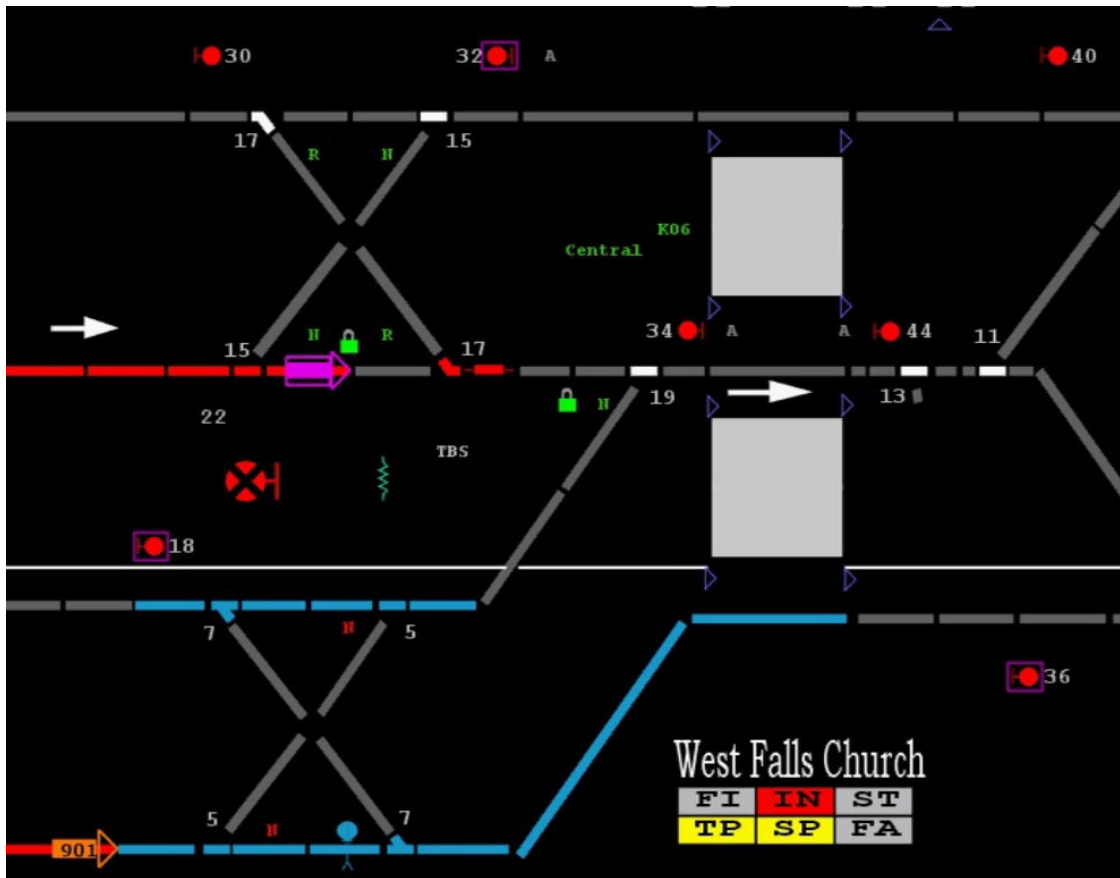


Figure 2 – Train ID 904 traveled beyond Signal K06-22 (Red) on Yard Lead 2 at approximately 05:22 hours.

Chronological Event Timeline

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

Time	Description
05:15:19 hours	<p><u>Interlocking Operator</u>: Provided a block to Train ID 904 up to Signal K99-56; upon receiving a lunar, they were clear to proceed to Signal K06-22 and contact ROCC on Ops 4. [Yard]</p> <p><u>Train ID 904 Train Operator</u>: Acknowledged and repeated the instructions, including contacting ROCC at Signal K06-22. [Yard]</p>
05:20:17 hours	<p><u>Train ID 904 Train Operator</u>: Contacted ROCC and reported standing by at Signal K06-30, eight cars, destination Vienna, over. [Ops 4]</p> <p><u>Radio RTC</u>: Acknowledged Train ID 904 at K06-22, Red. Instructed Train ID 904 to stand by. Informed 904 they are currently single-tracking Vienna from West Falls Church via Track 2 due to an interlocking out of correspondence at West Falls Church on Track 1. [Ops 4]</p> <p>Train ID 904 appeared at Signal K06-22 (Red) on Yard Lead 2. [AIMS]</p>

05:21:46 hours	<u>Radio RTC</u> : Instructed Train ID 904 to hold their location; how do you copy? [Ops 4] <u>Train ID 904 Train Operator</u> : Reported holding their location on Track 3 at the 8-Car Marker, over. [Ops 4]
05:22:00 hours	Train ID 904 appeared at Signal K06-22 (Red) on Yard Lead 2. [AIMS]
05:23:53 hours	<u>Radio RTC</u> : Notified the Interlocking Operator that Train 904 overran Signal K06-22 and trains cannot enter or exit the West Falls Church Yard at this time. Interlocking Operator acknowledged. [Landline]
05:23:57 hours	<u>Radio RTC</u> : Instructed Unit 30 to go to the West Falls Church platform for a red signal overrun with the train currently on Track 3. The Train Operator of Train ID 904 was removed from service pending a post-incident investigation. [Ops 4]
08:40:07 hours	<u>Radio RTC</u> : Instructed Train ID 904 to re-block to Train ID 704, destination West Falls Church Yard. Train ID 704 was given a lunar at Signal K06-34 and a permissive block to no closer than 10 feet of Signal K99-58 and to contact the Interlocking Operator. [Ops 4] <u>Train ID 904 Train Operator</u> : Train Operator acknowledged the RTC's instructions and performed a 100% repeat back. [Ops 4]

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

Office of Chief Mechanical Officer (CMOR) / Vehicle Monitoring and Diagnostic System (VMDS)

Adopted from CMOR IIT report with minor formatting and grammatical edits:

“At 5:22:14 hours, Train ID 904 was in front of the red signal K06-22, which remained in the red state. The Master Controller (MC) in lead car 7252 was activated, causing it to disregard the red signal K06-22 and proceed past it (Switch 17A was trailed). Subsequently, Train ID 904 came to a complete stop at West Falls Church Station 8-Car Marker. IIT did not detect any mechanical failures that could have contributed to this incident. See the timeline of events below:”

Time	Description
05:22:10 hours	Train ID 904 Limiting Speed went to 0 mph. MC was in B1-B3.
05:22:13 hours	Train ID 904 Regulated Speed went to 0 mph. MC was in B1-B3.
05:22:14 hours	Train ID 904 stopped in front of Signal K06-22.
05:22:18 hours	Train ID 904 entered Stop and Proceed Mode, Limiting Speed changed to 1 mph, and the MC was in B5.
05:22:22 hours	MC was placed in P1-P4, and Train ID 904 started moving.
05:22:25 hours	Train ID 904 continued towards the West Falls Church platform, thus overrunning Red Signal K-06-22. The train speed was 1.48 mph, and the MC was in P1-P4.
05:22:35 hours	Train keys down.

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

Office of Car Maintenance (CMNT)

CMNT personnel performed a post-incident inspection, including checking the trucks and wheels on Cars 7252 and 7253 (see Appendix D). CMNT complied with IIT recommendations and found no trouble; all tests passed satisfactorily. CMNT personnel determined that the train was suitable for service.

Office of Automatic Train Control Engineering (ATCE)

Adopted from ATCE report with minor formatting and grammatical edits.

“ATCE personnel analyzed the red signal overrun incident and revealed that Train ID 904 passed Red Signal K06-22 from Yard 2 to Track 3; Switch 17A was trailed (see Appendix E). Three trains were dispatched from the West Falls Church Yard to the K06 middle platform via Track 3 between 05:01:00 and 05:25:00 hours.

Train ID 607 occupied track circuit 528YT at 05:02:19 hours and passed lunar Signal K06-22 to K06-34 at 5:12:17 hours. Switches 15 and 17 were in the normal position. Train ID 607 cleared the interlocking at 5:13:40 hours.

Train ID 608 occupied track circuit 528YT at 05:14:15 hours and passed lunar Signal K06-22 to 34 at 05:17:24 hours. Switches 15 and 17 were in the normal position. Train ID 609 cleared the interlocking at 5:18:46 hours.”

At 05:19:22 hours, Signals K06-30 and K06-34 were flashing lunar (reverse traffic from Track 2 to Track 3). Switch 15 was in the normal position, and Switch 17 was in the reverse position. At 05:19:43 hours, Train ID 904 occupied track circuit 528YT in front of Red Signal K06-22. At 05:20:48 hours, Train ID 904 passed Red Signal K06-22 and occupied track circuit 15AT towards the K06 middle platform. Signal K06-30 changed from lunar to red. At 05:21:06 hours, Switch 17 was out of correspondence due to Switch 17A being trailed. Train ID 904 cleared the interlocking at 5:22:02 hours and occupied the K06 middle platform until 08:42:27 hours.

Office of Rail Transportation (RTRA)

Adopted from RTRA report with minor formatting and grammatical edits

“The RTRA Supervisor conducted an interview with the Train Operator after the incident occurred. The interviewed revealed the Train Operator was given permission to the K06-22 Signal, leaving the West Falls Church Yard, and to contact Ops #4. The Train Operator proceeded past the signal. The Train Operator is new operator that recently qualified. The Train Operator had no prior reported safety violations.”

Interview Findings

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

Train Operator

- Stated they were unfamiliar with the Yard signals, and it was their first time operating a train out of the West Falls Church Yard.
- Reported they did not conduct a 100% repeat back of the RTC's instructions.
- The Train Operator observed the incorrect signal (Signal K06-30) while leaving the yard and entering the mainline.
- Reported they had speed commands while passing Signal K06-22 (Red)¹.
- Train Operator's personal field notes indicated that Signal K06-22 was on the left side when leaving the yard.

Weather

At the time of the incident, NOAA recorded the temperature as 70°F, light rain, mostly cloudy, winds eight mph, and 87% humidity. Sunrise was at 06:00 hours. This is an above-ground station. The weather was likely a contributing factor in this incident (Weather source: NOAA – Location: West Falls Church, VA).

Related Rules and Procedures

- MSRPB Section 3 – Operating Rules Ver. 2.0 – 3.67 – Rail vehicles shall not be operated past or closer than a point 10 feet in the approach of an interlocking signal or lamp displaying a red aspect, a red flag, or a dark interlocking signal, except at a bump post or entering a pocket track, or unless authorized by ROCC or the Interlocking Operator and the move is consistent with customer safety as specified in Rule 3.1.
- MSRPB Section 3 – Operating Rules Ver. 2.0 – 3.79 – Train Operators shall not move trains with zero speed commands except after notifying ROCC or Terminal Supervisor and being given permission to move with zero speed commands and either a permissive block going with traffic or an absolute block going against traffic (see SOP #15).

Human Factors

Evidence of Fatigue

SAFE evaluated incident data for evidence of fatigue that may have been present at the time of the incident. No signs or symptoms of fatigue were detected from the available data. No signs or symptoms of fatigue were evident from the video. The employee reported feeling fully alert at the time of the incident. The Train Operator reported experiencing no symptoms of fatigue in the time leading up to the incident.

Fatigue Risk

¹ This statement was not supported by the train data and video analysis.

SAFE evaluated incident data for fatigue risk factors. Risk factors for fatigue were present due to the incident occurring at a time of low circadian alertness. The Train Operator reported keeping a regular sleep schedule in the days leading up to the incident. The Train Operator performed day shift work in the days leading up to the incident. The employee was awake for 2.3 hours at the time of the incident. The Train Operator reported 8 hours of sleep in the 24 hours preceding the incident. The off-duty period was 57.9 hours, which provides an opportunity for 7-9 hours of sleep. This was more than a comparable amount of sleep to the employee's regular workday sleep durations. The employee reported no issues with sleep.

Post-Incident Toxicology Testing

WMATA's Drug and Alcohol Program determined that the Train Operator was not in violation of the Drug and Alcohol Policy and Testing Program 7.7.3/7.

Work History

The Train Operator is a WMATA employee with over five years of total service: five years as a Bus Operator and two weeks as a Train Operator. The Train Operator is certified to the RWP-2 Level and expires in February 2024. This employee has no history of sleep issues to report.

Certifications

The Train Operator completed their Train Operator training course on May 22, 2023, with 87% on the MSRPH Exam and 86% on the TVOIM Exam. The Train Operator completed the practical application portion on July 6, 2023, with a Quality Level (QL) – 1 rating.

Findings

- The Train Operator was instructed to hold at Signal K06-22 by the Radio RTC.
- The Train Operator entered the Stop and Proceed Mode without permission from the ROCC.
- The Train Operator moved past Signal K06-22, displaying a red aspect.
- The Train Operator's hand-written training notes indicated that Signal K06-22 was on their left-hand side.
- Signal K06-30, which is on the left-hand side, was displaying a flashing lunar aspect at the time of the event.
- Weather conditions were rain and pre-dawn hours, which likely affected the Train Operators ability to read signal identifying labels.

Immediate Mitigation to Prevent Recurrence

- RTRA removed the Train Operator from service for post-incident toxicology testing.
- RTRA removed the incident consist from service for CMNT inspection and CENV analysis.

Probable Cause Statement

The probable cause of the signal overrun was a human factors error of the Train Operator. The Operator had an incorrect understanding of the signal placement, which likely contributed to the incident. Rainy conditions and darkness at the time of the event also likely affected visibility and made it challenging for the Train Operator to identify the correct yard signals to follow accurately. There were no vehicle or infrastructure deficiencies identified. All systems operated as designed.

A Contributing Factor to the event was the adjacent mainline signal K06-30 displaying a flashing lunar aspect. Signal K06-30 is a mainline signal and was displaying a flashing lunar aspect to the train operator's left as they approached Signal K06-22, which was on their right. An additional Contributing Factor to the event was the Train Operator entered Stop and Proceed Mode while at the red signal, which is located just before the ATC-controlled territory.

Recommended Corrective Actions

Corrective Action Code	Description	Responsible Party	Estimated Completion Date
110200_SAF ECAPS_RT RA_001	(RC-1) RTRA Supervisors will be required to document [within the Rail Supervisory Daily Activity Report (RSDAR) application] a minimum of five (5) discussions per day regarding train operator operations near interlocking signals displaying a red aspect.	RTRA SRC	Completed
110200_SAF ECAPS_RT RA_002	(RC-1) RTRA Management will ensure the Train Operator is scheduled and completes refresher training emphasizing operating within the yard and approaching red signals.	RTRA SRC	Completed

Appendices

Appendix A – Interview Summary

The below narrative summarizes the incident 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.

The Train Operator is a WMATA employee with over five years of total service: five years as a Bus Operator and two weeks as a Train Operator. The Train Operator is certified to the RWP-2 Level and expires in February 2024. This employee has no history of sleep issues to report.

During the interview, the Train Operator stated they were beginning their workday and were tasked to bring the train out of the yard. They noted that the Interlocking Operator instructed them to proceed to Signal K06-22 and hold. Once at the signal, the Train Operator reported that the signal was lunar, and they had speed commands. The Train Operator said they contacted ROCC and stated they had a lunar and were proceeding to the 8-Car Marker at West Falls Church. The Train Operator stated they were trained to proceed through signals if they had speed readouts. After reaching the platform, the Train Operator reported they were contacted by ROCC and informed to stand by as they had overrun a red signal.

The Train Operator disclosed their training notes during the interview, which did not include Signal K06-30 and notated that Signal K06-22 was on the left. The Train Operator said there are known radio communication issues within the West Falls Church Yard that may have contributed to not hearing clear instructions from ROCC.

The Train Operator said there were no distractions during the incident and no mechanical issues with the train. The Train Operator reported no problems with their sleep; they were fully alert at the time of the incident and made an honest mistake by traveling beyond the red signal.

Appendix B – Operator's Statement and RTRA Investigative Documents (Abridged)

WMATA/RTRA Incident/Accident Report (Other than Motor Vehicle) Page ___ of ___

Incident Information: This page must be completed for all incidents

Date: 7/21/23 Incident Time: 5:20 AM Time Reported: 5:20 AM Reported by: Customer Employee ROCC Other

Location

Station: West Falls Church Mezzanine #: N/A Track #/Destination: #3 Chain Marker/Signal Number: N/A

TYPE OF INCIDENT

Property Damage Smoke Fire Customer Complaint
 Customer injury Customer Illness Employee Injury Employee Illness
 Criminal Activity Elevator Entrapment Rail Vehicle Incident Other (Explain in description of incident)

WEATHER **LIGHT CONDITIONS (natural lighting)** **LIGHTING (artificial lighting)**

Clear Rain Dawn/Dusk Daylight Lights On Lights Off
 Snow Sleet/Ice Dark Tunnel/Underground Lights Not Working

STATION INCIDENTS: Always include equipment number you use for MOC/AFC/EOC

Elevator/Escalator #: _____ AFC #: _____ Room Number/Location: _____

Failure Number(s): _____

Parking Lot Paid Area Free Area Garage Station Entrance Stairway # _____ Platform Ancillary Room
 Injury/Illness reported aboard Train Other

Name of Responding Supervisor: _____ Name/Department of PLNT/AFC or other WMATA responder: _____

TRAIN INCIDENTS

Train ID: 904 Destination: Vienna Car Numbers (list all cars in consist): 7252 7575 7450 7659 Lead Car: 7252

Name of Responding Supervisor: _____ Name/Department of CMNT/TRST or other WMATA responder: N/A

DESCRIBE THE INCIDENT: Include what you did to correct the problem and who you notified and when.

Describe any property damage and the extent of any injuries.

I WAS 904 COMING OUT THE YARD ON THE APPROACH TO KOB-22 WITH A FLASHING LUNAR AND Speed Read OUTS (20mph) I CONTACT TO CENTER TO GO IN THE POCKET TRACK I COULDN'T UNDERSTAND THE RADIO DUE TO BEING IN A BAD AREA BUT I THOUGHT I COPY THAT THEY GAVE ME PERMISSION TO PROCEED TO THE POCKET TRACK THEN I REVERSE END AND ^{AFTER} I DID THAT I WAS TOLD TO HOLD MY LOCATION AND SEE A SUPERVISOR WHICH THEN I WAS TOLD THAT I WAS BEING TAKEN OUT OF SERVICE FOR RUNNING A RED SIGNAL

Employee Completing Report

Employee Name (print): _____ Employee Signature (print): _____ Employee #: _____ Date: 7/21/23
 Division: WFC Run #: 430030 Block #: _____ Assigned Days: W/TH

To Be Completed By Reviewing Manager

Supervisor Name (print): _____ Supervisor Signature: _____ Employee #: _____ Date: 7.21.2023
 Action taken/needed: _____

SMS Number: 20230921/#110085MY

50.753A 04/12 White Copy: Division or Supervisor Yellow Copy: For any incident involving escalators or elevators; remains in kiosk for use of elevator/escalator inspectors

Document 1 – Train Operator Incident Report.

Incident Date: 07/21/2023 Time: 05:20 hours
 Final Report – O-8 - Red Signal Overrun
 E23504

Rev.1 Drafted By: SAFE 702 – 04/3/2024
 Rev. 1 Reviewed By: SAFE 704 – 04/04/2024
 Rev.1 Approved By: SAFE 704 – 04/04/2024

M RTRA SUPERVISOR REPORT				
Date 7/21/23	Incident Time 5:20 A	Incident Location (Station Mezzanine #) West Falls Church	Track/Mezzanine # # 3	
Equipment Number (Train ID & Car Numbers; Escalator/Elevator #) 904 / 7852 7575 7450 7659				
Incident Description Red Signal Overrun				
WMATA Personnel Involved	Employee #	Rule Violation?	Home Division	Post Incident
[REDACTED]	[REDACTED]	n/a	WFC	Yes
Customer Information (Detailed Information must be recorded on Station Manager Incident Report)				
Name	Address			Injury?
Name	Address			Injury?
Name	Address			Injury?
Fire Department/EMS/Other External Agency Responding (Use Supplemental sheet if necessary)				
Arrival Time	Unit Number	Person In Charge	Remarks	

Chronological Account of Incident

At 5:35 am I got called about a Red Signal Overrun at West Falls Church Station from Supervisor [REDACTED]. I arrived to West Falls at 5:50 am and took Operator [REDACTED] down for a Post Incident Test and Interview. Operator [REDACTED] stated that [REDACTED] had a Lener at R06 22 signal but communication was bad.

(Note time for each entry; Include statement of Employee or Witness at conclusion)

Your Arrival Time: 5:50 AM

Supervisor Submitting Report	(Payroll #)	Date	Report Reviewed By	Date
[REDACTED]	[REDACTED]	7/21/23	[REDACTED]	7.21.2023

Report must be faxed to ROCC 202-962-2808 at end of Tour

Document 2 – RTRA Supervisor Incident Report.

Incident Date: 07/21/2023 Time: 05:20 hours
Final Report – O-8 - Red Signal Overrun
E23504

Rev.1 Drafted By: SAFE 702 – 04/3/2024
Rev. 1 Reviewed By: SAFE 704 – 04/04/2024
Rev.1 Approved By: SAFE 704 – 04/04/2024

Appendix C – Rail Operations Control Center (ROCC) Incident Report

View Approved Incident Report

INCIDENT ID: 202320ZORANGE2

DATE 2023-07-21	TIME 0520	LINE Orange	ITEM 2
LOCATION (STATION/YARD) West Falls Church (K06)	LOCATION/CHAIN MARKER (If Applicable)		REPORTED BY ROCC AIM DISPLAY
TRAIN ID 904	DIRECTION O/B	TRACK NUMBER 3	DEPTS NOTIFIED Everbridge Alert/Messaging
CAR NUMBERS (XXXX-XXXX)			
Lead Car			
7252-7253	7575-7574	7450-7451	7659-7658
Caused Issue <input checked="" type="checkbox"/>	Caused Issue <input type="checkbox"/>	Caused Issue <input type="checkbox"/>	Caused Issue <input type="checkbox"/>
TRBL CODE RSIG-RED SIGNAL OVERRUN	RESP CODE RTR		

TYPE INCIDENT
RED SIGNAL OVERRUN

ACTION PLAN
Remove Train and Train Operator From Service

DELAYS IN MINUTES			
LINE	INCIDENT	TRAIN	TOTAL DURATION
37	37	207	0

TRIPS MODIFIED					
PARTIAL	GAP TRAIN	LATE DISPATCHES	REROUTED	NOT DISPATCHED	OFFLOADS
4	0	0	0	0	2

FIVE PRIMARY CONSOLE INDICATIONS				
BCP	BRAKES ON ILLUMINATED	ALL DOORS CLOSED ILLUMINATED	AUTO\MANUAL ILLUMINATED	BPP
			AUTO	

INCIDENT CHRONOLOGY	
TIME	DESCRIPTION
0520	Train 904 Operator [REDACTED] overran signal K06-22 red, causing switches K06 17A & 17B to go out of correspondence. AOM, ROIC, MTPD, MOC and all concerned personnel notified.
0521	Unit 30 RTRA Supervisor [REDACTED] was on scene to remove the operator from service pending post incident investigation.

Document 3 – ROCC Incident Report page 1 of 3.

Incident Date: 07/21/2023 Time: 05:20 hours
 Final Report – O-8 - Red Signal Overrun
 E23504

Rev.1 Drafted By: SAFE 702 – 04/3/2024
Rev. 1 Reviewed By: SAFE 704 – 04/04/2024
Rev.1 Approved By: SAFE 704 – 04/04/2024

View Approved Incident Report

0527	ATC 2216 and 2251 reported on scene at K06 investigating switches 17A & 17B.
0556	Train 908 track two West Falls Church arrived on the platform and was instructed to hold. ROCC unable to establish a route at K06-32 signal.
0610	RTRA Supervisor [REDACTED] (Unit 30) was granted foul time on track two for the purpose of clamping switch 11B in normal position due to an inability to establish routing at K06-40 signal.
0624	Train 909 track two East Falls Church was instructed to make good announcements to customers, offload the train, and reverse ends for service to New Carrollton.
0626	Unit 30 clamped switch 11B in the the normal, relinquished foul time and was safely on the platform at West Falls Church.
0632	ATC 2251 reported that switches 15B and 17B were clamped in a normal position. ATC 2251 reported that all personnel were standing-by and standing-clear in a place of safety for train movement.
0633	Train 908 was given permission to pass K06-32 signal red verifying switches 15B and 17B were clamped and proceed in service to Vienna, ending the longest customer delay.
0645	Train 912 track two East Falls Church was instructed to make good announcements to customers, offload the train, and reverse ends for service to New Carrollton.
0659	Routing and lunar signal established on track two at West Falls Church K06-32 signal.
0705	ATC 2144 took over RWIC duties from ATC 2251.
0720	ATC 2144 established ETO protection to work on switches 15A/B, 17A/B, 5A/B, and 7A/B.
0810	Routing and lunar signal established on track one at West Falls Church K06-26 signal.
0817	ATC 2144 reported that all personnel and equipment were clear from the roadway and that switches 15A/B, 17A/B, 5A/B, and 7A/B were all clamped in the normal position for a straight through move. ATC Supervisor reported that it was safe for train movement over trailed switch 17A.
0827	ATC 2144 requested permission to enter the roadway for the purpose of inspecting switch 19.
0845	ATC 2144 reported they were standing-by, standing-clear in a place of safety for train movement and wanted to observe a train clearing switch 19.
0847	Incident train 904 was re-blocked to ID 704, destination West Falls Church Yard. Train 704 was given a lunar at K06-34 and given a permissive block no closer than 10 feet of K99-58 signal red and instructed to contact the tower. CMNT personnel was aboard the train.
0901	ATC 2177 reported all personnel and equipment were clear from track 3 and that switch 19 was operational.

MAXIMO TICKET#
8683966

REPORT PREPARED BY	NAME	CLICK TO SIGN
RADIO CONTROLLER 1	[REDACTED]	✓
BUTTON CONTROLLER 1	[REDACTED]	✓
RADIO CONTROLLER 2	[REDACTED]	✓
BUTTON CONTROLLER 2	[REDACTED]	✓

SUPERINTENDENTS OR ASSISTANTS SECTION

ADDITIONAL FOLLOW-UP CORRECTIVE ACTIONS OR REMARKS

Document 4 – ROCC Incident Report page 2 of 3.

Incident Date: 07/21/2023 Time: 05:20 hours
Final Report – O-8 - Red Signal Overrun
E23504

Rev.1 Drafted By: SAFE 702 – 04/3/2024
Rev. 1 Reviewed By: SAFE 704 – 04/04/2024
Rev.1 Approved By: SAFE 704 – 04/04/2024

View Approved Incident Report


**FOLLOW-UP INFORMATION OBTAINED FROM
SUPPORT DEPARTMENTS**

NOTIFICATIONS/PAGE GROUPS

#1/CEO #2/DGM &BELOW

**ADDITIONAL NOTIFICATIONS MADE BY
PHONE**

MAC

APPROVED BY	NAME	CLICK TO SIGN
REPORT APPROVED BY SUPT. OR ASST SUPT.		<input checked="" type="checkbox"/>

© 2014 - Washington Metropolitan Area Transit Authority

Document 5 – ROCC Incident Report page 3 of 3.

Incident Date: 07/21/2023 Time: 05:20 hours
Final Report – O-8 - Red Signal Overrun
E23504

Rev.1 Drafted By: SAFE 702 – 04/3/2024
Rev. 1 Reviewed By: SAFE 704 – 04/04/2024
Rev.1 Approved By: SAFE 704 – 04/04/2024

page 22

Appendix D – CMNT Maximo Inspection Report



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

Work Order #: 18020279
Type: CM



Status: COMP
07/22/2023 13:01

Work Description: Red Signal over run at K06/22, 0/0, K06, RTR, RSIG, 904
Job Plan Description:

Work Information			
Asset: R7252	7252, RAIL CAR, KAWASAKI, 7000 AC, A CAR	Owning Office: CMNT-CMNT-CMNT	Parent:
Asset Tag: R7252		Maintenance Office: CMNT-DULL-INSP	Create Date: 07/21/2023 08:44
Asset S/N: 7252		Labor Group: CMNT	Actual Start: 07/21/2023 08:45
Location: 2280	N99, DULLES YARD	Crew:	Actual Comp: 07/22/2023 13:01
Work Location: 2494	K99, WEST FALLS CHURCH YARD	Lead:	Item: K18050001
Failure Class: CMNT018	AUTOMATIC TRAIN CONTROL (ATC)	GL Account: WMATA-02-33395-50499160-041-*****-OPR**	Target Start:
Problem Code: 3079	STATION OVERRUN	Supervisor: [REDACTED]	Target Comp:
Requested By:		Requestor Phone:	Scheduled Start:
Chain Mark Start:		Chain Mark End:	
Create-Mileage: 479848.0		Complete-Mileage: 479953.0	

Task IDs

Task ID

10 check trucks and wheels on both cars. found no damage or defects ok for service.

000-300-K03 TRUCK&SUSPENSION: WHEEL &
Component: AXLE ASSY; TRUCK; 2K/3K/6K/7K **Work Accomp:** INSPECTED **Reason:** INCIDENT//ACCIDENT **Status:** COMP **Position:** 232 **Warranty?:** N

20 PERFORMED GOOD D.I. IN SHOP.

Component: 000-300 RAIL CAR; 2K/3K/6K/7K **Work Accomp:** INSPECTED **Reason:** NO FAILURE **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]	07/22/2023	07/22/2023	08:00	09:30	Y	01:30	00:00	\$66.40
20	[REDACTED]	07/22/2023	07/22/2023	11:00	11:30	Y	00:30	00:00	\$25.58
Total Actual Hour/Labor:							02:00	00:00	\$91.98

Related Incidents

Ticket	Description	Class	Status	Relationship
8683966	Red Signal overrun at signal K06-22, 0/0, K06, RTR, RSIG, 904	SR	RESOLVED	ORIGINATOR



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

Work Order #: 18020279
 Type: CM



Status: COMP
 07/22/2023 13:01

Work Description: Red Signal over run at K06/22, 0/0, K06, RTR, RSIG, 904
 Job Plan Description:


Failure Reporting			
Cause	Remedy	Supervisor	Remark Date
2477	NO DEFECT, OPERATOR ERROR	3192 TESTED / INSPECTED	07/22/2023
Remarks: COMPLIED WITH IIT RECCOMENDATIONS. NO TROUBLE FOUND. OK FOR SERVICE			

Document 7 – Maximo Work Order displaying inspections conducted by CMNT personnel. Page 2 of 2.

Incident Date: 07/21/2023 Time: 05:20 hours
 Final Report – O-8 - Red Signal Overrun
 E23504

Rev.1 Drafted By: SAFE 702 – 04/3/2024 Rev. 1 Reviewed By: SAFE 704 – 04/04/2024 Rev.1 Approved By: SAFE 704 – 04/04/2024

Appendix E – Automatic Train Control Engineering (ATCE) Report

	Washington Metropolitan Area Transit Authority ENGA-ATCE			Request: [REDACTED]				
				Date: 07/31/2023				
				From: [REDACTED]				
				To: [REDACTED]				
Location: K06		Time of incident: 05:20:48		Date of incident: 07/21/2023		Train ID: Train #3		
Description: Train Passed RED Sig-22 from Yard YL2-528 to K3-528; SW17A Trailed						Control of interlocking: Central		
Initial state as of: 05: 01: 00								
Name	State	Auto	Name	State	Auto	Name	State	Auto
Sig-22	STOP	-----	YL2-528	Vacant	-----	19T	Vacant	
SW-15	Normal	-----	15AT-33	Vacant	-----	K3-512	Vacant	
SW-17	Normal	-----	YL2-528	Vacant	-----			
Time	Location	Status/Control	AIMS DESCRIPTION			Comments		
5:02:19	K06	Status	Track Circuit 528Y2 Occupied			Train #1 Occupied track circuit 528Y2 from Yard		
5:11:15	K06	Control	Signal 22 Request Route Request Route			Request entrance Signal 22 to 34 (from Yard to K06 Middle Platform; track 3)		
5:11:17	K06	Status	Signal Entrance 22 Received					
5:11:18	K06	Control	Signal 34 Request Route Request Route			SW15 & SW17 in Normal Position		
5:11:20	K06	Status	Switch Call 15 Call Normal					
5:11:20	K06	Status	Switch Call 17 Call Normal			Sig-22 to 34 Lunar		
5:11:26	K06	Status	Signal State 22 Clear					
5:12:17	K06	Status	Track Circuit 15AT Occupied			Train passed the interlocking to K06 Platform; Sig-22 changed from lunar to RED		
5:12:17	K06	Status	Signal State 22 Stop					
5:13:09	K06	Status	Track Circuit 528Y2 Vacant			Train clear interlocking		
5:13:16	K06	Status	Track Circuit 15AT Vacant					
5:13:40	K06	Status	Track Circuit 19T Vacant			Train#2 occupied track circuit 528Y2 from Yard		
5:14:15	K06	Status	Track Circuit 528Y2 Occupied					
5:15:53	K06	Control	Signal 22 Request Route Request Route			Request entrance Signal 22 to 34 (from Yard to K06 Middle Platform; track 3)		
5:15:55	K06	Status	Signal Entrance 22 Received					
5:15:55	K06	Control	Signal 34 Request Route Request Route			SW15 & SW17 in Normal Position		
5:15:59	K06	Status	Switch Call 15 Call Normal					
5:15:59	K06	Status	Switch Call 17 Call Normal			Sig-22 to 34 Lunar		
5:16:00	K06	Status	Signal State 22 Clear					
5:17:24	K06	Status	Track Circuit 15AT Occupied			Train passed Sig-22		

Original
07/31/2023

Incident Report 0.0
Page 1 of 3
K06_22RED_Signal_overrun_Oracle_report_2023_07_31_NO

Document 8 – ATCE analysis of the circuits, switches, and signals governing West Falls Church Yard. Page 1 of 3.

Incident Date: 07/21/2023 Time: 05:20 hours
Final Report – O-8 - Red Signal Overrun
E23504

Rev.1 Drafted By: SAFE 702 – 04/3/2024
Rev. 1 Reviewed By: SAFE 704 – 04/04/2024
Rev.1 Approved By: SAFE 704 – 04/04/2024

5:17:24	K06	Status	Signal State 22 Stop	Sig-22 changed to RED
5:17:38	K06	Status	Track Circuit 17AT Occupied	The second train from yard passed interlocking and stopped on K06 middle platform (K3-518). Still SW15 and SW17 in Normal position.
5:17:49	K06	Status	Track Circuit 19AT Occupied	
5:17:59	K06	Status	Track Circuit K3-518 Occupied	
5:18:03	K06	Status	Track Circuit 528Y2 Vacant	
5:18:34	K06	Status	Track Circuit 15AT Vacant	
5:18:38	K06	Status	Track Circuit 17AT Vacant	
5:18:46	K06	Status	Track Circuit 19T Vacant	Train clear interlocking
5:19:11	K06	Control	Signal 30 Request Route Request Route	Request entrance Signal 30 to 34 (Revers Traffic from K2 to K3)
5:19:13	K06	Status	Signal Entrance 30 Received	
5:19:13	K06	Control	Signal 34 Request Route Request Route	
5:19:17	K06	Status	Switch Call 15 Call Normal	SW-15 in Normal
5:19:17	K06	Status	Switch Call 17 Call Reverse	SW-17 called revers
5:19:21	K06	Status	Switch Position 17 Reverse	SW-17 in Revers
5:19:22	K06	Status	Signal State 30 Clear	Sig-30 to 34 Lunar
5:19:43	K06	Status	Track Circuit 528Y2 Occupied	Train #3 occupied 528Y2 from yard
5:20:48	K06	Status	Track Circuit 15AT Occupied	Train passed RED Sig-22
5:20:48	K06	Status	Signal State 30 Stop	Sig-30 Changed to RED
5:20:57	K06	Status	Track Circuit 17AT Occupied	
5:21:06	K06	Status	Switch Position 17 Out Of Correspondent	SW-17 Trailed
5:21:08	K06	Status	Track Circuit 19AT Occupied	Train moved to K06 middle platform
5:21:11	K06	Status	Track Circuit 19T Occupied	
5:21:23	K06	Status	Track Circuit K3-518 Occupied	
5:21:36	K06	Status	Track Circuit 528Y2 Vacant	Train cleared interlocking and stopped on K06 middle platform (Track3).
5:21:46	K06	Status	Track Circuit 15AT Vacant	
5:21:52	K06	Status	Track Circuit 17AT Vacant	
5:22:02	K06	Status	Track Circuit 19AT Vacant	
5:22:11	K06	Status	Track Circuit K3-512 Occupied	
8:42:27	K06	Status	Track Circuit K3-518 Vacant	
=====	=====	=====	=====	=====
Time	Location	Status/Control	AIMS DESCRIPTION	Comments

Original
07/31/2023

Incident Report 0.0
Page 2 of 3
K06_22RED_Signal_overrun_Oracle_report_2023_07_31_NO

Document 9 – ATCE analysis of the circuits, switches, and signals governing West Falls Church Yard. Page 2 of 3.

Incident Date: 07/21/2023 Time: 05:20 hours
Final Report – O-8 - Red Signal Overrun
E23504

Rev.1 Drafted By: SAFE 702 – 04/3/2024
Rev. 1 Reviewed By: SAFE 704 – 04/04/2024
Rev.1 Approved By: SAFE 704 – 04/04/2024

Alarm Status

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

Findings & Conclusion:

Three Trains dispatched from K99 Yard to K06 middle platform via track-3 between 05:01:00 to 05:25:00 AM.

Train #1:

- At **5:02:19** Occupied track circuit 528YT and Passed Lunar Signal 22 to 34 at **5:12:17** AM
- SW15 and SW17 was in Normal Position
- Train Cleared interlocking at **5:13:40** AM

Train #2

- At **5:14:15** Occupied track circuit 528YT and Passed Lunar signal 22 to 34 at **5:17:24** AM
- SW15 and SW17 was in Normal Position
- Train Cleared interlocking at 5:18:46 AM

Train#3:

- At **5:19:22** Signal **30 to 34 Flashing Lunar (Reverse traffic from track-2 to track3)**
 - SW15 in **Normal** and SW17 in **Reverse** position
- At **5:19:43** train occupied track circuit 528YT which is in-front of **RED** signal 22
- AT **5:20:48** train passed **RED** signal-22 and occupied track circuit 15AT towards K06 middle platform; signal 30 changed from lunar to **RED**.
- At **5:21:06** SW17 out of correspondence state **due to Switch 17A Trailed**
- AT **5:22:02** train clear interlocking and occupied K06 middle platform (track circuit K3-518) until **8:42:27** AM.

Distribution:



Original
07/31/2023

Incident Report 0.0
Page 3 of 3

K06_22RED_Signal_overrun_Oracle_report_2023_07_31_NO

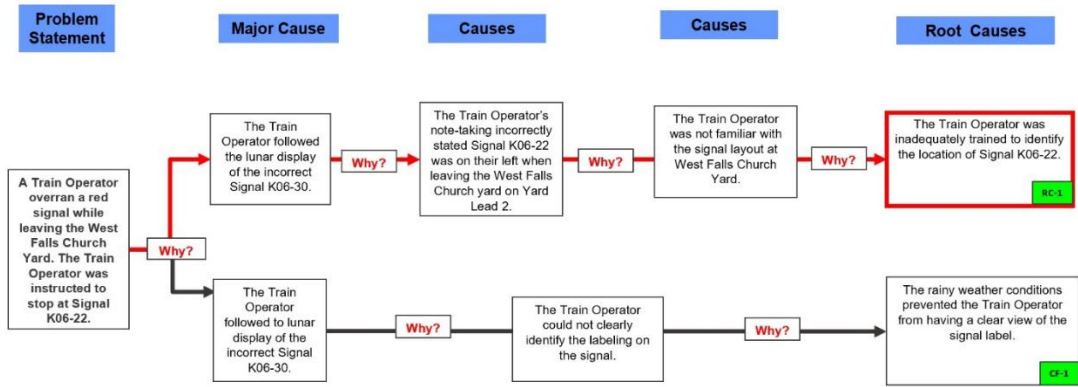
Document 10 – ATCE analysis of the circuits, switches, and signals governing West Falls Church Yard. Page 3 of 3.

Incident Date: 07/21/2023 Time: 05:20 hours
Final Report – O-8 - Red Signal Overrun
E23504

Rev.1 Drafted By: SAFE 702 – 04/3/2024
Rev. 1 Reviewed By: SAFE 704 – 04/04/2024
Rev.1 Approved By: SAFE 704 – 04/04/2024

Appendix F – Why-Tree Analysis

E23504 – Red Signal Overrun – West Falls Church



7

Root Cause Analysis

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

