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

Improper Door Operation

Glenmont Station, Alexandria Rail Yard Employee Platform, Glenmont Station, and Stadium-Armory Station

July 1, 2023 – August 25, 2023 – November 12, 2023

Document Purpose:

This WMSC written report on WMATA Metrorail's safety event investigations and review of Metrorail's findings in accordance with the WMSC Program Standard, in conjunction with the attached Metrorail investigation reports that have undergone WMSC staff review and, if necessary, feedback and revision, describes the investigation activities, identifies factors causing or contributing to the safety events, and sets forth ongoing, additional, or upcoming corrective actions and further oversight work (such as inspections and audits) as necessary or appropriate. The WMSC's ongoing oversight during the investigative process, including safety event reporting and verification, participation in investigative interviews, data review, consistent communication with the Metrorail investigations team, and feedback on Metrorail's reports leads to further improvements prior to consideration of the reports by WMSC Commissioners for adoption. The WMSC's safety event investigation oversight assures the sufficiency and thoroughness of Metrorail's investigations. The WMSC Commissioners are considering these documents (the WMSC review and Metrorail's investigation reports) as a unified item for adoption at the Washington Metrorail Safety Commission meeting on August 6, 2024.

WMSC staff recommend adoption of these investigations.

Improper Door Operation

In 2023, improper door operations events accounted for 16 of the 859 total safety events reported by Metrorail to the WMSC. Direct causes of improper door operations can include human factors (such as pressing a button to open doors on the wrong side or opening doors when the train is not on the platform) or mechanical defect. Investigations into other 2023 improper door events are addressed in other reports.

The causes of and contributing factors to the events described in more detail below include:

- Fatigue: Employee assigned to work 12 consecutive days with mix of day and night shifts
- Rail Supervisor distracting a Train Operator from properly berthing the train, and directing the operator to stop prior to the proper location without the required coordination with the Train Operator or Rail Traffic Controllers
- Loss of focus on specific actions being taken during troubleshooting
- Inadvertent button activation due to lack of understanding of the sensitivity and safety-critical nature of the buttons.
- Contributing to safety issues that occurred during the response to W-0324 (Stadium-Armory Station) was acceptance of noncompliance with written rules and procedures, specifically in this case supervisory personnel entering the roadway without permission or protection, disregarding Metrorail's roadway worker protection requirements defining the WMATA roadway, and acting without use of radio read backs and confirmations to ensure communications are fully understood.
- A rush to prioritize service, including by stopping trains short, without considering the potential hazards that could have been mitigated by having operators walk to the other end of the platform.

As a mitigation related to improper door operation, Metrorail completed its required safety certification steps for the use of automatic door operation on the Red Line in fall 2023, leading to the WMSC's concurrence that Metrorail had completed this hazard identification, verification, and mitigation process, and Metrorail subsequently began implementing automatic door operation on the Red Line in December 2023. Metrorail more recently completed its necessary safety certification steps for automatic door operation on all other lines (Green, Yellow, Blue, Orange, Silver), leading to the WMSC's concurrence on June 27, 2024 that Metrorail had completed this hazard identification and mitigation process for those lines. Metrorail began use of automatic door operation on those other lines on July 8, 2024. Metrorail is utilizing an aspect of the automatic door operation system that is designed to automatically open doors on the correct side of the train when the train is properly berthed in a station. Metrorail is utilizing a setting that requires train operators to manually close doors after visually assuring that it is safe to do so.

Investigations W-0321-W-0324 being considered at the August 6, 2024, meeting led to specific corrective actions including:

- Retraining on door operations, station servicing procedures, and roadway worker protection.
- Communication to all Train Operators regarding lessons learned from several improper door operation events
- Focus of Rail Supervisors on new train operators
- Bulletin on Fatigue Awareness and Prevention (SB-24-02-B) shared with all Metrorail employees.

In addition, Metrorail is planning to implement "point and call" practices for train operators, which provide for actions that increase attention to specific tasks and details. Under this practice, operators physically (point) and verbally (call) acknowledge safety and operational indications on the train and wayside. Metrorail safety leadership have stated they intend to offer this as a tool for operators, not initially require it as a procedure. Metrorail currently requires operators to physically place their heads out the window to identify and verify the platform side with their hands by their side prior to manually opening doors.

Metrorail is implementing corrective action plans (CAP C-0181) associated with the WMSC's Rail Operations Audit issued in April 2022. Metrorail has committed to completing this CAP in October 2024. This CAP addresses consistent supervisory oversight, effective training, safety promotion, "just culture," and other elements Metrorail has committed to in its Public Transportation Agency Safety Plan (PTASP).

Regarding the improper roadway worker protection, the WMSC's second audit of Metrorail's Roadway/Wayside Worker Protection Programs was issued on July 31, 2024. Metrorail is now developing corrective action plans to address the findings of this audit.

Regarding fatigue, Metrorail is implementing CAPs including C-0120 related to ignoring the rest period requirements of its Fatigue Risk Management Policy, and C-0129 regarding the creation and implementation of a procedure for and training to carry out fitness for duty checks on a regular basis for all covered employees as specified in the APTA Fitness For Duty Standard. The WMSC is prepared to conduct another detailed assessment of Metrorail's programs through the Fitness for Duty and Occupational Health Audit that is part of the current second triennial cycle of WMSC safety audits. This audit has been delayed due to Metrorail not yet providing required records and information in accordance with the WMSC Compact and WMSC Program Standard. The WMSC is ensuring that Metrorail provides the information required by the WMSC Compact, WMSC Program Standard, and associated rules and requirements.

Safety event summaries:

W-0321 – Glenmont Station (Red Line) – July 1, 2023 (WMATA ID: E23446)

A Train Operator properly moved a Red Line train to the platform at Glenmont Station (a Red Line terminal station), then pressed the button to open the doors on the non-platform side. The doors then opened on the non-platform side of the train. The doors were open on the incorrect side of the train, with passengers aboard the train, for more than one minute.

Vehicle data show that about 5 seconds after the Train Operator properly berthed the train, they initially pressed the door open button on the correct side of the train facing the platform (left side). The doors did not open due to the way Metrorail directs train operators to conduct manual door operations on 7000 Series railcars without use of the train berth button and the design of these railcars in response to this action. Five seconds after that, the railcar systems allowing door operation activated. Five seconds after the activation, the operator pressed the right-side (non-platform side) door pushbutton, and doors opened on the opposite side of the train from the platform. The Train Operator then keyed down (turned off controls of) the train as usual at a terminal station. The doors remained open. The Train Operator later keyed the train back up to close the doors on the incorrect side.

The Terminal Supervisor noticed that the doors had been open on the incorrect side of the train and instructed the Train Operator to key down the train. The Terminal Supervisor reported the event to the Rail Traffic Controllers, turned over control of the interlocking to the Rail Traffic Controllers, and got permission to conduct a ground walk around to determine whether any passengers or items had fallen to the roadway. The Train Operator opened the train doors on the correct side approximately 50 seconds after the doors on the incorrect side of the train closed. Four riders on the train exited onto the platform. The Terminal Supervisor walked through the train and did not observe anyone on the roadway, then conducted a ground walkaround, that confirmed no one was on the roadway.

In an interview, the Train Operator stated that they were attempting to clean the operating cab before moving to the other end of the train, and inadvertently opened the train doors on the non-platform side of the train. This Train Operator had just begun in this role, having been certified a week and a half prior to this event.

W-0322 – Alexandria Rail Yard Crew Platform – July 1, 2023 (WMATA ID: E23447)

The Train Operator of a Blue Line train toward Downtown Largo Station improperly opened all doors on the right side of the train after stopping the front of the train at the Alexandria Rail Yard Employee Platform. This short platform is used to pick up and drop off employees, in this case, another train operator. The doors from the rear of the first car through the trailing car were open with nothing adjacent to them, creating the risk that riders or objects could fall from the train. The Train Operator operating the train was scheduled to be relieved at this yard platform stop, with another operator taking over to continue the train's trip toward King St.-Old Town Station, downtown D.C., and Largo.

The process used for pickups and drop offs at locations such as this small platform and the similar Metrorail personnel platform near the Brentwood Rail Yard is for the train operator to stop the train at this short platform after being directed to do so by a Rail Traffic Controller, the employee being picked up (or dropped off) to use a key to manually open and

then close the single set of doors at this platform, and the train operator to then continue on. In this case, the Train Operator pressed the door open button in the operating cab, opening all train doors. The Train Operator then pressed the door close button within 3 seconds. The Train Operator properly and immediately reported this improper door operation just after it occurred. Because this door operation outside of a station creates the opportunity for riders or items to fall from the train, Metrorail requires a ground walk around be conducted. The Rail Traffic Controller directed the Train Operator to conduct this walk around, and the Train Operator subsequently reported that no one had fallen from or otherwise exited the train. The Train Operator turned over operation of the train to the new operator, and walked to a building in the rail yard.

The investigation identified fatigue risk for this operator due to the shifts that Metrorail had assigned the operator to work. Metrorail assigned the operator to work 12 consecutive days, with a mix of night and day shifts. This led to sleep debt. Fatigue modeling done as part of this investigation as required by the WMSC Program Standard further demonstrates that this operator had been assigned to work multiple shifts at reduced performance effectiveness due to fatigue in the weeks prior to this event.

Metrorail management disqualified this individual as a train operator following this event, citing this event and others that occurred between 2013 and 2019. The individual had been a certified train operator since August 2013.

W-0323 – Glenmont Station – August 25, 2023 (WMATA ID: E23594)

A Train Operator properly berthed a Red Line train at Glenmont Station, opened the doors on the correct side at this terminal station, then properly exited the train. Another Train Operator, assigned to operate the train back toward Shady Grove Station, boarded at the opposite end of the train. That Train Operator reported to the Terminal Supervisor that there was an issue with the train. After the event, the Train Operator stated that, during their pre-trip inspection of the cab, they observed three circuit breakers that were not in the expected position after boarding, and that they recycled (adjusted) the circuit breakers, two of which related to interior lights and one of which was a door control circuit breaker. Railcar data confirms that a circuit breaker tripped. CCTV shows the interior lights flicker, indicating the time the Train Operator adjusted those switches. Upon adjusting the door control breaker, the Train Operator reported that only the doors on the first car in the new direction of travel closed, which they learned of from the Terminal Supervisor who had come out of the block house to check on the situation. Vehicle data show that the doors closed when the left side door circuit breaker was tripped, however Metrorail's Railcar Engineering report does not document why or how the platform-side doors on the trailing cars of the train remained open. The Train Operator reported that they were worried based on the interaction with the Terminal Supervisor that they had done something incorrectly, and wanted to demonstrate to the Terminal Supervisor that the circuit breakers were in the correct position by re-cycling (opening and closing) the platform-side doors, but inadvertently pressed the button to open the non-platform side doors instead. The doors then opened on the non-platform side. The Train Operator then closed those non-platform side doors within approximately 15 seconds. The Train Operator was then able to close the platform-side doors on the trailing cars.

A ground walkaround determined that the roadway was clear and no people or items fell from the train when the doors were open on the incorrect side.

Post-event inspection of the train identified an issue with the vehicle monitoring system (data collection system). This was not contributory to the event.

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W-0324 – Stadium-Armory Station (improper Roadway Worker Protection during response) – November 12, 2023 (WMATA ID: E23819)

A Rail Supervisor improperly signaled for a Train Operator to stop a train in passenger service with only the lead railcar on the platform at Stadium-Armory Station, with the intent of directing the operator to disembark there and walk across the platform to operate a train on the other track so that this train operator changeout could be made slightly more quickly than if the train operator had to walk back the length of the platform. Stadium-Armory Station was functioning as a partial terminal station due to weekend track work.

The Rail Supervisor had not communicated these planned actions in advance to the Train Operator or other personnel over the radio, and had not received permission from the Rail Traffic Controllers that would be required to conduct such an operation (either at this time or at the other times during the day that they later reported doing this).

After the Train Operator stopped at the location indicated by the Rail Supervisor on the platform, and went to the cab window to interact with the Rail Supervisor, the Train Operator instinctively opened the doors on the platform side of the train. Five cars of the train were still in the tunnel, so doors on each of those cars opened off the platform (in the tunnel) posing a risk of injury to riders in those trailing cars.

The Train Operator acted to close the doors within 2 seconds (doors were open for 6.3 seconds total), and properly reported this improper door operation. However, the Rail Traffic Controller did not acknowledge the reported safety event, and provided permission to the operator to continue forward to berth the train.

A Rail Supervisor stated to the Rail Traffic Controller that they would perform a ground walkaround, but the Rail Traffic Controller did not acknowledge the report. That additional Rail Supervisor conducted the ground walkaround without permission or protection, and reported to the Rail Supervisor on the platform that no people or objects had fallen from the train. The Rail Traffic Controller had again provided permission to a replacement Train Operator to move the train without receiving this confirmation.

After hearing the subsequent communication between the rail supervisors regarding the walkaround, the Rail Traffic Controller asked for further details, which the Rail Supervisor on the platform said they would provide on the telephone after the ground walkaround was completed.

Metrorail safety rules require roadway worker protection to enter the roadway, which was not requested or provided, putting the Rail Supervisor conducting the ground walkaround at risk. The Button Rail Traffic Controller later reported to an Assistant Operations Manager that a Rail Supervisor conducted a ground walkaround without permission. Based on the investigation, it is unclear whether a complete ground walkaround was conducted after the Rail Supervisor entered the WMATA roadway by passing the platform end gate and handrail, but the investigation does demonstrate that the Rail Supervisor entered the area where roadway worker protection is required to mitigate the risk of injury or death without obtaining that protection.

Following the improper roadway worker protection, a Train Operator moved the train to the proper position on the platform, opened the doors, and the train was offloaded. The train was moved to New Carrollton Rail Yard for inspection.

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

FINAL REPORT OF INVESTIGATION A&I E23446/E23447

Event Number:	E23446	E23447
Date of Event:	07/01/2023	07/01/2023
Incident Time:	13:57 Hours	14:00 Hours
Type of Event:	Improper Door Operation	
Location:	Glenmont Station, track 1	Alexandria Yard Employee Platform Stop, track 1
Time and How received by SAFE:	14:02 Hours	14:03 Hours
WMSC Notification Time:	14:25 Hours	14:36 Hours
Responding Safety Officers:	None	
Rail Vehicle:	Train ID 103	Train ID 410
Injuries:	None	
Damage:	None	
Emergency Responders:	None	
SMS I/A Number	20230723#109635	20230723#109612

Drafted By: SAFE 708 08/23/2023
Reviewed By: SAFE 707 – 08/31/2023
Approved By: SAFE 71 – 08/31/2023

Glenmont Station & Alexandria Yard Employee Platform Stop – Improper Door Operation

July 1, 2023

Table of Contents

Drafted By: SAFE 708 08/23/2023
Reviewed By: SAFE 707 – 08/31/2023
Approved By: SAFE 71 – 08/31/2023

Abbreviations and Acronyms

ADU	Aspect Display Unit
AOM	Assistant Operations Manager
ARS	Audio Recording System
AIMS	Advanced Information Management System
CCTV	Closed Circuit Television
CMOR	Office of the Chief Mechanical Officer
ER	Event Recorder
IIT	Incident Investigation Team
MSRPH	Metrorail Safety Rules and Procedures Handbook
NOAA	National Oceanic and Atmospheric Administration
RTC	Rail Traffic Controller
RWP	Roadway Worker Protection
RSDAR	Rail Supervisor Daily Activity Report
RTRA	Office of Rail Transportation
ROCC	Rail Operations Control Center
ROIC	Rail Operations Information Center
SOP	Standard Operating Procedure
SAFE	Department of Safety
SMS	Safety Measurement System
SPOTS	System Performance On-Time Summary
VMDS	Vehicle Monitoring and Diagnostics System
WMATA	Washington Metropolitan Area Transit Authority
WMSC	Washington Metrorail Safety Commission

Executive Summary

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

First Occurrence (E23446)

On Saturday, July 1, 2023, at 13:56 hours, Train ID 103 (L7046/47X7035/34X7060/61X7107/06T), a Red Line train on track 1, arrived at Glenmont Station and stopped at the 8-car marker. At 13:57 hours, the Train Operator opened the train doors on the opposite side of the platform. The Terminal Supervisor observed the event and instructed the Train Operator to key down and stand by.

The Glenmont Terminal Supervisor contacted the Rail Operations Control Center (ROCC) and reported the event. The Radio Rail Traffic Controller (RTC) instructed the Terminal Supervisor to conduct a ground walkaround.

After performing the ground walkaround, the Terminal Supervisor reported that no one was observed, the roadway was clear, and the train was placed out of service.

The Office of Rail Transportation (RTRA) removed the Train Operator from service for post-incident toxicology testing. The train consist was removed from service for post-incident inspection.

There were no injuries or damages resulting from this incident. The Train Operator stated during the interview that they were attempting to clean up the operating cab before departing and opened the train doors on the non-platform side of the train.

The probable cause of the Improper Door Operation event on July 1, 2023, at Glenmont Station was human factors error due to inattention. The Train Operator was focused on cleaning the operating cab when they inadvertently opened the train doors off the platform side.

Second Occurrence (E23447)

On Saturday, July 1, 2023, at 14:00 hours, the Train Operator of Train ID 410 (L6003/02X6169/68X6107X6106T), a Blue Line train on track 1, operating in the direction of Downtown Largo Station, opened all right-side train doors at the Alexandria Yard Employee Platform Stop. The Employee Platform Stop is utilized for personnel to board the train through the lead rail car by opening one door leaf with the train door key. The normal procedure is for the Train Operator to berth at the Employee Platform and observe the employee manually activate the door and enter the rail car. They are not supposed to perform a door operation.

At 14:01 hours, the Train Operator notified the Rail Operations Control Center (ROCC) of the improper door operation. The Radio Rail Traffic Controller (RTC) instructed the Train Operator to verify with the customers that no one was observed exiting the train and then conduct a ground walkaround.

The Button RTC notified the Rail Operations Information Center (ROIC) and the Assistant Operations Manager (AOM) of the event. The Radio RTC instructed an Office of Rail Transportation (RTRA) Rail Supervisor to intercept Train ID 410 at King Street Station.

At 14:10 hours, the Train Operator reported that the ground walkaround was complete, and no passengers had exited the train.

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RTRA removed the Train Operator from revenue service for post-incident toxicology testing. The train was removed from service for post-incident inspection. A fatigue analysis, conducted as a standard practice following a safety event, found several fatigue risk factors, including working multiple shifts and accumulated sleep debt following 12 consecutive days of work.

The probable cause of the Improper Door Operation event on July 1, 2023, at the Alexandria Yard Employee Platform Stop was a human factors error due to complacency with a repetitive task (Door Operations). Fatigue was a possible contributing factor due to accumulated sleep debt associated with 12 consecutive days worked and working night and day shifts. The Train Operator focused their attention on another Train Operator who was boarding the train when they opened the train doors.

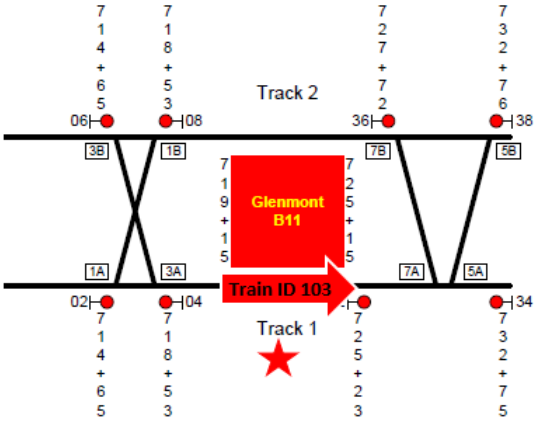
Incident Site

First Occurrence (E23446)
Glenmont Station, track 1

Second Occurrence (E23447)
Alexandria Yard (Platform Stop), track 1

Field Sketch/Schematics

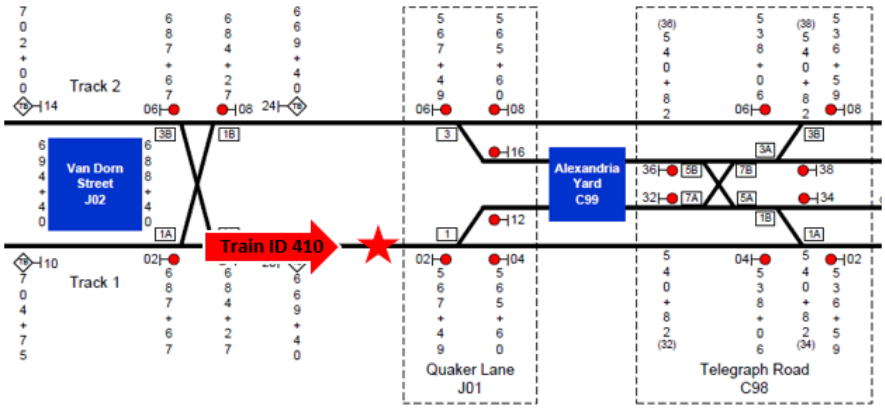
First Occurrence (E23446)



The above depiction is not to scale.

Drafted By: SAFE 708 08/23/2023
Reviewed By: SAFE 707 – 08/31/2023
Approved By: SAFE 71 – 08/31/2023

Second Occurrence (E23447)



The above depiction is not to scale.

Purpose and Scope

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

Investigative Methods

The investigative methodologies included the following:

- Site assessment through video and document review

- Formal Interviews – SAFE interviewed two individuals as part of this investigation. 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:
    - First Occurrence (E23446) – Train Operator (Train ID 103)
    - Second Occurrence (E23447) – Train Operator (Train ID 410)

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

- System Data Recording Review – Collection of information contained in Metro Data Recording Systems. This data includes:
    - Audio Recording System (ARS) playback
    - The Office of Chief Mechanical Officer (CMOR) Incident Investigation Team (IIT) Vehicle Monitoring and Diagnostic System (VMDS)
    - System Performance On-Time Summary (Spots)
    - Advanced Information Management System (AIMS)

Drafted By: SAFE 708 08/23/2023
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Investigation

First Occurrence (E23446)

On Saturday, July 1, 2023, at 13:56 hours, Train ID 103 (L7046/47X7035/34X7060/61 X7107/06T), a Red Line train arrived at Glenmont Station on track 1 and stopped at the 8-car marker. At 13:57 hours, the Train Operator opened the train doors on the opposite side of the platform. The Terminal Supervisor observed the event and instructed the Train Operator to key down and stand by.

According to Audio Recording System (ARS) playback, at 13:59 hours, the Terminal Supervisor reported the event to ROCC. The Terminal Supervisor requested that ROCC take control of the interlocking board, so that the Terminal Supervisor could conduct a ground walkaround to ensure that no passengers had exited the train onto the roadway. The Terminal Supervisor was granted permission and instructed to provide a radio check.

The Button RTC notified the Assistant Operations Manager (AOM) of the incident, that ROCC had taken control of the interlocking board, and that the Terminal Supervisor was conducting a ground walkaround.

At 14:00 hours, the Button RTC notified the Rail Operations Information Center (ROIC) of the incident.

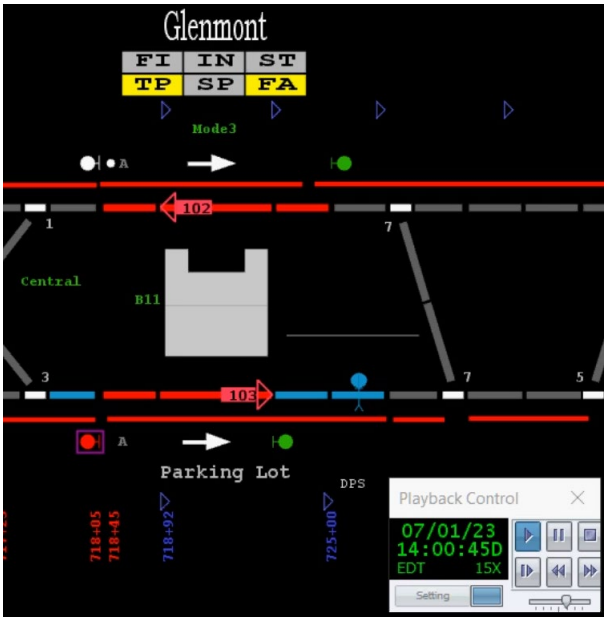


Image 1 - AIMS Playback depicting blue block and human form in place at Glenmont Station, track 1 at 14:00 hours.

At 14:06 hours, the Terminal Supervisor provided a radio check to the Radio RTC. The Radio RTC instructed the Terminal Supervisor to advise when ready for foul time.

At 14:07 hours, the Terminal Supervisor reported that they were walking through the train, confirmed that the train was clear of customers, and no one was observed on the off-platform side of the train. The Terminal Supervisor reported that they placed their head out of the off-platform side of the train while walking through the 8-cars, and no one was observed on the roadway.

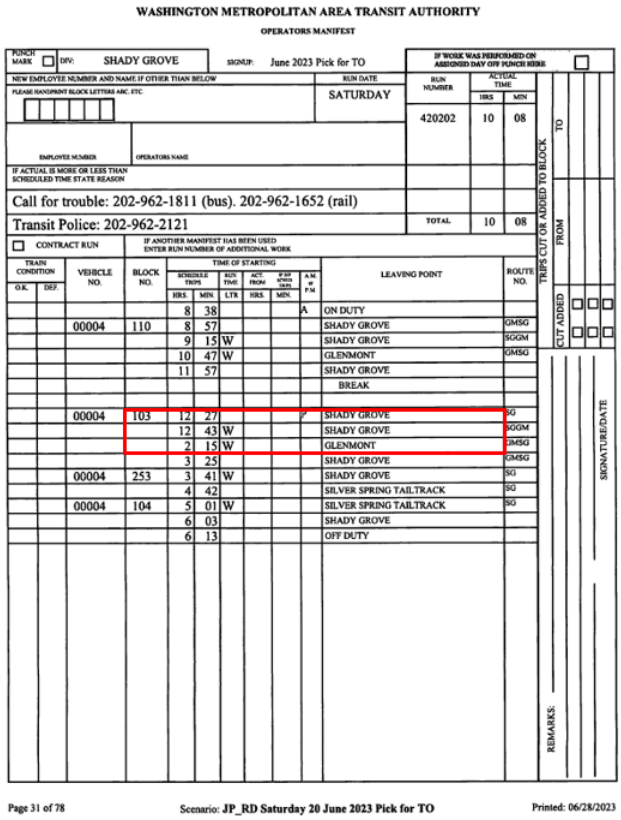
At 14:10 hours, the Terminal Supervisor requested to perform another inspection by walking around the train on the lighted grates. The Radio RTC granted permission and instructed to advise when complete.

At 14:12 hours, the Radio RTC instructed the Glenmont terminal supervisor to inspect the lead train car, for any indications that the door open push button was damaged. The terminal supervisor reported there was no damage to the door control panel.

At 14:17 hours, the Terminal Supervisor reported that they were clear of the roadway, and the ground walkaround was complete and clear.

The Office of Chief Mechanical Officer/Incident Investigation Team (CMOR/IIT) performed an analysis of the train's data and determined that there was no fault found with the train that would have contributed to the cause of this incident.

The Train Operator was working the second-round trip of their assignment after taking a scheduled break from 11:57 hours to 12:27 hours, according to the Train Operator's Manifest. The Train Operator was on duty for five hours and twenty-four minutes when the event occurred.



WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

OPERATORS MANIFEST

PUNCH MARK: ☐ DIV: SHADY GROVE SIGNUP: June 2023 Pick for TO

IF WORK WAS PERFORMED ON ASSIGNED DAY OFF PUNCH HERE ☐

NEW EMPLOYEE NUMBER AND NAME IF OTHER THAN BELOW

PLEASE HANDPRINT BLOCK LETTERS ABC, ETC.

RUN DATE: SATURDAY

EMPLOYEE NUMBER | OPERATORS NAME

IF ACTUAL IS MORE OR LESS THAN SCHEDULED TIME STATE REASON

RUN NUMBER	ACTUAL TIME HRS	MIN
420202	10	08
TOTAL	10	08

Call for trouble: 202-962-1811 (bus). 202-962-1652 (rail)

Transit Police: 202-962-2121

☐ CONTRACT RUN

IF ANOTHER MANIFEST HAS BEEN USED ENTER RUN NUMBER OF ADDITIONAL WORK

TRIPS CUT OR ADDED TO BLOCK — TO | FROM | CUT ADDED

TRAIN CONDITION O.K.	TRAIN CONDITION DEF.	VEHICLE NO.	BLOCK NO.	TIME OF STARTING SCHEDULE TRIPS HRS.	SCHEDULE TRIPS MIN.	RUN TIME LTR	ACT. FROM HRS.	ACT. FROM MIN.	A.M. or P.M.	LEAVING POINT	ROUTE NO.
				8	38				A	ON DUTY	
		00004	110	8	57					SHADY GROVE	GMSG
				9	15	W				SHADY GROVE	SGGM
				10	47	W				GLENMONT	GMSG
				11	57					SHADY GROVE	
										BREAK	
		00004	103	12	27				P	SHADY GROVE	SG
				12	43	W				SHADY GROVE	SGGM
				2	15	W				GLENMONT	GMSG
				3	25					SHADY GROVE	GMSG
		00004	253	3	41	W				SHADY GROVE	SG
				4	42					SILVER SPRING TAILTRACK	SG
		00004	104	5	01	W				SILVER SPRING TAILTRACK	SG
				6	03					SHADY GROVE	
				6	13					OFF DUTY	

REMARKS: SIGNATURE/DATE

Page 31 of 78 Scenario: JP_RD Saturday 20 June 2023 Pick for TO Printed: 06/28/2023

Document 1 – Train Operator's Manifest

The Train Operator reported during the interview that upon arriving at Glenmont Station on track 1, they were attempting to clean up the operating cab before departing and opened the train doors on the non-platform side of the train.

Second Occurrence (E23447)

Drafted By: SAFE 708 08/23/2023
Reviewed By: SAFE 707 – 08/31/2023
Approved By: SAFE 71 – 08/31/2023

On Saturday, July 1, 2023, at 13:53 hours, Train ID 410, (L6003/02X6169/68X6107X6106T), a Blue Line train on track 1, with a destination of Downtown Largo Station, departed Franconia-Springfield Station.

According to the Train Operator's manifest at 14:01 hours, they were scheduled to be relieved from operating at the Alexandria Yard Employee Platform Stop, and another Train Operator would take over operating.

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

OPERATORS MANIFEST

Safety takes precedence over scheduled times, operate defensively

PUNCH MARK ☐ DIV: ALEXANDRIA - RAIL DIVISION 38

IF WORK WAS PERFORMED ON ASSIGNED DAY OFF PUNCH HERE ☐

NEW EMPLOYEE NUMBER AND NAME IF OTHER THAN BELOW

PLEASE HANDPRINT BLOCK LETTERS ABC ETC

RUN DATE 07/01/23

[redacted] EMPLOYEE NUMBER [redacted] OPERATORS NAME

IF ACTUAL IS MORE OR LESS THAN SCHEDULED TIME STATE REASON

Call for trouble: 962-1811 (bus). 962-1652 (rail)

Transit Police: 962-2121

RUN NUMBER	ACTUAL TIME HRS	MIN
380002	08	00
380512 OT	05	04
T/2	2	32
TOTAL	13	04

RECORD OF TRANSFERS ISSUED — BEGINNING # — ENDING # — TOTAL

☐ CONTRACT RUN

IF ANOTHER MANIFEST HAS BEEN USED ENTER RUN NUMBER OF ADDITIONAL WORK

BUS CONDITION O.K.	BUS CONDITION DEF	VEHICLE NO.	BLOCK NO.	TIME OF STARTING HRS	MIN				LEAVING POINT	ROUTE NO.
				6	52			A	ON DUTY	
			406	7	40				VAN DORN STREET	#
				7	41			LT	VAN DORN STREET	#
				7	53				FRANCONIA-SPRINGFIELD	FSLG
				9	12				LARGO TOWN CENTER	LGFS
				10	29				FRANCONIA-SPRINGFIELD	FSLG
				11	38				LARGO TOWN CENTER	
									(LARGO TOWN CENTER)	
									BREAK	
			410	12	26			P	LARGO TOWN CENTER	FSLG
				12	36				LARGO TOWN CENTER	LGFS
				1	53				FRANCONIA-SPRINGFIELD	FSLG
				2	01				Alexandria Platform	
									(LARGO TOWN CENTER)	
			406	3	49				Alexandria Platform	FSLG
				5	00				LARGO TOWN CENTER	LGFS
				6	09				FRANCONIA-SPRINGFIELD	
									(FRANCONIA-SPRINGFIELD)	
			410	6	57				FRANCONIA-SPRINGFIELD	LGFS
				7	05				FRANCONIA-SPRINGFIELD	FSLG
				8	25				LARGO TOWN CENTER	LGFS
				9	41				LARGO TOWN CENTER	
									(FRANCONIA-SPRINGFIELD)	
				10	00				OFF DUTY	
LT									LITE	

REMARKS — SIGNATURE/DATE [redacted]

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Document 2 – Train Operator's Manifest

The Closed-Circuit Television (CCTV) revealed that Train ID 410 arrived at the Alexandria Yard Employee Platform Stop at 14:00 hours.

Image 2 – Train ID 410 arriving at the Alexandria Yard Employee Platform Stop at 14:00 hours.

Drafted By: SAFE 708 08/23/2023
Reviewed By: SAFE 707 – 08/31/2023
Approved By: SAFE 71 – 08/31/2023

The Office of Chief Mechanical Officer/Incident Investigation Team (CMOR/IIT) performed an analysis of the train's data and determined that upon arriving at the Employee Platform Stop, the right-side doors of the train were commanded to open and were subsequently commanded to close just 3 seconds after opening.

According to Audio Recording System (ARS), at 14:01 hours, the Train Operator reported that they opened the train doors at the inbound platform stop, then requested to perform a ground walkaround. The Radio RTC instructed the Train Operator to walk through the train and ask customers if they saw anyone exit the train, then conduct a ground walk around to ensure no passengers exited onto the roadway.

At 14:02 hours, the Button RTC notified ROIC that Train ID 410 opened doors at the employee platform stop. The Radio RTC instructed a Rail Supervisor located at Braddock Road Station to report to King Street Station and standby for Train ID 410. At 14:03 hours, the Button RTC notified the AOM of the incident.

The Train Operator advised the Radio RTC that customers reported no one had exited the train. The Radio RTC advised that blue block, human form and J02-02 signal were red, then granted permission to the Train Operator to enter the roadway to perform a ground walkaround.

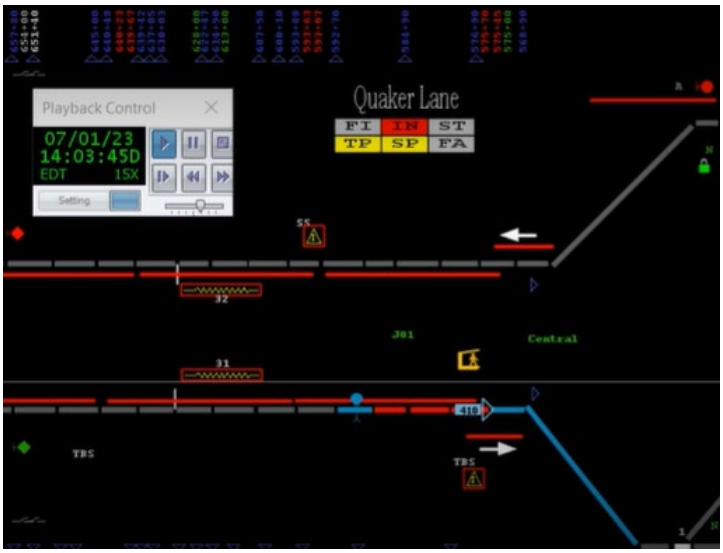

Figure 1 – AIMS Playback depicting blue block and human form in place at 14:03 hours.

At 14:10 hours, the Train Operator informed the Radio RTC that the ground walk-around was complete, and nothing was found. The Radio RTC instructed the Train Operator to continue to King Street Station.

The Train Operator turned over the train to the new Train Operator.

At 14:12 hours, the Train Operator advised ROCC that they had exited the train and walked to the Alexandria Yard Administrative Building. The Radio RTC instructed the Train Operator to contact ROCC via landline.

During the formal interview, the Train Operator reported that they opened the doors at the platform stop while focusing on another Train Operator keying open the train doors for entry onto the train.

RTRA conducted an administrative investigation and the Train Operator was disqualified from train operations based on this event and past performance.

Chronological Event Timeline

First Occurrence (E23446)

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

Time	Description
13:55:17 hours	Train ID 103: Contacted the Terminal Supervisor and advised that the train was approaching Glenmont Station. Glenmont Terminal Supervisor: Acknowledged and instructed to verify lunar and alignment, properly berth on the platform and initiate the doors on the platform side only. Train ID 103: Acknowledged and repeated. [Radio GM YD1]
13:56:59 hours	Train ID 103 arrived at Glenmont Station on track 1. [Spots]
13:57:38 hours	Train ID 103 doors opened off the platform side. [CCTV]
13:58:58 hours	Train ID 103 doors closed on the off-platform side. [CCTV]
13:58:59 hours	Glenmont Terminal Supervisor: Instructed the Train Operator to key down and stand by. [Radio GM YD1]
13:59:14 hours	Glenmont Terminal Supervisor: Contacted ROCC and reported that Train ID 103 opened the doors on the opposite side of the platform. Advised that they were departing the Terminal to perform a ground walkaround and requested ROCC to take control of the board. Button RTC: Acknowledged and instructed to provide a radio check. [Telephone Ops 1]
13:59:48 hours	Train ID 103 doors opened on the platform side, and four customers exited the train. [CCTV]
13:59:59 hours	Button RTC: Contacted the AOM and advised that ROCC had control of the board at Glenmont due to Train ID 103 opening doors on the wrong side of the platform, and the Terminal Supervisor was conducting a ground walkaround. [Telephone Ops 1]
14:00:24 hours	Button RTC: Contacted the ROIC and advised that Train ID 103 opened doors on the wrong side of the platform, and the Terminal Supervisor was conducting a ground walkaround. [Telephone Ops 1]
14:04:31 hours	Radio RTC: Requested radio check with Glenmont terminal supervisor. [Radio Ops 1]
14:06:53 hours	Glenmont Terminal Supervisor: Provided a radio check. [Radio Ops 1]
14:07:03 hours	Radio RTC: Instructed the Terminal Supervisor to advise when ready for foul time. Glenmont Terminal Supervisor: Advised that they were walking through the train and confirmed the train was clear of customers and no one observed on the off-platform side. Radio RTC: Inquired whether the roadway was clear. Glenmont Terminal Supervisor: Confirmed the roadway was clear. They placed their head out of the opposite side while walking through the 8-cars, and no one was observed on the roadway, and the train was out of service. Radio RTC: Acknowledged and repeated. [Radio Ops 1]
14:10:30 hours	Glenmont Terminal Supervisor: Requested to perform a walkaround of the train by walking on the lighted grates. Radio RTC: Granted permission and instructed to advise when complete. [Radio Ops 1]

Drafted By: SAFE 708 08/23/2023
Reviewed By: SAFE 707 – 08/31/2023
Approved By: SAFE 71 – 08/31/2023

Time	Description
14:12:50 hours	Radio RTC: Requested that the Glenmont terminal supervisor inspect the lead car of Train ID 103 to ensure the door open push button was not stuck. Glenmont Terminal Supervisor: Acknowledged and repeated. [Radio Ops 1]
14:14:45 hours	Rail Supervisor: Contacted ROCC and advised they were located at Bethesda Station and were en route to transport the Train Operator. [Telephone Ops 1]
14:17:46 hours	Glenmont Terminal Supervisor: Reported clear of the roadway; the ground walkaround was complete and clear. Radio RTC: Acknowledged and repeated. [Radio Ops 1]
14:17:44 hours	Glenmont Terminal Supervisor: Contacted Radio RTC that there were no passengers on the roadway. Radio RTC: Acknowledged. [Radio Ops 1]

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

Second Occurrence (E23447)

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

Time	Description
13:53:04 hours	Train ID 410 departed Franconia-Springfield Station. [SPOTS]
14:00:25 hours	Train ID 410 arrived at the Alexandria Yard Platform Stop. [CCTV]
14:01:34 hours	Train ID 410: Contacted and reported to the Radio RTC that they opened the train doors at the inbound platform stop. Requested to perform a ground walkaround. Radio RTC; Acknowledged. Instructed Train Operator to walk through the train and ask customers if they saw anyone exit the train, then conduct a ground walk around to ensure no passengers exited onto the roadway. [Radio Ops 3]
14:02:36 hours	Buttons RTC: Notified ROIC that Train ID 410 opened doors at the employee platform stop.[1] ROIC: Acknowledged. [Telephone Ops 3]
14:02:53 hours	Radio RTC: Instructed an RTRA Supervisor to report to King Street Station and standby for Train ID 410. RTRA Supervisor: Acknowledged. [Radio Ops 3]
14:03:02 hours	Buttons RTC: Notified the AOM of Train ID 410 improper door operation. [Telephone Ops 3]
14:03:52 – 14:04:40 hours	Train ID 410: Contacted Radio RTC and informed walk through of train. No passengers detrained. Requested permission to enter roadway. Radio RTC: Acknowledged. Advised that blue block, human form and J02-02 signal were red. Granted permission to enter the roadway. [Radio Ops 3]
14:05:22 hours	Train ID 410: Contacted Radio RTC and informed continued the ground walkaround. Radio RTC: Acknowledged. Advised Train Operator to inform ROCC when done with ground walk around of train. [Radio Ops 3]
14:06:50 hours	RTRA Supervisor: Contacted RTC and discussed exactly where to meet Train ID 410. Buttons RTC: Confirmed with RTRA supervisor to meet Train ID 410 at King Street Station. [Telephone Ops 3]

[1] Doors were opened on the side of the employee platform, but there was no station platform.

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Time	Description
14:09:22 hours	Radio RTC: Requested an update from Train ID 410 on the ground walk-around of the train. [Radio Ops 3]
14:10:28 hours	Train ID 410: Advised the Radio RTC that the ground walk-around was complete, and nothing was found. Radio RTC: Acknowledged. Advised the Train Operator to verify the signal and continue to King Street Station. [Radio Ops 3]
14:12:07 - 14:13:46 hours	Train ID 410: Contacted the Radio RTC and advised that they exited the train and walked to the Alexandria administration building. Radio RTC: Acknowledged. Requested the Train Operator to call ROCC via landline. [Radio Ops 3]

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

Advanced Information Management System (AIMS)

First Occurrence (E23446)

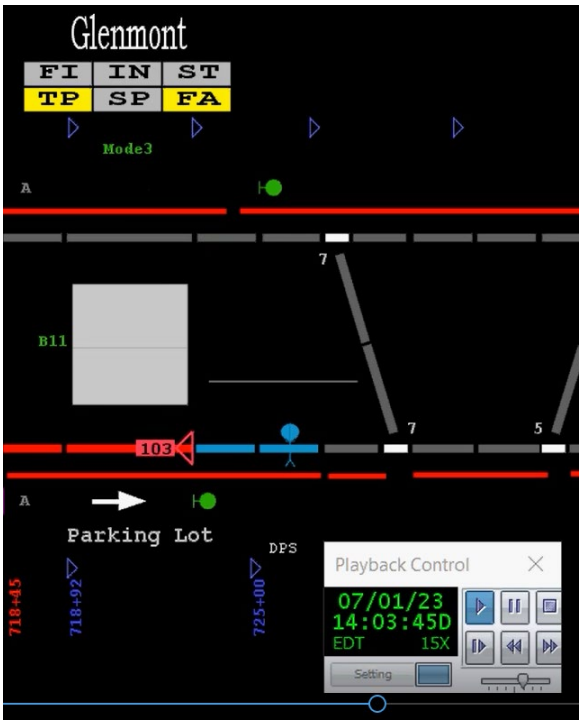

Figure 2 – Train ID 103 located at Glenmont Station, track 1 at 14:03 hours.

Drafted By: SAFE 708 08/23/2023
Reviewed By: SAFE 707 – 08/31/2023
Approved By: SAFE 71 – 08/31/2023

Second Occurrence (E23447)

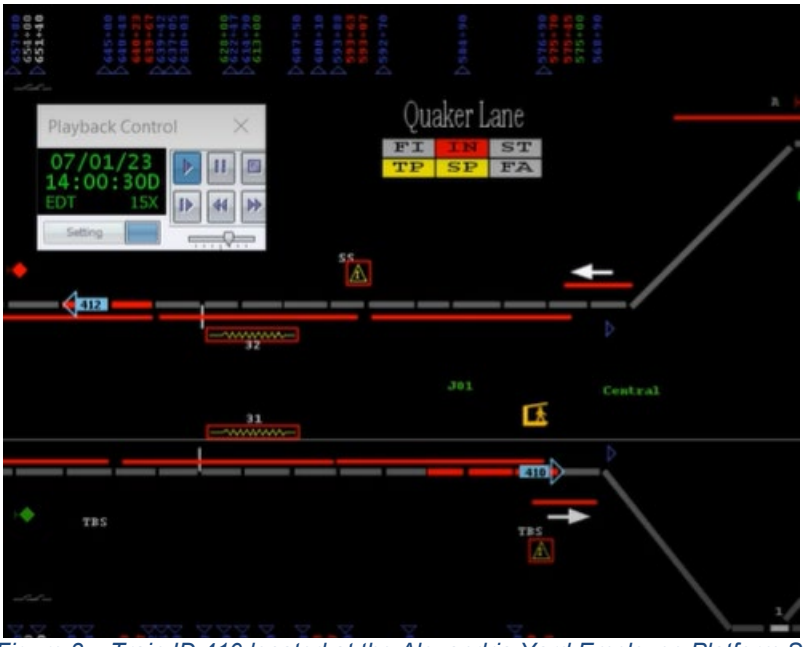

Figure 3 – Train ID 410 located at the Alexandria Yard Employee Platform Stop, track 1 at 14:00 hours.

The Office of Chief Mechanical Officer (CMOR) / Vehicle Monitoring and Diagnostic System (VMDS)
Adopted from CMOR IIT report with minor formatting and grammatical edits:

First Occurrence (E23446)

"Based on ER data, at 13:57:25.640, train ID 103 came to a complete stop at Glenmont Station 8th car Marker, track #1 with car 7046 as the lead car. After ADU Door enable goes high, at 13:57:40.010 the right-side door open pushbutton was activated, and the right-side doors instantly opened on the opposite side of the platform. The train is keyed down/up with the doors opened on the opposite side of the platform.

After 65 seconds, the right-side door close pushbutton was activated, and the right-side doors subsequently closed. After all doors were closed and locked, the left-side door open pushbutton activated, doors opened on platform side, and station serviced. All videos are now Available on SharePoint.

Based on ER, VMDS, and video, there was no fault found with the train that may contributed to the cause of this incident."

Timeline of events:

NOTE: NVR time is 8seconds slower than the ER data time.

Time	Description of Events
13:57:25.640	Train ID103 came to a complete stop at 8th car Marker at Glenmont Station (B11), track #1 with car 7046 as the lead car. TWC platform Station ID 65.
13:57:30.390	Left-side door opened pushbutton activated. ATC Door Enable sequence is initiated. All Door Closed and Locked T/L status remain high.
13:57:35.000	ATC ADU Door Enable goes high (energized), Manuel Door Enable (left and right) goes high. Doors can be opened manually at this time.
13:57:40.010	Right-side Doors opened pushbutton is activated. All door closed and locked T/L goes low. Doors are opened opposite side of the platform.
13:57:50.990	Car 7046 is keyed down. Doors remained opened, opposite side of the platform.
13:58:34.080	Car 7046 is keyed up. Doors are still opened opposite side of the platform.
13:58:45.500	Right-side door closed pushbutton was activated multiple times. Doors closed sequence initiated.
13:58:50.610	All door closed and locked T/L signal goes high, indicating right-side doors are closed and locked.
13:59:39.690	Left-side door opened pushbutton was activated.
13:59:40.010	All door closed and locked T/L signal goes low, doors opened on platform side, and station serviced.
14:00:01.980	Car 7046 is keyed down.

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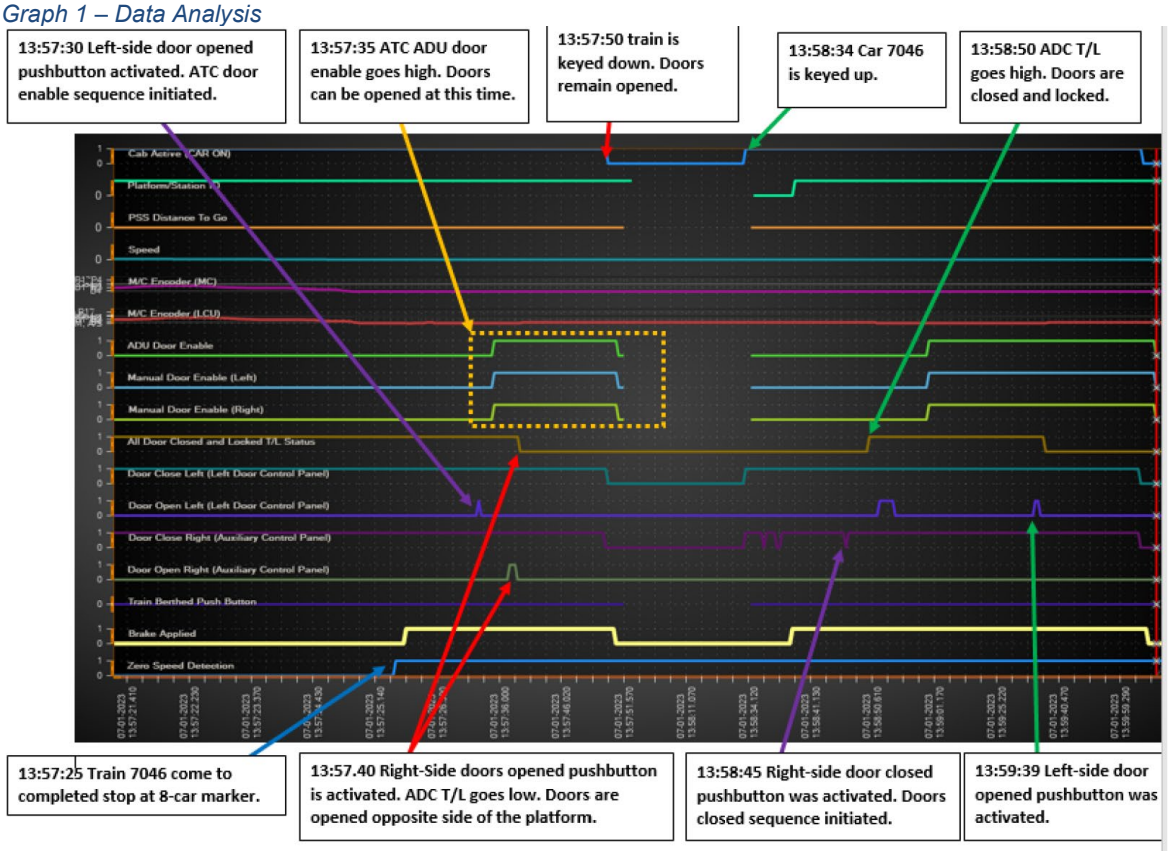
Graph 1 – Data Analysis



Second Occurrence (23447)

“According to the gathered data, Train ID 410 arrived at the Alexandria employee stop situated near J01 TBS2 Building (as illustrated in Picture 1).

Picture 1. Birds view of Alexandria Yard stop.

Upon arrival, the right-side doors of the train were commanded to open. However, they were subsequently commanded to close just 3 seconds after opening. This sequence of actions is classified as an improper door operation, as there is no platform present at this location. Consequently, the doors momentarily opened to the wayside during the incident. Notably, no

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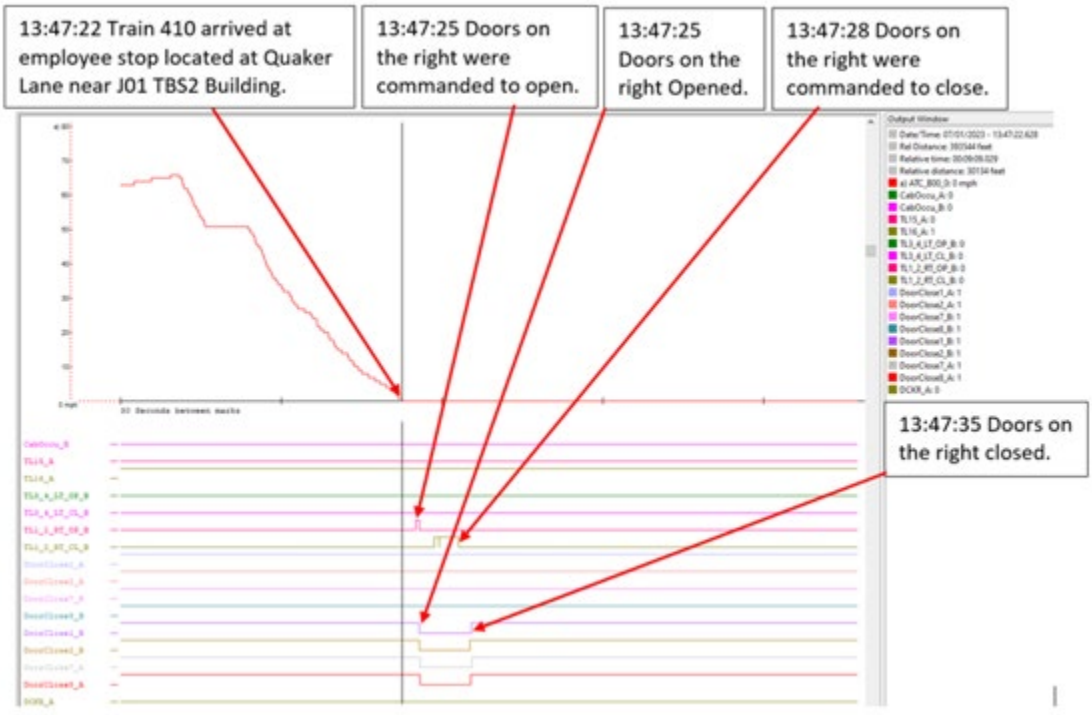
mechanical defects that could have contributed to the cause of this incident were identified during the data analysis process."

Table 1. Sequence of Events.

Time	Event
13:47:22	Train 410 arrived at employee stop located at Quaker Lane near J01 TBS2 Building.
13:47:25	Doors on the right were commanded to open.
13:47:25	Doors on the right opened.
13:47:28	Doors on the right were commanded to close.
13:47:35	Doors on the right closed.

Graph 1. Data Analysis.



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

There were no radio communication issues reported or observed during this event.

Office of Rail Transportation (RTRA)

Adopted from RTRA report:

First Occurrence (E22446)

Drafted By: SAFE 708 08/23/2023
Reviewed By: SAFE 707 – 08/31/2023
Approved By: SAFE 71 – 08/31/2023

The Terminal Supervisor observed the event and instructed the Train Operator to key down and stand by.

The Rail Operations Supervisor stated in their report that, they observed the other side of the train doors closing.

The Terminal Supervisor contacted the Rail Operations Control Center (ROCC) and reported the event.

The Train Operator stated in their incident report, “I pulled to the platform on track 1 at Glenmont and accidently opened the doors on the wrong side of the platform.”

The Glenmont Terminal supervisor requested that the Rail Operation Control Center (ROCC) take control of the Glenmont terminal interlocking so that they could conduct a ground walkaround to ensure no passengers had exited the train and entered the roadway.

The Glenmont Terminal supervisor and the Train Operator of Train ID 103 verified that a ground walkaround was completed, and no passengers exited the train onto the roadway. The train was off-loaded and verified clear of passengers.

The Train Operator was removed from service and transported for post-incident testing.

Second Occurrence (E23447)

The Train Operator stated in their incident report, “I pulled to the inbound platform to get relieved, and I unknowingly opened the train doors. I immediately closed the doors and notified ROCC. I was instructed to key down the train, walk through the consist, and ask the customers if anyone exited the train. When I got to the other end of the train, I contacted the ROCC.”

The Train Operator was removed from service and transported for post-incident testing.

The Train Operator had the following operational violations and was disqualified from train operations following this event:

STOV, March 3, 2013, at Alexandria
Improper door operations, January 11, 2014, at West Falls Church
Sleeping while on duty. December 15, 2015
Sleeping while on duty. May 7, 2016, at West Falls Church
Failure to have train keyed up 2 minutes prior to departure on January 31, 2017
STOV, February 1, 2018, at Branch Avenue
Exceeding the maximum authorized speed, October 16, 2018, at West Falls Church
Red Signal overrun May 30, 2019, at West Falls Church

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

First Occurrence (E23446)

The Train Operator was working their second-round trip portion of their assignment after taking an assigned work break from 11:57 hours to 12:27 hours, according to the manifest. The Train Operator was on duty for five hours and twenty-four minutes.

The Train Operator did not report the improper door operation to the Rail Operations Control Center (ROCC). The Glenmont Terminal Supervisor observed the improper door operation and immediately reported the incident via radio channel OPS 1 to the ROCC before the Train Operator was able to report.

The Train Operator stated during the interview they were attempting to clean the operating cab and open the train doors simultaneously.

Second Occurrence (E23447)

The Train Operator was on duty for 7 hours and 14 minutes and was going into their assigned work break to be relieved at the Alexandria Rail Yard platform.

The Train Operator reported the event to the Radio RTC.

The Train Operator stated in their written statement and interview that they unknowingly opened the doors while observing another Train Operator keying open the platform side train doors for entry onto the train.

Weather

First Occurrence (E23446)

On July 1, 2023, at the time of the incident, NOAA recorded the temperature as 84°F, with cloudy skies, winds of 10 mph, and 48% humidity. The weather was not a contributing factor in this incident (Weather source: NOAA) – Location: Glenmont, MD.

Second Occurrence (E23447)

On July 1, 2023, at the time of the incident, NOAA recorded the temperature as 86°F, with clear skies, winds of 5 mph, and 72% humidity. The weather was not a contributing factor in this incident (Weather source: NOAA) – Location: Alexandria, VA.

Related Rules and Procedures

SOP #40 – Door Operations / Station Servicing Procedures – 40.5.1.5.3 – “Depress Open Doors button on the platform side of the train.”

MSRPH G.R. 1.46 - Employees shall not permit unnecessary conversation, reading, lounging or any other action or condition of mind to divert their attention from the safe and efficient performance of duty.

8.16.6
The procedure for requesting a Pick-Up from an Employee Platform:

a. The requestor must be positioned at the yard platform, when the request is made, to avoid any unnecessary delay to rail service.
b. The requestor will communicate with the appropriate OPS using a WMATA issued radio or cell phone, from a place of safety, if radio is not available
• OPS 1 – Brentwood contact number 202-962-1546
• OPS 3 – Alexandria contact number 202-962-1502
c. The requestor will give the Rail Traffic Controller:
• Their unit number or name/title,
• Location, and
• The number of personnel in their party.
d. The requestor will not take any action until the Rail Traffic Controller acknowledges the requestor through positive communication.
e. Rail Traffic Controllers shall request an approaching train to make the stop.
f. Once the approaching train arrives and is properly positioned, the requestor will key onto the train through first door closest to the Rail Vehicle Operator. The crew door must immediately be keyed closed once the requestor is aboard the train.
g. The requestor must be positioned at the yard platform, when the request is made, to avoid any unnecessary delay to rail service.
h. The Rail Vehicle Operator will continue as appropriate with speed commands after all members of the crew are safely aboard.

Human Factors

Fatigue

Signs and Symptoms of Fatigue

E23446 – Train Operator

We evaluated signs and symptoms of fatigue that may have been present during the incident. No signs or symptoms of fatigue were detected from the available date. Video of the incident was reviewed for signs of fatigue from the train operator. No signs or symptoms of fatigue were evident from the video. The employee reported feeling fully alert at the time of the incident. Employee reported experiencing no symptoms of fatigue in the time leading up to the incident.

E23447 – Train Operator

We evaluated signs and symptoms of fatigue that may have been present during the incident. No signs or symptoms of fatigue were detected from available data. There was no in-cab video of the incident. The employee 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.

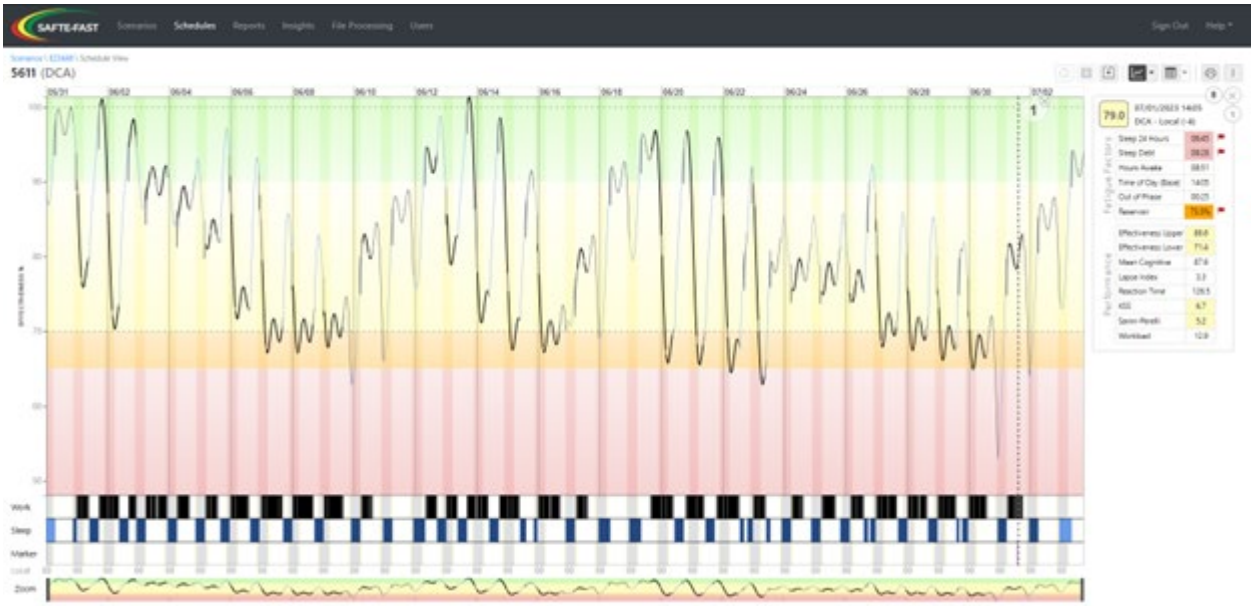
E23446 – Train Operator

We evaluated incident data for fatigue risk factors. Risk factors for fatigue were not present. The incident time of day did not suggest an increased risk of fatigue-related impairment. The employee reported some variations in the sleep schedule in the days leading up to the incident. The employee worked the morning shift in the days leading up to the incident. The employee was awake for 6:55 minutes at the time of the incident. The employee reported nine hours of sleep in the twenty-four hours preceding the incident. The off-duty period was sixty-four hours, which provided an opportunity for seven to nine hours of sleep. The employee reported no issues with sleep.

E23447 – Train Operator

Incident data was evaluated for fatigue risk factors. Risk factors for fatigue were present. The incident time of day (14:06 hours) does not suggest an increased risk of fatigue-related impairment. The employee worked day and overnight shifts and was on duty for 12 consecutive days leading up to the incident. The employee reported a total of 6 hours and 45 minutes of sleep in the last sleep period preceding the incident and was awake for 5.8 hours at the time of the incident. The employee reported usual workday sleep durations of 7 hours and no issues with sleep.

A biomathematical fatigue modelling application (SAFTE-FAST WebSFC) was used to further evaluate fatigue risk factors that may have been present in the Train Operator's schedule. The analysis was based on the Train Operator's work schedule, reported sleep from the day before the incident, and reported habitual sleep durations. Estimated performance effectiveness at the time of the incident was 79%. Specifically, the analysis identified sleep debt (inferring accumulated sleep loss of more than 8 hours) as a factor 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 30 days leading up to the work shift, based on the employee work and reported sleep schedule. Estimates were based on the Train Operator's work schedule, reported sleep from the day preceding the incident, and reported habitual sleep durations (7 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.

Incident Toxicology Testing

E23446 - Train Operator

WMATA's Drug and Alcohol Program determined that the Train Operator (E23446) complied with and was not in violation of the Drug and Alcohol Policy and Testing Program 7.7.3/6.

E23447 - Train Operator

WMATA's Drug and Alcohol Program determined that the Train Operator (E23447) complied with and was not in violation of the Drug and Alcohol Policy and Testing Program 7.7.3/6.

Findings

First Occurrence (E23446)

- The Train Operator was completing their third roundtrip for the day and was servicing their terminus station.
- The Train Operator failed to follow SOP #40 – Door Operations / Station Servicing Procedures.
- The Train Operator reported being unfocused on performing door operations and was performing other tasks at the same time while preparing to leave the operating cab.
- Risk factors for fatigue were not present.

Second Occurrence (E23447)

- The Train Operator was going on their assigned work break following this trip.
- The Train Operator completed their second roundtrip of the day.
- The Train Operator reported the incident immediately to the ROCC.
- Risk factors for fatigue were present.

Immediate Mitigation to Prevent Recurrence

- Train Operators were removed from service for post-incident testing.
- Train ID 103 was removed from revenue service for inspection.
- Train ID 410 was removed from revenue service for inspection.
- RTRA issued a Lessons Learned bulletin to personnel on July 10, 2023.
- The Train Operator involved in E23447 was disqualified from train operations by RTRA.

Probable Cause Statement

First Occurrence (E23446)

The probable cause was a human factors error due to inattention. The Train Operator's focus was on cleaning the operating cab and opening the train doors simultaneously. This action caused the doors to open on the non-platform side.

Second Occurrence (E23447)

The probable cause of the Improper Door Operation event on July 1, 2023, at the Alexandria Yard Employee Platform Stop was a human factors error due to complacency with a repetitive task (Door Operations). Fatigue was a possible contributing factor due to accumulated sleep debt associated with 12 consecutive days worked and working night and day shifts. The Train Operator focused their attention on another Train Operator who was boarding the train when they opened the train doors.

Recommended Corrective Actions

First Occurrence (E23446)

Corrective Action Code	Description	Responsible Party	Estimated Completion Date
109635_SAFE CAPS_RTRA _001	Train Operator to complete Refresher Training with emphasis on SOP #40 – Door Operations / Station Servicing Procedures – 40.5.1.5.3 – "Depress Open Doors button on the platform side of the train."	RTRA SRC	Completed
109635_SAFE CAPS_RTRA _002	Develop a Lessons Learned document about Improper Door Operations at various locations and distribute the document to all Train Operators.	RTRA SRC	Completed
109635_SAFE CAPS_RTRA _003	Instruct RTRA supervisors to conduct increased observations on newly promoted Train Operators and enter their observations into the RSDAR.	RTRA SRC	On-Going

Second Occurrence (E23447)

Corrective Action Code	Description	Responsible Party	Estimated Completion Date
109612_SAFE CAPS_RTRA _001	Develop a Lessons Learned document about Improper Door Operations at various locations and distribute the document to all Train Operators.	RTRA SRC	Completed
109612_SAFE CAPS_RTRA _002	Instruct RTRA supervisors to conduct increased observations on newly promoted Train Operators and enter their observations into the RSDAR.	RTRA SRC	On-Going
109612_SAFE CAPS_RTRA _003	Develop a bulletin regarding Fatigue Awareness and Prevention.	RTRA SRC and SAFE	9/29/2023

Appendices

Appendix A – Interview Summaries

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

First Occurrence (E23446)

Train Operator

The Train Operator is a WMATA employee with 5 months of seniority. The Train Operator was certified as a Train Operator on June 21, 2023, with a QL-1 and scores of 89% and 82% on their Train Operators exam. The Train Operator is RWP Level 2 certified and will be recertified in February 2024.

The Train Operator was working their second-round trip portion of their assignment after taking an assigned work break from 11:57 hours to 12:27 hours, according to the manifest. The Train Operator was on duty for five hours and twenty-four minutes.

The Train Operator stated during the interview they were attempting to clean the operating cab and open the train doors at the same time.

The Train Operator stated during the interview that they were fully alert during the improper door operations event.

During the interview, the Train Operator was asked if they had any concerns with their training. They responded that there were no issues or concerns with training.

Second Occurrence (E23447)

Train Operator

The Train Operator is a WMATA employee with 20 years seniority. The employee became a certified Train Operator on August 25, 2013. Their last train operator certification was June 16, 2022.

The Train Operator is RWP Level 2 certified and will be recertified in August 2023.

The Train Operator stated during the interview their focus was observing another Train Operator keying open the platform side train doors for entry onto the train.

The Train Operator stated during the interview that they were fully alert during the improper door operations event; however, the FAST modeling identified fatigue risk factors.

Appendix B – RTRA Incident/Accident Reports

First Occurrence (E23446)

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

Incident Information: This page must be completed for all incidents

Date:	Incident Time:	Time Reported:	Reported by: Customer ☐ Employee ☑ ROCC ☐ Other ☐
7/1/23	1:56	1:56	

Location

Station	Mezzanine #	Track #/Destination	Chain Marker/Signal Number
Glenmont	N/A	1 Glenmont	B11-32

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): N/A

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	Destination	Car Numbers(list all cars in consist):	Lead Car:
103	Glenmont	8 7100-7161-7034-7047	7040

Name of Responding Supervisor: [redacted]	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.

No Damage

Employee Completing Report

Employee Name: (print)	Employee Signature: (sign)	Employee #:	Date:
[redacted]	[redacted]	[redacted]	7/1/23

Division:	Run #	Block #	Assigned Days:
Shady Grove	103		Tues/Wed

To Be Completed By Reviewing Manager

Supervisor Name: (print)	Supervisor Signature	Employee #	Date:
[redacted]	[redacted]	[redacted]	7/3/23

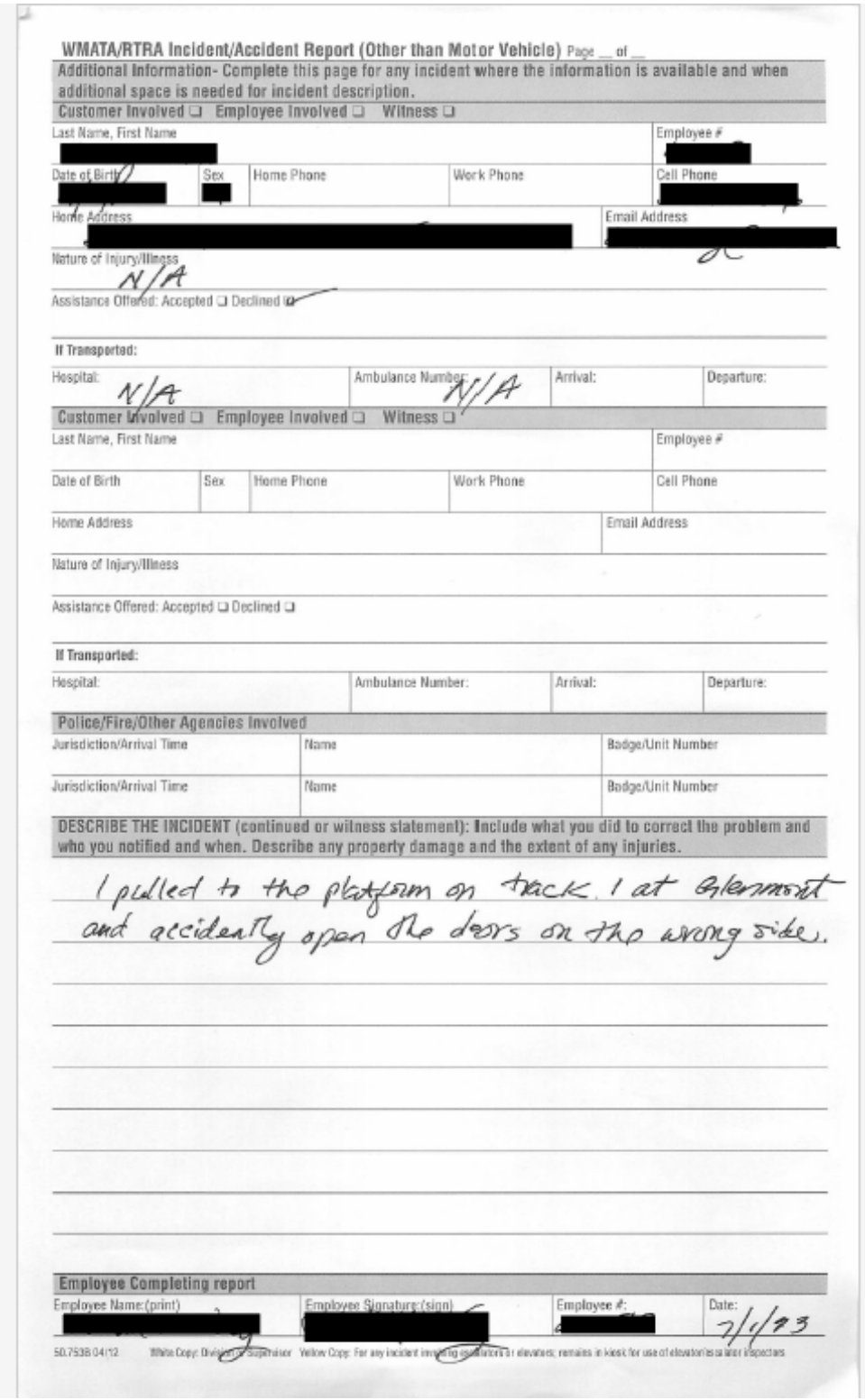
Action taken/needed: SMS Filed

SMS Number: 20230703# 109635

50.783A 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 3 – RTRA Incident Accident Report – Glenmont Station Event, Page 1 of 2

Drafted By: SAFE 708 08/23/2023
Reviewed By: SAFE 707 – 08/31/2023
Approved By: SAFE 71 – 08/31/2023



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

Additional Information- Complete this page for any incident where the information is available and when additional space is needed for incident description.

Customer Involved ❑ Employee Involved ❑ Witness ❑

Last Name, First Name [redacted] | Employee # [redacted]

Date of Birth [redacted] | Sex [redacted] | Home Phone | Work Phone | Cell Phone [redacted]

Home Address [redacted] | Email Address [redacted]

Nature of Injury/Illness N/A

Assistance Offered: Accepted ❑ Declined ☑

If Transported:

Hospital: N/A | Ambulance Number: N/A | Arrival: | Departure:

Customer Involved ❑ Employee Involved ❑ Witness ❑

Last Name, First Name | Employee #

Date of Birth | Sex | Home Phone | Work Phone | Cell Phone

Home Address | Email Address

Nature of Injury/Illness

Assistance Offered: Accepted ❑ Declined ❑

If Transported:

Hospital: | Ambulance Number: | Arrival: | Departure:

Police/Fire/Other Agencies Involved

Jurisdiction/Arrival Time | Name | Badge/Unit Number

Jurisdiction/Arrival Time | Name | Badge/Unit Number

DESCRIBE THE INCIDENT (continued or witness statement): 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 pulled to the platform on track 1 at Glenmont and accidently open the doors on the wrong side.

Employee Completing report

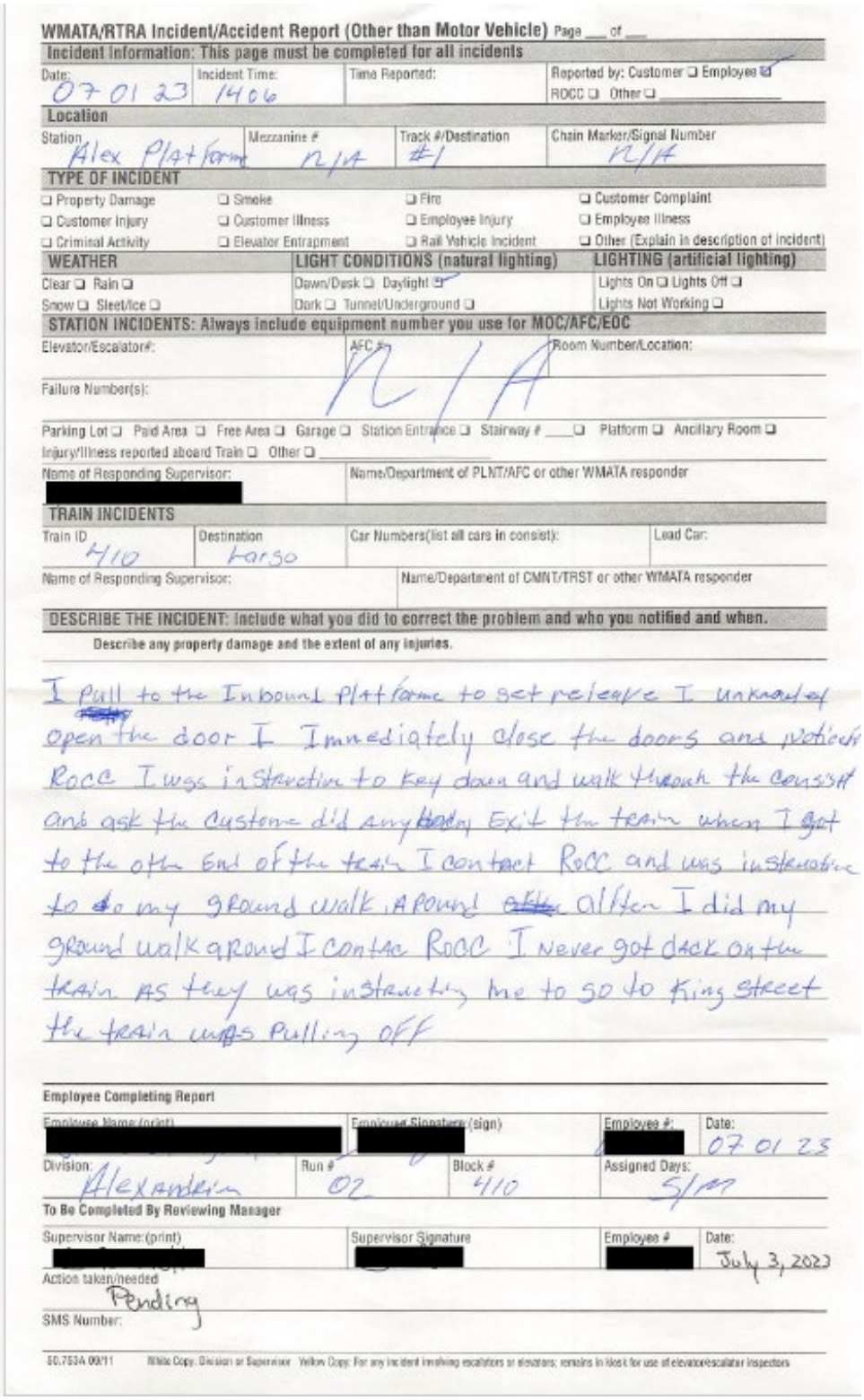
Employee Name: (print) [redacted] | Employee Signature: (sign) [redacted] | Employee #: [redacted] | Date: 7/1/23

50.7538.04/12 White Copy: Division Supervisor Yellow Copy: For any incident involving customer's or elevators; remains in kiosk for use of elevator/escalator inspectors

Document 4 - RTRA Incident Accident Report – Glenmont Station Event, Page 2 of 2

Second Occurrence (E23447)

Drafted By: SAFE 708 08/23/2023
Reviewed By: SAFE 707 – 08/31/2023
Approved By: SAFE 71 – 08/31/2023



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

Incident Information: This page must be completed for all incidents

Date:	Incident Time:	Time Reported:	Reported by: Customer ☐ Employee ☑ ROCC ☐ Other ☐
07 01 23	1406		

Location

Station	Mezzanine #	Track #/Destination	Chain Marker/Signal Number
Alex Platform	N/A	#1	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 #: N/A 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: [redacted] Name/Department of PLNT/AFC or other WMATA responder

TRAIN INCIDENTS

Train ID	Destination	Car Numbers(list all cars in consist):	Lead Car:
410	Largo		

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

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 pull to the Inbound platforme to set release I unknowly ~~Pushy~~ open the door I Immediately close the doors and notified Rocc I was instruction to key down and walk through the consist and ask the customs did anybody Exit the train when I got to the other End of the train I contact Rocc and was instructing to do my ground walk Around ~~after~~ after I did my ground walk around I contact Rocc I Never got back on the train As they was instructing me to go to King Street the train was Pulling off

Employee Completing Report

Employee Name:(print)	Employee Signature:(sign)	Employee #:	Date:
[redacted]	[redacted]	[redacted]	07 01 23

Division:	Run #	Block #	Assigned Days:
Alexandria	02	410	S/M

To Be Completed By Reviewing Manager

Supervisor Name:(print)	Supervisor Signature	Employee #	Date:
[redacted]	[redacted]	[redacted]	July 3, 2023

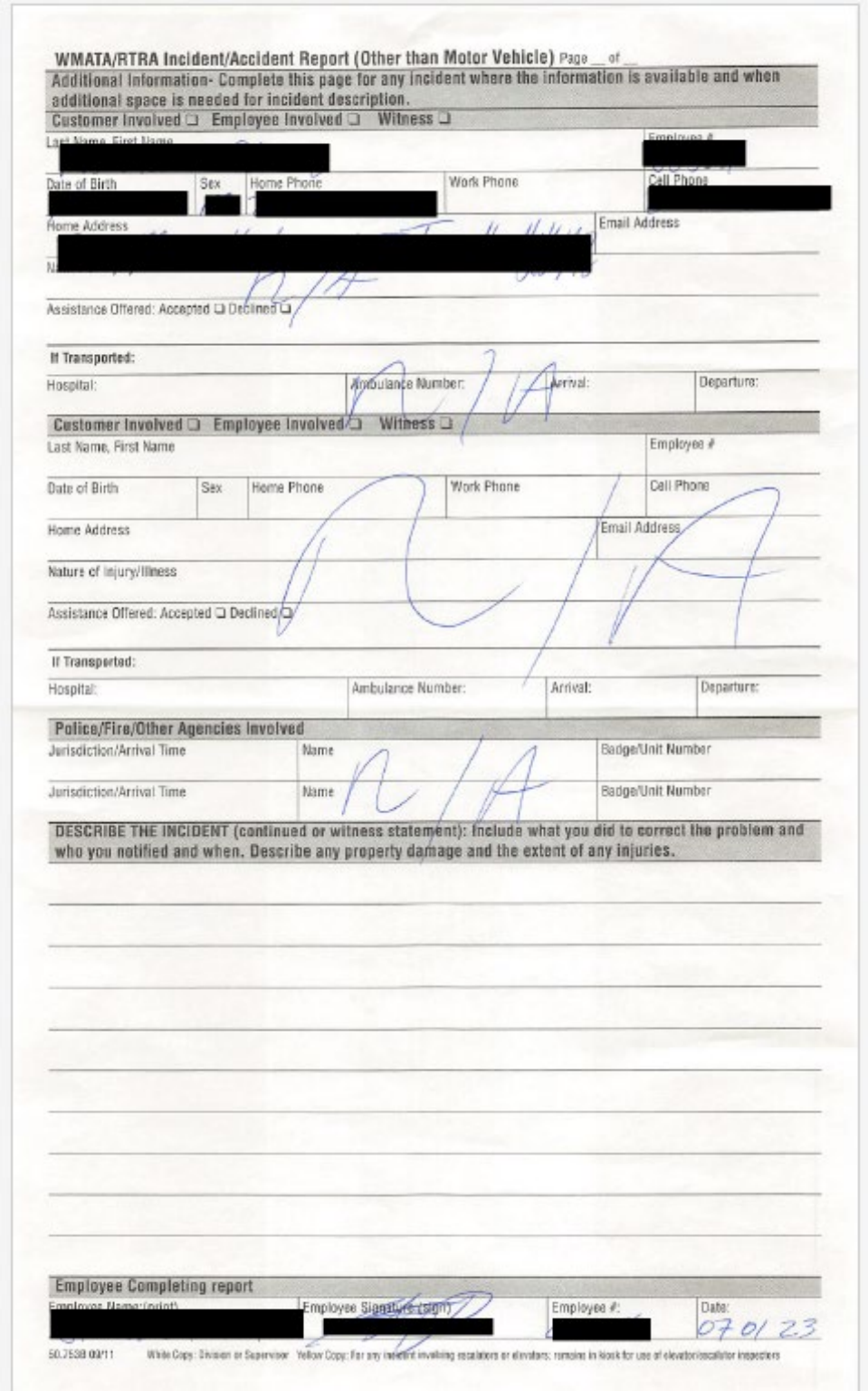
Action taken/needed: Pending

SMS Number:

60.753A 09/11 White Copy: Division or Supervisor Yellow Copy: For any incident involving escalators or elevators; remains in kiosk for use of elevator/escalator inspectors

Document 5 - RTRA Incident Accident Report – Alexandria Yard Employee Platform Stop Event, Page 1 of 2

Drafted By: SAFE 708 08/23/2023
Reviewed By: SAFE 707 – 08/31/2023
Approved By: SAFE 71 – 08/31/2023



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

Additional Information- Complete this page for any incident where the information is available and when additional space is needed for incident description.

Customer Involved ❑ Employee Involved ❑ Witness ❑

Last Name, First Name [redacted] | Employee # [redacted]

Date of Birth [redacted] | Sex [redacted] | Home Phone [redacted] | Work Phone | Cell Phone [redacted]

Home Address [redacted] | Email Address

Nature of Injury/Illness

Assistance Offered: Accepted ❑ Declined ❑

If Transported:

Hospital: | Ambulance Number: | Arrival: | Departure:

Customer Involved ❑ Employee Involved ❑ Witness ❑

Last Name, First Name | Employee #

Date of Birth | Sex | Home Phone | Work Phone | Cell Phone

Home Address | Email Address

Nature of Injury/Illness

Assistance Offered: Accepted ❑ Declined ❑

If Transported:

Hospital: | Ambulance Number: | Arrival: | Departure:

Police/Fire/Other Agencies Involved

Jurisdiction/Arrival Time | Name | Badge/Unit Number

Jurisdiction/Arrival Time | Name | Badge/Unit Number

DESCRIBE THE INCIDENT (continued or witness statement): Include what you did to correct the problem and who you notified and when. Describe any property damage and the extent of any injuries.

Employee Completing report

Employee Name (print) [redacted] | Employee Signature (sign) [redacted] | Employee #: [redacted] | Date: 07/01/23

50.7538 03/11 White Copy: Division or Supervisor Yellow Copy: For any incident involving escalators or elevators, remains in kiosk for use of elevator/escalator inspectors

Document 6 - RTRA Incident Accident Report – Alexandria Yard Employee Platform Stop Event, Page 2 of 2

Drafted By: SAFE 708 08/23/2023
Reviewed By: SAFE 707 – 08/31/2023
Approved By: SAFE 71 – 08/31/2023

Appendix C – RTRA Lessons Learned

Office of Rail Transportation

Lessons Learned

RTRA OFFICE OF RAIL TRANSPORTATION

metro

Looking back, to effectively move forward

July 10, 2023
Number: RTRA-303-07-00

Improper Door Operations at Various Locations

INCIDENT SUMMARIES

Incident #1 On **Friday, May 26, 2023**, at approximately 11:05pm, the operator of Train 514 opened the doors on the opposite side of the platform while at Archives Navy Memorial, Track #1. Afterwards, the doors were closed and then reopened on the platform side to service the station. The operator continued in service to the next station and failed to report the incident to the Rail Operations Control Center. The operator also failed to conduct a ground walkaround inspection to ensure no one exited from the train when the doors opened on the opposite side. There were no reported injuries or damages to equipment as a result of this incident.

Incident #2 On **Saturday, July 1, 2023**, at approximately 1:59pm, the operator of Train 103 opened the doors on the opposite side of the platform while at Glenmont, Track #1. When the terminal supervisor made an inquiry regarding the train doors not being opened on the platform side, the doors on the opposite side were closed. The doors were then opened on the platform side. The terminal supervisor reported the incident to the Rail Operations Control Center and ensured the train was removed from service and a ground walkaround inspection was conducted. There were no reported injuries or damages to equipment as a result of this incident.

Incident #3 On **Saturday, July 1, 2023**, at approximately 2:06pm, the operator of Train 410 opened the doors while making a platform stop at Quaker Lane, Track #1, which is located outside Alexandria Yard. The operator reported the incident to the Rail Operations Control Center and conducted a ground walkaround inspection. There were no reported injuries or damages to equipment as a result of this incident.

ROOT CAUSE

Inattentiveness was the root cause of all three (3) incidents. If the operators were paying attention to their operational duties, as well as their surroundings, these incidents would not have occurred.

TRAIN 614 PICTURED ABOVE WITH DOOR INDICATOR LIGHTS ILLUMINATED WHILE AT ARCHIVES (WITH DOORS ON THE PLATFORM SIDE STILL CLOSED...)

MSRPH RULES VIOLATED

SOP 40.5.1.5 Verify the platform side of the train by placing your head out of the window and first look and identify the platform. Then look at the doors on the platform side of the train to observe any activity in front of the doors, with your hands to your side approximately five (5) seconds, before reaching up to touch the manual door opening button.

GR 1.46 Employees shall not permit unnecessary conversation, reading, lounging, or any other action or condition to divert their attention from the safe and efficient performance of duty.

LESSONS LEARNED

What happened...	*What should have happened...*
The operators in all three (3) incidents failed to use SOP #40 as a guide to ensure proper door operations.	Train Operators must place their head out of the window to confirm platform location and move their hands to their side away from the door control panel for five (5) seconds prior to opening doors

Office of Rail Transportation (RTRA) *Lessons Learned* *Number: RTRA-303-07-00*

Document 7 – RTRA Lessons Learned, Page 1 of 2

Drafted By: SAFE 708 08/23/2023
Reviewed By: SAFE 707 – 08/31/2023
Approved By: SAFE 71 – 08/31/2023

Office of Rail Transportation

Lessons Learned

RTRA OFFICE OF RAIL TRANSPORTATION

metro

Looking back, to effectively move forward

July 10, 2023
Number: RTRA-303-07-00

The operator involved in Incident #1 failed to report the occurrence to the Rail Operations Control Center.	The operator should have reported the incident to the Rail Operations Control Center and await further instructions, i.e., ground walkaround, offload train, etc.
The operator involved in Incident #3 opened the train doors while at a platform stop.	Operators are not to initiate door operations while at a platform stop. Personnel requiring a platform stop must key themselves aboard the train.

RECOMMENDATIONS

- ✓ Emphasize that all operational personnel abide by SOP 40 when operating trains, with particular emphasis on section 6.1.5 from Permanent Order T-22-55 (Update to MSRPH SOP 40 Door Operations, pictured to the right)
- ✓ Ensure that all operational personnel comply with all Operating Rules, especially Cardinal Operating Rules.
- ✓ Always follow Rules/Procedures outlined in WMATA's MSRPH.
- ✓ Train Operators and all personnel must always be vigilant and aware of their surroundings at all times.

6.1.5 When the Door Mode Selector is in the Manual/Manual position, the Train Operator shall:

a) Use extreme caution before depressing the Car's Open Doors button;
b) Ensure the train is properly berthed on the platform for the number of cars in the Train;
c) Make eight-car stops with all trains unless otherwise directed by the RTC;
d) Verify the platform side of the train by placing their head out of the cab window and first look and identify the platform.
e) Look at the doors on the platform side of the train to observe any activity in front of the doors, with hands to their side for five (5) seconds;
f) Depress the Car's Open Doors button on the platform side of the train.

Office of Rail Transportation (RTRA) *Lessons Learned* *Number: RTRA-303-07-00*

Document 8 - RTRA Lessons Learned, Page 2 of 2

Drafted By: SAFE 708 08/23/2023
Reviewed By: SAFE 707 – 08/31/2023
Approved By: SAFE 71 – 08/31/2023

Appendix D – Scene Photographs

Train operator door control panel

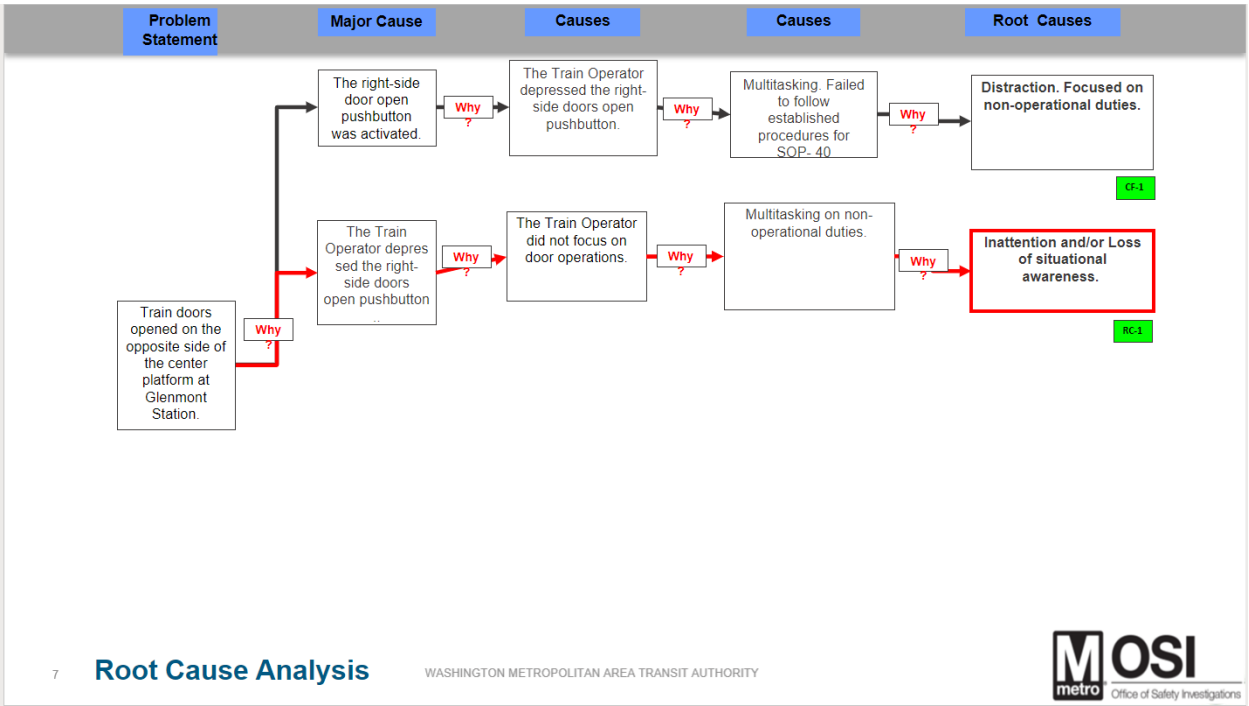
Drafted By: SAFE 708 08/23/2023
Reviewed By: SAFE 707 – 08/31/2023
Approved By: SAFE 71 – 08/31/2023

Employee platform stop.

Drafted By: SAFE 708 08/23/2023
Reviewed By: SAFE 707 – 08/31/2023
Approved By: SAFE 71 – 08/31/2023

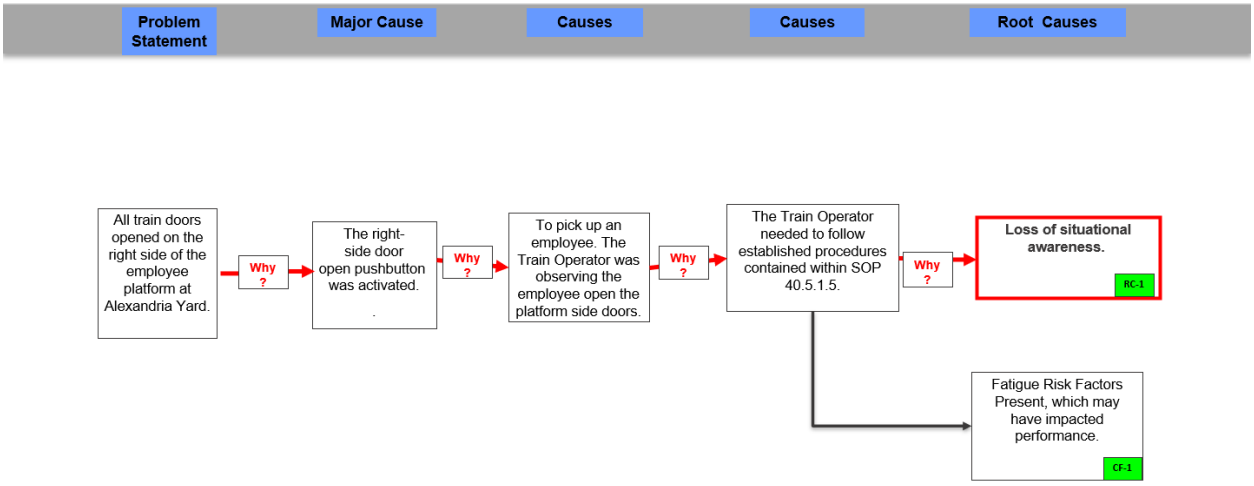
Appendix E – Why-Tree Analysis

First Occurrence (E23446)



Drafted By: SAFE 708 08/23/2023
Reviewed By: SAFE 707 – 08/31/2023
Approved By: SAFE 71 – 08/31/2023

Second Occurrence (E23447)



7 **Root Cause Analysis** WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

Drafted By: SAFE 708 08/23/2023
Reviewed By: SAFE 707 – 08/31/2023
Approved By: SAFE 71 – 08/31/2023

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

FINAL REPORT OF INVESTIGATION A&I E23594

Date of Event:	August 25, 2023
Type of Event:	O-15(a) - Improper Door Operation
Incident Time:	20:52 hours
Location:	Glenmont Station
Time and How received by SAFE:	21:42 hours/MAC Notification
WMSC Notification Time:	21:42 hours
Responding Safety Officers:	None
Rail Vehicle:	Train ID 120 L3125/24X3178/79X3158/59X3243/42T
Injuries:	None
Damage:	None
Emergency Responders:	None
SMS I/A Number	20230825#110939MX

Glenmont Station – Improper Door Operation

August 25, 2023

Table of Contents

Abbreviations and Acronyms

AIMS	Advanced Information Management System
AOM	Assistant Operations Manager
CCTV	Closed-Circuit Television
CMOR	Office of the Chief Mechanical Officer
IIT	Incident Investigation Team
MOR	Metrorail Operating Rulebook
NOAA	National Oceanic and Atmospheric Administration
OM	Operations Manager
RTC	Rail Traffic Controller
RTRA	Office of Rail Transportation
ROCC	Rail Operations Control Center
SAFE	Department of Safety
SMS	Safety Measurement System
WMATA	Washington Metropolitan Area Transit Authority
WMSC	Washington Metrorail Safety Commission

Executive Summary

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

On August 25, 2023, at 20:48 hours, Train ID 120 (L3242/43X3159/58X3179/78X3124/25T) arrived at Glenmont Station on track 2. The Train Operator activated the platform-side doors from lead car 3242, and all platform-side doors were opened throughout the train. The Train Operator keyed down and exited the train.

At 20:49 hours, a second Train Operator boarded the opposite end of the train to operate Train ID 120 (L3125/24X3178/79X3158/59X3243/42T) from Glenmont Station to Shady Grove Station. The Train Operator boarded lead car 3125. At 20:51 hours, the Train Operator contacted the Terminal Supervisor and reported experiencing trouble with the circuit breakers.

At the same time, Closed-Circuit Television (CCTV) captured the platform-side doors on the lead car (3125) closed and the doors on the remaining cars open. The Terminal Supervisor exited the terminal and approached the train at 20:51 hours. Moments later, the non-platform side train doors opened on the train due to pushbutton activation by the Train Operator. At 20:52 hours, the non-platform side doors were closed. The Train Operator reported being flustered while attempting to troubleshoot the cause of the lead car's doors closing.

The Terminal Supervisor returned the Terminal, and at 20:53 hours, instructed the Train Operator make announcements and place the train out of service.

The Terminal Supervisor notified the Rail Operations Control Center (ROCC) of the event and conducted a ground walkaround. The Button Rail Traffic Controller (RTC) notified the Operations Manager (OM) of the event.

At 21:00 hours, the Terminal Supervisor advised ROCC that the ground walkaround was complete and the roadway was clear.

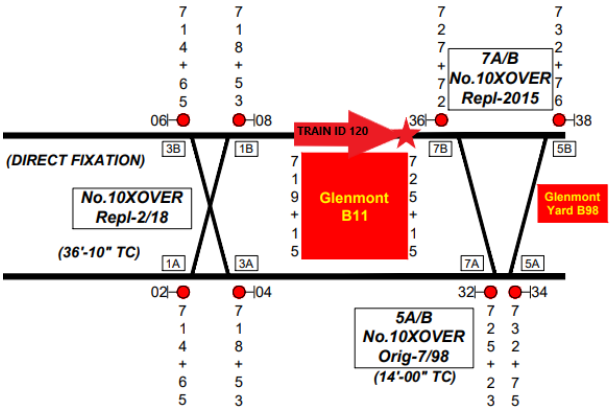
RTRA removed the Train Operator from service for post-incident testing. The train consist was removed from service for post-incident inspection.

The probable cause of the Improper Door Operation event on August 25, 2023, at Glenmont Station, was a loss of situational awareness by the Train Operator while troubleshooting, resulting in activating the train doors on the non-platform side.

Incident Site

Glenmont Station, Track 2

Field Sketch/Schematics



The above depiction is not to scale.

Purpose and Scope

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

Investigative Methods

The investigative methodologies included the following:

- Site Assessment through video and document review

- Formal Interviews – 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 individual:
    - Train Operator (Train ID 120)

- Informal Interviews – Collected through conversations with individuals during the investigation to provide background and supporting information. Written statements were reviewed from personnel present during the event.
    - Terminal Supervisor

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

- System Data Recording Review – Collection of information contained in Metro Data Recording Systems. This data includes:

- Audio Recording System (ARS) Playback
- The Office of Chief Mechanical Officer (CMOR) Incident Investigation Team (IIT) Vehicle Monitoring and Diagnostic System (VMDS)
- Closed-Circuit Television (CCTV)

Investigation

On August 25, 2023, at 20:48 hours, Train ID 120 arrived at Glenmont Station on track 2, and all platform-side doors were activated in rail car 3242. The Operator keyed down and exited the train and was relieved by a second Train Operator.

Image 1 - Train ID 120 arrived at Glenmont Station track 2 at approximately 20:48 hours and all platform side doors were activated.

At 20:49 hours, (CCTV) captured the new Train Operator board the opposite end of the train to operate Train ID 120 (L3125/24X3178/79X3158/59X3243/42T) from Glenmont Station to Shady Grove Station. The Train Operator entered the cab of car 3125, then keyed up the train. At 20:50 hours, the lights flickered in the lead car, and at 20:51 hours, the doors of the lead car closed while the remaining train doors stayed open.

Image 2 - Train ID 120 with lead car platform-side doors closed (left) and trailing cars with platform-side doors open (right), at 20:51 hours.

The Audio Recording System (ARS) determined that at 20:51 hours, the Train Operator contacted the Terminal Supervisor and reported experiencing trouble with the circuit breakers. The Terminal Supervisor exited the terminal and approached the train. Moments later, the non-platform side train doors were opened. At 20:52 hours, the non-platform side doors were closed.

Image 3 - Train ID 120 non-platform side doors opened at 20:52 hours with the RTRA Supervisor present.

The Terminal Supervisor returned the Terminal, and at 20:53 hours, instructed the Train Operator make announcements and to place the train out of service. The train doors were closed on the remaining platform rail cars, then all doors on the platform side were opened. Seconds later, all of the train doors were closed on the entire consist.

The Terminal Supervisor notified the Button RTC of the incident. The Button RTC instructed the Terminal Supervisor to perform a ground walk-around.
At 20:56 hours, the Terminal Supervisor advised the Radio RTC that a ground walk-around was being conducted. The Button RTC notified the Operations Manager (OM) of the incident.

At 20:58 hours, the Train Operator reported that the train was clear of customers.

At 21:00 hours, the Terminal Supervisor advised that the ground walk-around was completed and clear. The Radio RTC instructed the Terminal Supervisor that transport the train to Glenmont Yard.

At 21:01 hours, the Terminal Supervisor reported to the Button RTC that the Train Operator reported that they were troubleshooting circuit breakers that resulted in the doors being closed on the lead car only, and the Train Operator moved the circuit breakers to the up position. The Train Operator then activated the door open button on the off side of the platform.

At 21:14 hours, Train ID 120 was dispatched to Glenmont Yard.

The Train Operator provided a written statement that stated they observed three circuit breakers that were out of correspondence and attempted to troubleshoot by resetting the switches, one of which was a door control. The Train Operator stated while troubleshooting the circuit breakers, they did not notice the doors of their lead car had closed.

The Train Operator stated the RTRA Supervisor approached their lead car and inquired if there was an issue with their train. The Train Operator stated they then showed the RTRA Supervisor the circuit breakers had returned to their default setting, but the doors were still closed. The Train Operator stated they then accidentally activated the off-side door operation button, opening the off-platform side doors.

During the formal interview, the Train Operator stated that they were conducting a pre-trip inspection when they noticed that three circuit breakers were tripped: two associated with the interior lights and one associated with the door operation. After the Terminal Supervisor arrived, they attempted to show the supervisor the circuit breakers that were in correspondence, when they activated the non-platform side doors.

The Terminal Supervisor's written statement revealed that as they approached the train they observed the lead car doors had closed and the lights had gone out and had then suddenly come back on. They asked the Train Operator if they had tripped any circuit breakers. The Train Operator replied that they were recycling the circuit breakers. At some point during the troubleshooting, the Train Operator activated the non-platform side doors

The Office of the Chief Mechanical Officer, Incident Investigation Team (CMOR/IIT) completed a post-incident inspection and determined that there was no failure on rail cars 3242 or 3125 that would have caused this incident, and the event was not caused by a stuck Door Control Pushbutton. Their analysis identified a circuit breaker tripping around the time of the event; however, the off-platform doors did not open until the action of the Train Operator to depress the Door Open Pushbutton.

Chronological Event Timeline

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

Time	Description
20:48:34 hours	Train ID 120 arrived at Glenmont Station, track 2 eight-car marker. [CCTV]
20:48:47 hours	Train doors opened from cat 3242, all train doors open on the platform side. [CCTV]
20:49:31 hours	The Train Operator boarded the train in rail car 3125. [CCTV]
20:50:26 hours	Train ID 120 was keyed up in rail car 3125. [CCTV]
20:50:53 hours	Train lights on car 3125 flickered off and then on. [CCTV]
20:51:18 hours	Train doors closed on car 3125 only. [CCTV]
20:51:30 hours	Terminal Supervisor: Inquired if there was an issue with Train ID 120 from the Train Operator Train Operator Train ID 120: Advised that they had an unidentified issue. [Radio, Glenmont Yard]
20:51:48 hours	CCTV determined that the RTRA Supervisor approached Train ID 120.
20:52:12 hours	All train doors opened on the non-platform side. [CCTV]
20:52:28 hours	All train doors closed on the non-platform side. [CCTV]
20:53:10 hours	Terminal Supervisor: Advised the Train Operator that Train ID 120 was out of service and to make good announcements. [Radio, Glenmont Yard]
20:53:35 hours	Train doors closed on the platform side remaining rail cars. [CCTV]
20:53:37 hours	All train doors opened on the platform side. [CCTV]
20:53:43 hours	Terminal Supervisor: Advised the Button RTC of the incident. Button RTC: Acknowledged and advised them to offload the train and conduct a ground walk-around. Terminal Supervisor: Acknowledged. [Phone, OPS 1]
20:53:50 hours	All train doors closed on the platform side. [CCTV]
20:56:20 hours	Terminal Supervisor: Advised the Radio RTC that Train ID 120 was conducting a ground walk-around and that the train was out of service. Radio RTC: Acknowledged and repeated back. [Radio, OPS 1]
20:56:45 hours	Button RTC: Advised the OM of the incident OM: Acknowledged. [Phone, Rail 1]
20:58:49 hours	Train Operator: Advised that Train ID 120 was clear of customers. Terminal Supervisor: Acknowledged. [Radio, Glenmont Yard]
21:00:22 hours	Terminal Supervisor: Advised the Radio RTC that the ground walk-around was complete and clear. Radio RTC: Acknowledged and advised the Terminal Supervisor to transport the train to Glenmont Yard. Terminal Supervisor: Acknowledged. [Radio, OPS 1]
21:01:20 hours	Terminal Supervisor: Advised the Button RTC that the Train Operator reported that they were troubleshooting circuit breakers that resulted in the doors being closed on the lead car only, and the Train Operator moved the circuit breakers to the up position. The Train Operator activated the door open button on the off side of the platform. Button RTC: Acknowledged. [Phone, OPS 1]

21:14:17 hours	Terminal Supervisor: Advised the Radio RTC that Train ID 120 was ready to move into Glenmont Yard. Radio RTC: Acknowledged. [Radio, OPS 1]
21:15:11 hours	*CCTV determined that the RTRA Supervisor operated Train ID 120 towards Glenmont Yard.*

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

Advanced Information Management System (AIMS)

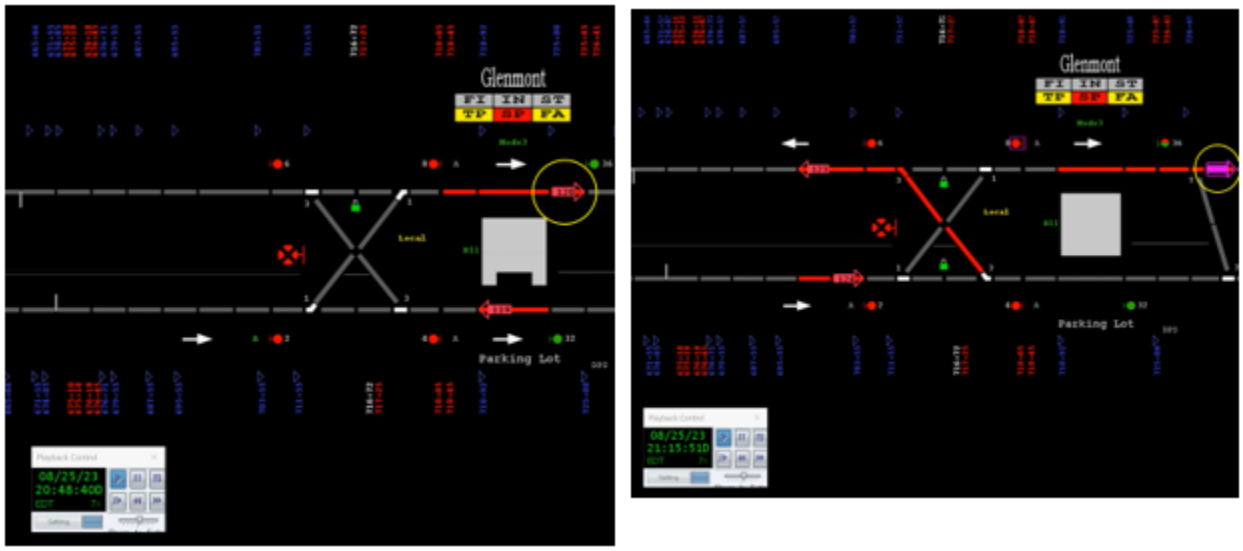


Figure 1 – AIMS depicting Train ID 120 located at Glenmont Station at 20:48 hours, then being moved to Glenmont Yard at 21:15 hours.

The Office of Chief Mechanical Officer (CMOR) / Vehicle Monitoring and Diagnostic System (VMDS)
Adopted from CMOR IIT report with minor formatting and grammatical edits:

IIT found no failure on either Cars 3242 or 3125 that would have caused this incident and was not caused by a stuck Door Control Switch.

Train 120 approached Glenmont Station on Track 1 (Outbound) and crossed over to Track 2 where it stopped at the 8 Car Marker."

Based on these findings, the circuit breaker did not cause the doors to open off the platform — the Train Operated as designed.

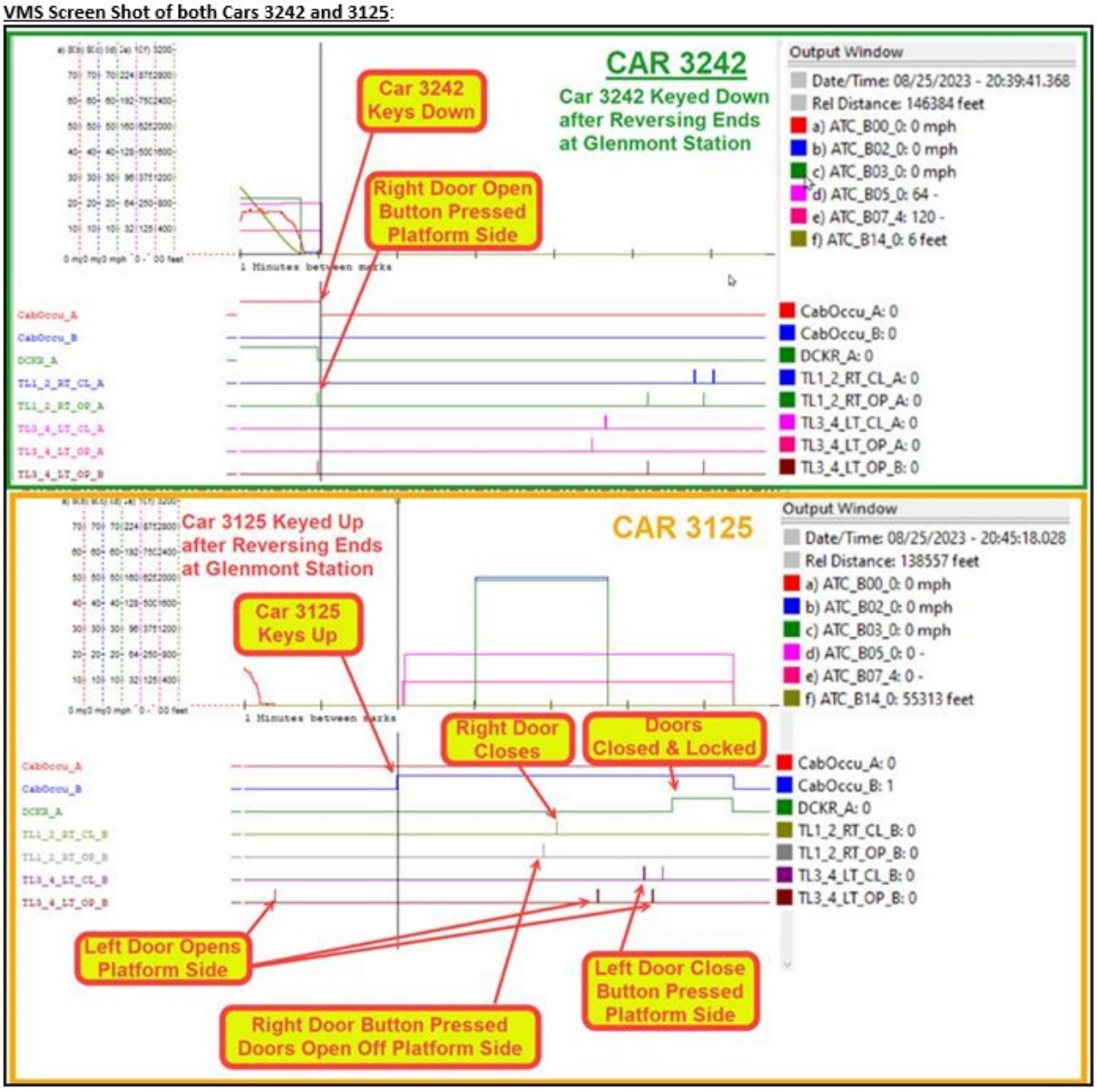
Incident Summary Events:

1. At 20:39:29.572, Train 120 entered Glenmont Station and stopped 1 foot before the 8 Car Marker.
2. At 20:39:29.732, Car 3242 was placed in "Stop & Proceed" and moved ~ 1 Foot.
3. At 20:39:39.640, the A Car Right Door Button was pressed, which opened the Doors on the Center Platform Side of the Train. The "Door Check Relay" signal goes High, indicating the Train Doors are Open.
4. At 20:39:41.368, Car 3242 is Keyed Down.
   NOTE: Glenmont Station is a Center Platform.
5. At 20:45:18.028, Car 3125 was Keyed Up.

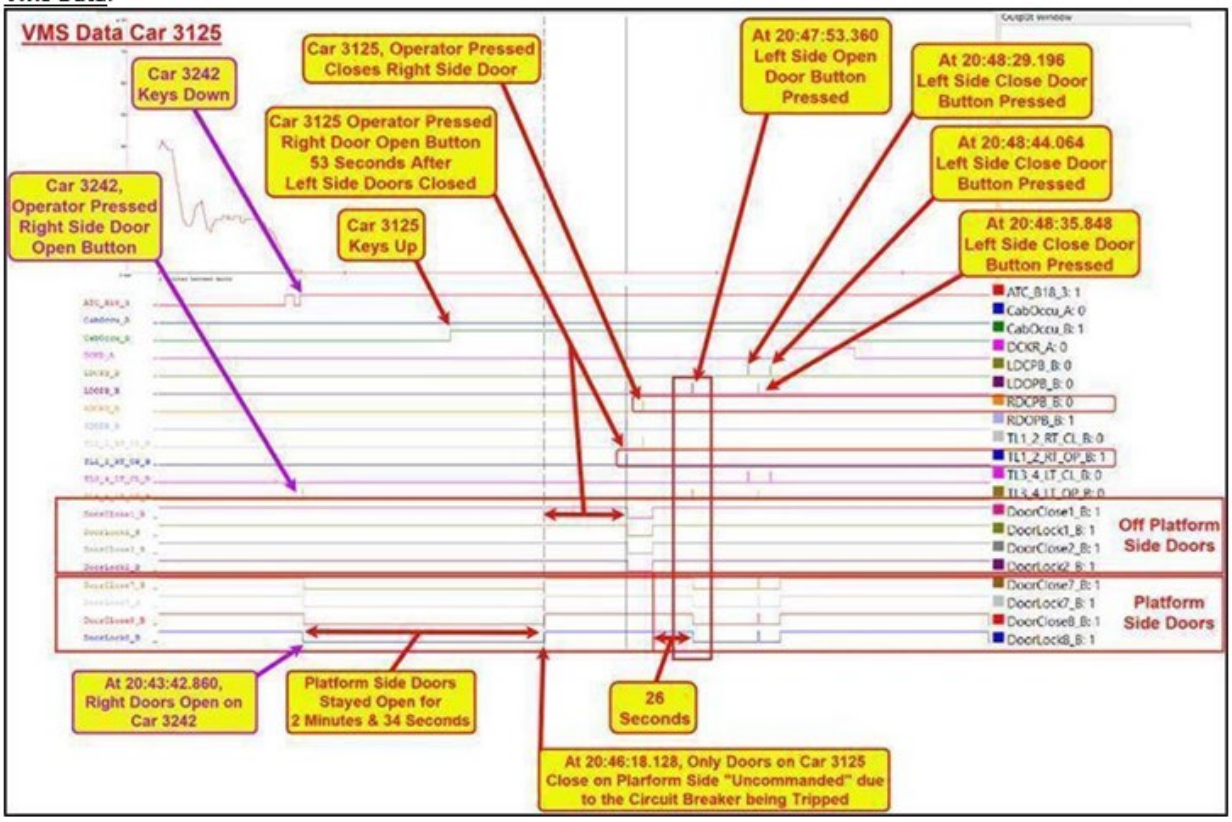
6. At 20:47:10.908, the B Car Right Door Open Button was pressed, which opened the Doors on the Off Platform Side of the Station.
7. At 20:47:21.392, the B Car Right Door Close Button was pressed.
8. At 2:47:53.360, the Left Door Open Button was pressed.
9. At 20:48:29.196, the Left Door Close Button was pressed.
10. At 20:48:35.848, the Left Door Open Button was pressed.
11. At 20:48:43.520, the Left Door Close Button was pressed.
12. At 20:48:51.097, the Door Check Relay goes High, and the Doors are Closed and Locked.
13. At 20:49:38.824, Car 3125 is Keyed down.

VMS Time	Station Video Time	Car Number	Description of Event
---	20:48:04	3242 (L)	The train enters the Station.
20:43:31.028	20:48:35	3242	First stop before 8 Car Marker.
20:43:40.556	20:48:45	3242	Train 120 Stopped at 8 Car Marker.
20:43:42.124	---	3242	The Train Operator pressed the Right Door Open Button.
20:43:42.860	20:48:46	3242	Doors on Platform Side (Right) Doors Opened.
	---	3242	Car 3242 Keys Down.
20:45:17.386	20:49:48	3125	Car 3125 Keys Up.
	20:50:53	3125	Lights in Car 3125 (Only) Flash On/Off, and the Circuit Breaker was Turned Off for 2 Seconds and then back On again.
20:48:18:128	20:51:18	3125	Doors Unconditionally Closed when Left Side Door Circuit Breaker was Tripped. Doors automatically close when the Door Controller loses power.
20:47:10.908	---	3125	Train Operator Pressed the Right Side Door Open Button (Wrong Side).
20:47:11.644	20:52:12	3125	Right Side Train Doors are seen Opening Off the Platform.
20:48:29.196	---	3125	Train Operator Pressed the Right Side Door Close Button.
---	20:52:28	3125	Right Side Train Doors are seen Closing.
20:48:53.360	---	3125	Train Operator Pressed the Left Side Door Open Button (Platform Side).
---	20:52:56		Left Side Train Doors are seen Opening (Platform Side).
20:48:29.196	---	3125	Train Operator Pressed the Left Side Door Close Button.
---	20:53:35	3125	Left Side Train Doors are seen Closing.
20:48:35.848	---	3125	Train Operator Pressed the Left Side Door Open Button.
---	20:53:37	3125	Left Side Train Doors are seen Opening.
20:48:43.520	---	3125	Train Operator Pressed the Left Side Door Open Button.
---	20:53:50	3125	Left Side Doors are seen Closing.
20:48:50.136	---	3125	Left Side Doors are Closed and Locked.
20:49:38.824	---	3125	Car 3125 is Keyed Down.

VMS Screen Shot of both Cars 3242 and 3125:



VMS Data:



Office of Car Maintenance (CMNT)

Adopted from CMNT report with minor formatting and grammatical edits:

"IIT confirms that Car 3125 was the lead Car at the time of the incident. Based on the VMS data from Car 3124, both the Left and Right Door Open Push Buttons were pushed. Data confirms that Doors Opened and Closed properly. No Door Control Switches malfunctioned."

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

No communications issues were identified during the course of this incident.

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. Findings detailed below include reported information from involved personnel and may conflict with other data sources contained in the report.

Train Operator Train ID 120

- The Train Operator stated they were conducting a pre-trip inspection when they noticed that three circuit breakers were tripped; two were associated with interior lights and one was associated with door operation.
- The Train Operator stated they reset the circuit breakers when the Terminal Supervisor came to assess the situation. The Train Operator stated the Terminal Supervisor informed them that their front doors were still closed compared to the rest of the open doors affiliated with the consist.

- The Train Operator stated they were intimidated by the interaction with the Terminal Supervisor and became flustered that they had done something incorrect.
- The Train Operator stated they then went to demonstrate the circuit breakers were in correspondence by operating the button to re-cycle the platform-side doors; instead, they activated the non-platform side doors.
- The Train Operator stated they did not believe anything was mechanically wrong with Train ID 120 except for the circuit breakers were tripped.

Weather

On August 25, at the time of the incident, NOAA recorded the temperature as 76°F, with significant cloud cover, winds averaging 9.6 mph, and 69% average humidity. Weather was not a contributing factor in this incident (Weather source: NOAA) – Location: Washington, DC.

Related Rules and Procedures

MSRPH SOP #40: Door Operations and Station Servicing Procedures.

Human Factors

Evidence of Fatigue

Conditions at the time of the incident were evaluated to distinguish whether evidence of fatigue was present. No video of the incident was available to assess behaviors suggesting fatigue. The employee reported feeling fully alert at the time of the incident and reported experiencing no symptoms of fatigue in the time leading up to the incident.

Fatigue Risk

Incident data was evaluated for fatigue risk factors. There were no significant risk factors for fatigue identified. The incident time of day (20:52 hours) does not suggest an increased risk of fatigue-related impairment. The employee worked afternoon shifts (15:30 – 23:30 hours) in the days leading up to the incident. The employee reported 10 hours of sleep in the last sleep period preceding the incident and was awake for 9.86 hours at the time of the incident. The employee was off duty at 00:30 hours (a calculated total of 14.96 hours), which provided the opportunity for 7-9 hours of sleep. The employee reported usual workday sleep durations of 6 hours and no issues with sleep.

Post-Incident Toxicology Testing

WMATA's Drug and Alcohol Program determined that the Train Operator involved complied with the Drug and Alcohol Policy and Testing Program 7.7.3/6.

Training and Work History

The Train Operator was hired on March 28, 2022, and passed all assessments. They certified as a Train Operator on October 28, 2022. The Train Operator then spent their career as a Train Operator, almost exclusively on the Red Line. The Train Operator had a previous Station Overrun, approximately 3 weeks prior to the incident.

Findings

- The Train Operator reported that they attempted to reset three circuit breakers that were tripped.
- CMOR-IIT analysis determined that the circuit breakers tripped off then on and was inconclusive in the assessment as to the root cause behind why the circuit breakers were tripped.
- While troubleshooting and interacting with the Terminal Supervisor, the Train Operator activated the right-side doors open pushbutton, resulting in all of the non-platform side doors opening on the non-platform side.
- The Train Operator stated that they were flustered and concerned during their interaction with the Terminal Supervisor.
- CMOR and CMNT determined that the train functioned as designed, with no recorded mechanical failures contributory to the incident.

Immediate Mitigation to Prevent Recurrence

- Train ID 120 was removed from service and dispatched to Glenmont Yard.
- Train Operator was removed from service.

Probable Cause Statement

The probable cause of the Improper Door Operation event on August 25, 2023, at Glenmont Station, was a loss of situational awareness by the Train Operator while troubleshooting, resulting in activating the train doors on the non-platform side.

Recommended Corrective Actions

Corrective Action Code	Description	Responsible Party	Estimated Completion Date
110939_SAFECAPS_RTRA_001	Train Operator to attend refresher training with an emphasis on SOP #40.	RTRA SRC	Completed

Appendices

Appendix A – Interview Summary

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

Train Operator Train ID 120

The Train Operator is a WMATA employee with 1 year of service and experience as a Train Operator. The Train Operator holds an RWP Level 2 that expires in March 2024.

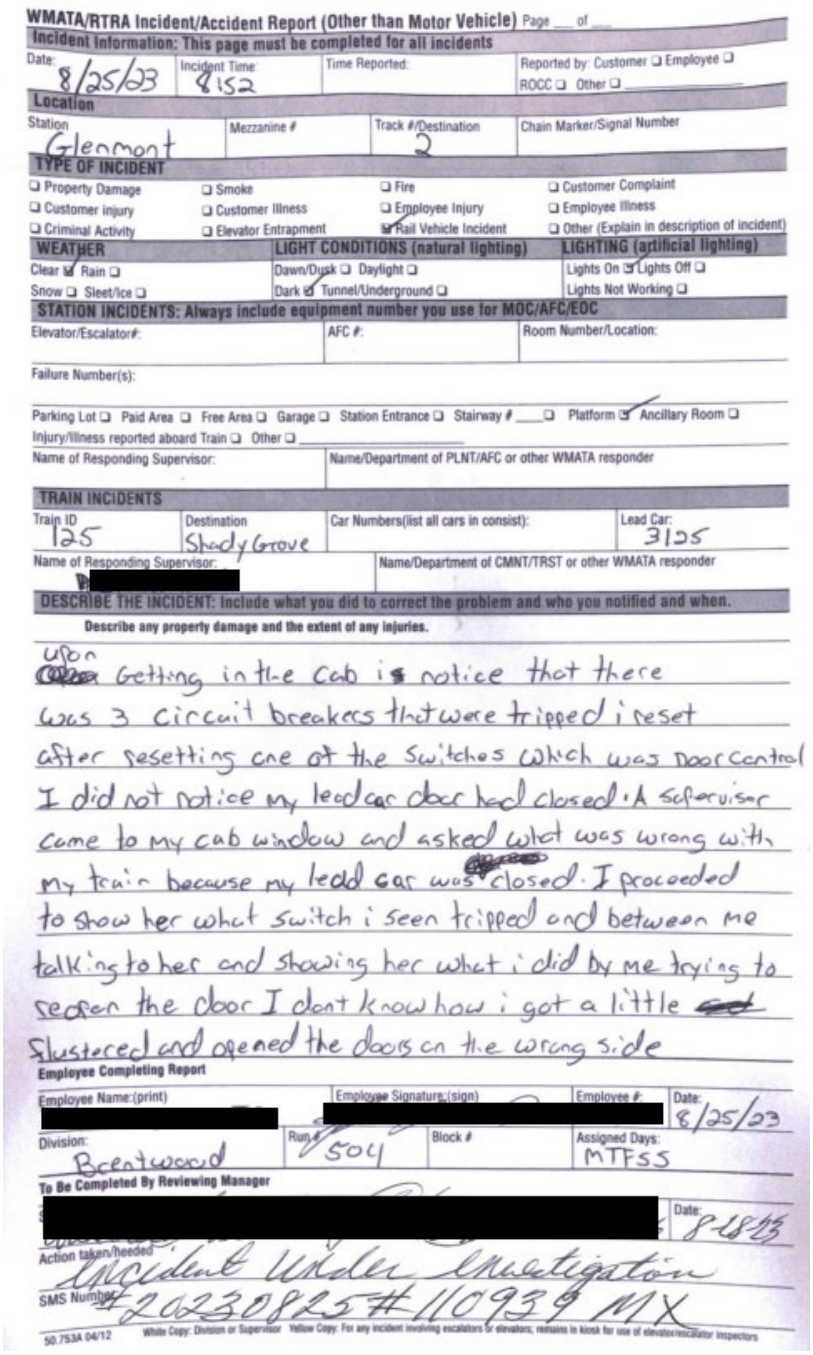
The Train Operator stated they were preparing to begin their fourth trip of the evening and took over operation of Train ID 120 from the previous Train Operator at Glenmont Station.

The Train Operator stated they noticed that three circuit breakers were tripped; two were associated with interior lights and one was associated with door operation of the platform-side doors.

The Train Operator stated they had recycled the circuit breakers when the Terminal Supervisor arrived to assess the situation. The Train Operator stated the Terminal Supervisor informed them that the lead car doors were closed and the rest of the doors were open. The Train Operator stated they were not aware of that before the Supervisor brought it to their attention.

The Train Operator stated they were intimidated by the interaction with the Terminal Supervisor, and that they became flustered and concerned that they had done something incorrect. The Train Operator stated they attempted to demonstrate the circuit breakers were in correspondence by operating the circuit breakers and instead, they activated the non-platform side doors.

The Train Operator stated they did not believe anything was mechanically wrong with the train except that the circuit breakers were tripped. The Train Operator stated this is common with the 3000 series trains.



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

Incident Information: This page must be completed for all incidents

Date: 8/25/23 | Incident Time: 8152 | Time Reported: | Reported by: Customer ❑ Employee ❑ ROCC ❑ Other ❑

Location

Station: Glenmont | Mezzanine # | Track #/Destination: 2 | Chain Marker/Signal Number

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: Clear ☑ Rain ❑ Snow ❑ Sleet/Ice ❑

LIGHT CONDITIONS (natural lighting): Dawn/Dusk ❑ Daylight ❑ Dark ☑ Tunnel/Underground ❑

LIGHTING (artificial lighting): Lights On ☑ Lights Off ❑ 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: 125 | Destination: Shady Grove | Car Numbers(list all cars in consist): | Lead Car: 3125

Name of Responding Supervisor: [redacted] | Name/Department of CMNT/TRST or other WMATA responder

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.

upon Getting in the cab i notice that there was 3 circuit breakers that were tripped i reset after resetting one of the switches which was Door control I did not notice my lead car door had closed. A Supervisor came to my cab window and asked what was wrong with my train because my ledd car was closed. I proceeded to show her what switch i seen tripped and between me talking to her and showing her what i did by me trying to reopen the door I dont know how i got a little ~~sad~~ flustered and opened the doors on the wrong side

Employee Completing Report

Employee Name:(print) [redacted] | Employee Signature:(sign) [redacted] | Employee #: | Date: 8/25/23

Division: Brentwood | Run: 504 | Block # | Assigned Days: MTFSS

To Be Completed By Reviewing Manager

[redacted] | Date: 8-18-23

Action taken/needed: Incident Under Investigation

SMS Number: #20230825#110939 MX

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 of Train ID 120's Written Statement Page 1 of 1.

RTRA SUPERVISOR REPORT

Date	Incident Time	Incident Location (Station Mezzanine #)	Track/Mezzanine #
08/25/2023	8:54 pm	Glenmont	Track #2

Equipment Number (Train ID & Car Numbers; Escalator/Elevator #)

Train ID #120 / 3125

Incident Description

Medical Dispatch for Injured Customer

WMATA Personnel Involved	Employee #	Rule Violation?	Home Division	Post Incident
[redacted]	[redacted]	N/A	Brentwood	Yes
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A

Customer Information (Detailed Information must be recorded on Station Manager Incident Report)

Name	Address	Injury?
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A

Fire Department/EMS/Other External Agency Responding (Use Supplemental sheet if necessary)

Arrival Time	Unit Number	Person In Charge	Remarks
8:54 pm	10	Supervisor [redacted]	N/A
N/A	N/A	N/A	N/A

Chronological Account of Incident

I observed Operator [redacted] board his train #120 on track #2 on Glenmont ' s platform. I notice the emergency lights went out on the lead car and came back on. Next the doors on the lead car only closed on the platform side. I went out to his train to see what was going on and I asked him did he trip any of the circuit breakers and he said he was recycling them. I told him the door on your lead car are closed and to check his circuit breakers. Operator [redacted] looked down at his circuit breakers to see it they were all in the normal position then turned to me for confirmation that he had check the circuit breakers and if the doors had open. I told Operator [redacted] that the door are still closed and asked if he tripped the left and right door circuit breakers and he stated no. I told him to check again because your doors are closed and you need to open them. While sitting in the operators chair, he reached up and hit the open-door control button on the opposite side of the platform. I instructed Operator [redacted] close the door because you just opened the door off the platform, make announcements to your customer the train is out of service, closed the doors and walk through and verify clear of customer. At that point I went back into the blockhouse to notify central and got permission to do a ground walk around. Ground walk around was completed and verify no customers exit the train.

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

Your Arrival Time:

Supervisor Submitting Report	(Payroll #)	Date	Report Reviewed By	Date
[redacted]	[redacted]	08/25/2023	[redacted]	8/28/2023

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

Document 2 –RTRA Supervisor's Written Statement Page 1 of 1.

RTRA Supervisors' Report

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

DEPARTMENT OF OPERATIONS-RAIL SERVICE

Office of Rail Transportation

Date:	Incident Time Approx.	Incident Location (Station Mezzanine#)	Track/Mezzanine
August 25, 2023	2116hrs	Glenmont	Track 2

--Equipment Number (Train ID & Car Numbers; Escalator/Elevator
3125

Incident Description
Improper train configuration

WMATA Personnel Involved	Employee #	Rule Violation?	Home Division	Post Incident
[redacted]	058422	SOP 40	Brentwood	Yes

Name (Witness)	D.O.B.	Injury?
Name (Witness)	D.O.B	Injury?
Name (Witness)	D.O.B	Injury?

Arrival Time	Unit Number	Person In Charge	Remarks
9:50pm	21	[redacted]	

Chronological Account of Incident

On Friday, August 25, 2023 at approximately 8:55pm Train Operator [redacted] performed at in proper door operation by opening the doors on the wrong side at Glenmont track 2.

[redacted] states while preparing to take train id 120 off the platform in the direction of Glenmont he noticed multiple circuit breakers tripped in the operators cab. [redacted] states that he recycled the door control circuit breaker with the doors open which at that time the lead car doors closed on the platform side.

[redacted] states that after the doors closed in the lead car. Supervisor [redacted] came to the cab window and asked him what was going on with his train. He responded to her that he had multiple circuit breakers tripped in the lead car and he was recycling them. At this time while Supervisor [redacted] was still standing at the cab window [redacted] performed a open door control from the operators seat which opened the doors on the wrong side of the platform.

At approximately 9:00pm a ground walk around was performed by Supervisor [redacted] which nothing abnormal was reported.

The incident consist was immediately taken out of service and layed-up in Glenmomnt yard.

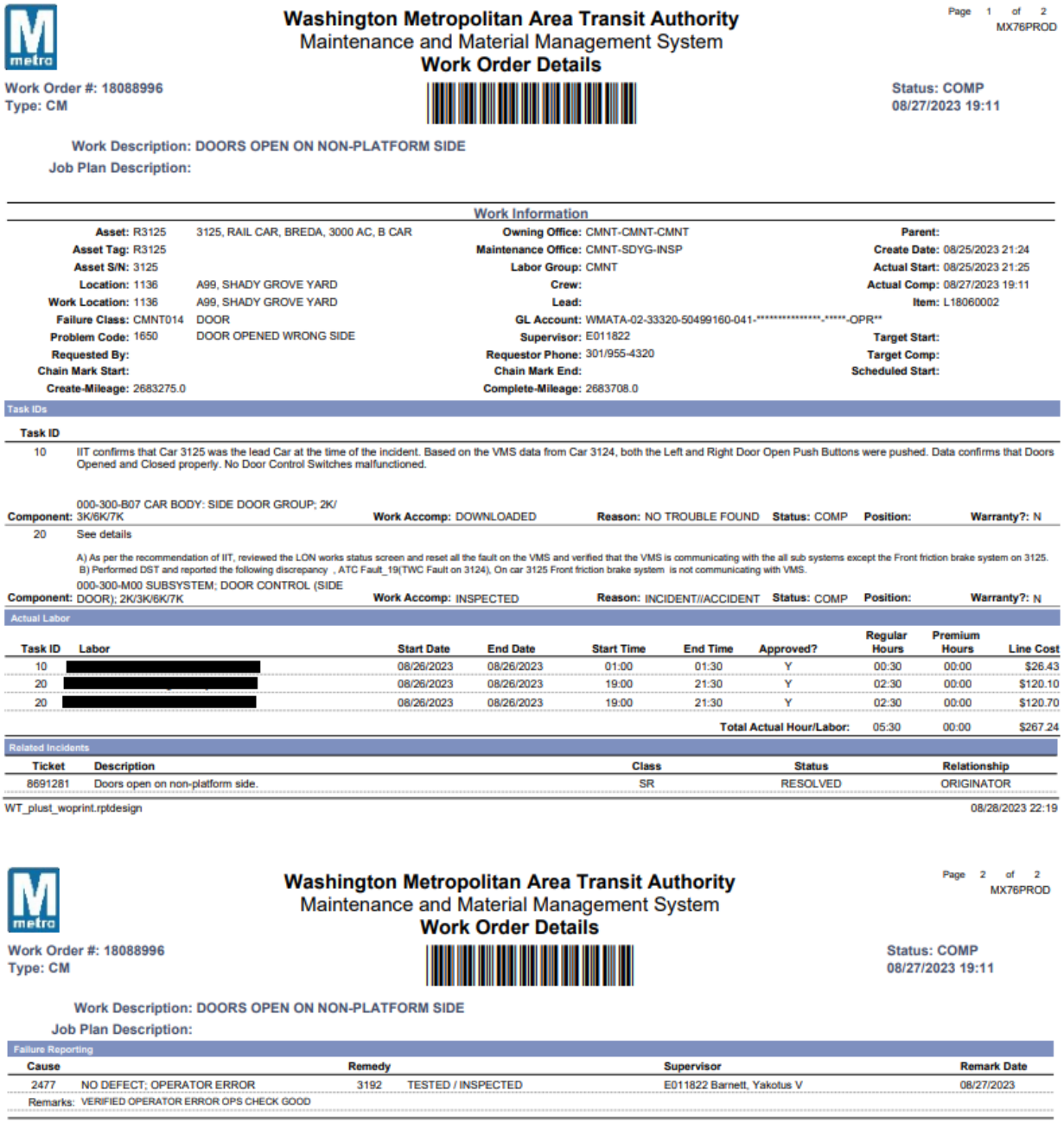
At approximately 9:50pm I arrived at Glenmomnt and transported [redacted] to L'Enfant Plaza Metro HQ for Post-incident testing.

Supervisor Submitting Report (include payroll #)	Date	Report Reviewed by	Date
[redacted]	8-25-23		

50.437 09/10REPORT MUST BE FAXED TO ROCC 301-618-1012 at end of tour

Document 3 – Transporting RTRA Supervisor's Written Statement Page 1 of 1.

Appendix C – Maximo Report



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

Page 1 of 2
MX76PROD

Work Order #: 18088996
Type: CM

Status: COMP
08/27/2023 19:11

Work Description: DOORS OPEN ON NON-PLATFORM SIDE
Job Plan Description:

Work Information

Asset: R3125	3125, RAIL CAR, BREDA, 3000 AC, B CAR	**Owning Office:** CMNT-CMNT-CMNT		**Parent:**	
Asset Tag: R3125		**Maintenance Office:** CMNT-SDYG-INSP		**Create Date:** 08/25/2023 21:24	
Asset S/N: 3125		**Labor Group:** CMNT		**Actual Start:** 08/25/2023 21:25	
Location: 1136	A99, SHADY GROVE YARD	**Crew:**		**Actual Comp:** 08/27/2023 19:11	
Work Location: 1136	A99, SHADY GROVE YARD	**Lead:**		**Item:** L18060002	
Failure Class: CMNT014	DOOR	**GL Account:** WMATA-02-33320-50499160-041-**********-*****-OPR**			
Problem Code: 1650	DOOR OPENED WRONG SIDE	**Supervisor:** E011822		**Target Start:**	
Requested By:		**Requestor Phone:** 301/955-4320		**Target Comp:**	
Chain Mark Start:		**Chain Mark End:**		**Scheduled Start:**	
Create-Mileage: 2683275.0		**Complete-Mileage:** 2683708.0			

Task IDs

Task ID	
10	IIT confirms that Car 3125 was the lead Car at the time of the incident. Based on the VMS data from Car 3124, both the Left and Right Door Open Push Buttons were pushed. Data confirms that Doors Opened and Closed properly. No Door Control Switches malfunctioned.

Component: 000-300-B07 CAR BODY: SIDE DOOR GROUP; 2K/3K/6K/7K **Work Accomp:** DOWNLOADED **Reason:** NO TROUBLE FOUND **Status:** COMP **Position:** **Warranty?:** N

20	See details

A) As per the recommendation of IIT, reviewed the LON works status screen and reset all the fault on the VMS and verified that the VMS is communicating with the all sub systems except the Front friction brake system on 3125.
B) Performed DST and reported the following discrepancy , ATC Fault_19(TWC Fault on 3124), On car 3125 Front friction brake system is not communicating with VMS.

Component: 000-300-M00 SUBSYSTEM; DOOR CONTROL (SIDE DOOR); 2K/3K/6K/7K **Work Accomp:** INSPECTED **Reason:** INCIDENT//ACCIDENT **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]	08/26/2023	08/26/2023	01:00	01:30	Y	00:30	00:00	$26.43
20	[redacted]	08/26/2023	08/26/2023	19:00	21:30	Y	02:30	00:00	$120.10
20	[redacted]	08/26/2023	08/26/2023	19:00	21:30	Y	02:30	00:00	$120.70
						Total Actual Hour/Labor:	05:30	00:00	$267.24

Related Incidents

Ticket	Description	Class	Status	Relationship
8691281	Doors open on non-platform side.	SR	RESOLVED	ORIGINATOR

WT_plust_woprint.rptdesign 08/28/2023 22:19

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

Page 2 of 2
MX76PROD

Work Order #: 18088996
Type: CM

Status: COMP
08/27/2023 19:11

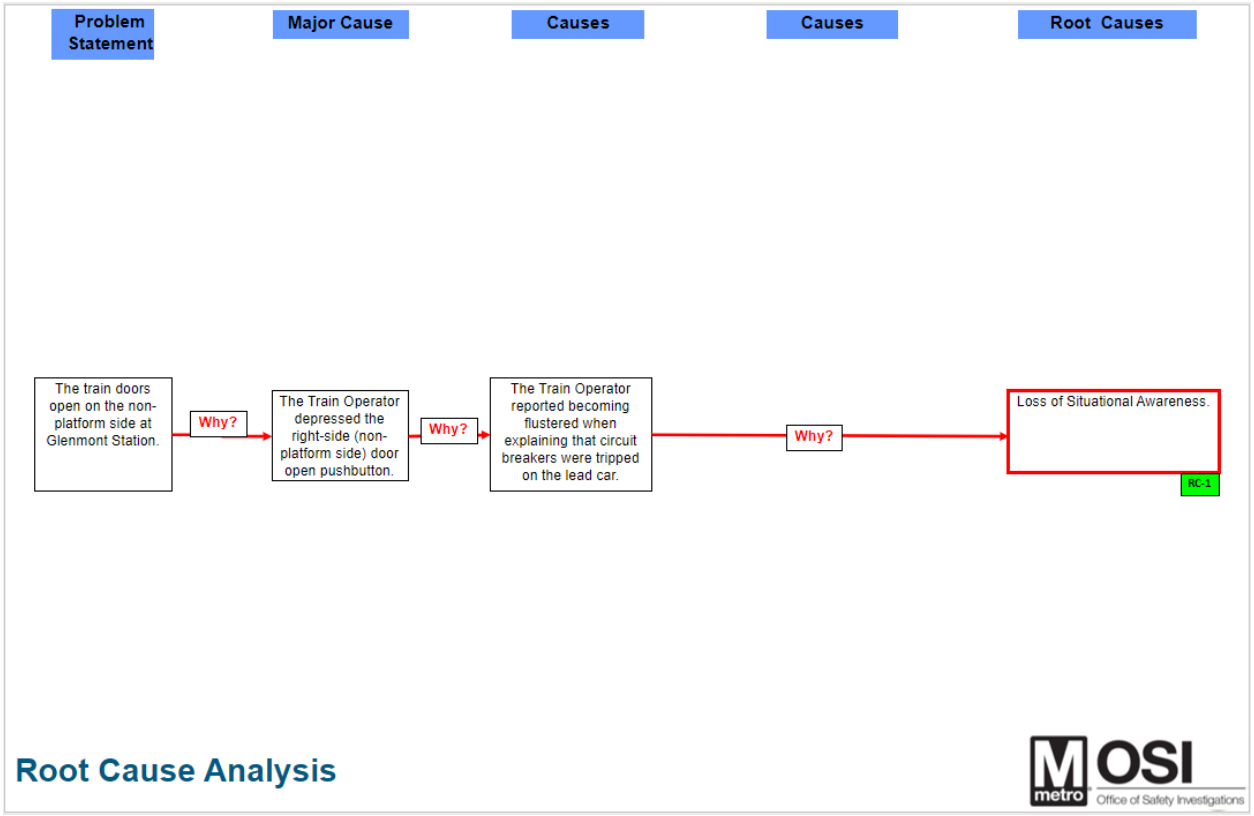
Work Description: DOORS OPEN ON NON-PLATFORM SIDE
Job Plan Description:

Failure Reporting

Cause		Remedy		Supervisor	Remark Date
2477	NO DEFECT; OPERATOR ERROR	3192	TESTED / INSPECTED	E011822 Barnett, Yakotus V	08/27/2023
Remarks:	VERIFIED OPERATOR ERROR OPS CHECK GOOD				

Document 4 – CMNT Maximo work order Page 1 of 1.

Appendix D – Why-Tree Analysis



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

FINAL REPORT OF INVESTIGATION A&I E23819

Date of Event:	November 12, 2023
Type of Event:	O-15 (a): Improper Door Operation
Incident Time:	12:32 Hours
Location:	Stadium-Armory Station, track 1
Time and How received by SAFE:	12:44 Hours – Mission Assurance Coordinator (MAC)
WMSC Notification Time:	13:39 Hours
Responding Safety Officers:	None
Rail Vehicle:	Train ID 405 [L3078.79x3249.48x3153.52T]
Injuries:	None
Damage:	None
Emergency Responders:	None
SMS I/A Incident Number:	20231112#112749MX

Drafted By: SAFE 709 – 6/5/2024
Reviewed By: SAFE 70 – 1/5/2023
Approved By: SAFE 707 – 01/11/2024

Stadium-Armory Station – Improper Door Operation

November 12, 2023

Table of Contents

Drafted By: SAFE 709 – 6/5/2024
Reviewed By: SAFE 70 – 1/5/2023
Approved By: SAFE 707 – 01/11/2024

Abbreviations and Acronyms

AIMS	Advanced Information Management System
ARS	Audio Recording System
CCTV	Closed-Circuit Television
CMOR	Office of The Chief Mechanical Officer
IIT	Incident Investigation Team
MC	Master Controller
MICC	Metro Integrated Command and Communications Center
MOR	Metrorail Operating Rulebook
NOAA	National Oceanic and Atmospheric Administration
OAP	Operations Administrative Policy
RTC	Rail Traffic Controller
RTRA	Office of Rail Transportation
ROQT	Office of Rail Operations Quality Training
SAFE	Department of Safety
SMS	Safety Measurement System
SOP	Standard Operating Procedure
WMATA	Washington Metropolitan Area Transit Authority
WMSC	Washington Metrorail Safety Commission

Executive Summary

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

On Sunday, November 12, 2023, at 12:32 hours, the Train Operator of Train ID 405 (L3078.79x3249.48x3153.52T) arrived at Stadium-Armory Station on track 1. Upon entering the platform limits, the Train Operator was signaled via hand signal by an Office of Rail Transportation (RTRA) Rail Supervisor to stop the train with the lead car on the platform, and the remaining five cars were off the platform, still in the tunnel. This was to allow the Train Operator to walk across the platform to a waiting train to reduce wait time for revenue service. The action was unauthorized by SOP 40.

After stopping the train, the Train Operator approached the left side cab window to acknowledge the Rail Supervisor. At 12:33 hours, the Train Operator opened the left side cab window, and then opened the train doors. The doors were immediately closed. The Train Operator reported to the Metro Integrated Command & Communications Center (MICC) that the train doors were open outside the platform.

The MICC Assistant Operations Manager (AOM) was notified of the event.

The Rail Supervisor performed a ground walkaround and reported that the roadway was clear.

The Train Operator was given a permissive block to the 8-car marker, and the train was offloaded. The train was transported to New Carrollton Yard.

RTRA removed the Train Operator and Rail Supervisor from service for post-incident testing. Train ID 405 was removed from service for post-incident inspection.

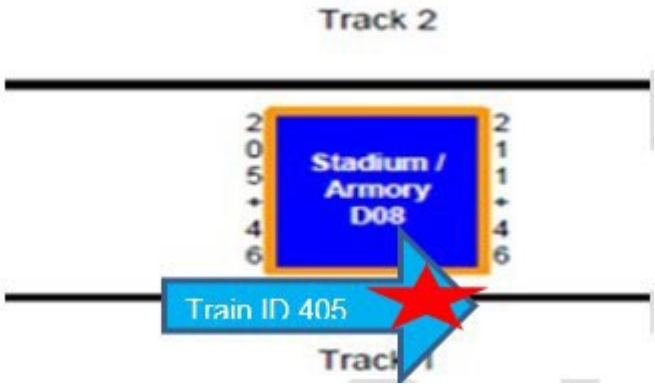
There was no damage or injuries resulting from this event.

The probable cause of the Improper Door Operation event on November 12, 2023, at Stadium-Armory Station was an attention error while losing focus by the Train Operator when they were signaled to short-stop and inadvertently opened the train doors while addressing the Rail Supervisor. A contributing factor was the Rail Supervisor distracting the Train Operator, by drawing their attention away from properly berthing the train on the platform.

Incident Site

Stadium-Armory Station, track 1 – Underground station with a center platform.

Field Sketch/Schematics



The above depiction is not to scale.

Purpose and Scope

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

Investigative Methods

Upon receiving notification of the Improper Door Operation event at the Stadium-Armory Station on November 14, 2023, SAFE dispatched a cross-functional team to assess the scene and conduct the subsequent investigation. SAFE team members worked with relevant WMATA subject matter experts to review the incident's facts and data.

The investigative methodologies included the following:

- Site Assessment through document and video review.

- Formal Interviews – SAFE interviewed two individuals as part of this investigation. The interviews included persons present at, during, and after the incident, those directly involved in the response process, and representatives from the Washington Metrorail Safety Commission (WMSC). SAFE interviewed the following individual:
    - Train Operator (Train ID 405)
    - Rail Supervisor

- Informal Interviews – Collected through conversations with individuals during the investigation to provide background and supporting information. Written statements were reviewed from personnel present during the event.
- Documentation Review – Collection of relevant work history information and process documentation contained in WMATA systems of record. These records include: Metro Operating Rules
    - Employee Training and Procedures

Drafted By: SAFE 709 – 6/5/2024
Reviewed By: SAFE 70 – 1/5/2023
Approved By: SAFE 707 – 01/11/2024

- Employee 30 Day Work History
- National Oceanic and Atmospheric Administration (NOAA)
- Office of the Chief Mechanical Officer (CMOR)/Incident Investigation Team (IIT) post-incident analysis data
- MICC Incident Report
- Maximo

- System Data Recording Review – Collection of information contained in Metro Data Recording Systems. This data includes:
  - Audio Recording System (ARS) playback
  - Closed-Circuit Television (CCTV)
  - Advance Information Management System (AIMS)

Investigation

On Sunday, November 12, 2023, Blue Line trains were operating in two segments: between Franconia-Springfield Station and Stadium-Armory Station and between Addison Road Station & Downtown Largo Station. Benning Road Station and Capitol Heights Station were closed due to scheduled track maintenance.

An RTRA Rail Supervisor #1 was stationed at the temporary terminal at Stadium-Armory Station when the Train Operator of Train ID 405 (L3078.79x3249.48x3153.52T) arrived at Stadium-Armory Station on track 1 at 12:32 hours. The Train's destination was Stadium-Armory Station.

The Closed-Circuit Television (CCTV) revealed that as Train ID 405 was entering the platform limits, Rail Supervisor #1, who was located near the 8-car marker, used hand signals for the Train Operator to stop the train.

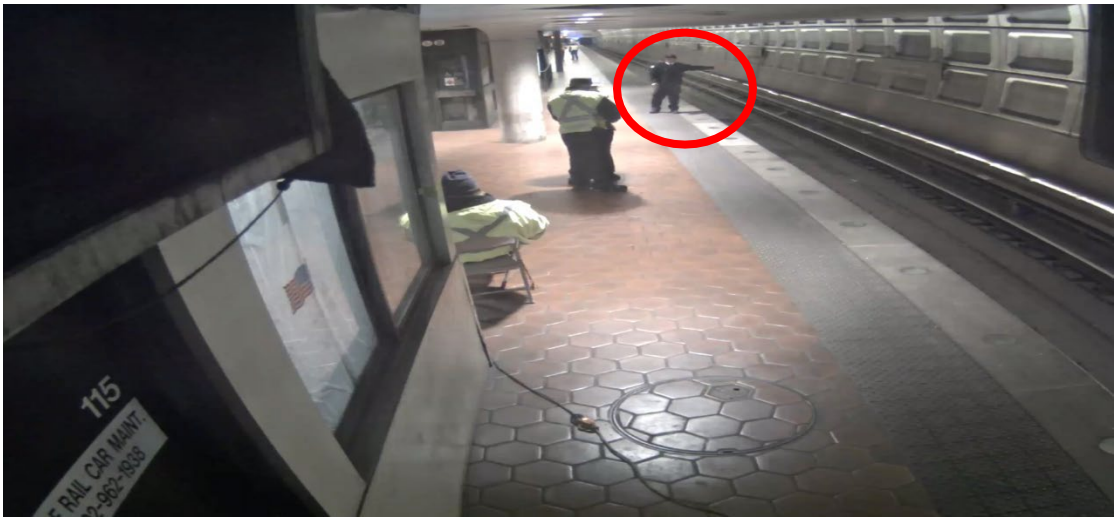


Image 1 - Rail Supervisor directing Train ID 405 to short-stop at Stadium-Armory platform at 12:34:52 hours.

The train stopped with the lead car on the platform, and the remaining five cars were off the platform, still in the tunnel. After stopping the train, the Train Operator approached the left side cab window to acknowledge Rail Supervisor #1. At 12:33 hours, the Train Operator opened the left side cab window and opened the train doors. The doors were immediately closed.

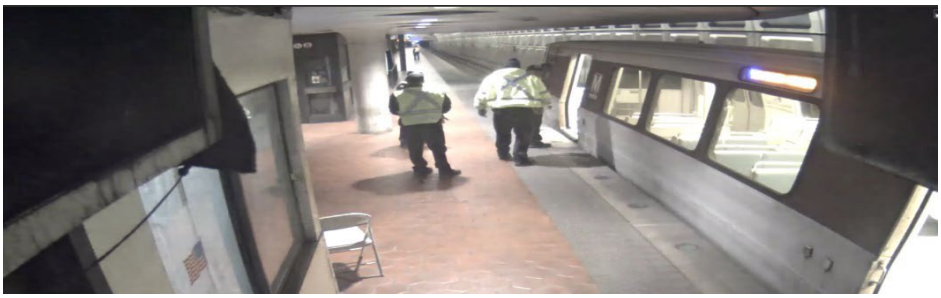


Image 2 - Train ID 405 doors open off the platform at 12:35:14 hours.

The Audio Recording System (ARS) revealed that at 12:35 hours, the Train Operator reported that the train doors were open outside the platform limits to the MICC Radio Rail Traffic Controller (RTC). The Radio RTC did not acknowledge the report and granted a permissive block to the 8-car marker. Rail Supervisor #1 advised the MICC that the ground walkaround was being conducted, but the Radio RTC did not acknowledge the report.

At 12:36 hours, the AD Train Operator keys aboard Train ID 405 and Train Operator of Train ID 405 departed the Train ID 405 and was removed from service.

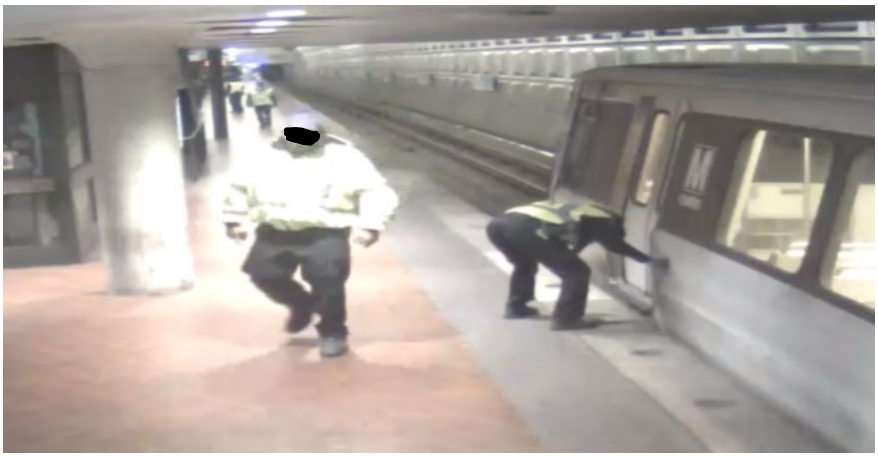


Image 3 - AD Train Operator keys aboard Train ID 405 at 12:36 hours

Image 4 – Train Operator of Train ID 405 departed Train ID 405 and is removed from service at 12:36 hours.

At 12:37 hours, the Radio RTC instructed the train to continue to the 8-car marker. Rail Supervisor #1 inquired with a second Rail Supervisor as to the status of the ground walkaround Rail Supervisor #2 reported that the roadway was clear. The Radio RTC inquired about what was happening and requested that Rail Supervisor #1 give a landline.

At 12:38 hours, Rail Supervisor #2 reported that the ground walkaround was clear.

At 12:39 hours, Rail Supervisor #1 contacted the MICC and reported that the Train Operator stopped the train with one car on the platform, and then opened the train doors with the remaining cars off the platform. A second Rail Supervisor had performed a ground walk so that the train could be moved to the 8-car marker to offload.

The train continued to the 8-car marker and was offloaded.

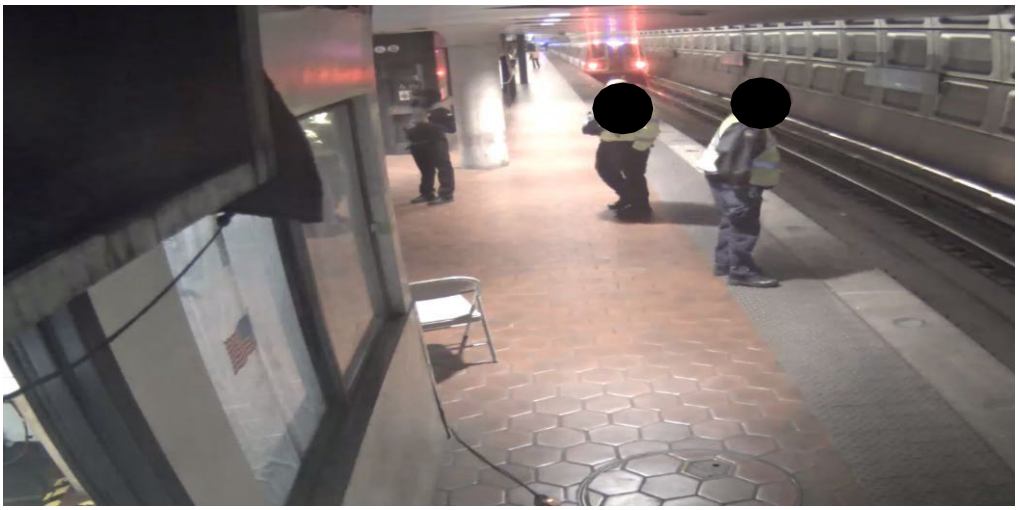


Image 5 - Train ID 405 moves to berth at 8-car marker and off load at Stadium-Armory platform at 12:40:32 hours.

At 12:41 hours, the Button RTC notified the AOM of the event and that a Rail Supervisor conducted a ground walkaround without permission.

Upon completion of the ground walkaround, another Train Operator took over operation of Train ID 405.

CCTV revealed that Train ID 405 (705) departed Stadium-Armory Station and continued to New Carrollton Yard for inspection. There were no injuries or damage resulting from this event.

Chronological Event Timeline

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

Time	Description
12:31:31 hours	Train ID 405: Advised no speed readouts approaching Stadium-Armory Station. Radio RTC: Acknowledged and granted a permissive block. [Radio OPS 2]
12:32:58 hours	Train ID 405 arrived at the Stadium Armory Station. [CCTV]
12:33:11 hours	Train ID 405 platform-side doors open with one car on the platform. [CCTV]
12:33:17 hours	Train ID 405 platform-side doors closed. [CCTV]

12:35:50 hours	Train ID 405: Reported that the doors opened off the platform at Stadium-Armory Station on track 1. Radio RTC: Granted a permissive block to 8-car marker. Rail Supervisor #1: Requested the train to hold and a ground walkaround was being conducted. [Radio Ops 2]
12:36:00 hours	AD Train Operator keyed aboard while Train Operator of Train ID 405 departs Train and is removed from service. [CCTV]
12:37:02 hours	Radio RTC: Instructed Train ID 405 to continue to the 8-car marker. Rail Supervisor #1: Inquired of Rail Supervisor #2, how was the ground walkaround going. Rail Supervisor #2: Responded, all clear and returning to the platform. Radio RTC: Inquired of Rail Supervisor #1, "What is going on?" [Radio Ops 2]
12:38:47 hours	Rail Supervisor #1: Advised to standby for landline, performing a ground walkaround. Rail Supervisor #2: Reported that they were all clear here. Radio RTC: Instructed Rail Supervisor #1 to give a landline. [Radio Ops 2]
12:39:33 hours	Rail Supervisor #1: Reported that Train ID 405 performed a short stop and the operator opened doors off platform and performed a ground walkaround so that the train could move to 8-car marker and offload. Button RTC: Instructed to take over operating and remove the Train Operator from service. [Phone Ops 2]
12:40:32 hours	Train ID 405 stopped at the 8-car marker and offloaded. [CCTV]
12:41:09 hours	Button RTC: Notified AOM of event. AOM: Acknowledged and instructed to have the Train Operator removed from service. [Phone ROCC RAIL 2]
12:50:06 hours	AOM: Instructed to send another Rail Supervisor to Stadium-Armory Station to assist. Button RTC: Acknowledged. [Phone Ops 2]
12:53:53 hours	Radio RTC: Instructed Rail Supervisor #3, who arrived at Stadium-Armory Station to assist. Rail Supervisor #3: Acknowledged. [Phone Ops 2]

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

Advanced Information Management System (AIMS)

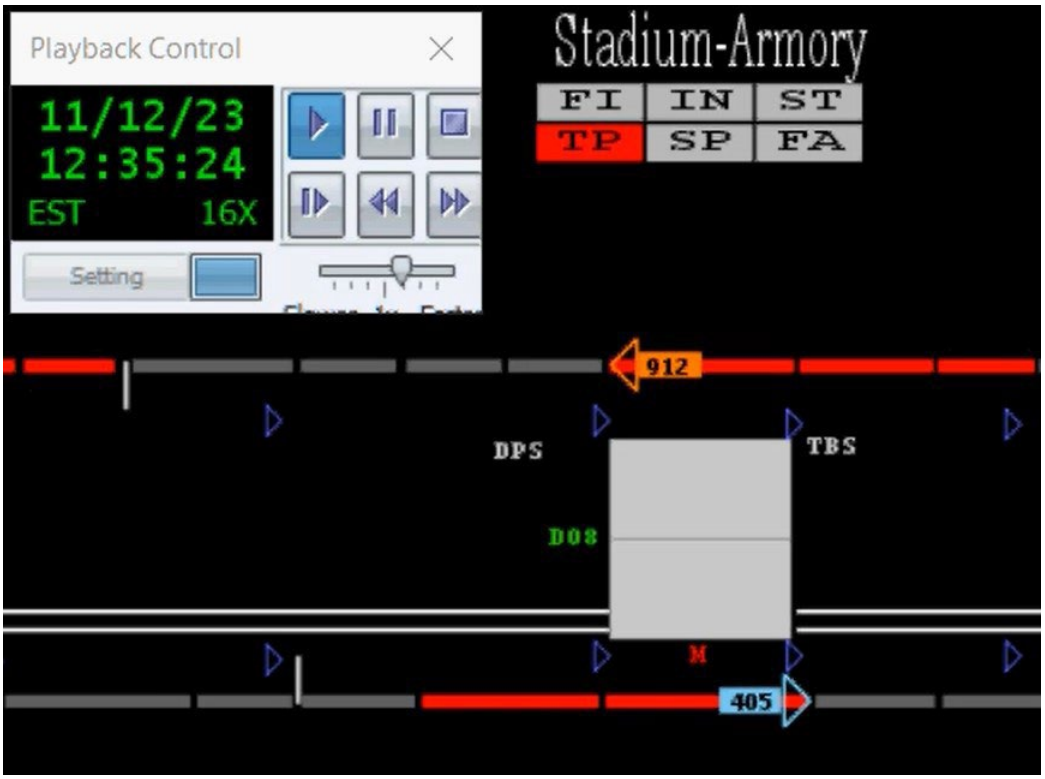


Figure 1 – AIMS playback depicting Train ID 405 at Stadium Armory Station.

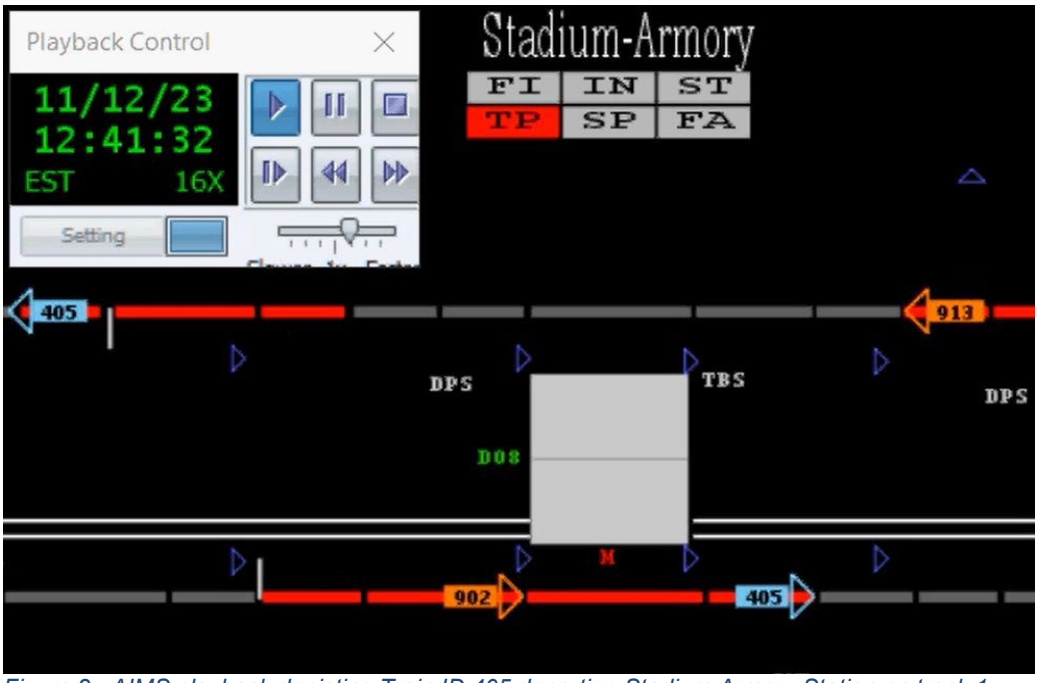


Figure 2 - AIMS playback depicting Train ID 405 departing Stadium Armory Station on track 1.

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

Radio checks were performed on the evening of November 20, 2023 for the Stadium-Armory Station platform, track 1 and no transmission or reception issues were identified.

Office of the Chief Mechanical Officer, Incident Investigation Team (CMOR/IIT)
Adopted from the CMOR/IIT report with minor edits for formatting and grammar:

IIT completed a download and analysis of data from Train ID 405, cars L3078-79X3249-48X3153-52T. Based on the VMS data, Train ID 405, with car 3078 as the lead car, entered into Stadium-Armory Station at a speed of 9 MPH. The train came to a complete stop 549 ft. short of the 8-car marker, leaving 399 ft. off the platform.

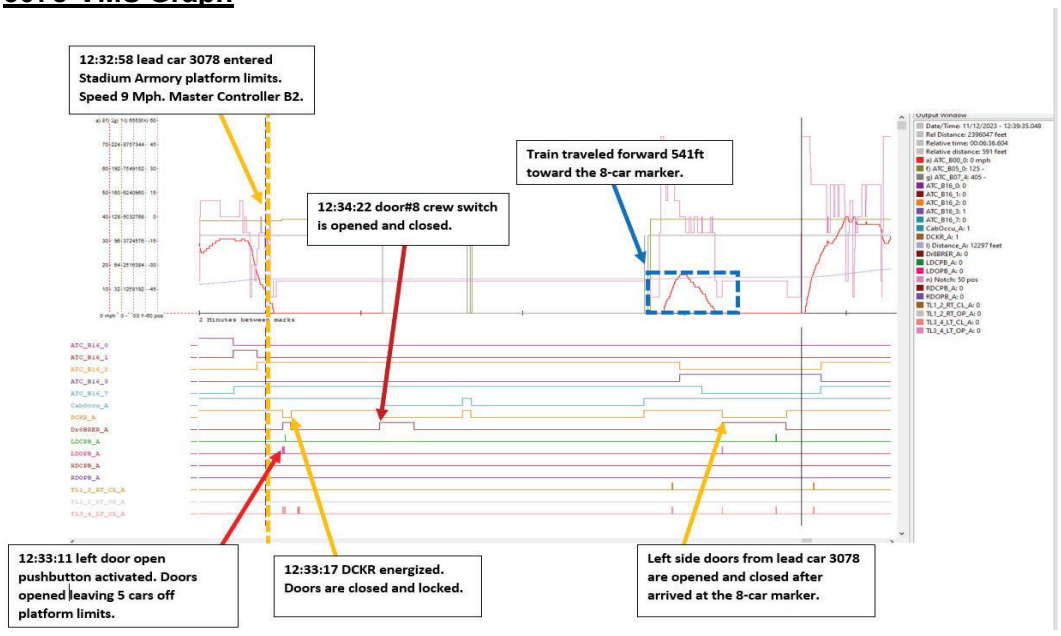
The Left Door open pushbutton was activated, and the Left-side passenger doors opened. Leaving 5 car doors opened off platform side. After the doors where commanded to opened, 1.7 seconds later the Door Closed pushbutton was activated and left doors begin to close. DCKR energized after being commanded 4.7 seconds later. This indicated all doors are closed and locked. The doors were held open for a total of 6.3 seconds.

Train ID 405 indicated all doors closed and locked at 12:33:17 hours and moved to a position of power at 12:37:50 hours. The master controller was moved to a P5 power position, and the train moved forward an additional 541 feet toward the 8-car marker at Stadium-Armory Station. Based on VMS data, there was no fault with the train that contributed to the cause of this incident. The train performed as commanded. See below timeline of event during the incident.

Time	Description of Events
12:32:58.444	Train ID 405 enters into Stadium Armory (D08-1), with Lead Car 3078, at a speed of 9 MPH. Master Controller in B2 position.
12:33:04.460	Train ID 405, 6-car consist, came to a complete stop At Stadium Armory, track #1, **549 ft.** shy of the 8-car marker, leaving **399 ft**. of the cars beyond platform limits.
12:33:11.116	Left Door Open pushbutton activated and left Doors Open with the last 5.32 cars doors of the trailing and belly cars off the platform. Doors Open platform side.
12:33:12.775	Left Door Close Pushbutton Activated, doors closed sequence initiated. Doors begin to close.
12:33:17.448	DCKR signal goes High, indicating All doors closed and locked.
12:34:22.229	Door #8 on Car 3078 is opened from the crew switch.
12:34:24.796	Car 3078 is keyed down.
12:34:48.408	Door #8 on Car 3078 is closed.
12:35:23.988	Car 3078 was keyed up.
12:35:30.864	Car 3078 is keyed down.
12:37:38.173	Car 3078 is keyed up.
12:37:50.552	Master Controller is placed in P5 position. Train begins to move to the 8-
12:38:31.376	Train come to completed stop after traveling a total of **541ft**. from initial stop at Stadium Armory station, putting all passenger doors onto the platform.
12:38:36.176	Left door Open pushbutton activated and left side doors platform side opened.
12:39:16.232	Left Door Close Pushbutton Activated, doors closed sequence initiated. Doors begin to close.
12:39:23.994	DCKR signal goes High, indicating All doors closed and locked.
12:39:35.048	Master Controller is placed in P5 Power position and train begins to move to the next station.

Table 1 – Timeline of event.

3078-VMS Graph



Graph 1 – VMS Graph

Office of Rail Transportation (RTRA)
Adopted from RTRA report:

The RTRA Investigative report revealed that the Train Operator failed to follow Door Operation Procedures. The Train Operator attended refresher training with the Office of Rail Operations Quality Training (ROQT) and received disciplinary action as a result of the event.

Rail Supervisor #1 received a re-instruction and disciplinary action as a result of the event. The RTRA Supervisor utilized the short-stop to facilitate reduced delay in the Train Operator of Train ID 405 boarding a waiting train across the platform on track 2.

Interview Findings

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

Train Operator

- The Train Operator stated that they were confused on the short-stop, the hand gestures were motioning them to “come here” so they approached the window and opened it and opened platform doors by reflex action.
- The Train Operator stated that they immediately closed the doors and notified the MICC once they realized their mistake.
- Train Operator stated they believed the speed commands had been taken as they were entering the station.
- The Train Operator stated that Rail Supervisor #1 walked away, and another Train Operator keyed themselves on the train and took over operating the train.
- The Train Operator advised their radio was working fine, and they had not heard a discussion to stop short.
- The Train Operator stated that they experienced frequent issues with the radio communication.
- The Train Operator stated they had performed a short stop earlier that day, and in that event, they did not need to open the window as an operator just keyed themselves on.

Rail Supervisor #1

- The Rail Supervisor stated that they were short staffed and requested additional supervisors for assistance.
- The Rail Supervisor stated that trains were 17 minutes behind schedule.
- The Rail Supervisor stated that the Train Operator had performed a short stop earlier in the day.
- The Rail Supervisor stated they were 120 feet from the end gate, and gave the Train Operator hand signals to stop, and allow another Train Operator to key on the train.
- The Rail Supervisor stated that when they looked back, the Train Operator had opened the window and the doors.
- The Rail Supervisor stated that they instructed the Train Operator to notify the MICC.
- The Rail Supervisor stated that another Rail Supervisor began to perform a ground walkaround, and they informed the MICC of the ground walkaround.
- The Rail Supervisor stated that they were not sure if their communication was being heard.
- The Rail Supervisor stated that they did not approach the cab window and remained 10

to 12 feet away from the train.
- The RTRA Supervisor primarily utilized the telephone to communicate with MICC.
- The Rail Supervisor stated that the MICC authorized the ground walkaround and they could not identify who granted permission for the ground walkaround. MICC did not grant foul time.
- The Rail Supervisor stated incorrectly that Rail Supervisor #2 did not enter the roadway and remained on the catwalk to perform the walkaround.

Weather

On November 12, 2023, at the time of the incident, NOAA recorded the temperature as 53°F, with scattered clouds. This event occurred within a tunneled section of the rail system. The weather did not contribute to this incident (Weather source: NOAA – Location: Washington, DC).

Related Rules and Procedures

- SOP # 40 – Door Operations.
- Operating Rule 1.1.2- customer safety is the responsibility of every WMATA employee; however, rail vehicle operators have the ultimate and final responsibility for the safety of the customers on their trains. If any rail vehicle operator is instructed by any person, regardless of rank, title, or position, to take any action which would adversely affect the safety of customers, the rail vehicle operator shall stop the train, notify rail operations Control Center or the interlocking operator, and shall not continue until satisfied that it is safe to do so.
- Operating Rule 1.1.3- employees shall not permit unnecessary conversation, reading, lounging or any other action or condition of mind to divert their attention from the safe and performance of duty.
- Operating Rule 8.18.4- In the event train doors are opened outside the platform limits or on the side opposite the platform, Rail Vehicle Operators shall close doors, notify the Rail Traffic Controller, and conduct a ground walk around inspection. The Rail Traffic Controller will determine if the train is to be taken out of service and if it is safe to discharge customers at that station.
- Operating Rule 17.17.3 Foul Time may be issued only by the Rail Traffic Controller or Interlocking Operator.

Human Factors

Evidence of Fatigue

Train Operator

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

Fatigue Risk

Train Operator

SAFE evaluated incident data for fatigue risk factors. No significant risk was identified. The incident time of day did not suggest an increased risk of fatigue-related impairment. The Train Operator reported keeping a regular sleep schedule in the days leading up to the incident. The Train Operator worked the day shift in the days leading up to the incident. The Train Operator was awake for 6 hours and 30 minutes at the time of the incident. The employee reported 7.5 hours of sleep in the 24 hours preceding the incident. The off-duty period was 15 hours , providing an opportunity for more than 7-9 hours of sleep. This was a comparable amount to the employee's usual workday sleep durations. The employee reported no issues with sleep. The Train Operator worked the day shift in the days leading up to the incident.

Evidence of Fatigue

Rail Supervisor

SAFE evaluated signs and symptoms of fatigue that may have been present during the incident. No signs or symptoms of fatigue were detected from the available data. Video of the incident was reviewed for signs of the Rail Supervisor's fatigue. No signs or symptoms of fatigue were evident from the video. The Rail Supervisor reported feeling fully alert at the time of the incident. The Rail Supervisor reported experiencing no symptoms of fatigue in the time leading up to the incident.

Fatigue Risk

Rail Supervisor

SAFE evaluated incident data for fatigue risk factors. No significant risk was identified. The incident time of day did not suggest an increased risk of fatigue-related impairment. The Rail Supervisor reported keeping a regular sleep schedule in the days leading up to the incident. The Rail Supervisor worked the evening shift in the days leading up to the incident. The Rail Supervisor was awake for 8 hours at the time of the incident. The employee reported 6 hours and 30 minutes of sleep in the 24 hours preceding the incident. The off-duty period was 7 days of leave, providing an opportunity for more than 7-9 hours of sleep. This was a comparable amount to the employee's usual workday sleep durations. The employee reported no issues with sleep. The Rail Supervisor worked no shifts in the 7 days leading up to the incident.

Post-Incident Toxicology Testing

WMATA's Drug and Alcohol Program determined that the Train Operator complied with and was not in violation of the Drug and Alcohol Policy and Testing Program 7.7.3/6.

WMATA's Drug and Alcohol Program determined that Rail Supervisor #1 complied with and was not in violation of the Drug and Alcohol Policy and Testing Program 7.7.3/6.

Findings

- The Train Operator acknowledged that they pressed the door open button as a reflex not realizing they were off platform.
- The Train Operator reported being distracted before the event when they were visually signaled by a Rail Supervisor on the platform to short-stop without prior warning.
- Rail Supervisor #1 did not request permission to conduct the ground walk.
- Radio Communication issues were reported post-incident.
- Rail Supervisor #2 did enter the roadway without requesting or being granted foul time and remained on the catwalk to perform the walkaround.

Immediate Mitigation to Prevent Recurrence

- A Rail Supervisor performed a walkaround.
- A Rail Supervisor was dispatched to Stadium-Armory Station to assist with the incident..
- The Train Operator was removed from service.
- Rail Supervisor #1 was removed from service.

Probable Cause Statement

The probable cause of the Improper Door Operation event on November 12, 2023, at Stadium-Armory Station was an attention error while losing focus by the Train Operator when they were signaled to short-stop and inadvertently opened the train doors while addressing the Rail Supervisor. A contributing factor was the Rail Supervisor distracting the Train Operator, by drawing their attention away from properly berthing the train on the platform.

Recommended Corrective Actions

Corrective Action Code	Description	Responsible Party	Estimated Completion Date
112413_SAFE CAPS_RTRA_ 001	Office of Rail Transportation (RTRA) will ensure the train operator will complete Re-Instruction Training with ROQT.	RTRA SRC	Completed
112749_SAFE CAPS_RTRA_ 003	Office of Rail Transportation (RTRA) will ensure Rail Supervisor completes Re-Instruction on Short-stop and RWP concerning the required ground walk procedures.	RTRA SRC	Completed
112749_SAFE CAPS_RTRA_ 002	RTRA redistributed SOP 40 related to Door Opening procedures to RTRA personnel.	RTRA SRC	Completed

Drafted By: SAFE 709 – 6/5/2024
Reviewed By: SAFE 70 – 1/5/2023
Approved By: SAFE 707 – 01/11/2024

Appendices

Appendix A – Interview Summary

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

Train Operator

The Train Operator is a WMATA employee with ten years of service and one year experience as a Train Operator. The Train Operator holds a Roadway Worker Protection (RWP) Level 2 certification that expires in December 2023 and was certified as a Train Operator in December 2022.

The Train Operator stated that they were confused on the short-stop, the hand gestures were motioning them to “come here” so they approached the window and opened it and opened platform doors by reflex action. The Train Operator stated that they immediately closed the doors and notified the MICC once they realized their mistake.

Train Operator stated they believed the speed commands had been taken as they were entering station. Not sure why but saw three RTRA Supervisors on platform. The Train Operator stated they advised Central via radio of the doors being opened off platform. The Train Operator advised Central responded to move to 8-car marker. The Train Operator did not move the consist since a walk around was not completed.

The Train Operator stated that RTRA Supervisor # 1 walked away, and an AD Operator keyed themselves on Train ID 405 and took over the train operation. RTRA Supervisor #1 advised Central they could not move until ground walk around was completed. The Train Operator walked from Train ID 405 with the RTRA Supervisor # 1 while the supervisor spoke with Central via cell phone. The Train Operator stated they did not take any other action while they waited for a supervisor to take them for PIME. The Train Operator stated a walk around was completed.

The Train Operator stated the AD Operator moved Train ID 405 to the 8-Car marker. They observed an RTRA Supervisor # 2 board the tail of the train and it departed to the D&G and Central took the train out of service.

The Train Operator advised their radio was working fine and they had not heard any discussion of a stop short issue. The Train Operator did mention they had experienced frequent issues with radio communications. The Train Operator stated they had performed a short stop earlier that day. In that event the Train Operator did not need to open window as an operator keyed themselves on.

RTRA Supervisor #1

The RTRA Supervisor is a WMATA employee with 18 years of service and one year experience as an RTRA Supervisor. The RTRA Supervisor holds a Roadway Worker Protection (RWP) Level 2 certification that expires in January 2024, and has not been a Train Operator but was certified in September of 2022.

The RTRA Supervisor advised they were short staffed for and operators as they normally had three assigned. One was assigned a run and one called out leaving the supervisor with one ad Operator, The requested additional supervisors for assistance, some were also operators, some were not.

The RTRA Supervisor advised they had been off a week, and this was their first shift back. The computer they expected to be available to help identify train movements was not available making schedule plans difficult. They were about 17 minutes behind schedule. The RTRA Supervisor communicated with Central via radio and cell phone to the OPS 2 phone.

The RTRA Supervisor had done a short-stop with the Train Operator of Train ID 405 earlier in the day. The RTRA Supervisor stated they were at about 120 feet and gave the Train Operator hand signals to stop, they did, the RTRA Supervisor turned to signal the AD Operator to key on and when the RTRA Supervisor looked back the Train Operator had opened the window and the doors.

The RTRA Supervisor confirmed the doors closed quickly, the Train Operator notified Central of the doors off platform event. Central advised the Train Operator they had a permissive block to 8-car marker. The RTRA Supervisor told Central via radio, “No, the need to complete a ground walk first.” The RTRA Supervisor stated they had to repeatedly respond to several Central request to move to the 8-car marker related to the ground walk issue via radio. The RTRA Supervisor advised they were not sure their communication was being heard. They believe they also called on the cell phone.

The RTRA Supervisor stated they did not approach the Train Operator’s window but remained about 10 to 12 feet from the window. The RTRA Supervisor stated they did not recall an acknowledgement from Central concerning the ground walk. The RTRA Supervisor confirmed a ground walk was completed. The RTRA Supervisor stated that Central authorized the ground walk after the RTRA Supervisor said it had to be done.

Specifically, they could not identify or confirm who received permission for the ground walk as it was “hectic” situation. The RTRA Supervisor advised they were not aware of any supervisor the specifically received permission to do the ground walk. They advised RTRA Supervisor # 2 did the ground walk. The RTRA Supervisor stated they observed supervisors entering the roadway without ground protection if, “You consider walking past the handrails, yes. No one actually entered the roadway, just the catwalk area.”

Appendix B – Certification Documents

TRAIN OPERATOR AND ROAD SUPERVISOR JOB TASK PROFICIENCY EVALUATION

Name:	Emp.No:	Division:	Date:
[redacted]	[redacted]	Rail Training	05-01-2023

Reason for Certification: *Please place a check in an area below.*

☑ Certification: Student ☐ Pre-certification: Student ☐ Division Request ☐ Re-Certification ☐ Return to Duty ☐ Other

Exam Administered	Score	Date Taken
MSRPH version #:	91 %	3-22-23
TVOIM/TOIM	89 %	3-22-23
Supervisor Combination	%	
Practical attempt #: 2	QL-Pass	5-1-23

Equipment *(current/working condition)*	Yes	No
MSRPH	✓	
Perm/Temp/Special Orders	✓	
Troubleshooting Guide	✓	
Flashlight	✓	
Safety Vest	✓	
Footwear	✓	
Identification (One Badge, RWP)	✓	

Comments

Signatures:	Date:
Employee: [redacted]	05/01/2023
Examiner:	05-01-2023

RTRA-906-01-00 TRAIN OPERATOR AND ROAD SUPERVISOR JOB TASK PROFICIENCY EVALUATION Page 1

Document 1 - RTRA Train Operator Certification page 1

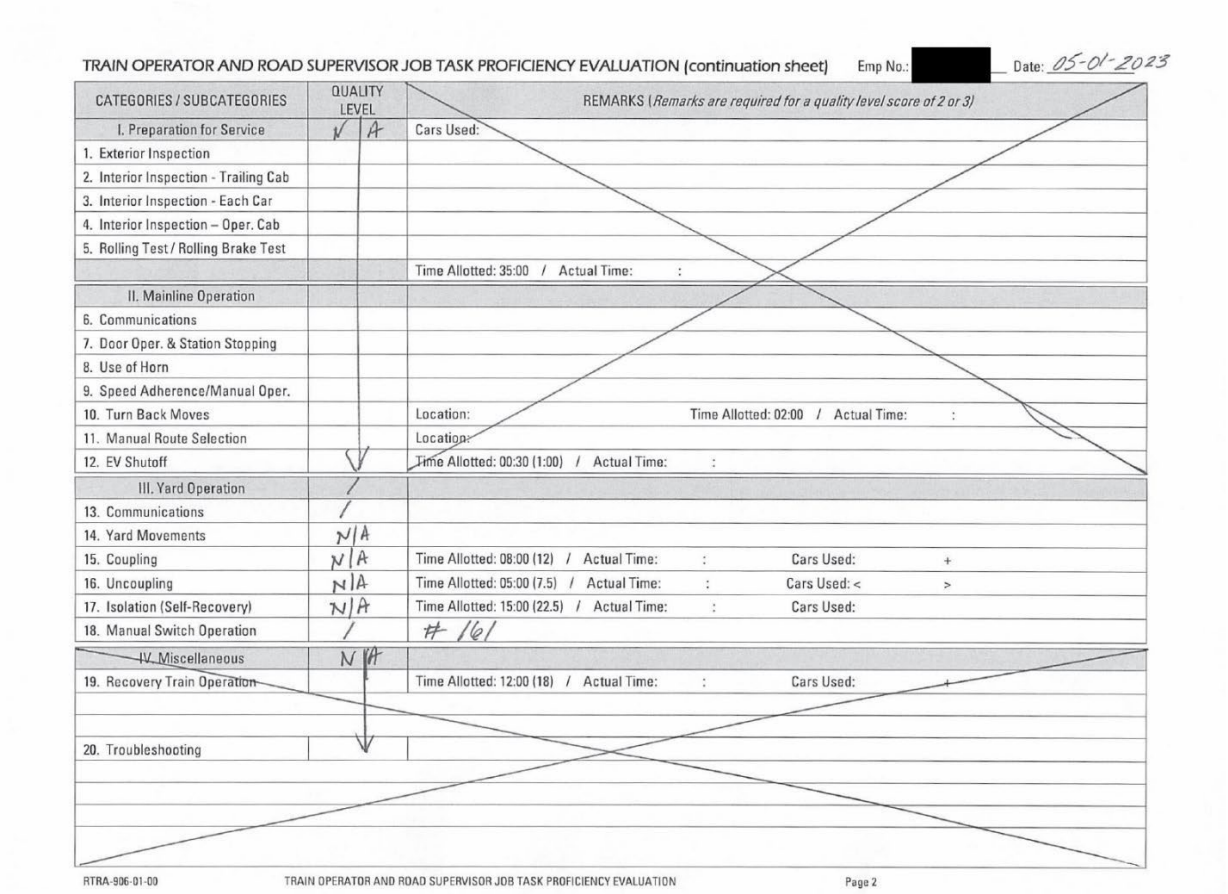
[redacted]

TRAIN OPERATOR AND ROAD SUPERVISOR JOB TASK PROFICIENCY EVALUATION (continuation sheet) Emp No [redacted] Date: December 6, 2022

CATEGORIES / SUBCATEGORIES	QUALITY LEVEL	REMARKS (*Remarks are required for a quality level score of 2 or 3*)
I. Preparation for Service	QL-1	Cars Used: 7472 -7473 X 7461 -7460 X 7234 -7235 X 7521 -7520
1. Exterior Inspection	1	# 7460 BPTL , 7473 BCO Cut
2. Interior Inspection - Trailing Cab	1	# 7472 missing paddle
3. Interior Inspection - Each Car	1	# 7473 Access panel open
4. Interior Inspection – Oper. Cab	1	# 7460 Emergency Evacuation Board missing
5. Rolling Test / Rolling Brake Test	1	
		Time Allotted: 35:00 / Actual Time: 22 : 30
II. Mainline Operation	QL-1	
6. Communications	1	
7. Door Oper. & Station Stopping	1	
8. Use of Horn	1	
9. Speed Adherence/Manual Oper.	1	
10. Turn Back Moves	1	Location: Huntington Time Allotted: 02:00 / Actual Time: 02 : 00
11. Manual Route Selection	1	Location: Huntington Terminal
12. EV Shutoff	1	Time Allotted: 00:30 (1:00) / Actual Time: 00 :30
III. Yard Operation	QL-1	
13. Communications	1	
14. Yard Movements	1	
15. Coupling	1	Time Allotted: 08:00 (12) / Actual Time: 05 : 45 Cars Used: 7521 + 7235
16. Uncoupling	1	Time Allotted: 05:00 (7.5) / Actual Time: 04 : 20 Cars Used: < >
17. Isolation (Self-Recovery)	1	Time Allotted: 15:00 (22.5) / Actual Time: 2 :12 Cars Used:
18. Manual Switch Operation	1	#191
IV. Miscellaneous	QL-1	
19. Recovery Train Operation	1	Time Allotted: 12:00 (18) / Actual Time: 10 : 00 Cars Used: 7460 + 7234
20. Troubleshooting	1	
1) mushroom no reset B.E 1:00		
2) Door control c/o trapped no reset 1:00		

RTRA-906-01-00 TRAIN OPERATOR AND ROAD SUPERVISOR JOB TASK PROFICIENCY EVALUATION Page 2

Document 2 - RTRA Train Operator Certification page 2



TRAIN OPERATOR AND ROAD SUPERVISOR JOB TASK PROFICIENCY EVALUATION (continuation sheet) Emp No.: [redacted] Date: 05-01-2023

CATEGORIES / SUBCATEGORIES	QUALITY LEVEL	REMARKS (*Remarks are required for a quality level score of 2 or 3*)
I. Preparation for Service	N/A	Cars Used:
1. Exterior Inspection		
2. Interior Inspection - Trailing Cab		
3. Interior Inspection - Each Car		
4. Interior Inspection – Oper. Cab		
5. Rolling Test / Rolling Brake Test		
		Time Allotted: 35:00 / Actual Time: :
II. Mainline Operation		
6. Communications		
7. Door Oper. & Station Stopping		
8. Use of Horn		
9. Speed Adherence/Manual Oper.		
10. Turn Back Moves		Location: Time Allotted: 02:00 / Actual Time: :
11. Manual Route Selection		Location:
12. EV Shutoff		Time Allotted: 00:30 (1:00) / Actual Time: :
III. Yard Operation	/	
13. Communications	/	
14. Yard Movements	N/A	
15. Coupling	N/A	Time Allotted: 08:00 (12) / Actual Time: : Cars Used: +
16. Uncoupling	N/A	Time Allotted: 05:00 (7.5) / Actual Time: : Cars Used: < >
17. Isolation (Self-Recovery)	N/A	Time Allotted: 15:00 (22.5) / Actual Time: : Cars Used:
18. Manual Switch Operation	/	# 161
IV. Miscellaneous	N/A	
19. Recovery Train Operation		Time Allotted: 12:00 (18) / Actual Time: : Cars Used: +
20. Troubleshooting		

RTRA-906-01-00 TRAIN OPERATOR AND ROAD SUPERVISOR JOB TASK PROFICIENCY EVALUATION Page 2

Document 3 - RTRA Train Operator Training Certification page 3

Appendix C – MICC Incident Report

View Approved Incident Report

INCIDENT ID: 2023316BLUE405

DATE	TIME	LINE	ITEM
2023-11-12	1235	Blue	405

LOCATION (STATION/YARD)	LOCATION/CHAIN MARKER (If Applicable)	REPORTED BY
Stadium-Armory (D08)		RTRA Supervisor [redacted]

TRAIN ID	DIRECTION	TRACK NUMBER	DEPTS NOTIFIED
405	I/B	1	Everbridge Alert/Messaging

CAR NUMBERS (XXXX-XXXX)
Lead Car

3078-3079	3249-3248	3153-3152	-
Caused Issue ☑	Caused Issue ☐	Caused Issue ☐	Caused Issue ☐

TRBL CODE	RESP CODE
IDOR-DOORS OPENED OFF PLATFORM	RTR

TYPE INCIDENT
Operator performed door operation with doors off the platform.

ACTION PLAN
Perform ground walk around. Remove Operator from service. Remove train from service. Remove RTRA Supervisor from service.

DELAYS IN MINUTES

LINE	INCIDENT	TRAIN	TOTAL DURATION
0	0	0	0

TRIPS MODIFIED

PARTIAL	GAP TRAIN	LATE DISPATCHES	REROUTED	NOT DISPATCHED	OFFLOADS
0	0	0	0	0	0

FIVE PRIMARY CONSOLE INDICATIONS

BCP	BRAKES ON ILLUMINATED	ALL DOORS CLOSED ILLUMINATED	AUTO\MANUAL ILLUMINATED	BPP
			AUTO	

INCIDENT CHRONOLOGY

TIME	DESCRIPTION
1235	ROCC noticed train 405 track #1 at Stadium Armory was not moving, attempts were made to contact train 405 (Operator [redacted] to no avail. RTRA Supervisor [redacted] told Central over the radio to stand-by. The AOM, ROIC, CMNT, and all concerned departments were notified.

Document 4 - MICC Incident Report page 1

View Approved Incident Report

1240	RTRA Supervisor [redacted] reported via landline that train 405 track #1 Stadium-Armory had stopped short and performed a door operation off the platform side. RTRA Supervisor [redacted] reported he performed a ground walk-around without being granted foul time by Central. RTRA Supervisor [redacted] was dispatched to Stadium-Armory.
1243	Train #405, now operated by RTRA Supervisor [redacted] continued non-revenue towards the D&G without contacting ROCC. Train #405 was re-blocked to ID #705 and instructed to continue non-revenue towards New Carrollton yard pending further investigation. Trains were re-blocked departing Stadium-Armory track #2 and no customer delay was incurred. Normal service resumed.
0000	RTRA Supervisor [redacted] and Operator [redacted] were removed from service and transported for post-incident investigation by RTRA Supervisor [redacted] per division management.

MAXIMO TICKET#
8710199

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

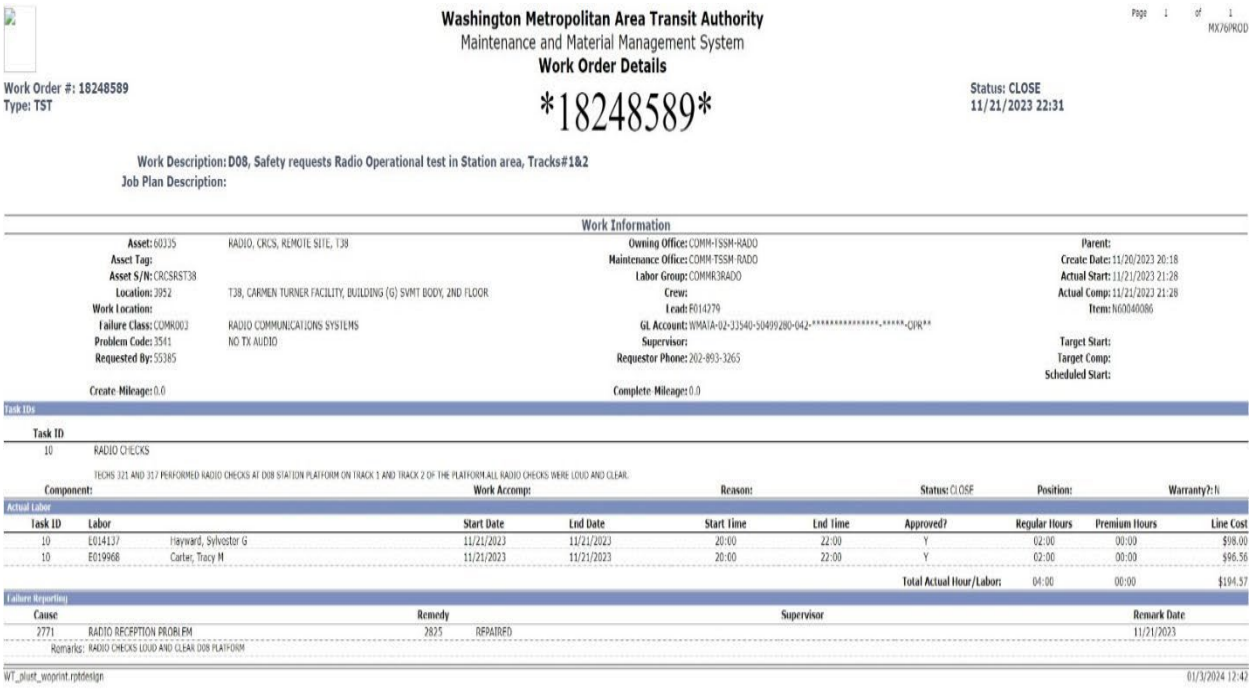
SUPERINTENDENTS OR ASSISTANTS SECTION

ADDITIONAL FOLLOW-UP CORRECTIVE ACTIONS OR REMARKS	
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.	[redacted]	✓

Document 5 - MICC Incident Report page 2

Appendix D – COMR Report



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

Page 1 of 1
MX76/ROD

Work Order #: 18248589
Type: TST

18248589

Status: CLOSE
11/21/2023 22:31

Work Description: D08, Safety requests Radio Operational test in Station area, Tracks#1&2
Job Plan Description:

Work Information

Asset: 60335	RADIO, CRCS, REMOTE SITE, T38	Owning Office: COMM-TSSM-RADO		Parent:
Asset Tag:		Maintenance Office: COMM-TSSM-RADO		Create Date: 11/20/2023 20:18
Asset S/N: CRCSRST38		Labor Group: COMMR3RADO		Actual Start: 11/21/2023 21:28
Location: 3052	T38, CARMEN TURNER FACILITY, BUILDING (G) SVMT BODY, 2ND FLOOR	Crew:		Actual Comp: 11/21/2023 21:28
Work Location:		Lead: F014279		Item: N60040086
Failure Class: COMR003	RADIO COMMUNICATIONS SYSTEMS	GL Account: WMAIA-02-33540-50409280-042-**********-*****-OPR**		
Problem Code: 3541	NO TX AUDIO	Supervisor:		Target Start:
Requested By: 55385		Requestor Phone: 202-893-3265		Target Comp:
				Scheduled Start:
Create Mileage: 0.0		Complete Mileage: 0.0		

Task IDs

Task ID	
10	RADIO CHECKS

TECHS 321 AND 317 PERFORMED RADIO CHECKS AT D08 STATION PLATFORM ON TRACK 1 AND TRACK 2 OF THE PLATFORM.ALL RADIO CHECKS WERE LOUD AND CLEAR.

Component:	Work Accomp:	Reason:	Status: CLOSE	Position:	Warranty?: N

Actual Labor

Task ID	Labor		Start Date	End Date	Start Time	End Time	Approved?	Regular Hours	Premium Hours	Line Cost
10	E014137	Hayward, Sylvester G	11/21/2023	11/21/2023	20:00	22:00	Y	02:00	00:00	$98.00
10	E019968	Carter, Tracy M	11/21/2023	11/21/2023	20:00	22:00	Y	02:00	00:00	$96.56
							Total Actual Hour/Labor:	04:00	00:00	$194.57

Failure Reporting

Cause		Remedy		Supervisor	Remark Date
2771	RADIO RECEPTION PROBLEM	2825	REPAIRED		11/21/2023

Remarks: RADIO CHECKS LOUD AND CLEAR D08 PLATFORM

WT_plant_woprint.rptdesign 01/3/2024 12:42

Document 6 - Radio Inspection COMR Report

Appendix E – Why Tree Analysis

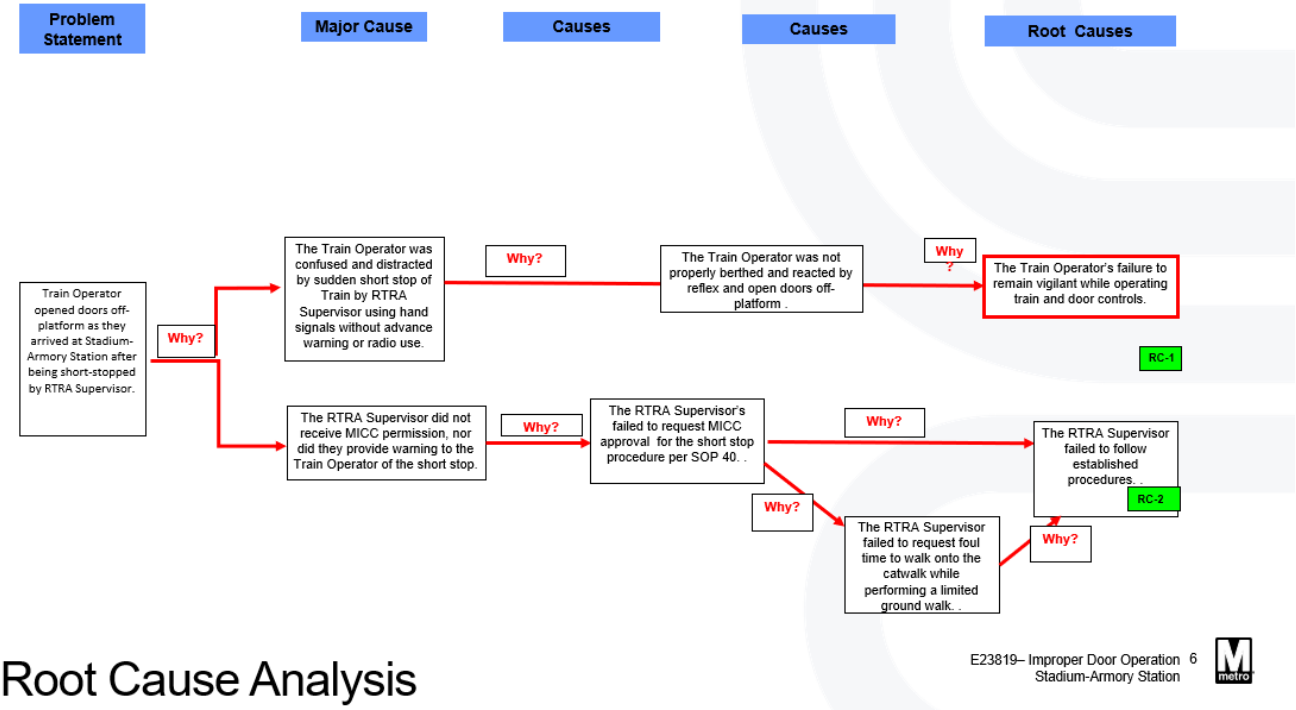


Figure 3 - Root Causes Analysis