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Improper Door Operation
Farragut West and Vienna stations
February 26, 2024 – March 12, 2024

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 October 22, 2024.

WMSC staff recommend adoption of these investigations.

Improper Door Operation

In 2023, there were 16 improper door operations safety events reported by Metrorail to the WMSC. As of October 1, 2024, there have been 16 such events reported, an increase from the 12 events reported during the same time period last year. 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 defects. Investigations into other 2024 improper door events will be addressed in other reports.

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

- Non-compliance with written operational rules and procedures
- Loss of/lack of focus and situational awareness

As a result of these investigations, Metrorail implemented corrective actions including:

- Personnel received refresher training, including on SOP #40 Procedure for Platform Berthing, Station Servicing, and Overruns

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.

Safety event summaries:

W-0346 – Farragut West Station – February 26, 2024 (WMATA ID: E24155

A Student Train Operator, operating an Orange Line train under the supervision of a Line Platform Instructor (LPI), reported to a Radio Rail Traffic Controller in the Metro Integrated Command and Control Center that they had opened all train doors on the non-platform side of Farragut West Station. The Student Train Operator and Instructor were instructed to offload riders from the train and to perform a ground walkaround inspection to ensure no one had fallen onto the roadway. The roadway was clear.

During the event, the LPI left the observation seat to speak with another Student Train Operator who requested to use the restroom. This interaction distracted both the student who was operating the Train and the LPI, causing a loss of focus and situational awareness. The Student Train Operator looked out the cab window on the non-platform side of the train, but did not identify that it was the incorrect side. The Student Train Operator incorrectly opened the doors on the non-platform side of the train. Then approximately 5 seconds later the Student Train Operator identified the error and closed the doors they opened on the wrong side.

The Student Train Operator and the Line Platform Instructor were removed from service for post-event toxicology testing.

The train was removed from service for post-event inspection, which determined the train operated as commanded by the Student Train Operator.

During investigative interviews with the student train operators, both expressed they did not have adequate time to operate the train.

W-0347 – Vienna Station – March 12, 2024 (WMATA ID: E24195)

The Train Operator of an Orange Line Train opened all train doors at Vienna Station without properly berthing the train, leaving one door of the last car open off the platform. The Train Operator keyed down (turned the train off) and exited to reverse ends. An investigative review of footage shows the Train Operator looking out the cab window twice before opening the train doors; however, the Train Operator did not identify that the last car was not completely within platform limits. Another Train Operator who was on the last car at the time of the event notified the Terminal Supervisor at the station.

The Terminal Supervisor boarded the train, closed the doors and reported the improper door operation to the Metro Integrated Command and Communications Center, noting that the open door was blocked by a handrail. The Radio Rail Traffic Controller in the Metro Integrated Command and Communications Center instructed the Terminal Supervisor to perform ground walkaround inspection to ensure no one had fallen to the roadway. The roadway was clear.

The train was removed from service for post-event inspection, which determined the train operated as commanded by the Train Operator.

The Train Operator was removed from service for post-event toxicology testing

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

FINAL REPORT OF INVESTIGATION A&I E24155

Date of Event:	February 26, 2024
Type of Event:	Improper Door Operation
Incident Time:	08:16 Hours
Location:	Farragut West Station, track 2
Time and How received by SAFE:	08:40 Hours – SAFE/MAC
WMSC Notification Time:	09:25 Hours
Responding Safety Officers:	None
Rail Vehicle:	Train ID 910 – L7266/67x7144/45x7260/61T
Injuries:	None
Damage:	None
Emergency Responders:	None
SMS I/A Incident Number:	20240226#115032MX

Farragut West Station – Improper Door Operation

February 26, 2024

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Abbreviations and Acronyms

AIMS	Advanced Information Management System
AOM	Assistant Operations Manager
CCTV	Closed-Circuit Television
CMNT	Car Maintenance
CMOR	Chief Mechanical Officer
IIT	Incident Investigation Team
LPI	Line Platform Instructor
MICC	Metro Integrated Command and Communications Center
MOR	Metrorail Operating Rulebook
NOAA	National Oceanic and Atmospheric Administration
ROQT	Rail Operations Quality Training
RTC	Rail Traffic Controller
RTRA	Office of Rail Transportation
SAFE	Department of Safety
SMS	Safety Measurement System
SPOTS	System Performance On-Time Summary
VDMS	Vehicle Monitoring and Diagnostic 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 Monday, February 26, 2024, at 08:16 Hours, a Student Train Operator operating Train ID 910 (L7266/67x7144/45x7260/61T) located at Farragut West Station on track two reported to the Radio Rail Traffic Controller (RTC) that they had opened the train doors on the non-platform side.

The Radio RTC instructed the Student Train Operator to off-load the train, make announcements to the customers, and ensure that all customers were cleared of the train. The Student Train Operator and the Line Platform Instructor (LPI) were instructed to conduct a ground walk-around and verify that the area was clear. They reported a clear ground walk around. There was no damage or injuries resulting from this event.

At 08:17 hours, the Button RTC notified the Assistant Operations Manager (AOM) of the incident.

The Radio RTC dispatched an Office of Rail Transportation (RTRA) Rail Supervisor to Farragut West Station and instructed them to assist with the ground walkaround inspection.

In adherence to Standard Operating Procedure 102-01-02, which outlines the protocol for Removing an Employee from Service for involvement in an operational safety event, the Radio RTC dispatched a Rail Supervisor to relieve the Student Train Operator and the Line Platform Instructor from duty for post-incident testing.

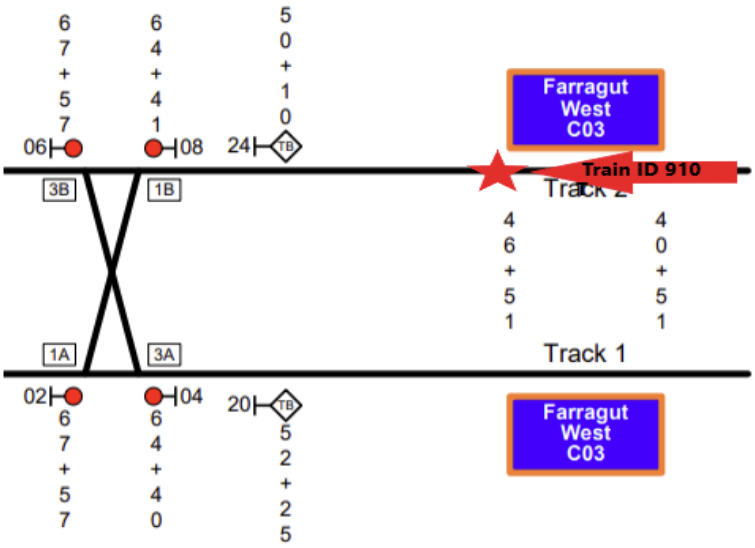
In accordance with the Office of the Chief Mechanical Officer (CMOR) Incident Investigation Team (IIT) Operations Administrative Policy (OAP) 102.06, the Metro Integrated Command and Communications Center (MICC) promptly initiated the removal of Train ID 910 from revenue service for post-incident investigative measures. This action adhered to the Rail Vehicle Event Investigation Policy, ensuring a comprehensive examination of the incident.

The probable cause of the Improper Door Operation event on February 26, 2024, at Farragut West Station was the distraction of Student Train Operator #1 and the LPI when Student Train Operator #2 requested the attention of the LPI while the train was stopping on the platform. Contributing factors of Student Train Operator #1 were a loss of situational awareness and lack of experience that caused them to approach the left side of the Operator's Cab when the LPI moved from the observation seat to address the concerns of Student Operator #2. Also, there was a lack of supervisory oversight on behalf of the LPI.

Incident Site

Farragut West 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 three individual(s) 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(s):
    - Student Train Operator #1
    - Student Train Operator #2
    - Line Platform Instructor (LPI)

- 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:
    - Train Operators Training Records
    - Train Operators Certifications
    - Train Operators 30-day work history review
    - Metrorail Operating Rulebook (MOR)
    - National Oceanic and Atmospheric Administration (NOAA)

- Metro Integrated Command and Communications Center (MICC) Rail Incident Report
- Maximo Data

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

Investigation

On Monday, February 26, 2024, a West Falls Church Division Train Operator performing the duties of a Line Platform Instructor (LPI) was assigned two student Train Operators to teach train operation on the mainline.

The LPI would alternate students operating throughout their scheduled shifts. One student operated the train with the LPI positioned in the observation seat in the cab area. The second student Train Operator would remain outside of the Operator's Cab.

The Closed-Circuit Television (CCTV) revealed that at 08:16 hours, Train ID 910 (L7266/67x7144/45x7260/61T) arrived at Farragut West Station on track two. As the train was coming to a stop, Student Train Operator #2 knocked on the Operator's Cab door; the LPI left the observation seat and then opened the Operator's Cab door to address Student Train Operator #2. The train stopped at the 8-car marker; the platform was on the right of the train. As the LPI was talking to Student Train Operator #2, Student Train Operator #1 stood up and walked to the left side door control panel, opened, and looked out of the window on the non-platform side of the train, then walked back to the train console and acknowledged the alarm that confirmed that the train doors should open on the left side. Student Train Operator #1 walked back to the left side door control panel, opened, and looked out of the window on the non-platform side of the train and then opened the train doors on the non-platform side.

Image 1 – Image of Student Train Operator #1 at the left side cab window at 08:15 hours.

Image 2 - Image of Train ID 910 with the train doors open on the non-platform side at 08:16 hours.

After opening the doors on the non-platform side, Student Train Operator #1 closed the train doors and then serviced the station by opening the train doors on the platform side.

The System Performance on Time Summary (SPOTS) revealed that the non-platform side doors were opened at 08:16:04 hours and were closed at 08:16:09 hours. The platform side doors were opened at 08:16:32 hours and were closed at 08:21:40 hours.

The Audio Recording System (ARS) revealed that at 08:16 hours, Student Train Operator #1 reported to the Radio RTC that they opened the doors on the non-platform side.

At 08:18 hours, the Radio RTC dispatched a Rail Supervisor to Farragut West Station.

At 08:20 hours, the Radio RTC instructed Student Train Operator #1 to offload the train, make announcements to the customers, ensure that all customers were clear of the train, and perform a radio check.

At 08:22 hours, the Rail Supervisor advised that they were located at Farragut West Station and aboard Train ID 910. The Radio RTC instructed the Rail Supervisor to assist with performing a ground walkaround inspection.

At 08:23 hours, foul time was granted to perform a ground walkaround inspection. The Rail Supervisor reported a clear inspection and foul time was relinquished at 08:32 hours.

At 08:34 hours, the Rail Supervisor was instructed to take over the operation of the train, and the train was transported to West Falls Church Yard for post-incident inspection.

Chronological Event Timeline

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

Time	Description
08:15:23 hours	Student Train Operator #2: Knocked on the Operator's Cab door. [CCTV]
08:15:40 hours	LPI: Opened the Operator's Cab door. [CCTV]
08:15:48 hours	Student Train Operator #1: Stopped the train at the 8-car marker. [CCTV]
08:16:04 hours	Train doors were opened on the non-platform side. [SPOTS]
08:16:09 hours	Train doors were closed on the non-platform side. [SPOTS]
08:16:32 hours	Train doors were opened on the platform side. [SPOTS]
08:16:51 hours	Train ID 910: Reported the doors were opened on the non-platform side at Farragut West Station. Radio RTC: Acknowledged. [Radio OPS2]
08:17:30 hours	Button RTC: Notified the AOM of the Improper Door Operation. [Phone Bl/Or]
08:18:44 hours	Radio RTC: Instructed a Rail Supervisor to report to Farragut West Station. [Radio OPS2]
08:20:02 hours	Radio RTC: Instructed Train ID 910 to offload the train, make announcements, clear customers, and give a radio check. Train ID 910: Acknowledged. [Radio OPS2]
08:22:42 hours	Rail Supervisor: Advised they are aboard the train at McPherson Square Station. [Radio OPS2]
08:23:27 hours	Radio RTC: Granted foul time to perform a ground walkaround inspection on track two. [Radio OPS2]
08:26:18 hours	Radio RTC: Granted the Rail Supervisor foul time to assist with performing a ground walkaround inspection. [Radio OPS2]
08:31:58 hours	Rail Supervisor: Reported nothing was observed during the ground walkaround inspection. [Radio OPS2]
08:32:11 hours	Radio RTC: Instructed the Rail Supervisor to take over operating the train. [Radio OPS2]
08:32:26 hours	Rail Supervisor: Relinquished Foul Time. [Radio OPS2}
08:34:46 hours	Radio RTC: Instructed the Rail Supervisor to key up and continue to West Falls Church Yard. Rail Supervisor: Acknowledged. [Radio OPS2]
08:56:30 hours	Train ID 910: Arrived at West Falls Church Yard and was stored on track 6C. [Radio FC-YD1]

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

Advanced Information Management System (AIMS)

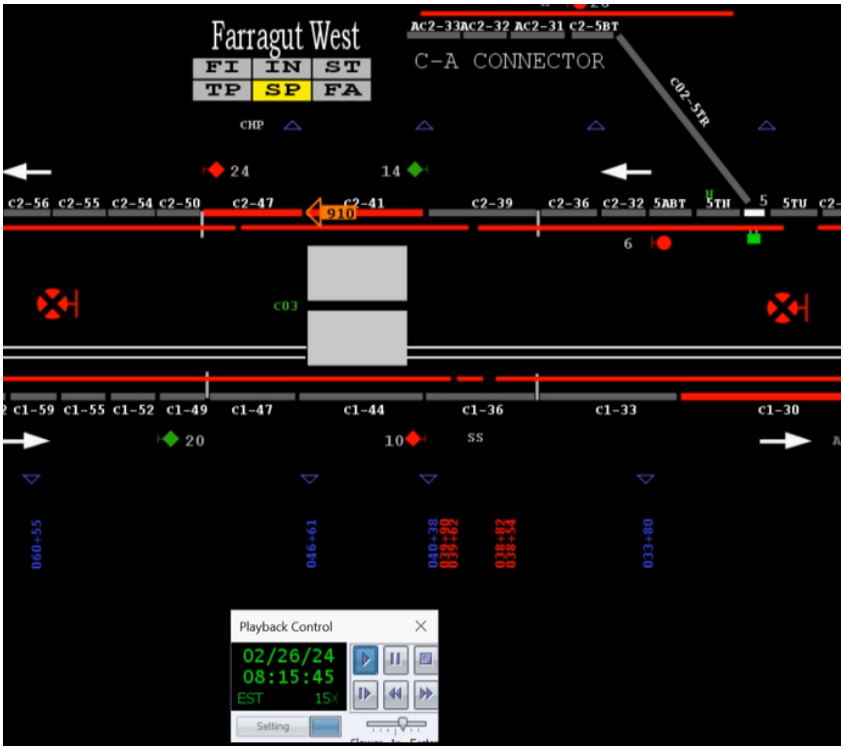


Figure 1 - AIMS depicting Train ID 910 located at Farragut West Station at 08:15 hours.

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

Adopted from CMOR IIT report with minor formatting and grammatical edits:
The Incident Investigation Team (IIT) completed the data downloads and analysis of Train ID 910 (Lead Car 7266) which involved an improper door operation incident on February 26, 2024, at 8:16 hours.

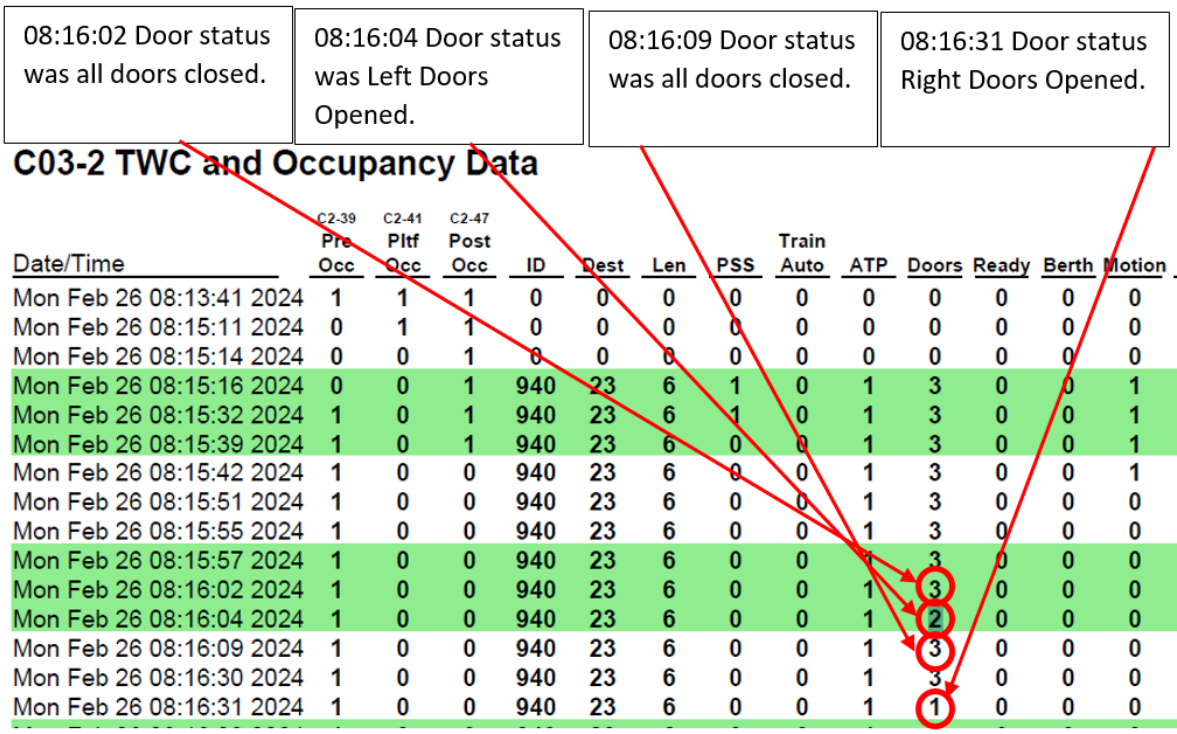
Based on the VMDS, there were no faults that could have contributed to this incident's cause. The Event Recorder failed, and the signals that monitor the cab push buttons were not recorded during the incident.

TWC data was used below to determine that the doors opened on the opposite side of the platform at the time of the incident. Based on the TWC data, the doors on the non-platform side were opened briefly, and the doors closed moments later.

Following the incident, the doors on the platform side opened and the station was serviced. The passenger compartment video from car 7266 confirmed the incident.

Time	Description
08:16:02 hours	The door status was all doors closed.
08:16:04 hours	The door status was Left Doors Opened.
08:16:09 hours	The door status was all doors closed.
08:16:31 hours	Door status Right Doors Opened.

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



C03-2 TWC and Occupancy Data

Date/Time	C2-39 Pre Occ	C2-41 Pltf Occ	C2-47 Post Occ	ID	Dest	Len	PSS	Train Auto	ATP	Doors	Ready	Berth	Motion	Door Man
Mon Feb 26 08:13:41 2024	1	1	1	0	0	0	0	0	0	0	0	0	0	0
Mon Feb 26 08:15:11 2024	0	1	1	0	0	0	0	0	0	0	0	0	0	0
Mon Feb 26 08:15:14 2024	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Mon Feb 26 08:15:16 2024	0	0	1	940	23	6	1	0	1	3	0	0	1	0
Mon Feb 26 08:15:32 2024	1	0	1	940	23	6	1	0	1	3	0	0	1	0
Mon Feb 26 08:15:39 2024	1	0	1	940	23	6	0	0	1	3	0	0	1	0
Mon Feb 26 08:15:42 2024	1	0	0	940	23	6	0	0	1	3	0	0	1	0
Mon Feb 26 08:15:51 2024	1	0	0	940	23	6	0	0	1	3	0	0	0	0
Mon Feb 26 08:15:55 2024	1	0	0	940	23	6	0	0	1	3	0	0	0	1
Mon Feb 26 08:15:57 2024	1	0	0	940	23	6	0	0	1	3	0	0	0	0
Mon Feb 26 08:16:02 2024	1	0	0	940	23	6	0	0	1	3	0	0	0	1
Mon Feb 26 08:16:04 2024	1	0	0	940	23	6	0	0	1	2	0	0	0	0
Mon Feb 26 08:16:09 2024	1	0	0	940	23	6	0	0	1	3	0	0	0	0
Mon Feb 26 08:16:30 2024	1	0	0	940	23	6	0	0	1	3	0	0	0	1
Mon Feb 26 08:16:31 2024	1	0	0	940	23	6	0	0	1	1	0	0	0	1

Table 1: CMOR IIT, TWC data analysis

ROCS SPOTS Report

Generate Report

ID	Platform	length	dcode	Right door open	Right door close	dwell	Left door open	Left door close	dwell	Head Arrived	Tail cleared	cars	Headway door open to door open
910	D06-2	6	23				08:01:42	08:02:02	20	08:01:01	08:02:25	7266-7267.7261-7260.7145-7144	-
910	D05-2	6	23				08:03:35	08:03:53	18	08:02:55	08:04:15	7266-7267.7261-7260.7145-7144	1:53
910	D04-2	6	23				08:05:38	08:05:55	17	08:04:49	08:06:19	7266-7267.7261-7260.7145-7144	2:03
910	D03-2	6	23				08:07:21	08:07:41	20	08:06:31	08:08:04	7266-7267.7261-7260.7145-7144	1:43
910	D02-2	6	23	08:09:12	08:09:31	19				08:08:37	08:09:51	7266-7267.7261-7260.7145-7144	1:51
910	D01-2	6	23							08:10:10	08:11:31	7266-7267.7261-7260.7145-7144	-
910	C01-2	6	23				08:12:23	08:12:46	23	08:11:42	08:13:08	7266-7267.7261-7260.7145-7144	3:11
910	C02-2	6	23	08:14:19	08:14:36	17				08:13:40	08:14:58	7266-7267.7261-7260.7145-7144	1:56
740	C03-2	6	94	08:16:32	08:21:40	308	08:16:04	08:16:09	5	08:15:15	08:35:53	7266-7267.7261-7260.7145-7144	1:45
740	C04-2	6	94							08:36:39	08:37:15	7266-7267.7261-7260.7145-7144	-

Table 2: SPOTS Report illustrates the left side doors opened off the platform side at 08:16 hours.

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

There were no radio communication issues observed during this incident.

Office of Rail Operations Quality Training (ROQT)

The Student Train Operator received discipline under the Disciplinary Administration Program (DAP) and attended refresher training with an emphasis on Standard Operating Procedures (SOP) 40.

The Line Platform Instructor received reinstruction with an emphasis on being distracted while performing the duties of a Line Platform Instructor and servicing stations.

ROQT will implement a 2-year refresher training program for Line Platform Instructors with an emphasis on full-time and attention. The training will be mandatory for all Line Platform Instructors every 2 years in Peoplesoft Enterprise Learning Management. (Train Operator Line Platform Instructor Refresher – OPRROTLPIF)

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

RTRA issued a re-instruction to the Line Platform Instructor on the standing position while in the operating cab with a student and discussed on how to limit distractions for the student while servicing a platform and operating speeds when approaching the platform with an emphasis placed on Standard Operations Procedure (SOP) 40.

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

ROQT

Student Train Operator #1

- Student Train Operator #1 stated that they clocked in at 05:55 hours at West Falls Church Division and then met the LPI at Vienna Station.
- Student Train Operator #1 stated that the incident occurred on their first trip to New Carrollton Station.
- Student Train Operator #1 stated they were approaching Farragut West Station when they heard a knock on the operator's cab door.
- Student Train Operator #1 stated that they could not wait until the end of the line to use the restroom.
- Student Train Operator #1 stated that they became distracted and concerned about the second Student Train Operator, and muscle memory caused them to open the doors on the non-platform side.
- Student Train Operator #1 stated that they notified the LPI and the Radio RTC of the incident and performed a ground walkaround with the assistance of the LPI and a Rail Supervisor.

Student Train Operator #2

- Student Train Operator #2 stated that they met the LPI and Student Train Operator #1 at Courthouse Station.
- Student Train Operator #2 stated that they knocked on the operator’s cab door after the train stopped at Farragut West Station to request a restroom break.
- Student Train Operator #2 stated that after they requested the break, they realized that the doors were opened on the non-platform side.
- Student Train Operator #2 stated that the LPI did not open the operator’s cab door until the train had stopped on the platform.

RTRA

Line Platform Instructor (LPI)

- The LPI stated that they were on their first trip starting at Vienna Station with two Student Train Operators.
- The LPI stated that Student Train Operator #1 began operating the train first.
- The LPI stated there was a knock on the operator's cab door; the second Student Train Operator had requested a restroom break.
- The LPI stated that when they opened the operator's cab door, they noticed the doors open on the non-platform side.
- The LPI stated that they immediately advised Student Train Operator #1 to service the platform side and advise Central of the incident.
- The LPI stated that they generally do not move from the observation seat.

Weather

At the time of the incident, NOAA recorded the temperature at 49 °F, with overcast skies, winds at 5 mph, and 54% relative humidity. Farragut West Station is located within a tunneled area of the system. The weather was not a contributing factor in this incident. (Weather source: NOAA – Location: Washington, D.C.)

Human Factors

Fatigue

Signs and Symptoms of Fatigue

Conditions at the time of the incident were evaluated to distinguish whether evidence of fatigue was present. Video of the incident was reviewed for behaviors suggesting fatigue. No indications of fatigue were evident from the video. 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

ROQT

ROQT *Student Train Operator #1*

We 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 Student Train Operator #1 reported keeping a regular sleep schedule in the days leading up to the incident. The Student Train Operator worked one shift in the days leading up to the incident. The Train Operator was awake for 3.26 hours at the time of the incident The Train Operator reported 8 hours of sleep in the 24 hours preceding the incident. The off-duty period was 11.16 hours which provides an opportunity for 7-9 hours of sleep. The Student Train Operator stated having a different sleep schedule in the past 7 days. The Train Operator reported no issues with sleep.

RTRA

Line Platform Instructor (LPI)

Incident data was evaluated for fatigue risk factors. No significant risk was identified. The incident time of day (08:16 hours) does not suggest an increased risk of fatigue-related impairment. The Line Platform Instructor reported keeping a regular sleep schedule in the days leading up to the incident. The Line Platform Instructor worked the morning shift in the days leading up to the incident. The Train Line Platform Instructor was awake for 4.26 hours at the time of the incident. The Train Operator reported 6 hours of sleep in the 24 hours preceding the incident. The off-duty period was 15 hours, which provided the opportunity for 7-9 hours of sleep. This was a comparable amount of sleep to the employee's usual workday sleep durations. The Line Platform Instructor reported usual workday sleep durations of 6-8 hours and no issues with sleep.

ROQT Student Train Operator #2

Incident data was evaluated for fatigue risk factors. No significant risk was identified. The incident time of day (08:16 hours) does not suggest an increased risk of fatigue-related impairment. The Student Train Operator #2 reported keeping a regular sleep schedule in the days leading up to the incident. The Train Operator worked the evening shift in the days leading up to the incident. The Student Train Operator #2 was awake for 4 hours at the time of the incident. The Student Train Operator #2 reported 8 hours of sleep in the 24 hours preceding the incident. The off-duty period was 16 hours, which provided the opportunity for 7-9 hours of sleep. This was a comparable amount of sleep to the employee's usual workday sleep durations. The Student Train Operator #2 reported usual workday sleep durations of 8-9 hours and no issues with sleep.

WMATA's Drug and Alcohol Program determined that Student Train Operator #1 complied with the Drug and Alcohol Policy and Testing Program 7.7.3/6.

WMATA's Drug and Alcohol Program determined that the Line Platform Instructor complied with the Drug and Alcohol Policy and Testing Program 7.7.3/6.

Findings

- Student Train Operator #1 acknowledged unintentionally opening the train doors on the non-platform side.
- The Line Platform Instructor acknowledged being distracted by a second Student Train Operator when they knocked on the operator's cab door.
- Student Train Operators #1 and #2 reported that they do not have adequate time operating the train.

Immediate Mitigation to Prevent Recurrence

- Student Train Operator #1 and the LPI were removed from service.
- Train ID 910 was removed from service for post-incident inspection.
- A ground walkaround inspection was conducted.
- A Rail Supervisor took over operating the train.

Probable Cause Statement

The probable cause of the Improper Door Operation event on February 26, 2024, at Farragut West Station was the distraction of Student Train Operator #1 and the LPI when Student Train Operator #2 requested the attention of the LPI while the train was stopping on the platform. The contributing human factors of Student Train Operator #1 were a loss of situational awareness and a lack of experience that caused them to approach the left side of the Operator's Cab when the LPI moved from the observation seat.

Recommended Corrective Actions

Corrective Action Code	Description	Responsible Party	Estimated Completion Date
115032MX _SAFECAPS_ RTRA_001	The Student Train Operator to receive refresher training with an emphasis on Standard Operating Procedure 40.	RTRA	Completed
115032MX _SAFECAPS_ RTRA_002	The LPI is to receive a reinstruction with an emphasis on being distracted while performing the duties of an LPI. servicing while servicing a station.	RTRA	Completed
115032MX _SAFECAPS_ ROQT_001	Develop a refresher training platform for LPI's with an emphasis focused on full-time attention.	ROQT	Completed

Appendices

Appendix A – Interview Summaries

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

ROQT

Student Train Operator #1

The Student Train Operator is a WMATA employee with 4 months of service and training as a Train Operator. The Student Train Operator holds a Roadway Worker Protection (RWP) Level 2 certification that expires in December 2024.

During the formal interview, Student Train Operator #1 stated that they clocked in at 05:55 hours at West Falls Church Division and met the LPI at Vienna Station. The Student Train Operator stated they were on their first trip to New Carrollton Station.

Student Train Operator #1 recalled most of the stations before Farragut West Station, and split platform stations. Student Train Operator #1 stated that as they were approaching Farragut West Station, they heard a knock on the operator's cab door. Student Train Operator #1 stated that it was a second Student Train Operator and that they recalled hearing the student saying that they could not wait until the end of the line.

Student Train Operator #1 reported being distracted and concerned about the other Student Train Operator, and muscle memory had caused them to open the doors on the non-platform side. Student Train Operator #1 stated that they notified the LPI and the Radio RTC of the incident. The Radio RTC instructed them to perform a ground walkaround with the assistance of the LPI and a Rail Supervisor.

Student Train Operator #1 reported no mechanical issues that would have contributed to the Improper Door Operation.

Student Train Operator #2

The Student Train Operator is a WMATA employee with 17 years of service and 4 months of training as a Train Operator. The Student Train Operator holds a Roadway Worker Protection (RWP) Level 2 certification that expires in December 2024.

Student Train Operator #2 stated that they met with the LPI and Student Train Operator #1 at Courthouse Station. Student Train Operator #2 stated that they knocked on the cab door after the train stopped at Farragut West Station to request a restroom break.

Student Train Operator #2 stated that after they requested the restroom break, they sat down they realized that the doors had opened on the non-platform side. Student Train Operator #2 stated that the LPI did not open the cab door until the train had stopped on the platform.

RTRA

Line Platform Instructor (LPI)

The Train Operator is a WMATA employee with 10 years of service and 8 total years of experience as a Train Operator. The Train Operator holds a Roadway Worker Protection (RWP) Level 2 certification that expires in October 2024.

The Line Platform Instructor (LPI) stated that their first trip started at Vienna Station, and they were assigned two Student Train Operators. The LPI stated that the trip began with Student Train Operator #1.

The LPI stated that Student Train Operator #2 knocked on the operator's cab door and requested a restroom break. The LPI stated that when they opened the cab door to address Student Train Operator #2, they noticed the doors open on the non-platform side.

The LPI stated they immediately advised Student Train Operator #1 to service the platform side and advise Central of the incident. The LPI stated that they generally do not move from the observation seat.

Appendix B – Supervisor's Report (Redacted)

RTRA SUPERVISOR REPORT

Date	Incident Time	Incident Location (Station Mezzanine #)	Track/Mezzanine #
2/26/24	8:20 am	Farragut West	2

Equipment Number (Train ID & Car Numbers; Escalator/Elevator #)
ID 940 Lead car (7266) 7260 7144

Incident Description
Student Operator [redacted] opening the doors the opposite side the platform

WMATA Personnel Involved	Employee #	Rule Violation?	Home Division	Post Incident
[redacted]	[redacted]	SOP 40	st Falls Church (Traini	Yes
[redacted]	[redacted]	Pending Investagation	West Falls Church	Yes
N/A	N/A	N/A	N/A	No

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

Name	Address	Injury?
N/A	N/A	No
N/A	N/A	No
N/A	N/A	No

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

Arrival Time	Unit Number	Person In Charge	Remarks
8:33 am	35	[redacted]	N/A
N/A	N/A	N/A	N/A

Chronological Account of Incident

8:20 am Student Train Operator [redacted] properly Berth at the 8'car marker Farragut West Track 2 and stated he got up walk over to the left window open window walk back over hit clear and walked back over and open the doors on the wrong side. He stated as well it was muscle memory had him open the doors on that side.

LPI Train Operator [redacted] stated that Student Operator [redacted] knock on the cab door when when Student Operator [redacted] was making an 8 car stop on the platform. Operator [redacted] also state that she was having a conversation with Student Operator [redacted] outside the cab area because Student Operator [redacted] needed to take a personal. While out the cab area the incident took place.

8:48 am Post Incident Transport

9:40 am arrived at Medical for testing

10:30 am Leaving Medical

11:24 am arrived at West Falls Church to complete the necessary documents from the incident. (I) Supervisor [redacted] instructed Operator [redacted] and Operator [redacted] to complete an incident report . Follow the completion of the incident report speak to Division Management about the incident.

(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]	2/26/24		
Report must be faxed to ROCC [redacted] at end of Tour				

Document 1 - RTRA Supervisor's Report, Page 1 of 1

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 ☐
2/26/24	8:15 AM	8:15	

Location

Station	Mezzanine #	Track #/Destination	Chain Marker/Signal Number
Fairfax West	N/A	2 / Vienna	8 Car Marker

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:
910	Vienna	7266, 7260, 7144, 45	7266

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

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.

Property Beath & Car Marker, Serviced the platform LPJ got up to talk to other Stuper operator at the partition Door, open window went Back hit OK MUSCle Memory Brought me Back to the opposite S.De platform Looked out window hit open Door C/V ~~Cut~~ Wrong S.De Immediatly Closed Doors and carried In Tn.

Employee Completing Report

Employee Name:(print)	Employee Signature:(sign)	Employee #:	Date:
[redacted]	[redacted]	[redacted]	2/26/24

Division:	Run #	Block #	Assigned Days:
West Falls	204	910	~~Saturday~~ N/A

To Be Completed By Reviewing Manager

Supervisor Name:(print)	Supervisor Signature	Employee #	Date:

Action taken/needed

SMS Number:

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 2 - Student Train Operator #1 Incident Report, Page 1 of 1 (Redacted)

WMATA/RTRA Incident/Accident Report (Other than Motor Vehicle) Page 1 of 2

Incident Information: This page must be completed for all incidents

Date:	Incident Time:	Time Reported:	Reported by: Customer ❑ Employee ☑ ROCC ❑ Other ❑
2-26-24	Approx. 8:18 am	Approximately 8:30am	

Location

Station	Mezzanine #	Track #/Destination	Chain Marker/Signal Number
Farragut West		TRK 2 / Vienna	N/A

TYPE OF INCIDENT

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

WEATHER	LIGHT CONDITIONS (natural lighting)	LIGHTING (artificial lighting)
Clear ☑ Rain ❑	Dawn/Dusk ❑ Daylight ☑	Lights On ☑ Lights Off ❑
Snow ❑ Sleet/Ice ❑	Dark ❑ Tunnel/Underground ❑	Lights Not Working ❑

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

Elevator/Escalator#:	AFC #:	Room Number/Location:
N/A	NA	NA

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
N/A	N/A

TRAIN INCIDENTS

Train ID	Destination	Car Numbers(list all cars in consist):	Lead Car:
940	Vienna	7266 7267 7261 7260 7145 7144	7266

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

On Monday February 26, 2024 at approximately 8:18am, train ID 940 serviced the Farragut West Station on the off side of the platform. I was customizing on the train while LPI [redacted] and Student operator [redacted] were in the operating cab. When the train stopped at Farragut West Station, I knocked on the cab door to inform LPI [redacted] that I need to exit the train to use the restroom. She responded to me while the student operator was servicing the station. Once the student noticed what had happened he immediately closed the doors, serviced the station and contacted ROCC. ROCC instructed Train ID 940 to offload and verify all customers were clear. I walked through the train and verified all customers were clear. ROCC was updated. Then ROCC instructed the operator.

Employee Completing Report

Employee Name:(print)	Employee Signature:(sign)	Employee #:	Date:
[redacted]	[redacted]	[redacted]	2-26-24

Division:	Run #	Block #	Assigned Days:
West Falls Church	204		TH/FRI

To Be Completed By Reviewing Manager

Supervisor Name:(print)	Supervisor Signature	Employee #	Date:

Action taken/needed

SMS Number:

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 3 -Student Train Operator #2 Incident Report, Page 1 of 2 (Redacted)

WMATA/RTRA Incident/Accident Report (Other than Motor Vehicle) Page 2 of 2

Incident Information: This page must be completed for all incidents

Date:	Incident Time:	Time Reported:	Reported by: Customer ❑ Employee ❑ ROCC ❑ Other ❑
N/A			

Location

Station	Mezzanine #	Track #/Destination	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	LIGHT CONDITIONS (natural lighting)	LIGHTING (artificial lighting)
Clear ❑ Rain ❑	Dawn/Dusk ❑ Daylight ❑	Lights On ❑ Lights Off ❑
Snow ❑ Sleet/Ice ❑	Dark ❑ Tunnel/Underground ❑	Lights Not Working ❑

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

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

Failure Number(s):

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

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

TRAIN INCIDENTS

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

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.

to complete a ground walk around While LPI [redacted] + Student Operator [redacted] completed the walk around, Supervisor [redacted] arrived on the scene. He also, walked through the train and completed a walk around. Once train was cleared Supervisor [redacted] took over operation of the train. per ROCC instructions I was instructed to report to the division and complete an incident report.

Employee Completing Report

Employee Name:(print)	Employee Signature:(sign)	Employee #:	Date:
[redacted]	[redacted]	[redacted]	2-26-24

Division:	Run #	Block #	Assigned Days:
Westfalls Church	204		TH/Fri

To Be Completed By Reviewing Manager

Supervisor Name:(print)	Supervisor Signature	Employee #	Date:

Action taken/needed

SMS Number:

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 4 – Student Train Operator #2 Incident Report, Page 2 of 2 (Redacted)

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 ❑
2/26/24	8:20AM	8:20AM	

Location

Station	Mezzanine #	Track #/Destination	Chain Marker/Signal Number
Farragut West		2	E car marker

TYPE OF INCIDENT

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

WEATHER	LIGHT CONDITIONS (natural lighting)	LIGHTING (artificial lighting)
Clear ☒ Rain ❑	Dawn/Dusk ❑ Daylight ❑	Lights On ☒ Lights Off ❑
Snow ❑ Sleet/Ice ❑	Dark ❑ Tunnel/Underground ☒	Lights Not Working ❑

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

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

Failure Number(s):

Parking Lot ❑ Paid Area ❑ Free Area ❑ Garage ❑ Station Entrance ❑ Stairway # ___ ❑ Platform ❑ Ancillary Room ❑

Injury/Illness reported aboard Train ❑ Other ❑

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

TRAIN INCIDENTS

Train ID	Destination	Car Numbers(list all cars in consist):	Lead Car:
940	Penn Q	7266, 7267, 7260, 7261, 7144, 7145	7266

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

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.

Student Operator [redacted] properly bypassed the E car marker @ Farragut West, my other student operator knocked on the cab door. I got up to open the door and address my other student, she stated she needed to use the bathroom & where car she got off at. I, noticed that the doors had been opened on the wrong side & instructed the student to contact ROCC. We then followed ROCC's instructions & bypassed 2 sets ground walk-a-rounds.

Employee Completing Report

Employee Name:(print)	Employee Signature:(sign)	Employee #:	Date:
[redacted]	[redacted]	[redacted]	2/26/24

Division:	Run #	Block #	Assigned Days:
	204	940	Th/Fr

To Be Completed By Reviewing Manager

Supervisor Name:(print)	Supervisor Signature	Employee #	Date:

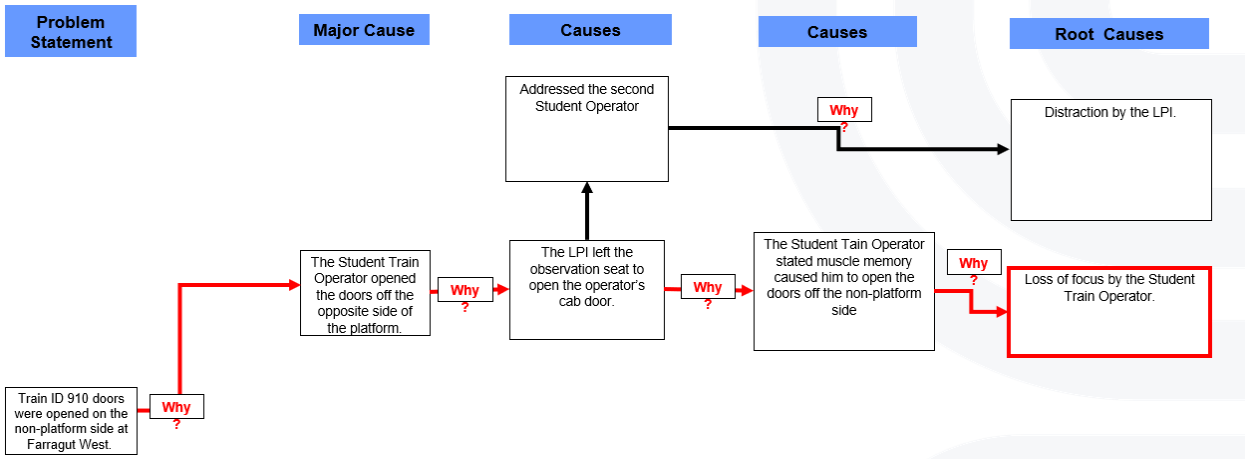
Action taken/needed

SMS Number:

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 5 - Line Platform Instructor Incident Report, Page 1 of 1 (Redacted)

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 E24195

Date of Event:	March 12, 2024
Type of Event:	O-15(a): Improper Door Operation
Incident Time:	10:38 hours
Location:	Vienna Station, track 2
Time and How received by SAFE:	10:41 hours Mission Assurance Coordinator (MAC)
WMSC Notification Time:	11:27 hours
Responding Safety Officers:	N/A
Rail Vehicle:	Train ID 914 (**L**7274/75**X**7279/78**X**7462/63**X**7417/16**T**)
Injuries:	N/A
Damage:	N/A
Emergency Responders:	NA
SMS I/A Number	20240312#115407MX

Vienna Station – Improper Door Operation

March 12, 2024
Table of Contents

Drafted By: SAFE 709 – 08/18/2024
Reviewed By: SAFE 707 – 05/13/2024
Approved By: SAFE 707 – 05/15/2024

Abbreviations and Acronyms

ADU	Aspect Display Unit
AIMS	Advanced Information Management System
AOM	Assistant Operations Manager
ARS	Audio Recording System
CCTV	Closed-Circuit Television
CMOR	Office of Chief Mechanical Officer
IIT	Incident Investigation Team
MAC	Mission Assurance Coordinator
MICC	Metro Integrated Command and Communications Center
MOR	Metrorail Operating Rulebook
NOAA	National Oceanic and Atmospheric Administration
PIME	Post-Incident Medical Exam
RTC	Rail Traffic Controller
RTRA	Office of Rail Transportation
SAFE	Department of Safety
SMS	Safety Measurement System
SOP	Standard Operating Procedures
SPOTS	System Performance On-Time Summary
SRC	Safety Risk Coordinator
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 Tuesday, March 12, 2024, at 10:38 hours, Train ID 914 [L7274/75x7279/78x7462/63x7417-16T] arrived at Vienna Station on track 2 and stopped with one door of the trailing car outside of the platform limits. The Train Operator opened the train doors, keyed down, and exited the train. A second Train Operator, who was in the trailing car, notified the Terminal Supervisor that the train door was opened outside of the platform limits.

The Terminal Supervisor verified the Improper Door Operation, boarded the trailing car, closed the train doors, placed the train out of service, and then contacted the Metro Integrated Command and Communications Center (MICC) to report the event.

The Radio Rail Traffic Controller (RTC) instructed the Rail Supervisor located at West Falls Church Station to respond to Vienna Station.

At 10:47 hours, the Terminal Supervisor was granted foul time to perform a ground walkaround inspection, and at 10:51 hours, advised that the ground walkaround was complete and relinquished foul time.

At 10:49 hours, the train was moved from the platform to the tail track at Vienna Station.

The Office of Rail Transportation (RTRA) Supervisor that initially met the train on arrival removed the Train Operator from service. This was in accordance with the Office of the Chief Mechanical Officer (CMOR) Incident Investigation Team (IIT) Operations Administrative Policy (OAP) 102.06, the Metro Integrated Command and Communications Center (MICC) promptly initiated the removal of Train ID 914 from revenue service for post-incident investigative measures. This action adhered to the Rail Vehicle Event Investigation Policy, ensuring a comprehensive examination of the incident.

Train ID 914 was removed from service and transported to West Falls Church Yard for post-incident inspection by a gap operator.

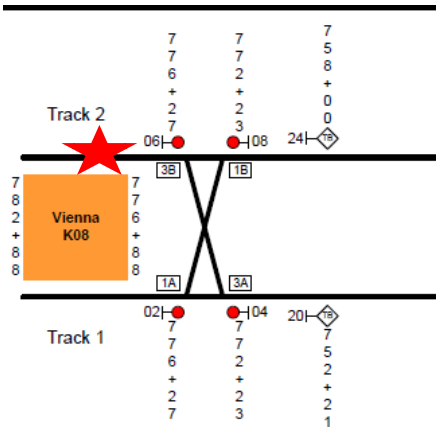
There were no injuries or damages that resulted from this event.

The probable cause of the Improper Door Operation event at Vienna Station on March 12, 2024, was a failure to perform door operations in accordance with established procedures. Specifically, the Train Operator failed to observe the platform from the cab window despite looking out twice and confirm the train was properly berthed before depressing the door open push button.

Incident Site

Vienna Station, track 2

Field Sketch/Schematics



**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 that occurred March 12, 2024, 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 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 914
- 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 – A collection of relevant work history information and process documentation contained in Metro systems of record. These records include:
    - Metrorail Operating Rulebook (MOR)
    - National Oceanic and Atmospheric Administration (NOAA)
    - CMOR Incident Report
    - Train Operator 30 Day Work History

- Train Operator Training Record
- Train Operator Certification Record

- System Data Recording Review – A collection of information contained in Metro Data Recording Systems. This data includes:
  - Audio Recording System (ARS) playback.
  - Closed-circuit television (CCTV)
  - System Performance On-Time Summary (SPOTS)

Investigation

On Tuesday, March 12, 2024, at 10:38 hours, Train ID 914 [L7274/75x7279/78x7462/63x7417-16T] arrived at Vienna Station on track 2 and stopped with one door of the trailing car outside of the platform limits. The Train Operator opened the train doors, keyed down, and exited the train. A second Train Operator, who was in the trailing car, notified the Terminal Supervisor that the train door was opened outside of the platform limits.

Image 1 – Train Operator looked out cab window second time prior to opening doors while the train doors were outside the platform limits.

Image 2 - RTRA Supervisor verifying the train doors open outside the platform limits.

The Closed-Circuit Television (CCTV) revealed that at 10:40 hours, the Terminal Supervisor verified the Improper Door Operation, boarded the trailing car, closed the train doors, and placed the train out of service. The Audio Recording System (ARS) revealed that at 10:44 hours, the Terminal Supervisor contacted the MICC to report the event.

The Radio RTC instructed the Rail Supervisor located at West Falls Church Station to respond to Vienna Station.

At 10:47 hours, the Terminal Supervisor was granted foul time to perform a ground walkaround inspection, and at 10:51 hours, advised that the ground walkaround was complete and relinquished foul time.

At 10:49 hours, the train was moved from the platform to the tail track at Vienna Station.

At 11:34 hours, a gap operator transported Train ID 914 (714) to Vienna Station for West Falls Church Yard.

Chronological Event Timeline

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

Time	Description
10:38:00 hours	Train ID 914 arrived at Vienna Station platform, track 2. [CCTV]
10:39:02 hours	Train Operator of Train ID 914 placed their head out of the cab window before opening doors off platform. [CCTV]
10:39:20 hours	Train Operator of Train ID 914 placed their head out of the cab window again serviced Vienna Station, track 2 opening the doors off the platform. [CCTV]
10:40:20 hours	Terminal Supervisor was advised by a train operator who had exited the trailing car of Train ID 914 of door open off platform. The RTRA Terminal Supervisor verified one door was outside of the platform limits. [CCTV]
10:40:58 hours	Terminal Supervisor boarded the trailing car. [CCTV]
10:41:37 hours	Train doors were closed. [CCTV]
10:42:48 hours	Terminal Supervisor exited the train. [CCTV]
10:44:45 hours	Terminal Supervisor: Reported that the train on track 2, opened the doors outside the platform limits, and the handrail was blocking the last door on the last car. [Phone, ROCC Silver Line]
10:45:47 hours	Radio RTC: Requested an additional Rail Supervisor to respond to Vienna Station to assist. RTRA Supervisor: Acknowledged [Radio, OPS 4]
10:46:01 hours	Radio RTC: Advised AOM of event. AOM: Acknowledged. [Phone, ROCC Silver Line]
10:47:27 hours	Radio RTC: Directed the Terminal Supervisor to complete a ground walk and authorized foul time. Terminal Supervisor: Acknowledged. [Phone, ROCC Silver Line]
10:49:31 hours	Terminal Supervisor performed a ground walk. [CCTV]
10:51:00 hours	Terminal Supervisor: Advised RTC that the ground walkaround was complete and relinquished foul time. Button RTC: Acknowledged. [Phone, ROCC Silver Line]
10:55:30 hours	Train ID 914 departed Vienna Station towards the tail track. [CCTV]
10:56:00 hours	Radio RTC: Instructed the Gap Operator to transport the gap train from West Falls Church Station to Vienna Station. [Radio, OPS 4]
11:34:26 hours	Train ID 914 (714) departed Vienna Station, track 2 to West Falls Church Yard. [CCTV]

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

Office of Chief Mechanical Officer (CMOR) – Incident Investigation Team (IIT)
Adopted from CMOR IIT report with minor formatting and grammatical edits:

IIT Findings:

1. IIT confirmed that Car 7274 was the Lead Car during this incident.
2. IIT confirmed that Speed Commands were lost when Train ID 914 was 23 feet from the 8-Car Marker, which trigged the Automatic Train Control (ATC) System to automatically set full-service braking, causing the train to apply Brakes.
3. IIT confirms that the train stopped 20 Feet from the 8-Car Marker.
4. Based on the digital EEM data in the Table below, the train stopped at 10:38:56.
5. Based on the data, the Loss of Speed Command caused the train to stop 20 feet short, leaving the Trail Car's last Pair of Doors off the Platform.
6. At 10:39:08, the Train Operator pressed the Aspect Display Unit (ADU) Door Enable Button.
7. At 10:39:11, the "Door Open Left (Control Panel)" Button was pressed. At 10:39:11, the "All Door Closed and Locked T/L" signal goes to Zero (0), indicating the Doors are Open.

DateTime [LOCAL]	Cab Active (CAR ON)	Car Number	Train ID	Platform/Station ID	ATP Speed Limit	Speed [Mph]	Zero Speed Detection	ADU Regulated Speed	PSS Distance To Go	ATC markers identification (First member)	M/C Encoder (MC)	BC Pressure (ACar F-end truck)	Full-Service Brake T/L Status	ADU Door Enable	All Door Closed and Locked T/L Status	Door Open Left (Left Door Control Panel)	Door Close Left (Left Door Control Panel)	BP Pressure	Comment and Notes
03/12/2024 10:38:44 AM	1	7274	914	244	50	9.897	0	50	137	0	50.05	-1.55	1	0	1	0	1	130.4	ATC Detects Vienna Station (K08-2). TWC = 244
03/12/2024 10:38:49 AM	1	7274	914	244	50	7.438	0	49	64	4	41.65	4.475	1	0	1	0	1	131.85	Second "F4" Marker is Detected.
03/12/2024 10:38:54 AM	1	7274	914	244	50	3.045	0	49	23	0	23.97	19.363	1	0	1	0	1	134.213	
03/12/2024 10:38:54 AM	1	7274	914	244	0	3.045	0	49	23	0	23.97	20.513	1	0	1	0	1	134.213	ATP Speed Limit goes to 0 MPH (Looses Speed Cmd) PSS Distance to 8 Car Marker is 23 Feet
03/12/2024 10:38:55 AM	1	7274	914	244	0	3.045	0	49	23	0	23.97	21.725	1	0	1	0	1	134.213	
03/12/2024 10:38:55 AM	1	7274	914	244	0	3.045	0	49	23	0	23.97	21.725	0	0	1	0	1	134.213	Full Service Braking is Set due to lose of Speed Cmd.
03/12/2024 10:38:56 AM	1	7274	914	244	0	0.936	0	49	20	0	23.97	35.163	0	0	1	0	1	134.75	ADU Regulated Speed goes to 0 MPH PSS Distance to 8 Car Marker is 20 Feet
03/12/2024 10:38:56 AM	1	7274	914	244	0	0.936	0	0	20	0	23.78	35.163	0	0	1	0	1	134.75	
03/12/2024 10:38:56 AM	1	7274	914	244	0	0	0	0	20	0	9.91	34.475	0	0	1	0	1	134.588	Train Speed goes to Zero (0) MPH
03/12/2024 10:38:57 AM	1	7274	914	244	0	0	1	0	20	0	9.91	34.475	0	0	1	0	1	134.588	Zero Speed Detection goes to One (1)
03/12/2024 10:39:08 AM	1	7274	914	244	0	0	1	0	20	0	9.91	33.938	0	1	1	0	1	137.65	ADU is enabled
03/12/2024 10:39:11 AM	1	7274	914	244	0	0	1	0	20	0	9.91	33.938	0	1	1	1	1	138.563	Door Open left Control Button Pressed
03/12/2024 10:39:11 AM	1	7274	914	244	0	0	1	0	20	0	9.91	33.938	0	1	1	0	1	138.563	
03/12/2024 10:39:11 AM	1	7274	914	244	0	0	1	0	20	0	9.91	33.938	0	1	0	0	1	138.563	All Doors Closed and Locked indicate Doors Open

Figure 1 - Data Analysis from the lead railcar 7274.

System Performance On-Time Summary (SPOTS)

ROCS SPOTS REPORT

based on up-to-the-second operational performance data from the Rail Operations Control System

Current date/time: Sun Mar 24 11:27:02 2024

Select Platform: K08-2 **and/or Select ID:** Leave blank to remove criteria
and/or Select 4-digit car number: 7274 Leave blank to remove criteria
Select Date: Mar 12 2024 **Select Times (0-24HRS): From** 10:00 **To** 12:00

Generate Report

ID	Platform	length	dcode	Right door open	Right door close	dwell	Left door open	Left door close	dwell	Head Arrived	Tail cleared	cars	Headway door open to door open
714	K08-2	2	76				10:39:06	10:39:13	7	10:38:15	10:59:11	7416-7417.7463-7462.7278-7279.7275-7274	-
	K08-2	0	0							11:28:17	11:34:55	7274-7275.7279-7278.7462-7463.7417-7416	-

Figure 2 - ROCS SPOTS Report depicting left platform side door operations for Train ID 714 (reassigned Train ID 914)

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

See Appendix B

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

The Train Operator stated, they reported to work West Falls Church Division at 03:40 hours. Prior to the incident they were on a meal break at New Carrollton Division.
The Train Operator stated, Train ID 914 was operating normal, and they did not experience any issues with the console radio. The Train Operator stated, they entered the Vienna Station platform at about 30 MPH.
The Train Operator stated, they believed they had reached the 8-car marker and were properly berthed. They pressed the door open push button on the platform side.
The Train Operator stated, they realized they had opened a train door outside the platform limits once they walked to the end of the consist.
The Train Operator notified the Terminal Supervisor, who was standing at the rear of the consist.
The Train Operator stated, they were removed from service immediately and taken for a Post Incident Medical Examination (PIME).
The Train Operator stated, they were distracted while properly berthing the train due to personal issues.
The Train Operator stated, that the Terminal Supervisor received permission from the Metro Integrated Command Center (MICC) to conduct a ground walkaround.

Weather

On March 12, 2024, at the time of the incident, NOAA recorded the temperature as 64°F, with clear skies, winds of 9 mph, and 48% humidity. The weather did not contribute to this incident (Weather source: NOAA) – Location: Fairfax, VA.

Related Rules and Procedures

SOP 40 – 6.1.5

- 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.
- Depress the Car's Open Doors button on the platform side of the train.

MOR 8.18 Door Operation

- 8.18.1 - Failure of train doors to open or close properly must be reported to the Rail Traffic Controller immediately.
- 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.

Drafted By: SAFE 709 – 08/18/2024
Reviewed By: SAFE 707 – 05/13/2024
Approved By: SAFE 707 – 05/15/2024

Human Factors

Evidence of Fatigue

Evidence of Fatigue: We evaluated conditions at the time of the incident to distinguish whether evidence of fatigue was present. No sign of fatigue was indicated by the available data. Video of the incident was reviewed for behaviors suggesting fatigue. No indications of fatigue were evident from the video. Employee reported feeling moderately alert at the time of the incident. Employee reported experiencing no symptoms of fatigue in the time leading up to the incident.

Fatigue Risk

We 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 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 8.36 hours at the time of the incident. The Train Operator reported 6 hours of sleep in the 24 hours preceding the incident. The off-duty period was 14 hours, providing an opportunity for 7-9 hours of sleep. This was the same as the Train Operator's usual workday sleep duration. The Train Operator reported no issues with sleep. The Train Operator worked the day shift in the days leading up to the incident.

Post-Incident Toxicology Testing

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

Findings

- The Train Operator was beginning their third-round trip when the event occurred.

Immediate Mitigation to Prevent Recurrence

- Train 914 was offloaded.
- The consist was removed for post incident inspection.
- The Train Operator was removed from service and transported for Post Incident Testing.
- The RTRA Terminal Supervisor conducted a ground walk around.

Probable Cause Statement

The probable cause for the Improper Door Operation at Vienna Station on March 12, 2024, was complacency/inattention and failure to perform door operations in accordance with established procedures. Specifically, the Train Operator failed to observe the platform and ensure the train was properly berthed from the cab window with their hands at their side before depressing the door open push button.

Recommended Corrective Actions

Corrective Action Code	Description	Responsible Party	Estimated Completion Date
114841_SAFECAPS_RTRA_001	Train Operator will complete refresher training with an emphasis on SOP 40.	RTRA SRC	Completed

Appendices

Appendix A – Interview Summary

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

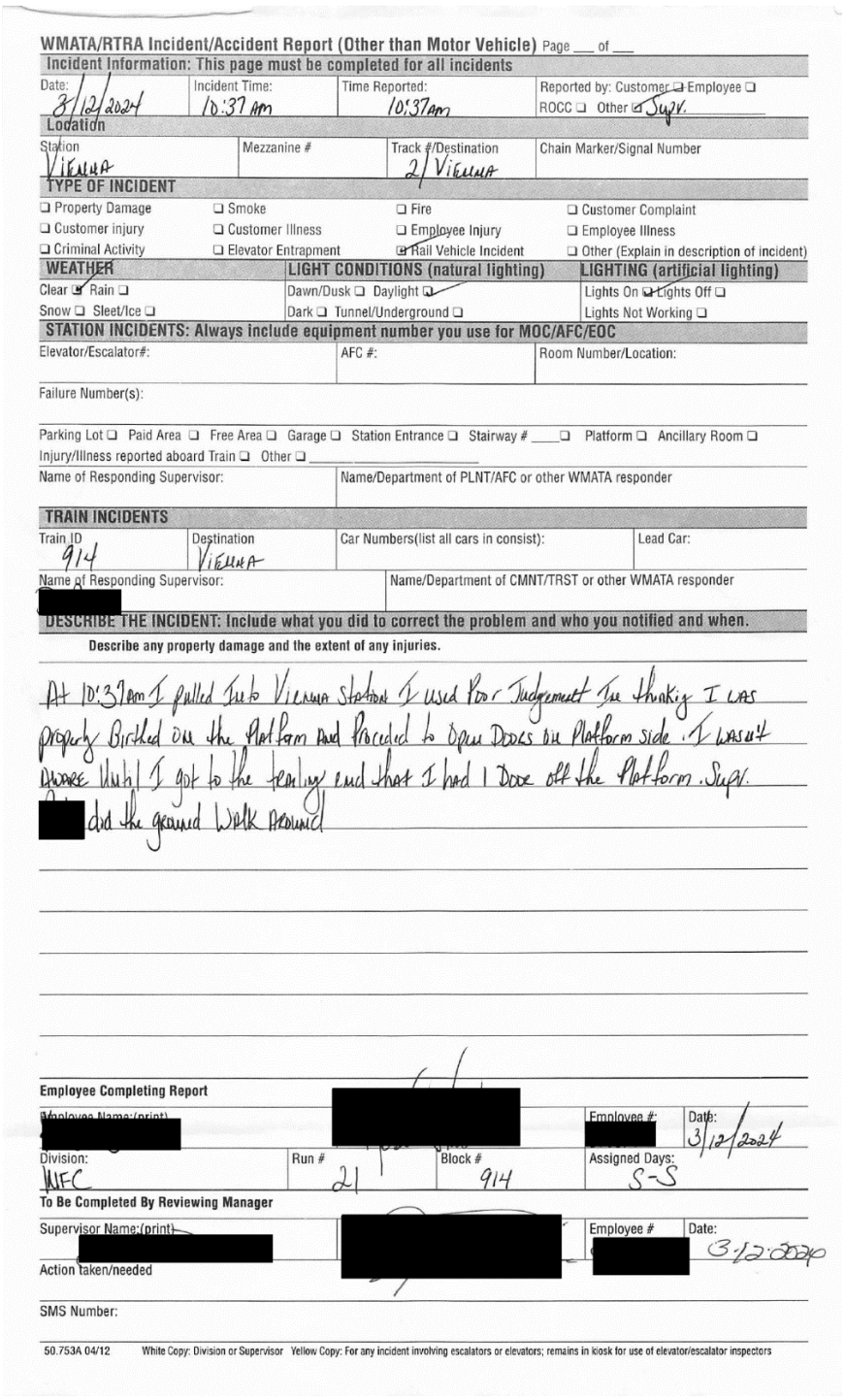
Train Operator

The Train Operator has been a WMATA employee for twenty years and in their current position for eleven years. The Train Operator is currently RWP Level 2 certified with an expiration date of June 2024. The Train Operator's last certification score was a QL-1 on July 7, 2022.

The Train Operator stated, "They were operating after a meal break at New Carrollton, and they arrived at Vienna Station platform. They stated, they believed the train was properly berthed and opened the platform side doors. The Train Operator became aware the consist had one car door outside the platform limits, after arriving at the rear of the consist. The door that was outside the platform limits was blocked by the platform end gate.

The Train Operator advised they were met by an RTRA Supervisor as they arrived at the rear of the consist. The RTRA Supervisor removed the Train Operator from service and the Train Operator stated, they were taken for a PIME.

Appendix B – RTRA Rail Transportation Reports (redacted)



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 ☑ Supv.
3/12/2024	10:37 AM	10:37AM	

Location

Station	Mezzanine #	Track #/Destination	Chain Marker/Signal Number
VIENNA		2/VIENNA	

TYPE OF INCIDENT

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

WEATHER	LIGHT CONDITIONS (natural lighting)	LIGHTING (artificial lighting)
Clear ☑ Rain ❑	Dawn/Dusk ❑ Daylight ☑	Lights On ☑ Lights Off ❑
Snow ❑ Sleet/Ice ❑	Dark ❑ Tunnel/Underground ❑	Lights Not Working ❑

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

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

Failure Number(s):

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

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

TRAIN INCIDENTS

Train ID	Destination	Car Numbers(list all cars in consist):	Lead Car:
914	VIENNA		

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

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.

At 10:37am I pulled Into Vienna Station I used Poor Judgement In thinking I was properly Birthed on the Platform and Proceed to Open Doors on Platform Side. I wasn't aware that I got to the leading end that I had 1 Door off the Platform. Supv. [redacted] did the ground Walk Around

Employee Completing Report

Employee Name:(print) [redacted]	[redacted]	Employee # [redacted]	Date: 3/12/2024

Division:	Run #	Block #	Assigned Days:
MFC	21	914	S-S

To Be Completed By Reviewing Manager

Supervisor Name:(print) [redacted]	[redacted]	Employee # [redacted]	Date: 3/12/2024

Action taken/needed

SMS Number:

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 - RTRA Incident Report Page 1 of 1.

Appendix C – RTRA Investigative Report (Redacted)

Washington Metropolitan Area Transit Authority

Office of Rail Transportation: Managerial Incident Investigation Report

Incident Status: PRELIMINARY

GENERAL INCIDENT INFORMATION

Incident Type:	Improper Door Operation	Delay (Minutes):	Zero minutes
Incident Date:	Tuesday, March 12, 2024	Vehicles Involved:	**L7274**-7279-7462-7417
Incident Time:	10:37 am	First Reported By:	Supervisor [redacted]
Location:	Vienna Station		

BRIEF DESCRIPTION:

At approximately 10:37am Terminal Supervisor [redacted] reported to the MICC that the operator of train ID 914 stopped short of the 8-car marker and then opened the doors. As a result, one door on the trailing end opened off the platform. A ground walk around was conducted with negative results.

Key Employees Involved & Employee Statements:

- Train Operator [redacted]
- Hire Date- [redacted]
- Seniority Date- [redacted]
- Certification Date- July 1, 2022

[redacted]

At 10:37am I pulled into Vienna Station I used poor judgment in thinking I was properly berth on the platform and proceeded to open doors on platform side. I wasn't aware until I got to the trailing end that I had 1 door off the platform. Supervisor [redacted] did the ground walk around.

Post Incident Testing & Employee History:

Operator [redacted] was transported for post incident testing.

No prior violations.

SIGNIFICANT INCIDENT TIMELINE:

10:36 am – Train #914 entered the platform at Vienna track #2.

10:37 am – Train #914 stopped short of the 8-car marker and opened the doors off the platform.

Document 2 - RTRA Managerial Investigative Report Page 1 of 2.

Washington Metropolitan Area Transit Authority

Office of Rail Transportation: Managerial Incident Investigation Report

SIGNIFICANT FINDINGS & PENDING ISSUES:

Provide any significant findings based on the preliminary incident investigation and incident/accident procedural protocol. Include preliminary root cause analysis and applicable rule violations.

CORRECTIVE ACTIONS:

Pending

INCIDENT PHOTOS: ATTACH ANY SIGNIFICANT PHOTOS BASED ON THE INITIAL INCIDENT INVESTIGATION.

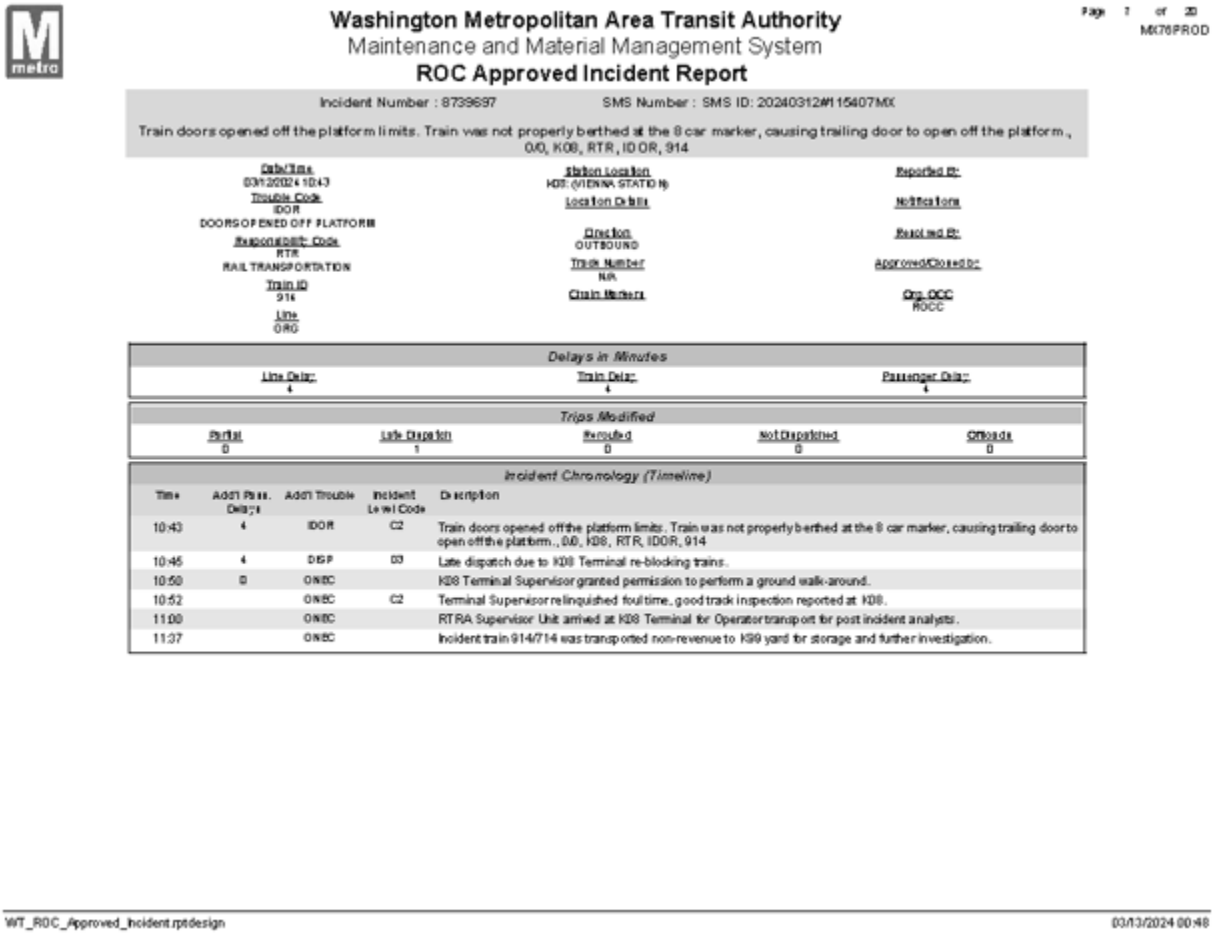
Report Prepared by: [redacted] 3/12/2024

Report Reviewed by:

Office of Rail Transportation: Managerial Incident Investigation Report Page 2 of 2

Document 3 - RTRA Managerial Investigative Report Page 2 of 2.

Appendix D – MICC Report



Washington Metropolitan Area Transit Authority
Maintenance and Material Management System
ROC Approved Incident Report

Page 1 of 20
MX76PROD

Incident Number : 8739697 SMS Number : SMS ID: 20240312#115407MX

Train doors opened off the platform limits. Train was not properly berthed at the 8 car marker, causing trailing door to open off the platform., 0.0, K08, RTR, IDOR, 914

Date/Time: 03/12/2024 10:43
Trouble Code: IDOR
DOORS OPENED OFF PLATFORM
Responsibility Code: RTR
RAIL TRANSPORTATION
Train ID: 914
Line: ORG

Station Location: K08 (VIENNA STATION)
Location Details:
Direction: OUTBOUND
Track Number: N/A
Chain Markers:

Reported By:
Notifications:
Resolved By:
Approved/Closed by:
Org. OCC: ROCC

Delays in Minutes

Line Delay:	Train Delay:	Passenger Delay:
4	4	4

Trips Modified

Partial	Late Dispatch	Rerouted	Not Dispatched	Offloads
0	1	0	0	0

Incident Chronology (Timeline)

Time	Addl Pass. Delays	Addl Trouble	Incident Level Code	Description
10:43	4	IDOR	C2	Train doors opened off the platform limits. Train was not properly berthed at the 8 car marker, causing trailing door to open off the platform., 0.0, K08, RTR, IDOR, 914
10:46	4	DISP	03	Late dispatch due to K08 Terminal re-blocking trains.
10:50	0	ONEC		K08 Terminal Supervisor granted permission to perform a ground walk-around.
10:52		ONEC	C2	Terminal Supervisor relinquished foul time., good track inspection reported at K08.
11:00		ONEC		RTRA Supervisor Unit arrived at K08 Terminal for Operator transport for post incident analysis.
11:37		ONEC		Incident train 914/714 was transported non-revenue to K99 yard for storage and further investigation.

WT_ROC_Approved_Incident.rptdesign 03/13/2024 00:48

Document 4 - MICC ROC Report

Appendix E – Why-Tree Analysis