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**Improper Door Operations**

**Bethesda, Rockville, Franconia-Springfield, and Pentagon Stations**

**November 1, 2024, December 13, 2024, December 21, 2024, and December 29, 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 September 16, 2025.*

*WMSC staff recommend adoption of these investigations.*

**Improper Door Operation**

In 2024, there were 25 improper door operations safety events reported by Metrorail to the WMSC. As of September 1, 2025, there have been 27 such events reported, an increase from the 12 events reported during the same time period last year. Starting in December 2023, following the substantial completion of Metrorail safety certification activities, Metrorail received WMSC concurrence to activate the Automatic Door Operation (ADO) feature on the Metrorail system incrementally, starting with the Red Line in December 2023. By June 2024, the WMSC provided concurrence for activation of ADO on all Metrorail lines. The events outlined below all occurred while trains were required to operate in ADO. Direct causes of improper door operations can include human error (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.

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

- Loss of/lack of focus and situational awareness
- Non-compliance with written operational rules and procedures including those related to door operation and station servicing procedures
- Fatigue leading to human error

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

- Rail Traffic Controllers began making hourly announcements reminding train operators to operate in Automatic Door Operations as required and to utilize the point-and-call method when doors must be opened manually

- Personnel attended refresher training on applicable rules and procedures, including door operations and properly servicing stations
- Metrorail redistributed a Personnel Notice reminding all the train operators to utilize the point-and-call method
- Metrorail's Department of Safety developed a Rail Vehicle Operator Outreach Program to increase rule compliance regarding door operations

**Safety event summaries:**

**W-0391 – Bethesda Station – November 1, 2024 (WMATA ID: E24884)**

On Friday, November 1, 2024, the Train Operator of Red Line Train 138 opened train doors with 4 cars outside the platform limits at Bethesda Station. At the time of the safety event, Red Lines were beginning to bypass Bethesda Station due to an escalator outage at the station. Bethesda Station is a deep station with specific standard operating procedures associated with elevator and escalator outages.

Train 138, an eight-car consist train, was the first train instructed to bypass the station; however, the Radio Rail Traffic Controller instructed the Train Operator to key aboard any customers that might be on the station's platform. As Train 138 entered Bethesda Station, there was a small group of customers on the platform. The Train Operator stopped the train near the customers, 331 feet short of the 8-car marker. A review of closed-circuit television (CCTV) footage showed that the Train Operator exited the operator's cab without keying down the train, manually opened the door on the lead car to allow riders aboard, and returned to the operator's cab. As the Train Operator was about to close the doors, a Rail Supervisor stepped off the train to key riders off. This action by the Rail Supervisor was not coordinated with the Train Operator. In an investigative interview, the Train Operator stated that when they noticed the supervisor, they quickly reopened the doors using the pushbutton, thinking the Rail Supervisor may have been stuck in the doors.

The Rail Supervisor contacted the Radio Rail Traffic Controller and requested foul tome to enter the roadway to conduct a ground walkaround. Following the ground walkaround the Rail Supervisor took over train operations and was instructed to allow customers to reboard the train.

There were several deficiencies identified during this safety event, including the use of governing documents that had not yet been finalized (Procedure Number: 212-SOP-46: ELES-VTOC

Station Bypass SOP), to make determinations on whether the station should be bypassed or closed, and the premature opening of the station prior to escalator restoration. During the event, the Safety Information Official contacted the Operations Manager and asked if Bethesda Station had been reopened. The Operations Manager replied that per Metro 1, they were once again servicing the station and asked if the Safety Information Officer was monitoring the Microsoft Teams chat because that was where the decision was made. At that point the escalators in the station had not yet been restored to full service.

In the WMSC's 2025 Audit of Metrorail's Control Cent and Rail Operations, the WMSC found that Metrorail uses Microsoft Teams chats during safety events but has not demonstrated a review of these records when determining the facts of these events. As a result, Metrorail is required to review and include relevant information created by all available communication methods including Microsoft Teams chats. All communication methods must be preserved for future

investigation review. Metrorail must also make available all data related to rail safety events and investigations which includes “WMATA instant messaging chats and channels (e.g., Microsoft Teams or similar) that relate to the investigation of a safety event” as outlined by the WMSC Program Standard.

**W-0392 – Rockville Station – December 13, 2024 (WMATA ID: E24991)**

On December 13, 2024the Train Operator of Train 123, properly berthed the train at the 8-car marker at Rockville Station. The train was operating in Automatic Door Operation (ADO) mode, and all train doors opened on the platform side, except the doors on railcar 7098, which remained closed. Railcar 7098 had previously been isolated. The Train Operator then manually activated the Right Door Open pushbutton, opening train doors on the non-platform side of the train. The Train Operator closed the doors approximately 12 seconds later and reported the event to the Radio Rail Traffic Controller in the Control Center. The Radio Rail Traffic Controller instructed the Train Operator to offload the train and complete a ground walkaround.

The Train Opetator reported that the train was clear of customers and confirmed that they had completed their walkaround and that no customers had exited the train onto the roadway.

During a formal interview, the Train Operator stated that upon picking up the train on the Shady Grove Station platform, they observed that one railcar was isolated. The Train Operator stated that an alarm appeared on the Train Control Display (TCD), which confused them. In response, they inadvertently depressed the Door Open pushbutton on the non-platform side of the train. The Train Operator also indicated that they were unaware that an isolated car would activate an alarm following door operations.

In accordance with Metrorail policy, the Train Operator was removed from service for post-event toxicology testing. The train was removed from service for inspection.

**W-0393 – Franconia-Springfield Station – December 21, 2024 (WMATA ID: E241047)**

At 1:06 p.m. on Saturday, December 21, 2024, the Franconia-Springfield Terminal Supervisor reported an improper door operation at Franconia-Springfield Station, track 1, to the Button Rail Traffic Controller in the Control Center. The Terminal Supervisor had received the report from a Train Operator who witnessed the safety event.

An investigative review of data determined the Train Operator of Train 404 entered the station’s platform limits, stopping 56 feet short of the eight-car marker, leaving two doors off the platform. At the time of the event, the train was being operated in automatic door operations (ADO), however, without requesting the required permission, the Train Operator manually opened doors using the Door Open pushbutton to service the station. An investigative review of data showed that the Train Operator entered into emergency braking. During an interview regarding the event, the Train Operator could not explain why they initiated emergency braking. The Train Operator also stated they believed they were operating a 6-car consist, instead of an 8-car consist. After servicing the station, the Train Operator exited the train. They stated during an interview that they then noticed that two cars were off the platform. However, the Train Operator of Train 404 did not report the safety event.

During the event, there was confusion regarding the nature of the improper door operation. A misunderstanding of the initial report by the Terminal Supervisor caused personnel in the Control Center to believe train doors were opened on the non-platform side of the train. Approximately four minutes into the event, it was clarified that the doors were opened on the correct side of the train with two cars outside of the station's platform limits.

At 1:09 p.m., a Rail Supervisor was dispatched to the station. When the Rail Supervisor arrived, they requested and were granted Foul Time protection to perform a ground walk around to ensure no one had fallen onto the roadway.

The Train Operator was removed from service for post-event toxicology testing. The train was removed from service for inspection which determined there were no mechanical issues that would have contributed to the event.

**W-0394 – Pentagon Station – December 29, 2024 (WMATA ID: E241082)**

On Sunday, December 29, 2024, at 11:56 p.m. Train 321 entered Pentagon Station and properly berthed at the eight-car marker. At 11:57 p.m., the right-side Door Open pushbutton was activated by the Train Operator, opening the train doors on the non-platform side of the train. At the time of the incident, the train was operating in Automatic Door Operation (ADO). Train Operator placed their head out of the right-side cab window, noticed their error, and notified the Radio Rail Traffic Controller in the Control Center. The Radio Rail Traffic Controller instructed the Train Operator to offload riders from the train onto the platform, and to perform a ground walkaround to ensure no one had fallen onto the roadway. The Radio Rail Traffic Controller granted the Train Operator permission to conduct a ground walk. After the ground walkaround was complete, the Radio Rail Traffic Controller instructed the Train Operator to move the out of service train, now Train 721, toward Foggy Bottom, and dispatched a Rail Supervisor to relieve the Rail Vehicle Operator from duty for post-incident testing, in accordance with Metrorail policy.

At 12:16 p.m., Train 721 arrived at Foggy Bottom-GWU Station, and the Rail Supervisor questioned the Train Operator about the event before taking over operation of the train. The Train Operator stated that they had pressed the train berth button and hit the Right Door open button inadvertently while swinging their hand.

During an investigative interview, the Train Operator stated they only had 3.5 hours of sleep in the 24 hours leading up to the event, suggesting an increased risk for fatigue.

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

**FINAL REPORT OF INVESTIGATION A&I E24884**

| | |
|---|---|
| **Date of Event:** | November 1, 2024 |
| **Type of Event:** | O15(a): Improper Door Operation |
| **Incident Time:** | 18:15 hours |
| **Location:** | Bethesda Station, Track 2 |
| **Time and How received by Safety:** | 18:20 hours – Safety Information Official (SIO) |
| **Washington Metrorail Safety Commission (WMSC) Notification Time:** | 19:40 hours |
| **Responding Safety Officers:** | None |
| **Rail Vehicle:** | Train ID 138 (L6133/32x6000/01x6035/34x6017/16T) |
| **Injuries:** | None |
| **Damage:** | None |
| **Emergency Responders:** | None |
| **Safety Universal Data System (SUDS) Number:** | 20241101#121126MX |

**November 1, 2024**
**Table of Contents**

## Abbreviations and Acronyms

| | |
|---|---|
| **ACSO** | Assistant Chief Safety Officer |
| **AIMS** | Advanced Information Management System |
| **AOM** | Assistant Operations Manager |
| **ARS** | Audio Recording System |
| **CCTV** | Closed-Circuit Television |
| **CMOR** | Office of Chief Mechanical Officer |
| **ELES** | Office of Elevator and Escalator |
| **IIT** | Incident Investigation Team |
| **MICC** | Metro Integrated Command and Communications Center |
| **MOR** | Metrorail Operating Rulebook |
| **NOAA** | National Oceanic and Atmospheric Administration |
| **OAP** | Operations Administrative Policy |
| **OM** | Operations Manager |
| **SIO** | Safety Information Official |
| **SM** | Station Manager |
| **SMS** | Safety Measurement System |
| **SPOTS** | Service Performance On -Time System |
| **SVP** | Senior Vice President |
| **RTC** | Rail Traffic Controller |
| **RTRA** | Office of Rail Transportation |
| **RVO** | Rail Vehicle Operator |
| **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 Friday, November 1, 2024, at 18:08 hours, the Radio Ops 1 Rail Traffic Controller (RTC) made an announcement to all Red Line Rail Vehicle Operators (RVO) that they would not service, and should bypass Bethesda Station due to a power outage. Train ID 138 (L6133/32x6000/01x6035/34x6017/16T), an eight-car consist, was the first train on track 2 that would bypass Bethesda Station. The Radio RTC instructed Train ID 138 to bypass Bethesda Station, but if there were customers on the platform, key them aboard. Train ID 138 entered Bethesda Station, and there was a small group of customers on the platform.

The RVO of Train ID 138 stopped the train near the customers which was 331 feet short of the 8-car marker. The closed-circuit television (CCTV) revealed that the RVO stopped short of the 8-car marker, exited the operator's cab without keying down the train, manually opened the door on the lead car, and returned to the operator's cab. As the RVO was about to close the doors, a Rail Supervisor keyed off the train through a separate door, stepped off the train, and allowed customers to exit the train. The RVO returned to the operator's cab, looked out of the cab window, observed the Rail Supervisor, and then opened the train doors, causing the doors to open outside of the platform limits. The Rail Supervisor conducted a ground walkaround.

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 Rail Vehicle Operator from duty for post-incident testing.

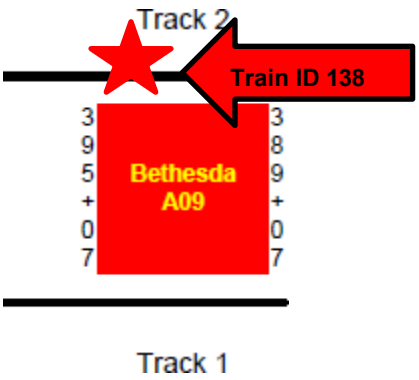
In accordance with the Office of the Chief Mechanical Officer (CMOR) Incident Investigation Team (IIT) Operations Administrative Policy (OAP) 102.06, the Metro Integrated Command and Communications Center (MICC) promptly initiated the removal of Train ID 138 from revenue service for post-incident investigative measures. This action adhered to the Rail Vehicle Event Investigation Policy, ensuring a comprehensive examination of the incident.

The probable cause for the Improper Door Operation event at Bethesda Station on November 1, 2024, was that the RVO failed to follow the established procedure for door operations. The train was not stopped at the 8-car marker before a door operation occurred. A contributing factor was the RVO became distracted and a lack of communication on behalf of the Rail Supervisor when they exited the train from an alternate door.

## Incident Site

Bethesda is an indoor station with a center platform. There are direct fixation tracks at this station and there is no interlocking.

## 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 two (2) individuals 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:
  - Rail Vehicle Operator
  - 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 – 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)
  - RVO 30-Day Work History
  - RVO Certifications
  - RVO Written Statement
  - Elevator and Escalator Outage Matrix

- 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)
- Service Performance On-Time System (SPOTS) Report

**Investigation**

On Friday, November 1, 2024, at 17:41 hours, the Station Manager (SM) at Bethesda Station contacted the Elevator and Escalator (ELES) desk to report that all of the street escalators were inoperable. The SM advised that a power surge may have caused the outage. At 17:58 hours, a Metro Integrated Command and Communications Center (MICC) Assistant Operations Manager (AOM) contacted the Button Rail Traffic Controller (RTC) to have a Rail Supervisor dispatched to Bethesda Station.

At 17:57 hours, Communications 1 contacted the SIO and informed them of the escalator outage and that they had a guidance matrix for deep stations with elevator or escalator outages but wanted to know if the Assistant Chief Safety Officer (ACSO) provided any other guidance. The SIO contacted the ACSO to inform them of the situation at Bethesda Station and that Communications 1 inquired if they had any guidance. The ACSO advised that if all the escalators were inoperable, bypass the station, then advised that the policy should be followed. The SOP that was used to make determinations on bypassing or closing the station was not finalized at the time of this event. The SIO called the MICC AOM and advised that the ACSO said to bypass the station.

At 18:08 hours, the Radio RTC made an announcement to all Red Line RVOs that they would not service, and to bypass Bethesda Station due to a power outage. Train ID 138, a Red line, eight car consist was the first train on track 2 that would bypass Bethesda Station. The Radio RTC instructed Train ID 138 to bypass Bethesda Station, but if there were any customers on the platform, key them aboard. As Train ID 138 entered Bethesda Station, and there was a small group of customers on the platform.

The RVO of Train ID 138 stopped the train short of the 8-car marker, but near the customers on the platform. CCTV revealed that the RVO stopped short of the 8-car marker, exited the operator's cab without keying down the train, manually opened the door on the lead car, and returned to the operator's cab. As the RVO was about to close the doors, a Rail Supervisor stepped off the train and appeared to be letting customers off. This undiscussed action caused the RVO to reopen the doors leading to the cars off the platform opening. The Rail Supervisor contacted the Button RTC and advised them of what happened. The Rail Supervisor requested foul time to conduct a ground walkaround.

After the ground walkaround was completed, the Rail Supervisor was instructed to make announcements to the customers, offload the train, and take over operations. The escalators still had not been restored when the train was offloaded. The Radio RTC instructed the Rail Supervisors to reboard the customers, continue to Medical Center Station, and offload the customers there.

At 18:36 hours, the Radio RTC made a blanket announcement to Red Line RVOs to service Bethesda Station. The SIO contacted the MICC OM to inquire who made the decision to re-open the Bethesda station. MICC OM asked if they were in the Teams chat because that is where the decision was made. The SVP of the MICC and the Senior Director of ELES agreed to re-open the station. The escalators still had not been restored to full service.

**Chronological Event Timeline**

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

| Time | Description |
|---|---|
| 17:41:03 hours | Bethesda Station Manager: Contacted the ELES desk to report that all of the street escalators were out. [Phone] |
| 17:46:00 hours | ELES Desk: Provided the Station Manager with the work order numbers for the escalators. [Phone] |
| 17:51:53 hours | Bethesda Station Manager: Contacted the MOC desk to report the escalator outage. [Phone] |
| 17:51:58 hours | Communications Agent: Contacted ELES to report the escalator outage at Bethesda Station. [Phone] |
| 17:57:49 hours | Communications 1: Contacted the SIO to inform them that all the escalators were out at Bethesda, informed them of a matrix guide they had for escalator outages but inquired if the Assistant Chief Safety Officer provided any guidance other than that.<br>SIO: Informed Communications 1 they were unsure, but they would contact the Assistant Chief Safety Officer. [Phone] |
| 17:58:03 hours | MICC AOM: Instructed the Button RTC to dispatch a Rail Supervisor to Bethesda Station. [Phone] |
| 17:58:57 hours | MOC Desk: Contacted ELES to inform them that the Bethesda Station Manager contacted them to report all their escalators were out. [Phone] |
| 18:01:44 hours | SIO: Contacted the Assistant Chief Safety Officer about the escalator outage at Bethesda Station and that the MICC asked if the Assistant Chief Safety Officer had any guidance.<br>Assistant Chief Safety Officer: Inquired if there were any policies on escalator outages and asked for the ETA for personnel to Bethesda Station. Advised if all the escalators were out, they should probably bypass the station. [Phone] |
| 18:03:19 hours | ELES Desk: Provided the Bethesda Station Manager with the work order for the power surge that caused the escalator outage. [Phone] |
| 18:05:12 hours | SIO: Contacted the MICC OM to inquire about ELES's ETA to Bethesda and informed them that the Assistant Chief Safety Officer said bypass the station if there were no operational escalators. [Phone] |
| 18:08:01 hours | ELES Desk: Informed the Button RTC that the ETA for an ELES Technician was 45 minutes. [Phone] |
| 18:08:07 hours | Radio RTC: Made a blanket announcement instructing to Ops. 1 RVOs to not service Bethesda Station. [Radio] |
| 18:08:28 hours | MICC OM: Informed the Button RTC to bypass Bethesda Station and have the first train key on any customers from the platform. [Phone] |
| 18:08:49 hours | SIO: Contacted the SDOC to update them on the Bethesda escalator outage and the overspeed alarm they had received. [Phone] |
| 18:09:07 hours | Communications Agent: Informed the ELES desk that Bethesda Station was being bypassed. [Phone] |
| 18:09:36 hours | Radio RTC: Informed Train ID 138 they would be bypassing Bethesda Station but if there were any customers on the platform then key them on.<br>Train ID 138: Gave a repeat back of the transmission. [Radio] |

| Time | Description |
|---|---|
| 18:10:42 hours | SIO: Provided the Assistant Chief Officer with an update and the station was being bypassed.<br>Assistant Chief Safety Officer: Advised the SIO to get with Rail Transportation and the MICC on the procedures because that is what we should follow. [Phone] |
| 18:16:07 hours | Rail Supervisor: Contacted the Button RTC to advise them of the improper door operation and requested permission to conduct a ground walkaround.<br>Button RTC: Instructed the Rail Supervisor to go over the air with their request. [Phone] |
| 18:17:51hours | Rail Supervisor: Contacted the Radio RTC to request foul time to enter the roadway to conduct a ground walkaround.<br>Radio RTC: Granted the foul time. [Radio] |
| 18:20:01 hours | MICC OM: Contacted the SIO to inform them of the improper door operation at Bethesda Station, track 2. [Phone] |
| 18:21:12 hours | Rail Supervisor: Informed the Radio RTC that they were relinquishing their foul time and headed to the lead car to take over operations.<br>Radio RTC: Acknowledged radio transmission and provided relinquish time. [Ops. 1] |
| 18:22:00 hours | Radio RTC: Instructed the Rail Supervisor to offload Train ID 138 and advise the customers to stand on track 1.<br>Rail Supervisor: Acknowledged. [Ops. 1] |
| 18:22:08 hours | SIO: Contacted the SDOC to inform them about the improper door operation at Bethesda Station. [Phone] |
| 18:24:08 hours | SIO: Asked the MICC OM if they were letting people off at Bethesda Station because the train just offloaded.<br>MICC OM: Advised they were single tracking but would go check with the RTC. [Phone] |
| 18:24:55 hours | Radio RTC: Instructed the Rail Supervisor to reboard the customers on Train ID 138 and take over train operations.<br>Rail Supervisor: Gave a repeat back. |
| 18:29:53 hours | OM: Contacted the SIO to inform them why the train had been offloaded and what the plan was. [Phone] |
| 18:31:37 hours | Rail Supervisor: Informed the Radio RTC that the train was clear of customers.<br>Radio RTC: Instructed the Rail Supervisor to change their ID and continue on. [Radio] |
| 18:34:34 hours | Radio RTC: Made a blanket announcement to all Ops. 1 RVOs to not service and bypass Bethesda Station due to a power outage. [Radio] |
| 18:36:47 hours | Radio RTC: Made a blanket announcement to all Ops. 1 RVOs to service Bethesda Station. [Radio] |
| 18:37:11 hours | SIO: Contacted the OM to inquire about Bethesda reopening.<br>OM: Informed them per Metro 1 they were reopening the station. Asked if they were monitoring the Teams chat. [Phone] |
| 18:39:12 hours | SIO: Contacted the Assistant Chief Safety Officer to inform them that the SVP of the MICC and Senior Director of ELES decided to reopen the station and there is no way to get the people out.<br>Assistant Chief Safety Officer: Responded we need to follow the procedure. [Phone] |

| Time | Description |
|---|---|
| 18:39:49 hours | SVP of MICC: Contacted Metro 1 to inquire if Bethesda was back open. Metro 1: Advised Bethesda Station was back open. [Phone] |
| 18:57:20 hours | SIO: Provided the SDOC with an update with the Bethesda incident and an overspeed alarm. [Phone] |

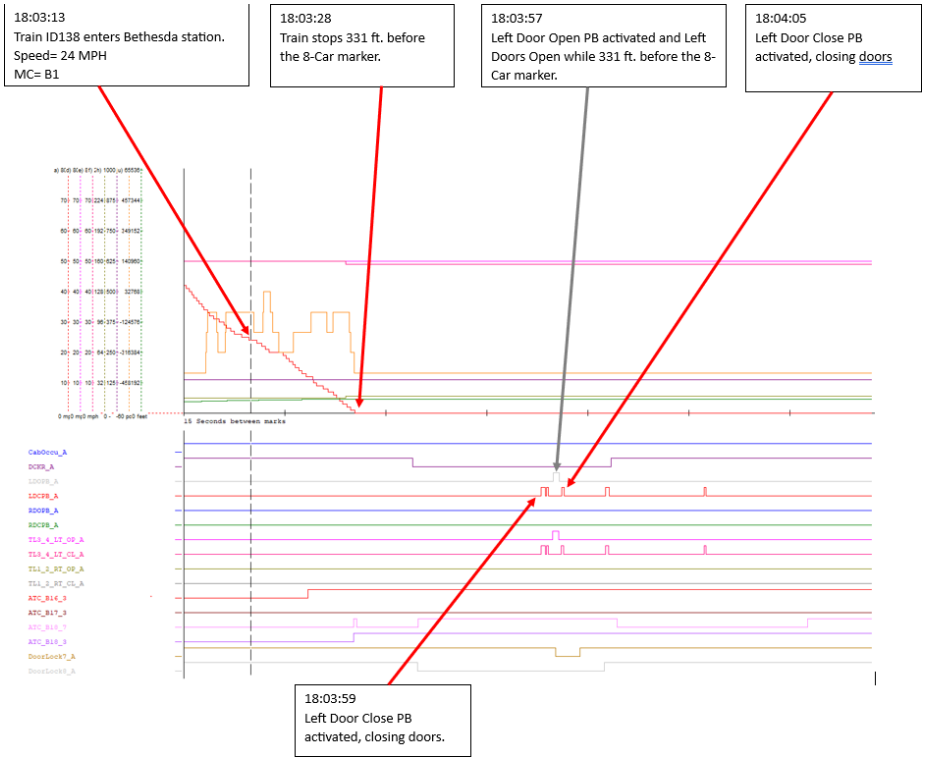
*Note: Times above may vary from other systems' timelines based on clock settings.*

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

Train ID #138 entered into Bethesda Station, Track #2 at a speed of 24 MPH. The master controller was cycled thru several brake modes and coast bringing the train to a stop 331 ft. before the 8-Car Marker. The Door #8 Crew switch was activated, opening door #8. The Left Door Close pushbutton was activated, then the Left Door **OPEN** pushbutton was activated immediately after, opening Left side doors while 331 ft. of the train was off the platform. The Left Door Close pushbutton was activated, closing Left side doors immediately. After left doors were closed, the DCKR signal goes HIGH, indicating all doors were fully closed and locked. Door #8 was opened and closed by the crew switch. Six minutes later, Door #8 was opened and closed again via crew switch. The master controller was placed in the P2 Power position and the train began to move towards the 8-car marker. The train came to a complete stop 4 ft. before the 8-car marker and the Left Door open pushbutton was activated, opening left doors on the platform at Bethesda.

Based on VMS data, there was no fault with the train that contributed to the cause of this incident. The train performed as commanded.

| Time | Description of Events |
|---|---|
| 18:03:13 hours | Train ID138 entered in Bethesda Station at a speed of 24 MPH, with the Master Controller in the B1 Braking position |
| 18:03:13 - 18:03:28 hours | Master Controller cycled thru various Braking positions and coast, reducing speed. |
| 18:03:27 hours | Master Controller moved to the B3 Braking position, Train speed was 2 MPH, 269 ft. onto the station platform. |
| 18:03:28 hours | Train comes to a complete stop 331 ft. before the 8-Car marker and Master Controller was placed in B5 Braking position. |
| 18:03:37 hours | Door #8 on Car 6016 Opened via Crew Switch |
| 18:03:56 hours | Left Door Close pushbutton was activated again, Left Door Close Trainline went HIGH. |
| 18:03:57 hours | The Left Door **Open** Pushbutton was activated. Left door **Open** trainline went HIGH, Opening Left side Doors 331 ft. before the 8-Car marker. |
| 18:03:59 hours | Left Door Close pushbutton was activated, Left Door Close Trainline went HIGH and left doors closed. |
| 18:04:05 hours | Left Door Close pushbutton was activated again, Left Door Close Trainline went HIGH. |
| 18:04:06 hours | DCKR went HIGH, indicating All Doors Closed and locked. |
| 18:04:20 hours | Left Door Close pushbutton was activated again, Left Door Close Trainline went HIGH, resulting in no action due to the doors already being closed. |
| 18:06:52 hours | Door #8 Open and Closed by Crew Switch |
| 18:12:54 hours | Door #8 Open and Closed by Crew Switch again |
| 18:14:00 hours | Master Controller placed in a P2 Power position and the train beings to move towards the 8-Car marker. |
| 18:14:42 hours | Train comes to a complete stop 4 ft. before the 8-Car marker and Master Controller was placed in B5 Braking position. |
| 18:14:49 hours | Left Door Open pushbutton activated and Left Doors Open on the platform side. |




## Interview Findings and Written Statements

*As part of the investigation launched into the event, SAFE interviewed two 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.*

- The RVO has been certified for a year and a half as a RVO.
- The RVO did not experience any mechanical issues with the train.
- The RVO never had to key customers on the train during revenue service.
- The RVO mentioned there is no procedure to follow when keying customers on the train.
- The RVO knew a Rail Supervisor was on their train.
- When the RVO left the operator's cab to manually open the door for the customers, they did not key down the train.
- As they were closing the doors, they noticed the Rail Supervisor and quickly reopened the doors thinking they may have been stuck.
- The RVO did not know the Rail Supervisor would be letting customers off the train.
- The RVO was trying to hurry and get out of the situation.
- The RVO wished the Radio RTC would have let them bypass the station and continue on to Medical Center Station.

**Weather**

On November 1, 2024, at the time of the incident, NOAA recorded the temperature as 72°F, with clear skies, winds 7.4 mph, and 37% humidity. Bethesda is an indoor station. Weather was not a contributing factor in this incident (Weather source: NOAA) – Location: Bethesda, MD.

**Related Rules and Procedures**

Bethesda Station (Per escalator matrix)

- In the event of failure to maintain at least one up-running escalator in this bank of three, the station shall be closed until up running service is restored.
- If a station is bypassed a bus shuttle shall be established, ELES notified immediately.

**Human Factors**

Fatigue

*Signs and Symptoms of Fatigue*

We evaluated conditions at the time of the incident to distinguish whether evidence of fatigue was present. No video of the involved person was available to ascertain whether evidence of fatigue was present. The RVO reported feeling moderately alert at the time of the incident. The RVO 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 RVO reported keeping a regular sleep schedule in the days leading up to the incident. The RVO worked day and night shifts in the days leading up to the incident. The employee was awake for nine hours at the time of the incident The RVO reported nine hours of sleep in the 24 hours preceding the incident. The off-duty period was 15 hours which provides an opportunity for 7-9 hours of sleep. This was a comparable amount of sleep as the RVO's usual workday sleep durations. The RVO reported no issues with sleep.

Post-Incident Toxicology Testing

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

**Findings**

- There was a power surge at Bethesda Station which caused the street escalators to go out.
- Bethesda Station was closed and bypassed due to the escalator outage.
- Communications 1 had the escalator outage matrix but contacted the SIO to inquire if the ASCO had different guidance.
- SIO contacted the ACSO to seek guidance and was told to bypass the station but follow the established policy if there is one.
- The Radio RTC advised all Red Line RVOs to bypass Bethesda Station.

- Train ID 138 was the first train to bypass Bethesda Station, track 2.
- Train ID 138 was instructed to not service Bethesda Station but if there were customers on the platform then key them on.
- This was the RVO's first time keying customers on during revenue service.
- Train ID 138 stopped 331 feet short of the 8-car marker.
- The RVO manually opened the door on the lead car.
- The RVO did not key down the train before leaving the operator's cab.
- A Rail Supervisor started keying customers off the train without communicating that with the Radio RTC or RVO.
- Bethesda Station was opened prior to the escalator being fully restored.

## Immediate Mitigation to Prevent Recurrence

- In adherence to Standard Operating Procedure 102-1, which outlines the protocol for Removing an Employee from Service for involvement in an operational safety event, the Rail Supervisor on scene relieved the RVO from duty for post-incident testing.

- In accordance with the Office of the Chief Mechanical Officer CMOR-IIT Operations Administrative Policy 102.06, the Rail Operations Control Center (ROCC) promptly removed Train ID 138 from revenue service for post-incident investigative measures. This action adhered to the Rail Vehicle Event Investigation Policy, ensuring a comprehensive incident examination.

## Probable Cause Statement

The probable cause for the Improper Door Operation event at Bethesda Station on November 1, 2024, was that the RVO failed to follow the established procedure for door operations. The train was not stopped at the 8-car marker before a door operation occurred. A contributing factor was the RVO became distracted and a lack of communication on behalf of the Rail Supervisor when they exited the train from an alternate door.

## Recommended Corrective Actions

| Corrective Action Code | Description | Responsible Party | Estimated Completion Date |
|---|---|---|---|
| 121126_SAFECAPS_RTRA_001 | The RVO completed refresher training with an emphasis on platform servicing procedures during an emergency. | RTRA SRC | Completed |
| 121126_SAFECAPS_ELES_001 | ELES finalized the SOP regarding when a station should be bypassed, closed, or reopened due to escalator or elevator issues. | ELES SRC | Completed |

## Appendices

### Appendix A – Interview Summary

*The below narrative summarizes 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.*

The RVO is a WMATA employee with six years of service including a year and a half as a certified RVO. The RVO previously worked as a Bus Operator. The RVO is RWP Level 2 certified and must recertify in April 2025. The RVO was last certified as an RVO in May 2024. The RVO reported feeling moderately alert right before the incident. The RVO mentioned they did not experience any fatigue like symptoms. The RVO said they have not had any issues with their sleep recently.

The RVO has been operating on the red line for about the last six months. The RVO was operating their normal run assignment on the day of the incident. The RVO was returning from their lunch break when the incident happened. At the start of their shift, they had a personal call that caused them to be bothered throughout the day. The RVO remembered picking up a Rail Supervisor a few stops prior to Bethesda Station.

The RVO mentioned their first instructions were to bypass Bethesda Station. They said they were good with that because all they had to do was make announcements and proceed to the next station. The RVO said the Radio RTC then instructed them to key people on the train but did not service it. That is when the RVO started to get in their head about what they were about to do. The RVO was not sure if they should go to the 8-car marker or stop close to where the customers were, so they decided to stop close to the customers. They stopped, keyed the door opened for the customers and returned to the operator's cab. Customers were using the intercom to figure out what was going on and this added pressure to them. The RVO saw the Rail Supervisor pop out as they were closing the doors, so they immediately reopened the doors. This led to the doors opening outside of the platform limits. The Rail Supervisor never communicated their intentions at Bethesda Station.

## Appendix B – Work Order

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

Page 1 of 1
MXAZP

Work Order #: 19042811
Type: EM

*19042811*

Status: CLOSE
11/05/2024 21:14

**Work Description:** POWER SURGE
**Job Plan Description:**

**Work Information**

| | | | | | |
|---|---|---|---|---|---|
| **Asset:** | 872037 A09, ELES, BETHESDA, ELE/ESC EQUIPMENT | **Owning Office:** | ELES | **Parent:** | |
| **Asset Tag:** | ELESA09 | **Maintenance Office:** | ELES-STA-Y3R3 | **Create Date:** | 11/01/2024 18:00 |
| **Asset S/N:** | ELESA09 | **Labor Group:** | | **Actual Start:** | 11/01/2024 17:00 |
| **Location:** | 1304 A09, BETHESDA, STATION | **Crew:** | | **Actual Comp:** | 11/01/2024 17:48 |
| **Work Location:** | | **Lead:** | | **Item:** | |
| **Failure Class:** | ELES1003 ELES, STATION CODES | **GL Account:** | WMATA-02-31820-50499160-042-**********-*****-OPR** | | |
| **Problem Code:** | 0130 STATION/FACILITY POWER OUTAGE, PARTIAL (ELES EQUIPMENT) | **Supervisor:** | | **Target Start:** | 11/01/2024 18:02 |
| **Requested By:** | SM | **Requestor Phone:** | [redacted] | **Target Comp:** | 11/03/2024 18:00 |
| | | | | **Scheduled Start:** | |
| **Create-Mileage:** | 0.0 | **Complete-Mileage:** | 0.0 | | |

**Task IDs**

| Task ID | |
|---|---|
| 10 | PER SUPERVISOR [redacted] ALL UNITS RTS. |

**Component:** **Work Accomp:** COMPLETED - WORK OR TASK **Reason:** INCIDENT//ACCIDENT **Status:** CLOSE **Position:** **Warranty?:** N

**Actual Labor**

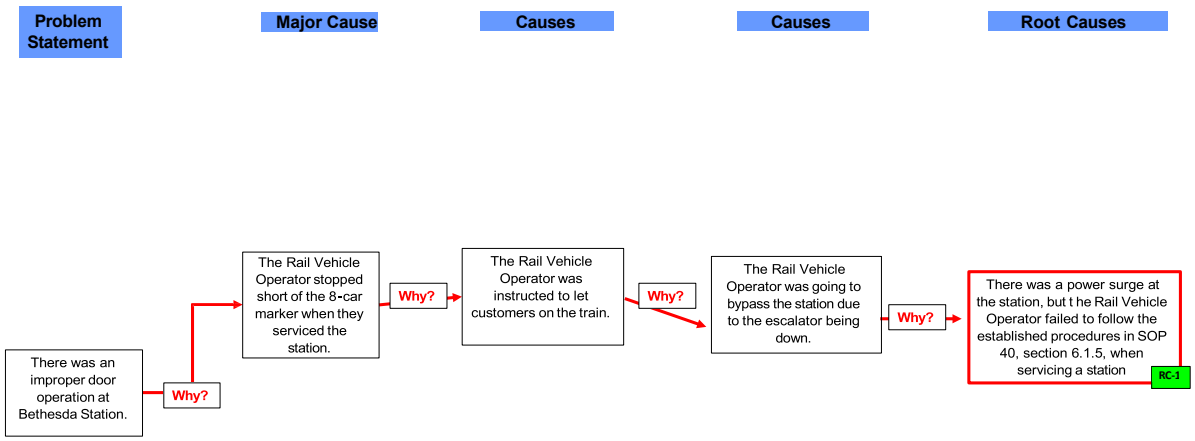
| Task ID | Labor | Start Date | End Date | Start Time | End Time | Approved? | Regular Hours | Premium Hours | Line Cost |
|---|---|---|---|---|---|---|---|---|---|
| 10 | [redacted] | 11/01/2024 | 11/01/2024 | 17:30 | 17:48 | Y | 00:18 | 00:00 | $17.31 |
| | | | | | | Total Actual Hour/Labor: | 00:18 | 00:00 | $17.31 |

**Failure Reporting**

| Cause | Remedy | Supervisor | Remark Date |
|---|---|---|---|

Remarks:

## Appendix C – Why Tree




## Root Cause Analysis

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

**FINAL REPORT OF INVESTIGATION A&I E24991**

| | |
|---|---|
| **Date of Event:** | December 13, 2024 |
| **Type of Event:** | O-15 (a) – Improper Door Operation |
| **Incident Time:** | 20:16 Hours |
| **Location:** | Rockville Station, track 1 |
| **Time and How received by Safety:** | 20:18 Hours – Safety Information Official (SIO) |
| **Washington Metrorail Safety Commission (WMSC) Notification Time:** | 21:00 Hours |
| **Responding Safety Officers:** | None |
| **Rail Vehicle:** | Train ID 123 (L7738-39x7099-98x7226-27x7069-68T) |
| **Injuries:** | None |
| **Damage:** | None |
| **Emergency Responders:** | None |
| **Safety Management System Incidents/Accidents (SMS I/A) Incident Number:** | 20241213#122142MX |

**Rockville Station – Improper Door Operation**

**December 13, 2024**

## Table of Contents

## Abbreviations and Acronyms

| | |
|---|---|
| **ADO** | Automatic Door Open |
| **AIMS** | Advanced Information Management System |
| **ARS** | Audio Recording System |
| **CCTV** | Closed-Circuit Television |
| **CMOR** | Office of the Chief Mechanical Officer |
| **ER** | Event Recording |
| **IIT** | Incident Investigation Team |
| **MICC** | Metro Integrated Command and Communications Center |
| **MOR** | Metrorail Operating Rulebook |
| **NOAA** | National Oceanic and Atmospheric Administration |
| **NVR** | Network Video Recorder |
| **OAP** | Operations Administrative Policy |
| **OM** | Operations Manager |
| **RVO** | Rail Vehicle Operator |
| **RWP** | Roadway Worker Protection |
| **SUDS** | Safety Universal Data System |
| **TCD** | Train Control Display |
| **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 Friday, December 13, 2024, an eight-car 7000 series Train ID 123 operated by a Glenmont Division Rail Vehicle Operator (RVO) manually opened the train doors on the off-platform side, following the Automation Door Open (ADO) operation on the platform side.

The train came to rest at 8-car marker at Rockville Station, with all the doors automatically opening on the platform side, except for railcar 7098, whose doors did not to open. The RVO then depressed the door open button on the off-platform side. They then closed the doors on the off-platform side and notified the Metro Integrated Command and Communication (MICC) Center. The train was offloaded at Rockville Station.

In adherence to Standard Operating Procedure (SOP) 102-01-02, which outlines the protocol for Removing an Employee from Service for involvement in an operational safety event, the Radio Rail Traffic Controller (RTC) dispatched a Rail Supervisor to relieve the RVO from duty for post-incident testing.

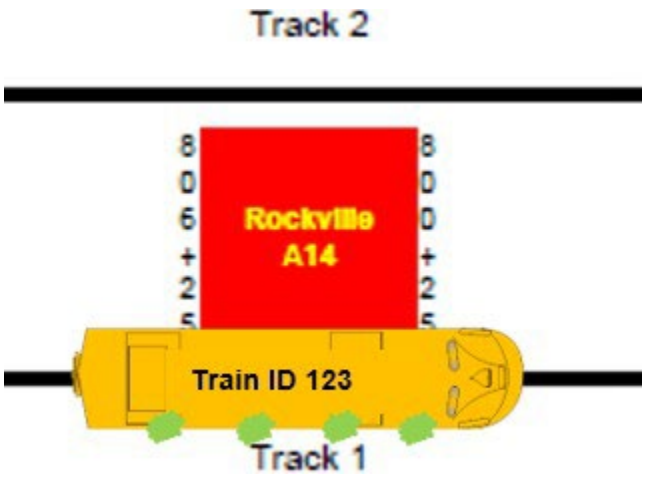
In adherence to the Office of the Chief Mechanical Officer (CMOR) Incident Investigation Team (IIT) Operation Administrative Policy (OAP) 102.06, the MICC took Train ID 123 out of revenue service for post-incident investigation. This action followed the Rail Vehicle Event Investigation Policy, ensuring a thorough examination of the incident.

The probable cause of the improper door operation event on December 13, 2024, was the RVO's failure of situational awareness. Specifically, the RVO observed that not all of the train doors in the consist opened automatically on the platform side and inadvertently manually opened the doors on the off-platform side.

## Incident Site

Rockville Station, track 1. This is an aboveground center platform station.

## 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 – Safety 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). Safety interviewed the following individuals:
    - Rail Vehicle Operator

- Informal Interviews – Collected through conversations with individuals during the investigation to provide background and supporting information. Written statements were reviewed by 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:
    - Training Records
    - Certifications

- 30-Day work history review
- Metrorail Operating Rulebook (MOR)
- National Oceanic and Atmospheric Administration (NOAA)
- Metro Integrated Command and Communications (MICC) Incident Report

- System Data Recording Review – Collection of information contained in Metro Data Recording Systems. This data includes:
  - Audio Recording System (ARS) playback (Radio – OPS 1 and phone)
  - The Office of Chief Mechanical Officer Incident Investigation Team (IIT) Event Recording (ER) and Network Video Recorder (NVR).
  - Closed-Circuit Television (CCTV)

## Investigation

On Friday, December 13, 2024, at 20:15 hours, Closed Circuit Television (CCTV) footage revealed that Train ID 123 was properly berthed at the 8-car marker at Rockville Station and operating in Auto Door Operation (ADO) mode. All train doors opened on the platform side except those on railcar 7098, which remained closed. Railcar 7098 was observed to be dark, as it had been previously isolated.

*Figure 1 - (Yellow Arrows) depict the closed train doors on (isolated) railcar 7098.*

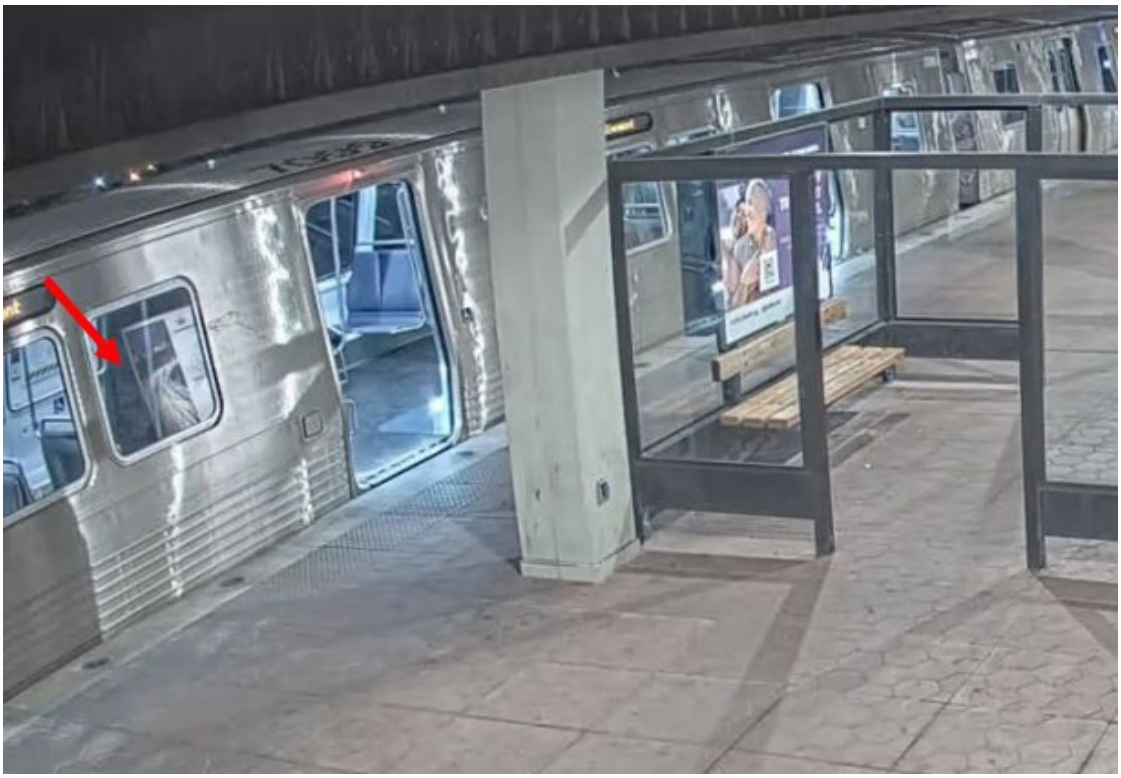


*Figure 2 - (Red Arrow) depicts the doors open on the off-platform through the window of railcar 7099.*

At 20:16 hours, the Audio Recording System (ARS) revealed that the RVO reported that they manually opened the train doors on the non-platform side. The RVO was instructed to offload the train and complete a ground walkaround.

*Figure 3 (Yellow Circle) depicts the RVO depressing the door open button on the off-platform side of the train.*

At 20:23, the RVO reported that the train was clear of customers. Radio RTC #2 granted Foul Time (FT). At 20:27, the RVO confirmed they completed their ground walkaround, and no customers exited the train onto the roadway.

According to the MICC incident report, at 20:35 hours, Train ID 123 began to non-revenue towards Glenmont Station. The Train ID was re-blocked to Train ID 723. A Rail Operations Supervisor took over operations of Train ID 723 at Medical Center Station, track 1.

During a formal interview, the RVO revealed that upon picking up the train at Shady Grove platform, they observed that one railcar was isolated and made note of it. Upon arrival at Rockville Station, the train was properly berthed, and the doors opened automatically on the platform side. The RVO reported that an alarm appeared on the Train Control Display (TCD), which confused them. In response, they inadvertently depressed the door open button on the non-platform side of the train.

They stated they were unaware that an isolated car could trigger an alarm following a door operation. Upon realizing that the isolated car had caused the alarm and the non-platform side doors had opened, the RVO closed the non-platform side doors and notified the MICC.

**Chronological Event Timeline**

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

| Time | Description |
|---|---|
| 20:15:12 hours | Train ID 123 comes to a complete stop at Rockville Station, 8-car marker. [CMOR IIT Report] |
| 20:15:17 hours | The Left-side doors open automatically. [CMOR IIT Report] |
| 20:15:35 hours | The Right Door Open pushbutton was depressed, and the Right Door Open trainlines energized, opening the right-side doors on the non-platform side. [CMOR IIT Report] |
| 20:15:48 hours | The Right Door Close pushbutton was depressed, and the Right Door Close trainlines energized, closing the right-side doors. [CMOR IIT Report] |
| 20:16:27 hours | Train ID 123: Reported that they opened the train doors on the non-platform side.<br>Radio RTC #1: Instructed the RVO to offload the train and complete a ground walkaround. [Radio, Ops1] |
| 20:18:39 hours | The Left Door Close pushbutton was activated, and the Left Door Close trainlines energized, closing the left side doors. All doors are closed, and the locked signal goes high, indicating all doors are fully closed and locked. [CMOR IIT Report] |
| 20:18:45 hours | OM: Notified the SIO of the Improper Door Operation Event. [Phone] |
| 20:23:42 hours | Train ID 123: Advised they were clear of customers.<br>Radio RTC #1: Acknowledged. [Radio, Ops1] |
| 20:24:21 hours | Radio RTC #2: Granted the RVO foul time to conduct a ground walkaround & requested confirmation of manual door operation.<br>Train ID 123: Acknowledged the foul time and updated that they opened the doors manually on the non-platform side. [Radio, Ops1] |
| 20:27:51 hours | Train ID 123: Advised the RTC that they completed their ground walkaround. [Radio, Ops1] |

| Time | Description |
|---|---|
| 20:30:46 hours | Train ID 123: The RVO reported that they were back onboard the train and relinquished foul time. [Radio, Ops1] |
| 20:35 hours | Train ID 123 and began moving towards Glenmont Station. [MICC Incident Report] |

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

**Advanced Information Management System (AIMS)**

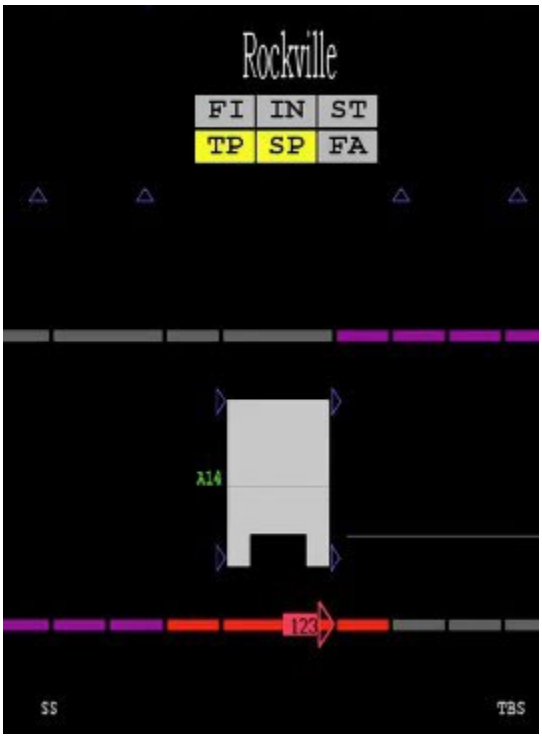



*Figure 4 - AIMS depict Train ID 123 doors opened at Rockville Station 20:16 hours.*

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

*Adopted from Office of Chief Mechanical Officer IIT report with minor formatting and grammatical edits:*

The Office of the Chief Mechanical Officer (CMOR), Incident Investigation Team (IIT) completed an analysis of data from Train ID 123 (L7738-39x7099-98x7226-27x7069-68T) that was reported for an improper door operation at Rockville Station.

Based on Event Recording (ER) and Network Video Recorder (NVR), Train ID 123 entered Rockville Station Track #1 and stopped at the 8th car marker. The train berthed pushbutton was activated 2 feet before coming to a complete stop. Once the train stopped, left-side doors opened automatically on the platform side, and the right-side door open pushbutton was activated, opening doors manually on the opposite side of the platform; right-side doors remained open for about 13 seconds. The right-side door close pushbutton was activated, and doors closed, then the left-side pushbutton was activated, closing the left-side doors after about 2:02 minutes.

The " All doors closed and locked" signal goes High, indicating that all doors are closed and locked. Soon after, the train keyed down.

Based on train data, the door opened on the opposite side of the platform as a result of being commanded manually. There was no fault observed with the pushbuttons, The door pushbuttons were exercised multiple times with no indication of sticking or binding.

## Timeline Of Events:

| Time | Description of Events |
|---|---|
| 20:14:42.5 | Train ID 123 entered Rockville Station, track #1, at a speed of 26.6 MPH, with the master Controller in the B1-B3 Braking position. |
| 20:15:10.9 | The train-berthed pushbutton is activated, and the train-berthed signal goes high. |
| 20:15:12.0 | The train came to a complete stop at the 8-car marker. |
| 20:15:16.9 | ATP Door Open Command left-side signal goes high. |
| 20:15:17.2 | Left-side doors opened Automatically. |
| 20:15:35.1 | The Right Door Open pushbutton was depressed, and the Right Door Open train lines energized, opening the right-side doors opposite the platform side. |
| 20:15:48.9 | The Right Door Close pushbutton was depressed, and the Right Door Close train lines energized, closing the right-side, Doors. |
| 20:18:39.2 | The Left Door Close Pushbutton was activated, and the Left Door Close Trainlines energized, closing the Left side doors. |
| 20:18:39.2 | All doors are closed, and the locked signal goes High, indicating All Doors are fully closed and Locked. |
| 20:19:08.2 | Train keyed down on car 7738. |
| 20:34:26.1 | Train keyed up on car 7738. |
| 20:34:41.2 | The Master Controller was placed in a P5 Power position, and the train began to move toward Twinbrook Station. |

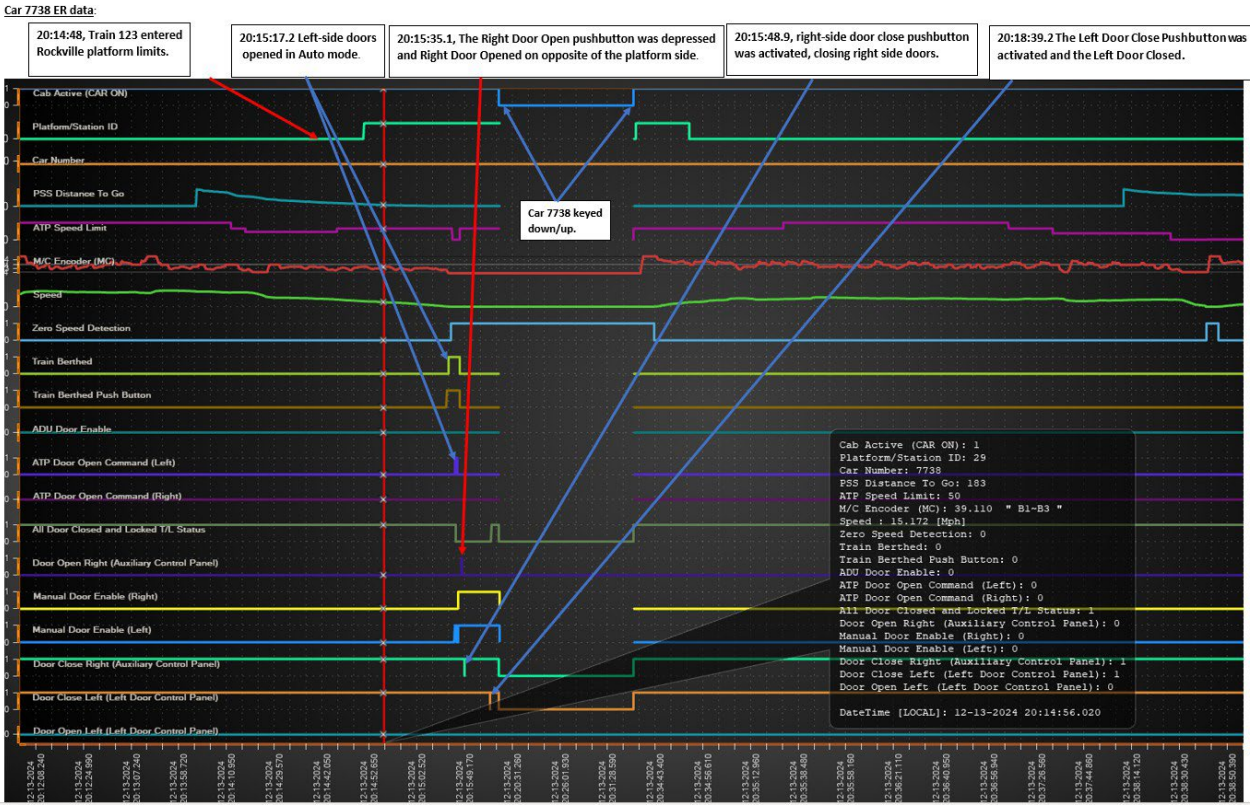



*Figure 5 - Event Recorded Data from railcar 7738.*

## Interview Findings and Written Statements

*As part of the investigation launched into the event, Safety 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.*

RVO

- The RVO stated that a car in the consist was isolated when they picked up the train at the Shady Grove platform.
- The RVO stated they mistakenly manually opened the doors on the non-platform side in an attempt to open all the train doors on the platform side after noticing that all the doors failed to open.
- The RVO stated they were unaware that an isolated car would activate an alarm following a door operation.
- The RVO stated that they were trained on the “point and call” method.

## Weather

On December 13 2024, at the time of the incident, NOAA recorded the temperature as 36°F, with mostly cloudy skies, winds of 7 mph, and 46% humidity. The weather was not a contributing factor in this incident (Weather source: NOAA) – Location: Rockville, MD.)

**Related Rules and Procedures**

Metrorail Operating Rulebook (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.

8.18.2 In revenue service, Rail Vehicle Operators shall not manually operate any OPEN DOORS control except the crew door key switch while any side doors of the train are outside the limits of a station platform, except when directed by the Rail Traffic Controller.

8.18.3 In revenue service, when the train is otherwise within the limits of a station platform, Rail Vehicle Operators shall not manually operate the OPEN DOORS control on the side of the train opposite the platform.

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.

**Human Factors**

Fatigue

*Signs and Symptoms of Fatigue*

RVO

A Safety Investigator evaluated signs and symptoms of fatigue that may have been present at the time of the incident. No signs or symptoms of fatigue were detected from the available data. Video of the incident was reviewed for signs of the RVO's fatigue. No signs or symptoms of fatigue were evident from the video. 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.

*Fatigue Risk*

RVO

A Safety Investigator 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 employee reported keeping a regular sleep schedule in the days leading up to the incident. The employee worked the evening shift in the days leading up to the incident. The employee was awake for eleven hours and twenty-six minutes at the time of the incident. The employee reported seven hours and thirty minutes of sleep in the 24 hours preceding the incident. This was a comparable amount to the employee's usual workday sleep durations. The off-duty period was fifteen hours and thirty-one minutes, which provided an opportunity for 7-9 hours of sleep. The employee reported no issues with sleep.

Post-Incident Toxicology Testing

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

## Findings

- Train ID 123 doors were in auto/manual and opened as designed.
- Railcar 7098 was isolated prior to the RVO picking up the train.
- The RVO manually activated the door open button on the non-platform side.

## Training History

RVO

- Roadway Worker Protection (RWP) - October 31, 2023
- Return to Auto Door Operations - May 21, 2023
- Point and Call – June 13, 2024

## Immediate Mitigation to Prevent Recurrence

- The RVO was removed from service for post-incident testing.
- A ground walkaround inspection was conducted.
- The consist was removed from revenue service for investigation.

## Probable Cause Statement

The probable cause of the Improper Door Operation event on December 13, 2024, was the RVO's failure of situational awareness. Specifically, the RVO observed that the train doors did not open and inadvertently manually opened the doors on the non-platform side.

## Recommended Corrective Actions

| Corrective Action Code | Description | Responsible Party | Estimated Completion Date |
|---|---|---|---|
| 122142_SAFECAPS_RTRA_001 | RVO will attend refresher training on improper door operations opposite the platform limits. Discuss the importance of MOR 8.18.3., 8.18.4 | 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.*

Rail Vehicle Operator

The RVO has been a WMATA employee and RVO since March 15, 2024. The RVO holds a Level 2 Roadway Worker Protection (RWP) certification that expires on October 31, 2025.

During a formal virtual interview, the RVO stated that when they picked up the train at the Shady Grove platform, they noticed a car was isolated and made note of it. When they arrived at Rockville Station, they initiated the train berth, and the door opened automatically on the platform side. They noticed an alarm on the Train Control Display (TCD) that caused them to become confused. They depressed the door open button on the off-platform side of the train. The RVO explained that they activated the door open button on the non-platform side and did not activate the door open button on the platform side a second time because the alarm and isolated car caused them to become confused. The RVO stated they were unaware that an isolated car would activate an alarm following a door operation.

The RVO stated that they realized that a car was isolated and closed to the non-platform side doors and then notified the MICC.

The RVO said they were familiar with and explained the “point and call” method.

**Washington Metropolitan Area Transit Authority**
Maintenance and Material Management System
**MICC Rail Approved Incident Report**

**Incident Number : 8837149** **SMS Number : SMS ID: 20241213#122142MX**

**Train 123 had doors open off platform side., 23/20, A14, RTR, DOPS, 123**

| | | |
|---|---|---|
| Date/Time<br>12/13/2024 20:15 | Station Location<br>A14: (ROCKVILLE STATION) | Reported By |
| Trouble Code<br>DOPS<br>DOORS OPENED OPPOSITE SIDE | Location Details | Notifications |
| Responsibility Code<br>RTR<br>RAIL TRANSPORTATION | Direction<br>INBOUND | Resolved By |
| Train ID<br>123 | Track Number<br>N/A | Approved/Closed by |
| Line<br>RED | Chain Markers | Org. OCC<br>ROCC |

*Delays in Minutes*

| Line Delay | Train Delay | Passenger Delay |
|---|---|---|
| 23 | 23 | 23 |

*Trips Modified*

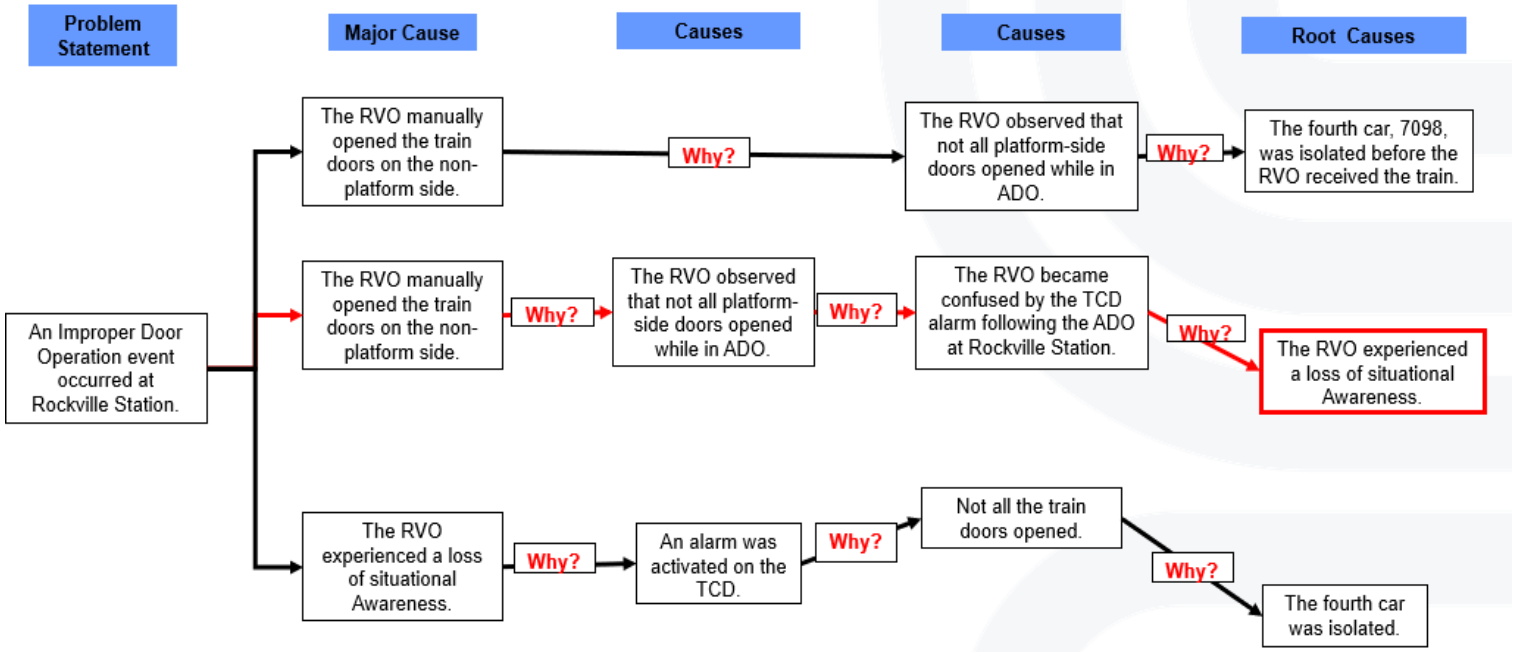
| Partial | Late Dispatch | Rerouted | Not Dispatched | Offloads |
|---|---|---|---|---|
| 5 | 0 | 0 | 0 | 3 |

*Incident Chronology (Timeline)*

| Time | Add'l Pass. Delays | Add'l Trouble | Incident Level Code | Description |
|---|---|---|---|---|
| 20:15 | 23 | DOPS | C2 | Train 123 had doors open off platform side. |
| 20:16 | | | | Train 123 reported doors had open off platform side. Operator was verified properly birth on the platform. Operator was instructed to offload train, close all doors, and verify clear of customers. AOM, MICC Communications, and all concerned personnel were notified. |
| 20:22 | | | | After train operator 123 verified clear of customers, train operator 123 was given foul time and instructions to perform a ground walk around and verify no customers were in the roadway. |
| 20:29 | | | | Train 136 was given instructions to offload train at Grosvenor, go into the pocket track, reverse ends and go back in service at Grosvenor in the direction of Glenmont to help minimize line delays. |
| 20:30 | | | | Train operator 123 verified no customers were in the roadway and relinquished foul time. Train operator was the instructed to return to the Glenmont end and non-revenue to Glenmont. |
| 20:35 | | | | Train 123 re-blocked to 723 and started moving in the direction of Glenmont in non-revenue service ending train delay. |
| 20:38 | | | | Train 125 serviced Rockville on track two side ending line and customer delay. |
| 20:44 | | | | Train 144 was instructed to offload train at Cleveland Park, reverse ends and go back in service in the direction of Glenmont to help minimize line delays. |

*Figure 6 - MICC Incident Report.*

## Appendix C – Why-Tree Analysis




# Root Cause Analysis

6

E24991 – Improper Door Operation – Rockville Station

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

**FINAL REPORT OF INVESTIGATION A&I E241047**

| | |
|---|---|
| **Date of Event:** | December 21, 2024 |
| **Type of Event:** | O-15: Improper Door Operation |
| **Incident Time:** | 13:04 hours |
| **Location:** | Franconia-Springfield Station, track 2 |
| **Time and How received by Safety:** | 13:05 hours Safety Information Official (SIO) |
| **Washington Metrorail Safety Commission (WMSC) Notification Time:** | 14:07 hours |
| **Responding Safety Officers:** | None |
| **Rail Vehicle:** | Train #404 (L7034-35x7723-22x7692-93x7347-46T) |
| **Injuries:** | None |
| **Damage:** | None |
| **Emergency Responders:** | None |
| **Safety Universal Data System (SUDS) Incident Number** | 20241226#122461 |

**December 21, 2024**
**Table of Contents**

## Abbreviations and Acronyms

| | |
|---|---|
| **ADO** | Automatic Door Operations |
| **AIMS** | Advanced Information Management System |
| **AOM** | Assistant Operations Manager |
| **ARS** | Audio Recording System |
| **CCTV** | Closed-Circuit Television |
| **MICC** | Metro Integrated Command and Communications Center |
| **MOR** | Metrorail Operating Rulebook |
| **NOAA** | National Oceanic and Atmospheric Administration |
| **OM** | Operations Manager |
| **SIO** | Safety Information Official |
| **SMS** | Safety Measurement System |
| **RTC** | Rail Traffic Controller |
| **RVO** | Rail Vehicle Operator |
| **VMDS** | 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 Saturday, December 21, 2024, an outbound, eight car, 7000 series consist, Train ID 404 (L7034-35x7723-22x7692-93x7347-46T), entered the platform limits of Franconia-Springfield Station, track 2 at 17 mph and stopped 56 feet short of the eight-car marker. Train ID 404 was being operated in automatic door operations (ADO), but the Rail Vehicle Operator (RVO) manually opened the doors on the platform side and serviced the station. The train was not properly berthed at the eight-car marker causing the last two doors of the trailing car to open outside the platform limits.

After servicing the station, the RVO keyed down the train and exited the Operator's cab. The RVO never reported servicing the station and the last two doors being opened outside the platform limits. There was another RVO at Franconia-Springfield Station that reported improper door operation to the Terminal Supervisor. The Terminal Supervisor reported the event to the Button Rail Traffic Controller (RTC). The Radio RTC dispatched a Rail Supervisor to Franconia-Springfield Station.

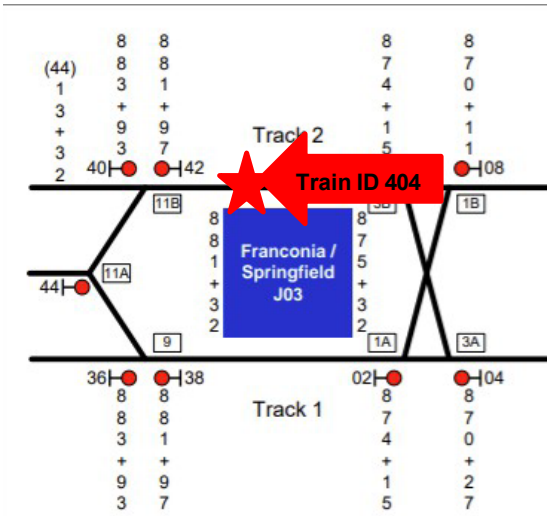
The Rail Supervisor conducted a ground walkaround and informed the Radio RTC nothing was found. There were no injuries or damages reported during this event. The RVO was removed from service for post-incident testing.

The probable cause for the Improper Door Operation event on December 21, 2024, at Franconia-Springfield Station was a failure to follow established procedures for servicing a station by the RVO.

## Incident Site

Franconia-Springfield Station is an outdoor station with a center platform. This station has ballasted tracks with interlockings at the front and rear of the station.

## 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 – Safety interviewed one (1) 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). Safety interviewed the following individual:
    - Rail Vehicle Operator

- 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)
    - Rail Vehicle Operator 30 Day Work History
    - Rail Vehicle Operator Written Statement
    - RTRA Division Report

- 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)
- Vehicle Monitoring and Diagnostic System (VMDS)

## Investigation

On Saturday, December 21, 2024, an outbound, eight car, 7000 series consist, Train ID 404 (L7034-35x7723-22x7692-93x7347-46T), entered the platform limits of Franconia-Springfield Station, track 2 at 17 mph and stopped 56 feet short of the eight-car marker. Train ID 404 was being operated in ADO, but the RVO manually opened the doors on the platform side and serviced the station. The train was not properly berthed at the eight-car marker. The RVO never requested permission to open the doors manually.


*Figure 1: Train ID 404 stopped 56 feet short of the eight-car marker and serviced the station.*

The train was not properly berthed at the eight-car marker when the RVO serviced the station. After servicing the station, the RVO keyed down the train and exited the Operator's cab. The RVO was completing their last trip when this event happened. The RVO that was operating Train ID 404 never reported the last two doors being opened outside the platform limits. At 13:20 hours, the Division Superintendent informed the MICC AOM to removed the RVO from service.

*Figure 2: The last two doors were outside the platform limits.*

There was another RVO at Franconia-Springfield Station that reported to the Terminal Supervisor that the doors were opened outside the platform limits. The Terminal Supervisor reported the event to the Button RTC. There was some initial confusion when the event was reported to the Metro Integrated Command and Communications Center (MICC) because it was reported as a door opened on the non-platform side, then corrected to doors opened outside the platform limits. A Rail Supervisor was dispatched to Franconia-Springfield Station.

The Rail Supervisor conducted a ground walkaround and informed the Button RTC nothing was found. The RVO was removed from service for post-incident testing. There were no injuries or damages reported during this event.

Chronological Event Timeline

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

| Time | Description |
|---|---|
| 13:06:02 hours | Franconia-Springfield Terminal Supervisor: Reported to the Button RTC that Train ID 404 opened the train doors off the platform.<br>Button RTC: Acknowledged and asked them to have the RVO complete a ground walkaround. [Phone, Ops. 3] |
| 13:06:29 hours | Button RTC: Advised the MICC AOM of the improper door operation at Franconia-Springfield Station, track 1. |
| 13:06:54 hours | MICC OM: Contacted the SIO to advise it was reported that Train ID 404 had an improper door operation at Franconia-Springfield Station, track 1. [Phone, Rail 1] |
| 13:07:30 hours | MICC AOM: Advised the MICC OM that the train was properly berthed but the doors were opened on the non-platform side. [Phone, Rail 2] |
| 13:09:55 hours | Button RTC: Instructed a Rail Supervisor to respond to Franconia-Springfield Station.<br>Rail Supervisor: Acknowledged the radio transmission. [Radio, Ops. 3] |
| 13:11:27 hours | MICC AOM: Contacted the MICC OM to clarify that the train was not properly berthed, one car off the platform, and the doors were opened on the non-platform side. [Phone, Rail 2] |
| 13:12:51 hours | MICC OM: Contacted the Button RTC to confirm if the RVO opened the doors manually or was in ADO.<br>Button RTC: Advised another RVO reported to the Terminal Supervisor that Train ID 404 had an improper door operation and the RVO of Train ID 404 never asked to manually open the doors. [Phone, Rail 1] |
| 13:15:46 hours | Rail Supervisor: Contacted the Radio RTC to request foul time to conduct a ground walkaround at Franconia-Springfield Station, track 1. |
| 13:16:09 hours | Radio RTC: Granted the Rai Supervisor foul time to conduct the ground walkaround.<br>Rail Supervisor: Acknowledged they were granted foul time. [Radio, Ops. 3] |
| 13:20:42 hours | MICC AOM: Contacted the Division Superintendent to advise them of the event at Franconia-Springfield Station.<br>Division Superintendent: Advised the MICC AOM to remove the RVO from service. [Phone, Rail 2] |
| 13:21:34 hours | Rail Supervisor: Advised they completed the ground walkaround with nothing found and they were relinquishing their foul time. |
| 13:25:31 hours | MICC OM: Contacted the SIO to clarify that the RVO never opened the doors on the non-platform side but they did stop short of the 8-car marker and opened the doors outside of the platform limits. [Phone, Rail 1] |

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

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

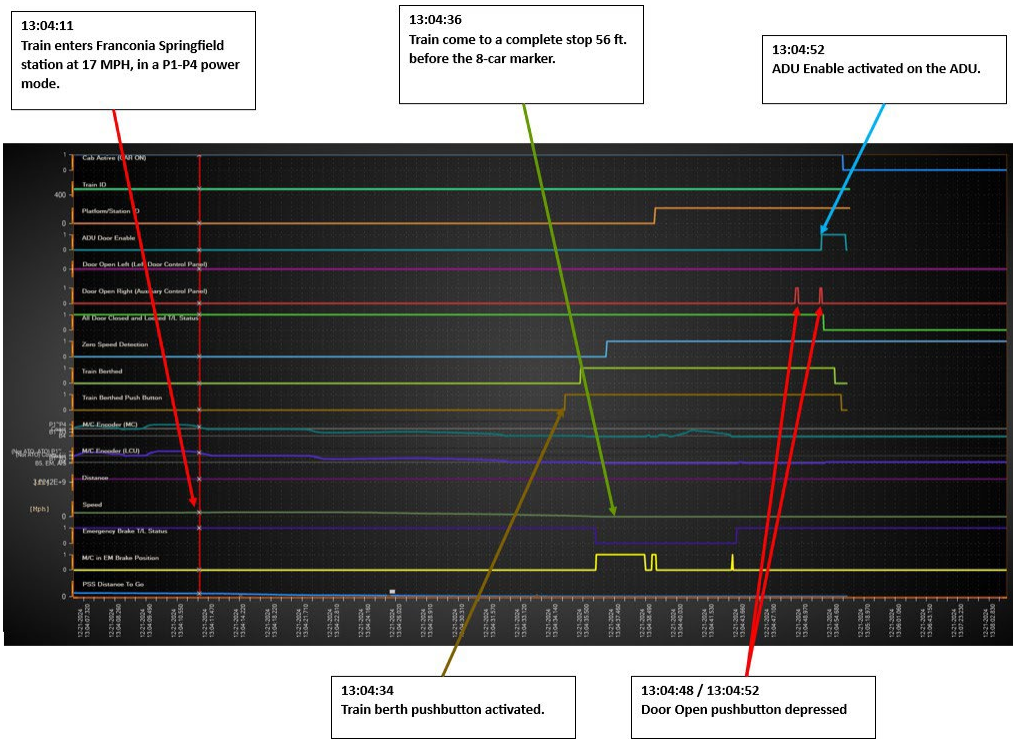
Train ID 404, (L7034-35x7723-22x7692-93x7347-46T), was reported for an improper door operation at Franconia-Springfield Station. IIT completed a download and analysis of data from Train ID 404. Based on VMDS and ER data, the train came to a complete stop 56 ft. before the 8-car marker. As the train was stopping, the master controller was moved to the emergency position, initiating emergency braking, and dumping the brake pipe.

Also, as the train was coming to a complete stop, the train berth pushbutton was activated.
After the train came to a complete stop, the right door open push button was activated. The ADU door enable was activated on the ADU and the door open push button was activated a second time, opening the right-side doors with 56 ft. of the consist off the platform. Car 7034 was then keyed down.

Based on the VMDS and ER data, there was no fault with the train that contributed to the cause of this incident. The train performed as commanded.

Timeline of events below:

| Time | Description of Events | Distance From 8-Car Marker |
|---|---|---|
| 13:04:11 | Train ID404 entered Franconia Springfield, Track #2 at a speed of 17 MPH with the Master Controller in the P1-P4 Power position. | ***600 ft.*** |
| 13:04:23 | The Master Controller was moved to B1-B3 Braking. Braking was implemented and the train came to a com Train speed was 18 MPH, 295 ft. before the 8-car marker. | ***295 ft.*** |
| 13:04:32 | The Master Controller was placed in the B4 Braking position, the train speed was 9 MPH, 87 ft. before the 8-Car marker. | ***87 ft.*** |
| 13:04:34 | Train berth pushbutton was activated, activating the Train Berthed signal. | |
| 13:04:35 | The Master Controller was placed on the B5 Braking position. Train speed was 2 MPH, 56 ft. before the 8-car marker. | ***56 ft.*** |
| 13:04:36 | The Master Controller was placed in the EMER position, initiating emergency braking and dumping the brake pipe. Train speed was less than 1 MPH. | ***56 ft.*** |
| 13:04:36 | The train came to a complete stop 56 ft. before the 8-car marker. | ***56 ft.*** |
| 13:04:48 | The right Door open pushbutton was activated | ***56 ft.*** |
| 13:04:52 | The ADU Enable went HIGH indicating ADU ok was acknowledged to allow doors to open and the right Door open pushbutton was activated again, and the right doors opened, with 56 ft. of the trailing car off the platform. | ***56 ft.*** |
| 13:05:01 | Car 7034 was keyed down with door open. | ***56 ft.*** |




## Office of Rail Transportation

*Adopted from Office of Rail Transportation report:*

1301pm Operator [redacted] train IOD 404 came into Franconia Springfield track one and stopped his train short of the eight-car marker then opened the door on the platform side with almost a whole car off the platform.

Operator [redacted] stated that the train had dump and he just opened the doors, keyed out and started walking down the platform until operator [redacted] instructed him the consist was not completely on the platform.

Both Operators was [redacted] and [redacted] was instructed to complete an incident report.

Operator [redacted] was taken for a Post Incident by Supervisor [redacted]

Operator [redacted] Met with safety in room 209-02 by Teams Meeting from 1315pm until 1540pm.

**Interview Findings and Written Statements**

*As part of the investigation launched into the event, Safety 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.*

RVO

- The train was in ADO, but the RVO manually opened the door without permission.
- The train came to a complete stop 56 feet short of the eight car marker.
- The RVO did not experience any mechanical issues with the train.
- The RVO initiated emergency braking but could not confirm how or why they activated the emergency braking.
- The RVO stated when the train dumped it caused them to become distracted.
- The RVO noticed the last two doors on the trailing car were at the platform gate.
- The train console displayed the train had eight cars.

**Weather**

On December 21, 2024, at the time of the incident, NOAA recorded the temperature as 36°F, with partly cloudy skies, winds 15.7 mph, and 32% humidity. Weather was not a contributing factor in this incident (Weather source: NOAA) – Location: Springfield, VA.

**Related Rules and Procedures**

6.2 Door Opening Procedures

6.2.2 When train is operating in Mode 2 and the Door Mode Selector is in the Auto/Manual position, to automatically open the doors, the Rail Vehicle Operator shall:

6.2.2.1 Depress the Train Berth pushbutton at three (3) miles per hour (mph) or less; and

6.2.2.2 Properly berth the train on the platform.

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.

8.18.2 In revenue service, Rail Vehicle Operators shall not manually operate any OPEN DOORS control except the crew door key switch while any side doors of the train are outside the limits of a station platform, except when directed by the Rail Traffic Controller.

8.18.3 In revenue service, when the train is otherwise within the limits of a station platform, Rail Vehicle Operators shall not manually operate the OPEN DOORS control on the side of the train opposite the platform.

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.

**Human Factors**

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. The RVO reported feeling fully alert at the time of the incident. The RVO 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 RVO reported keeping a regular sleep schedule in the days leading up to the incident. The employee worked day shift in the days leading up to the incident. The RVO was awake for eight hours at the time of the incident. The RVO reported eight hours of sleep in the 24 hours preceding the incident. The off-duty period was 17 hours which provides an opportunity for 7-9 hours of sleep. This was more than the RVO's usual workday sleep durations. The RVO reported no issues with sleep.

Post-Incident Toxicology Testing

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

## Findings

- Train ID 404 was being operated in ADO.
- The RVO manually opened the doors without requesting permission.
- The emergency braking was activated but the RVO could not verify how or why it was activated.
- The train stopped 56 feet short of the eight-car marker.
- The RVO was aware they had an eight-car train and was short of the eight-car marker.
- The RVO did not report they had an improper door operation.
- Another RVO at Franconia-Springfield Station reported the improper door operation to the Terminal Supervisor.
- There were no mechanical issues with Train ID 404.

## Immediate Mitigation to Prevent Recurrence

- 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 Rail Vehicle Operator was removed from service for post-incident testing.
- Train ID 404 was removed from service for post-incident inspections and train data downloads.

## Probable Cause Statement

The probable cause for the Improper Door Operation event on December 21, 2024, at Franconia-Springfield Station was a failure to follow established procedures for servicing a station by the RVO.

## Recommended Corrective Actions

| Corrective Action Code | Description | Responsible Party | Estimated Completion Date |
|---|---|---|---|
| 122461_SAFECAPS_RTRA_001 | The RVO will have to complete refresher training with an emphasis on properly servicing stations. | 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.*

The Rail Vehicle Operator is a WMATA employee with twelve (12) years of experience but less than a year of experience as a Rail Vehicle Operator. The Rail Vehicle Operator certified as a Rail Vehicle Operator in September 2024. The Rail Vehicle Operator previously worked as a Bus Operator. The Rail Vehicle Operator is RWP Level 2 certified and must recertify in November 2025.

The Rail Vehicle Operator stated they had a good training experience. The Rail Vehicle Operator mentioned feeling fully alert while operating their train. The Rail Vehicle Operator stated no non-work-related circumstances affected their opportunity to get good sleep. The Rail Vehicle Operator did not experience any mechanical issues while operating Train ID 404. The Rail Vehicle Operator was completing their fourth-round trip when this event occurred. The Rail Vehicle Operator mentioned that the train dumped when they were Foggy Bottom Station, but they never reported it.

The Rail Vehicle Operator stated they entered the Franconia-Springfield Station at the appropriate speed. The Rail Vehicle Operator could not explain how or why the train dumped at Franconia-Springfield Station. The Rail Vehicle Operator mentioned when the train dumped, they believed it caused them to become distracted. When the Rail Vehicle Operator alighted the train, they mentioned they noticed the last two doors on the trailing car was not on the platform. The Rail Vehicle Operator mentioned the train console displayed an eight car consist, but they had a six car consist prior and the train dumping distracted them. The Rail Vehicle Operator mentioned the train was in ADO, but they manually opened the doors without requesting permission.

## Appendix B – RTRA Supervisor's Report

# RTRA Alexandria Division Supervisor's Report

| Date | Incident Time | Incident Location (Station) | Track/Mezzanine # |
|---|---|---|---|
| 12/21/2024 | 1:01PM | Franconia Springfield | Track 1 |

**Equipment Number (Train ID & Car number: Escalator/ Elevator #: Room)**
ID 404 L7035x7722x7692x7347 (7346_off platform)

**Incident Description**
Train Operator opened the train doors off the platform

| WMATA Personnel involved | Employee # | Rule Violation/ List Rule | Home Division | Post Incident? |
|---|---|---|---|---|
| [redacted] | [redacted] | MOR 1.18,6.2.3.3,8.18.1,8.18.2,8.18.3,8.18.4 | Alexandria | Yes |
| | | | | |
| | | | | |

**Customer Information (detailed information must be recorded on Station Manager Incident Report )**

| | | |
|---|---|---|
| Name: | Address: | Injury? |
| Name | Address | Injury? |
| Name | Address | Injury? |

**Fire Department/EMS/other External Agency Responding ( Use supplemental sheet if necessary)**

| Arrival Time | Unit Number | Person in charge | Remarks: |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

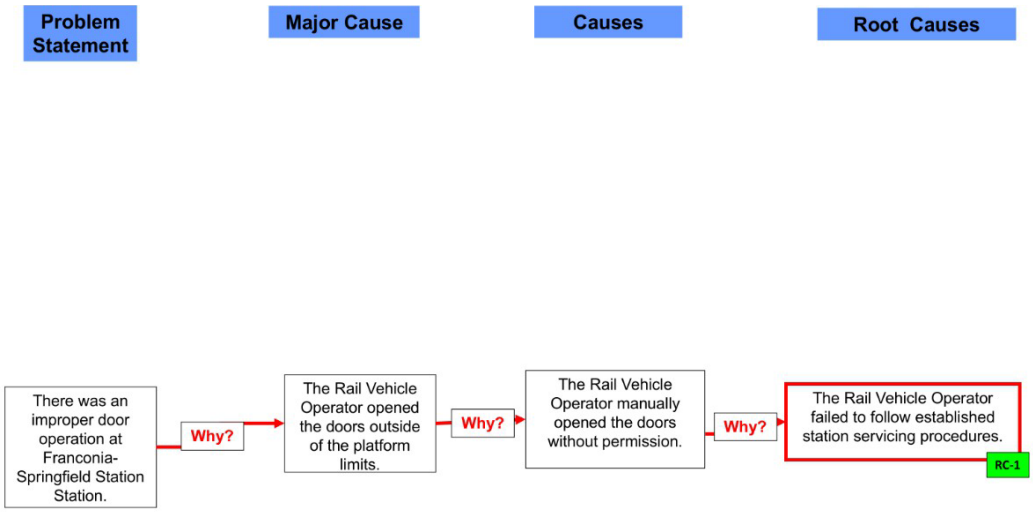
**Chronological Account of Incident**
(Note time of each entry: include statement of Employee or Witness at conclusion)

At approximately 1:01pm, it was reported to me by Train Operator [redacted] that "***the operator on track 1 open the train doors off the platform.***" I contacted MICC [redacted] reported the incident and provided pertinent information as requested. In the process of talking with MICC, the operator was walking down the platform, I don't think he realized he opened the doors off the platform. I asked the operator how he opened the doors he said he pushed the wrong button and the doors opened and I said that's not possible in a 7K, he agreed. I told him he is out of service and to standby someone will be coming to transport him for a post incident. Afterwards, MICC, instructed me to do a ground walk-around, I turned the key, gave MICC a radio checked, given foul-time at 1:13pm and started my inspection. At 1:21p, I relinquished my foul-time and requested to reposition the train to the 8-car marker.

| Supervisor Submitting Report (include payroll #) | Report Review By: | Date |
|---|---|---|
| [redacted] | [redacted] | 12-23-2024 |

**Report must be faxed to ROCC 202_962_2809 at end of tour**

## Appendix C – Why-Tree Analysis




## Root Cause Analysis

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

**FINAL REPORT OF INVESTIGATION A&I E241082**

| | |
|---|---|
| **Date of Event:** | December 29, 2024 |
| **Type of Event:** | Improper Door Operation |
| **Incident Time:** | 11:57 Hours |
| **Location:** | Pentagon Station, track 1 |
| **Time and How received by Safety:** | 12:19 Hours – Safety Information Official (SIO) |
| **Washington Metrorail Safety Commission (WMSC) Notification Time:** | 12:46 Hours |
| **Responding Safety Officers:** | WMATA: None<br>WMSC: None<br>Other: None |
| **Rail Vehicle:** | Train 321<br>(L6161x6160, 6032x6033, 6156x6157T) |
| **Injuries:** | None |
| **Damage:** | None |
| **Emergency Responders:** | None |
| **Safety Management System Incidents/Accidents (SMS I/A) Incident Number:** | 20241229#122532 |

**December 29, 2024**
**Table of Contents**

## Abbreviations and Acronyms

| | |
|---|---|
| **ADO** | Automatic Door Operation |
| **AIMS** | Advanced Information Management System |
| **ARS** | Audio Recording System |
| **CCTV** | Closed-Circuit Television |
| **CMOR** | Office of Chief Mechanical Officer |
| **IIT** | Incident Investigation Team |
| **MICC** | Metrorail Integrated Command and Communications Center |
| **MOR** | Metrorail Operations Rulebook |
| **NOAA** | National Oceanic and Atmospheric Administration |
| **OAP** | Operations Administrative Policy |
| **ROQT** | Rail Operations Quality Training |
| **RTRA** | Office of Rail Transportation |
| **RTC** | Rail Traffic Controller |
| **RVO** | Rail Vehicle Operator |
| **SAFE** | Department of Safety |
| **SIO** | Safety Information Official |
| **SOP** | Standard Operating Procedure |
| **SPOTS** | System Performance On-Time Summary |
| **SUDS** | Safety Universal Data System |
| **VDMS** | Vehicle Monitoring and Diagnostic |
| **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, December 29, 2024, at 11:56 hours, Tain ID 321 (L6161x6160, 6032x6033, 6156x6157T), a six-car 6000 series consist, entered the platform limits at Pentagon Station on track 1 and properly berthed at the eight-car marker.

Prior to the incident, the Rail Vehicle Operator (RVO) assumed operations of Train ID 321 at Huntington Station Platform departing at 11:38 hours with a final destination of Mount Vernon Square Station.

At 11:57 hours, the right-side door pushbutton was activated by the Rail Vehicle Operator (RVO) on Train ID 321, opening the train doors on the non-platform side (right side). Moments later, the RVO placed their head out of the right-side cab window, noticing the train doors were opened on the opposite side of the platform.

The RVO reported to the Metro Integrated Command and Communications Center (MICC) Radio Rail Traffic Controller (RTC) that Train ID 321's train doors were opened on the opposite side of the platform at Pentagon Station, track 1.

The Radio RTC instructed the RVO to offload Train ID 321, verify the train was clear of customers and conduct a ground walk around.

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 Rail Vehicle Operator from duty for post-incident testing.

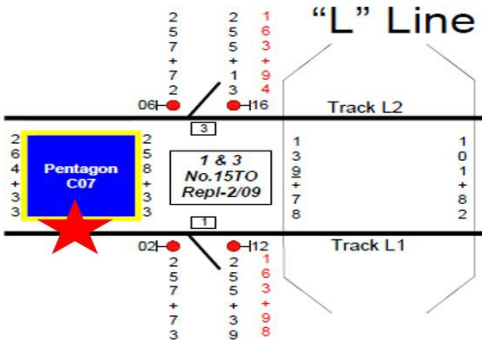
Following the Office of the Chief Mechanical Officer (CMOR) Incident Investigation Team (IIT) Operations Administrative Policy (OAP) 102.06, the Metro Integrated Command and Communications Center (MICC) promptly initiated the removal of Train ID 721 from revenue service for post-incident investigative 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 at Pentagon Station on December 29, 2024, was the RVO's lack of situational awareness and deviation from established Automatic Door Operation (ADO) procedures. ADO procedures require the RVO to press the Train Berth Button before properly berthing the train at the eight-car marker and reporting all failed ADO functions to the MICC Radio Rail Traffic Controller. A contributing factor was the RVO failed to place their head out of the cab window to visually verify the platform side and to wait for the required five (5) seconds before initiating door operations.

## Incident Site

Pentagon Station is an indoor station with a center platform and an interlocking.

## 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 – Safety interviewed one (1) 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). Safety interviewed the following individual(s):
    - Rail Vehicle Operator – Train ID 321

- 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:
    - Metrorail Operating Rulebook (MOR)
    - National Oceanic and Atmospheric Administration (NOAA)
    - Supervisor's Report
    - Rail Vehicle Operator's Incident/Accident Report
    - Rail Vehicle Operators Manifest
    - Rail Vehicle Operators Post-Incident/Accident Form
    - Rail Vehicle Operator's 30-Day Work History
    - RTRA Managerial Incident Investigation Report

- Standard Operating Procedure (SOP) 40—Procedure for Platform Berthing, Station Servicing and Overruns

- 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)
  - Advanced Information Management System (AIMS)
  - System Performance On-Time Summary (SPOTS)
  - CMOR IIT Vehicle Monitoring and Diagnostic System (VMDS)

## Investigation

On Sunday, December 29, 2024, at 11:38 hours, an RVO assumed operations of Train ID 321 (L6161x6160-6032x6033-6156x6157T), a six-car 6000 series consist at Huntington Station Platform departing at 11:38 hours with a final destination of Mount Vernon Square Station.

At 11:56 hours, Tain ID 321 entered the platform limits at Pentagon Station on track 1.

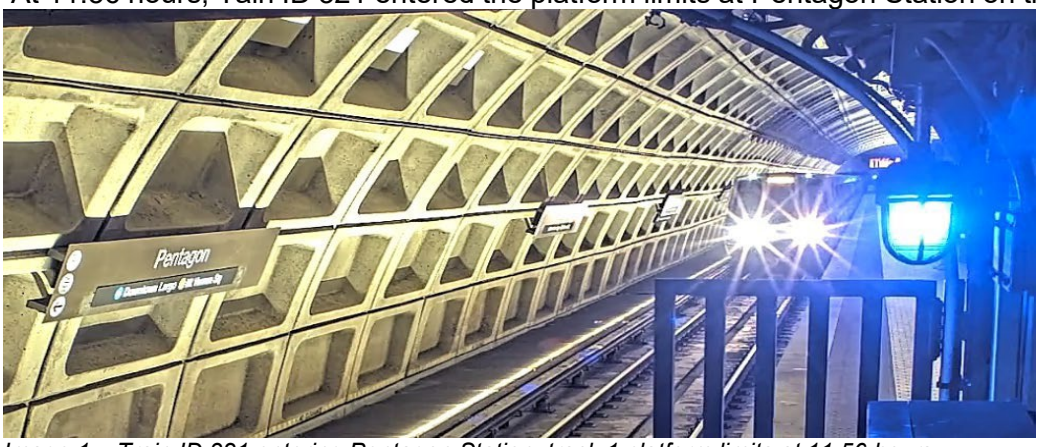



*Image 1 – Train ID 321 entering Pentagon Station, track 1 platform limits at 11:56 hours.*

At 11:57 hours, the RVO of Train ID 321 properly berthed the train at Pentagon Station track 1, eight-car maker, remained in the operator's seat, and then pressed the Right Door Open pushbutton, opening the non-platform side doors of the train.


*Image 2 – Depicts the RVO of Train ID 321 pressing the Right Door Open pushbutton at 11:57 hours.*

The RVO placed their head out of the cab window after the doors were opened on the non-platform side and reported the event to the Metro Integrated Command and Communications Center (MICC) Radio Rail Traffic Controller (RTC). At the time of the incident, the train was operating in Automatic Door Open (ADO).[1]

At 11:58 hours, Train ID 321 RVO asked the Radio RTC's permission to open the door on the platform side at Pentagon Station, track 1. The RTC advised the RVO that if the train was verified properly berthed on the platform, permission was granted to open the train doors on the platform side only. During this time the Button RTC advised the MICC Assistant Operations Manager (AOM) of the event.

.


*Image 3 – Depicts Door Signal Lights illuminated platform doors remained closed indicating the train doors were opened on the non-platform side.*

[1] The train doors open automatically on the platform side after the train properly berths at the 8-car marker.

After servicing Pentagon Station on track 1 on the platform side, the RVO placed their head out of the cab window and pressed the Right Door Closed button, closing the non-platform side doors at 11:59 hours. The Radio RTC instructed the RVO to offload the train and verify that the train was clear of customers.


*Image 4- Depicts the RVO closing the train doors on the non-platform side.*

The MICC Operations Manager (OM) notified the Safety Information Official (SIO) of the Improper Door Operation event at 11:59 hours. At 12:00 hours, Train ID 321 was reblocked and now identified as Train ID 721.

The RVO advised the Radio RTC that they were clear of customers, the Radio RTC acknowledged and granted the RVO permission to conduct a ground walk around at 12:04 hours.


*Image 5 – Depicts the RVO verifying the train was clear of customers and beginning a ground walk around.*

At 12:08 hours, the RVO informed the Radio RTC that the ground walk-around was complete. The Radio RTC instructed the RVO to key up on the downtown end and continue on towards Foggy Bottom Station to clear the interlocking at that location.

The RVO on Train ID 721 departed from Pentagon Station at 12:10 hours and was informed that a Rail Transportation (RTRA) Supervisor would board their train at Foggy Bottom Station on track 1. At 12:16 hours, Train ID 721 arrived at Foggy Bottom Station, track 1, and an RTRA Supervisor keyed themselves on the train.

The Safety Director on Call (SDOC) was informed of the event at 12:19 hours by the SIO.

At 12:31 hours, Train ID 721 arrived at National Airport Pocket Track.

*Image 6 – Depicts Train ID 721 arriving at National Airport Pocket track.*

At 12:37 hours, Supervisor 2 arrived at the National Airport Station to relieve Supervisor 1. The RVO was transported for post-incident testing by Supervisor 2 at 12:44 hours.

The Gap Operator departed National Airport Pocket Track at 12:57 hours, on Train ID 721 traveling towards Alexandria Yard.

**Chronological Event Timeline**

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

| Time | Description |
|---|---|
| 11:56:32 hours | Train ID 321 entered Pentagon Station track 1. [CCTV] |
| 11:57:02 hours | Train ID 321 properly berthed at the eight-car marker. [CCTV] |
| 11:57:14 hours | RVO on Train ID 321 opened non-platform side doors. [CCTV] |
| 11:57:51 hours | Train ID 321 RVO: Advised the Radio RTC that they opened doors off the platform.<br>Radio RTC: Asked if Train ID 321 stated they opened doors off the platform at Pentagon City Station.<br>Train ID 321 RVO: Confirmed they did.<br>Radio RTC: Advised the RVO to key down, provide a radio check, and complete a ground walk-around.<br>Train ID 321 RVO: Acknowledged transmission. [Radio OSPS 3] |
| 11:58:11 hours | Radio RTC: Asked for the lead car number.<br>Train ID 321 RVO: Replied lead car 6161.<br>Radio RTC: Acknowledged. [Radio OPS 3] |

| Time | Description |
|---|---|
| 11:58:17 hours | Button RTC advised the AOM of the incident. [Phone OPS 2] |
| 11:58:32 hours | Radio RTC: Inquired if the lead car was 6061.<br>Train ID 321 RVO: Replied 6161.<br>Radio RTC: Inquired if the train was properly berthed on the platform.<br>Train ID 321 RVO: Advised they were properly berthed, and asked if they should open the doors on the correct side.<br>Radio RTC: Acknowledged transmission. Granted the RVO permission to open the doors on the platform side, service the station, and offload the train. [Radio OPS 3] |
| 11:58:33 hours | AOM advised the OM of the incident. [Phone Rail 2] |
| 11:58:36 hours | Button RTC advised the Communications Agent of the incident. [Phone OPS 3] |
| 11:59:39 hours | OM advised the SIO of the incident. [Phone Rail 1] |
| 11:59:05 hours | Train ID 321 RVO opened the door on the platform side and offloaded the train. [CCTV] |
| 11:59:09 hours | Radio RTC: Asked for the location of the Supervisor.<br>Supervisor: Advised they were at National Airport Station.<br>Radio RTC: Instructed them to board Train ID 447 on track 1 and advise when they were onboard.<br>Supervisor: Acknowledged transmission [Radio OPS 3] |
| 11:59:34 hours | AOM: Contacted the Terminal Supervisor at Huntington to identify the RVO on Train ID 321.<br>Terminal Supervisor: Provided the information. [Phone, Rail 2] |
| 11:59:47 hours | Radio RTC: Instructed the Gap Operator at National Airport to key up a signal C10-44.<br>Gap Operator: Replied key up at signal C10-44.<br>Radio RTC: Acknowledged. Radio OPS 3] |
| 12:00:10 hours | Radio RTC: Inquired if Train ID 321 advised customers the train was out of service.<br>Train ID 321 RVO: Confirmed they were waiting on all customers to exit the train to perform the ground walk around.<br>Radio RTC: Instructed Train ID 321 they were now identified as Train ID 721.<br>Train ID 321 RVO: Acknowledged, requested permission to begin ground walk around.<br>Radio RTC: Instructed the RVO to verify the train was clear of customers. [Radio OPS 3] |
| 12:01:23 hours | Gap Operator: Advised keyed up at signal C10-44.<br>Radio RTC: Instructed the Gap Operator to stand by.<br>Gap Operator: Verified a lunar at signal C10-44, continue towards track 1.<br>Radio RTC: Confirmed verify the lunar at signal C10-44, crossing from track 3 to track 1. Permissive block to the turn back, lite to Mount Vernon Square Station.<br>Gap Operator: Acknowledged transmission. [Radio OPS 3] |
| 12:02:25 hours | Radio RTC: Asked Train ID 721 RVO if their train was clear of customers.<br>Train ID 721 RVO: Advised they were in the process of verifying.<br>Radio RTC: Instructed the RVO to advise when the train was clear of customers.<br>Train ID 721 RVO: Advised they were walking to the last car.<br>Radio RTC: Acknowledged. [Radio OPS 3] |

| Time | Description |
|---|---|
| 12:01:45 hours | AOM provided the OM with RVO's information. [Phone Rail 2] |
| 12:04:30 hours | Train ID 721 RVO: Advised train was clear of customers.<br>Radio RTC: Granted ID 721 RVO permission to conduct a ground walk-around and advise when safely on the platform.<br>Train ID 721 RVO: Acknowledged transmission. [Radio OPS 3] |
| 12:05:15 hours | Radio RTC: Asked if the Supervisor was onboard Train ID 447 at Pentagon City Station.<br>Train ID 447 RVO: Advised the Supervisor was onboard.<br>Radio RTC: Acknowledged. [Radio OPS 3] |
| 12:08:34 hours | Radio RTC: Requested an update from Train ID 721 RVO.<br>Train ID 721 RVO: Advised ground walk-around was complete.<br>Radio RTC: Acknowledged. Instructed the RVO to stand by in the lead car on the downtown end.<br>Train ID 721 RVO: Replied, stand by in the lead car.<br>Radio RTC: Changed instructions and advised the RVO to continue on and clear the interlocking at Foggy Bottom Station.<br>Train ID 721 RVO: Repeated the instructions.<br>Radio RTC: Advised the train would remain out of service, Train ID would remain 721.<br>Train ID 721 RVO: Acknowledged transmission. [Radio OPS 3] |
| 12:10:01 hours | Train ID 721 departed Pentagon Station track 1. [CCTV] |
| 12:10:06 hours | AOM: Instructed the RTRA Supervisor to board the train at Foggy Bottom Station and would be relieved at Pentagon Station.<br>Supervisor: Acknowledge transmission. [Phone Rail 2] |
| 12:11:57 hours | Radio RTC: Requested RTRA Supervisor to landline x21652.<br>Supervisor: Asked the RTC to repeat the number.<br>Radio RTC: Advised to landline x21652. [Radio OPS 3] |
| 12:14:31 hours | AOM: Instructed the Supervisor to ask if the RVO pressed the train berth of if they opened the doors manually.<br>Supervisor: Acknowledged. |
| 12:16:01 hours | Train ID 721 arrived at Foggy Bottom Station, track 1, and an RTRA Supervisor keyed on the train. [CCTV] |
| 12:17:38 hours | Supervisor: Informed the AOM that the RVO stated they pressed the train berth button, however swung their hand inadvertently hitting the Right Door open button.<br>AOM: Acknowledged. [Phone Rail 2] |
| 12:19:49 hours | SIO advised the SDOC of the incident. [Phone Emergency Mgmt] |
| 12:21:23 hours | AOM notified Alexandria Division Management of the incident. [Phone Rail 2] |
| 12:23:33 hours | Supervisor on Train ID 721: Contacted the Radio RTC and inquired where they would be relieved.<br>Radio RTC: Advised Train ID 721 would be held in the pocket track at National Airport.<br>Supervisor on Train ID 721: Acknowledged. [Radio OPS 3] |
| 12:27:05 hours | Per Division Management Train ID 721 RVO shall be removed from service. [Phone Rail 2] |
| 12:31:30 hours | Train ID 721 arrived at National Airport Pocket Track. [CCTV] |

| Time | Description |
|---|---|
| 12:37:15 hours | Supervisor 2 arrived at National Airport Station to relieve Supervisor 1. [CCTV] |
| 12:43:00 hours | SIO provided an Event Scene Release [SIO Log] |
| 12:44:33 hours | Supervisor 2 transported the RVO for post-incident testing. [CCTV] |
| 12:45:32 hours | Gap Operator on Train ID 721: Advised standing by signal C10-44 red.<br>Radio RTC: Acknowledged transmission. [Radio OPS 3] |
| 12:57:44 hours | Radio RTC: Instructed Train ID 721 to verify a lunar at signal C10-44, permissive block to the turnback continue with speed commands.<br>Gap Operator on Train ID 721: Acknowledged transmission, lite to Alexandria Yard. [Radio OPS 3] |

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

**Advanced Information Management System (AIMS)**

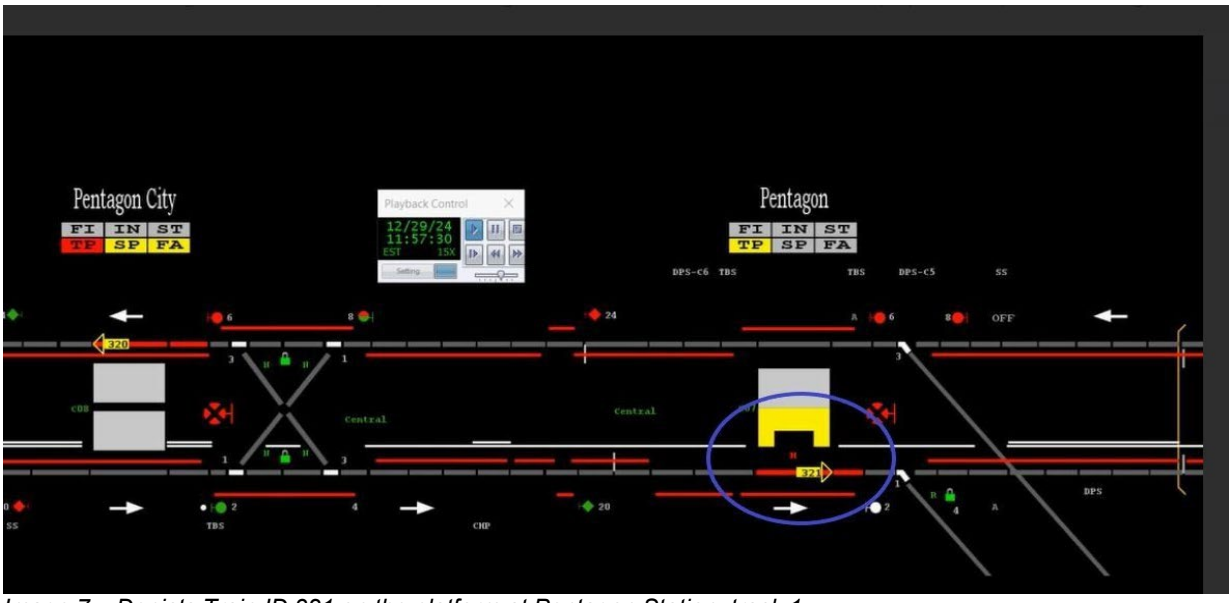



*Image 7 – Depicts Train ID 321 on the platform at Pentagon Station, track 1.*

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

IIT has completed the analysis of data from train ID 321, cars **6161-60x6032-33x6156-57**, reported for **Improper Door Operation** (Doors opened opposite the platform) at **Pentagon** Station (C07) Track #1 on 12/29/2024.

Based on the VMS data, Train ID332 entered the Pentagon station with the Lead car 6161. Then, it came to a complete stop 2 feet before the 8-car marker at 11:57:09.724.

15.676 seconds later, the Right Door Open Pushbutton was activated, opening the Right side Doors opposite the platform side.

1 min 49.812 seconds later, the Left Door Open Pushbutton was activated, opening the Left side Doors.

The Right Doors were commanded to close via the Right Door Close Pushbutton 15.932 seconds later. The Left side Doors closed 1 min 11.124 seconds later via the Left Door Close Pushbutton.

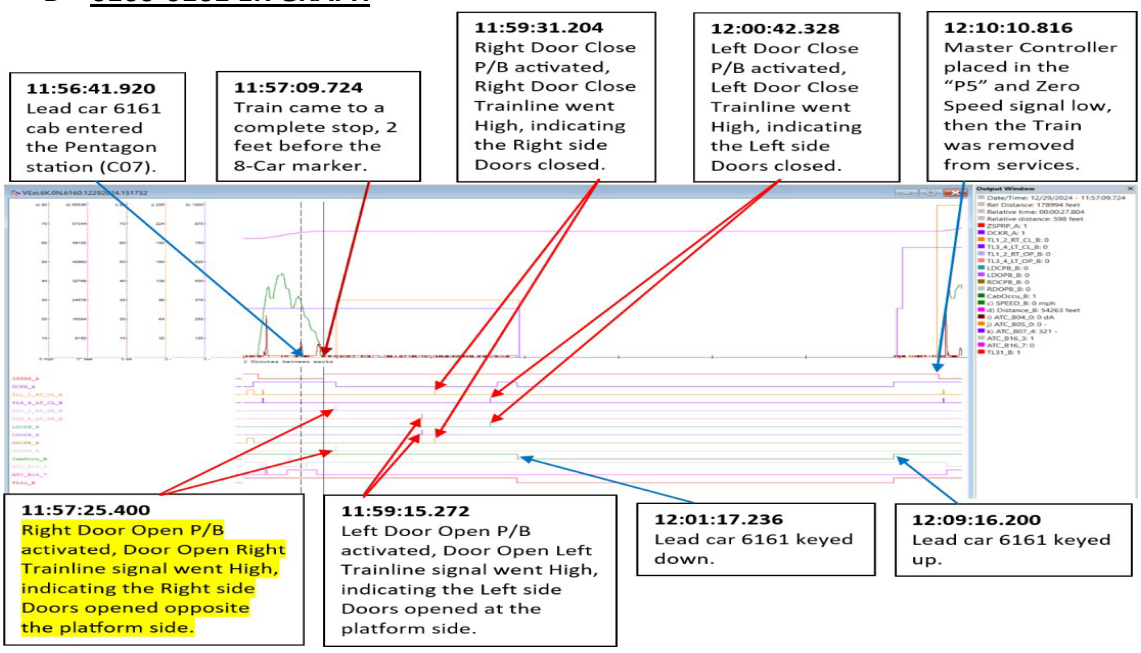
34.908 seconds later, the Lead car 6161 was keyed down.

The Lead car 6161 was keyed up 7 min 58.964 seconds later. Then the Master Controller was placed in a the “P5” Power position and the train was removed from services.

## A- TIMELINE OF EVENTS

| Time | Description of Events |
|---|---|
| 11:56:41.920 | Train ID 321 with lead car 6161 entered Pentagon Station (C07) on Track #1. |
| 11:57:09.724 | Train came to a complete stop, 2 feet before the 8-Car marker. |
| 11:57:25.400 | Right Door Open Pushbutton activated, Door Open Right Trainline signal went High, indicating the Right side Doors opened opposite the platform side. |
| 11:59:15.272 | Left Door Open Pushbutton activated, Door Open Left Trainline signal went High, indicating the Left side Doors opened at the platform side. |
| 11:59:31.204 | Right Door Close Pushbutton activated, Right Door Close Trainline went High, indicating the Right side Doors closed. |
| 12:00:42.328 | Left Door Close Pushbutton activated, Left Door Close Trainline went High, indicating the Left side Doors closed. |
| 12:01:17.236 | Lead car 6161 keyed down. |
| 12:09:16.200 | Lead car 6161 keyed up. |
| 12:10:10.816 | Master Controller placed in the “P5” Power position, then Zero Speed signal low, the Train was removed from services. |

## B- 6160-6161 ER GRAPH




## A- ROCS SPOTS REPORTS

Select Platform: C07-1 and/or Select ID: Leave blank to remove criteria
and/or Select 4-digit car number: 6161 Leave blank to remove criteria
Select Date: Dec 29 2024 Select Times (0-24HRS): From 11:00 To 13:00

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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 721 | C07-1 | 6 | 99 | 11:57:18 | 11:59:08 | 110 | 11:59:31 | 12:00:32 | 61 | 11:56:32 | 12:10:19 | 6161-6160.6032-6033.6156-6157 | - |

**Office of Systems Maintenance, Office of Radio Communications)**

Radio Communication issues were not observed.

**Office of Rail Transportation**
*Adopted from Office of Rail Transportation report:*

Hire Date: May 26, 2015
Rail Vehicle Certification Date; July 31, 2023
RVO Seniority Date: July 31, 2023
Previous Safety Violation: Level II Safety Operation Violation (Speeding)
The RVO was removed from service and transported for post-incident testing and will complete refresher training.

## Interview Findings

*As part of the investigation launched into the event, Safety 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.*

RVO of Train ID 321 (721) Written Statement

- "Servicing Pentagon Track 1, properly berth. Hit train berth and heard doors chime looking to the left saw no movement, hit train berth again and inadvertently hit the doors open button on the right side. Still hitting the train berth, then realized doors were off the platform. Contacted central."

## Weather

On December 29, 2024, at the time of the incident, NOAA recorded the temperature as 61°F, with cloud cover, winds of 20 mph, and 95% humidity. Pentagon Station is an indoor station. Weather was not a contributing factor in this incident (Weather source: NOAA) – Location: Arlington, VA

## Related Rules and Procedures

SOP 40 Procedure for Platform Berthing, Station Servicing and Overruns; Revision 0, dated August 15, 2023

6.2 Door Opening Procedures

6.2.2 When the train is operating in Mode 2 and the Door Mode Selector is in the Auto/Manual position, to automatically open the doors, the Rail Vehicle Operator shall:

6.2.2.1 Depress the Train Berth pushbutton at three (3) miles per hour (mph) or less; and

6.2.2.2 Properly berth the train on the platform.

6.2.3 When the Door Mode Selector is in the Manual/Manual position, the Rail Vehicle Operator shall:

6.2.3.1 Use extreme caution before depressing the Open Doors pushbutton;
6.2.3.2 Ensure the train is properly berthed on the platform;
6.2.3.3 Verify the platform side of the train by placing their head out of the cab window and first look and identify the platform;
6.2.3.4 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;
6.2.3.5 Depress the Open Doors pushbutton on the platform side of the train;
6.2.3.6 (Additional step only for 7000 Series Fleet) Depress the console 'Ok' pushbutton on the Aspect Display Unit;
6.2.3.7 (Additional step only for 7000 Series Fleet) Depress the 'Open Doors' pushbutton on the platform side of the train.

## Human Factors

Fatigue

*Signs and Symptoms of Fatigue*

SAFE evaluated conditions at the time of the incident to distinguish whether evidence of fatigue was present. Video of the incident was not available. The Rail Vehicle Operator reported feeling fully alert at the time of the incident. The Rail Vehicle Operator reported experiencing no symptoms of fatigue in the time leading up to the incident.

*Fatigue Risk*

SAFE evaluated incident data for fatigue risk factors. Risk factors for fatigue were present. The incident time of day did not suggest an increased risk of fatigue-related impairment. The Rail Vehicle Operator reported keeping a regular sleep schedule in the days leading up to the incident. The employee worked AM shifts in the days leading up to the incident. The employee was awake for 6.7 hours at the time of the incident The employee reported 3.5 hours of sleep in the 24 hours preceding the incident. The off-duty period was 12 hours, providing an opportunity for 7-9 hours of sleep. This was a comparable amount to the employee's usual workday sleep reported personal factors affecting their sleep. The employee worked day shifts in the days leading up to the incident. The employee reported being moderately alert leading and difficulty concentrating leading up to the incident.

Post-Incident Toxicology Testing

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

## Findings

- The RVO was operating in manual mode.
- Train ID 321 Door Control Circuit Breaker was sealed in ATO/Manual.
- All rail vehicles are utilizing Automatic Door Operation (ADO).
- The RVO failed to press the Train Berth Button on the console.
- The RVO inadvertently pressed the Right Door Open Button on the non-platform side of the train.
- The RVO failed to verify the platform before initiating a door operation.
- The RVO became distracted by external circumstances.

## Immediate Mitigation to Prevent Recurrence

- The RVO was removed from service and transported for post-incident testing.
- Train ID 721 (321) was removed from service for post-accident investigation and download of Vehicle Monitoring and Diagnostic System (VDMS).

## Probable Cause Statement

The probable cause of the improper door operation event at Pentagon Station on December 29, 2024, was the RVO's lack of situational awareness and deviation from established Automatic Door Operation (ADO) procedures. ADO procedures require the RVO to press the Train Berth Button before properly berthing the train at the eight-car marker and reporting all failed ADO functions to the MICC Radio Rail Traffic Controller. A contributing factor was the RVO failed to place their head out of the cab window to visually verify the platform side and to wait for the required five (5) seconds before initiating door operations.

## Recommended Corrective Actions

| Corrective Action Code | Description | Responsible Party | Estimated Completion Date |
|---|---|---|---|
| 122532_SAFECAPS_RTRA_001 | The RVO received reinstruction training with an emphasis on door operations. | RTRA/ROQT | 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.*

Rail Vehicle Operator

RVO #1 is a WMATA employee with 10 years of service and two (2) total years of experience as a Rail Vehicle Operator. The RVO holds a Roadway Worker Protection (RWP) Level 2 certification that expires in March 2025. The RVO was last certified as a Rail Vehicle Operator on July 31, 2023.

The RVO hold worked previously as a Bus Operator. During the interview, the RVO indicated they experienced difficulty concentrating leading up to the incident and feeling moderately alert.

The RVO stated they arrived at work and pre-tripped the train, this was their fourth-round trip. They didn't experience any issues with the train. They arrived at the eight-car marker, they were pressing the train berth button, and they don't recall if they waved their hand or if they pressed the button.

The RVO stated they heard door chimes, they looked to the left they didn't see any movement, so they pressed the train berth button again. The RVO stated it was not registering that they could have pressed the door open button. The RVO stated they heard someone say an expletive, they looked again, opened the cab window placed their head out of the cab window noticed the lights on the door indicator lights on the right side, and contacted central.

The RVO stated their consist were 6000 series trains with 6 cars. The RVO stated central instructed them to offload the train and perform a ground walk around.

The RVO stated they did not utilize Point and Call during the incident. The RVO stated they could not recall what station they were located at during this incident.

The RVO stated their training was good, including the training provided by the Line Platform Instructor (LPI) and the Rail Operations Quality Training Instructor (ROQT).

## Appendix B – Incident Report

**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 ❑ |
|---|---|---|---|
| 12-29-2024 | 11:57 | 12:04 | |

**Location**

| Station | Mezzanine # | Track #/Destination | Chain Marker/Signal Number |
|---|---|---|---|
| Pentagon | | 1 | B 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: |
|---|---|---|
| N/A | N/A | N/A |

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 CMNT/TRST/AFC or other WMATA responder |
|---|---|
| N/A | N/A |

**TRAIN INCIDENTS**

| Train ID | Destination | Car Numbers(list all cars in consist): | Lead Car: |
|---|---|---|---|
| 321 | Mt. Vernon Sq | 6161 6157 | 6161 |

| 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.**

Servicing Pentagon Track 1, properly berth. Hit train berth, heard doors chime looking to the left saw no movement, hit train berth again & inadvertently hit the doors button on right side. Still hitting train berth then realized doors were off platform. Contacted Control

**Employee Completing Report**

| Employee Name (print): | Employee Signature (sign): | Employee #: | Date: |
|---|---|---|---|
| [redacted] | [redacted] | [redacted] | 12/29/2024 |

| Division: | Run # | Block # | Assigned Days: |
|---|---|---|---|
| Flex | 405 | 321 | T/W |

**To Be Completed By Reviewing Manager**

| Supervisor Name (print): | Supervisor Signature: | Employee # | Date: |
|---|---|---|---|
| [redacted] | [redacted] | [redacted] | 12/29/2024 |

Action taken/needed

SMS Number: 2024122[redacted] 122562

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 – RVO's Incident Report*

# 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: | Sunday, December 29, 2024 | Vehicles Involved: | **L6161**-6032-6156 |
| Incident Time: | 11:58 AM | First Reported By: | RVO [redacted] |
| Location: | Pentagon Station (C07) Track 1 | | |

**BRIEF DESCRIPTION:**

On the above date and time, the operator of train ID 321 reported to the MICC an Improper Door Operation at Pentagon Station Track 1. The operator performed a right-side door operation resulting in doors being opened on the opposite side of the platform. A ground walk around was conducted with negative results.

**Key Employees Involved & Employee Statements:**

- RVO-[redacted]

Servicing Pentagon Track 1, properly berth. Hit train berth, heard door chime looking to the left saw No movement, hit train berth again inadvertently hit the door button on the right side. Still hitting train berth then realized doors were off platform. Contacted central.

**Post Incident Testing & Employee History:**

**Safety Violations: Level II Safety Operation Violation (Speeding)**
**Hire: May 26, 2015**
**RVO: July 31, 2023**
**Certification Date: July 31, 2025**
**Removed from service for Post Incident Testing**



*Document 2 – RTRA Managerial Incident Investigation Report page 1 of 3.*

**SIGNIFICANT INCIDENT TIMELINE:**

Pending

**SIGNIFICANT FINDINGS & PENDING ISSUES:**

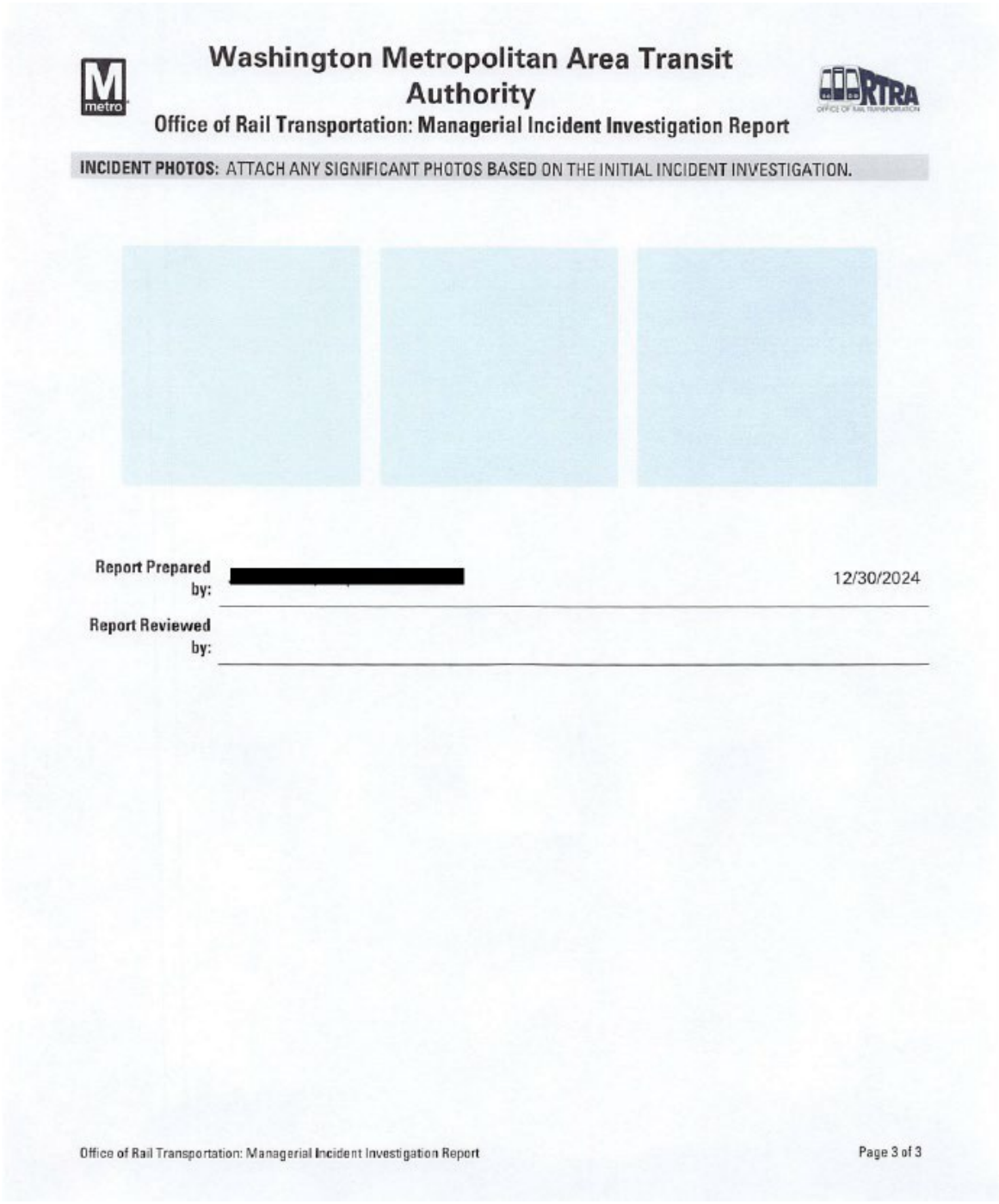
Pending

**CORRECTIVE ACTIONS:**

Pending



*Document 3 – RTRA Managerial Incident Investigation Report page 2 of 3.*



Washington Metropolitan Area Transit Authority

Office of Rail Transportation: Managerial Incident Investigation Report

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

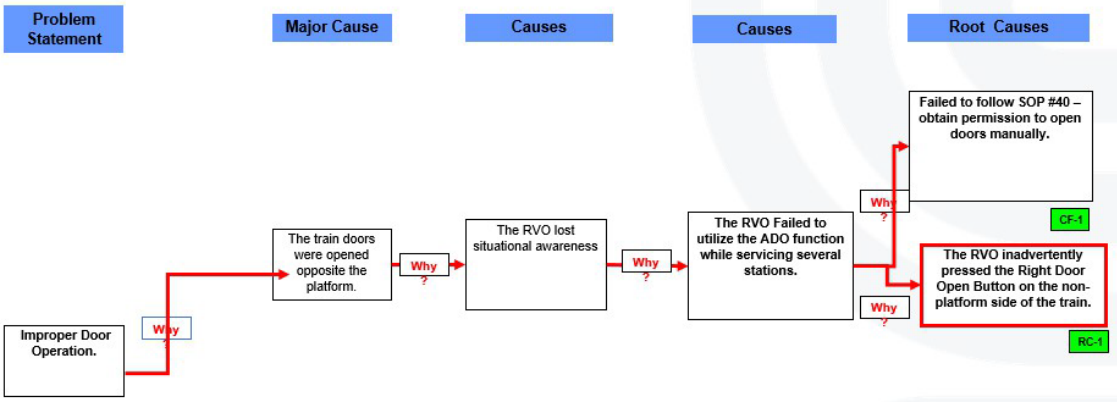
Report Prepared by: [redacted] 12/30/2024

Report Reviewed by:

Office of Rail Transportation: Managerial Incident Investigation Report Page 3 of 3

*Document 4 – RTRA Managerial Incident Investigation Report page 3 of 3.*

## Appendix D– Why-Tree Analysis




Root Cause Analysis

6

E241082 – Improper Door Operations – Pentagon Station