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WMSC Commissioner Brief: W-0120 – Improper Door Operation – Glenmont Station – June 4, 2021

Prepared for Washington Metrorail Safety Commission meeting on October 26, 2021

Safety event summary:

A Train Operator completing a Red Line trip to Glenmont Station stopped the train short of the eight-car marker at the end of the platform, then manually opened the train doors with the rear doors of the train outside of the platform limits.

After stopping 15 feet short of the end of the platform, the Train Operator had not attempted to reposition the train to move up to the eight-car marker. Metrorail recently began requiring train operators to contact the ROCC or a terminal supervisor to adjust the train's position to properly berth at the station platform if the train does not have speed commands.

In an investigative interview, the Train Operator, who had two years of experience in the role, claimed that their understanding was that there was a gray area surrounding what properly berthing a train means, and claimed that the train does not have to be exactly at the eight-car marker. Metrorail's written requirements are for all trains to be stopped at the eight-car marker to service a station. At the time of this event, Metrorail was attempting to utilize automatic door operations on the Red Line. The Train Operator did not contact the Rail Operations Control Center (ROCC) or terminal supervisor for permission to operate the doors manually.

The Train Operator who was taking over the train to operate it back toward Shady Grove saw the doors open off the platform and reported the event to the Glenmont Station Blockhouse Supervisor (Terminal Supervisor).

The Glenmont Station Blockhouse Supervisor reported this event to the Rail Operations Control Center (ROCC), however the Supervisor later incorrectly reported to the ROCC that all train doors were on the platform.

A supervisor conducted a ground walk around as required.

Metrorail did not notify the WMSC of this event within two hours as required.

Probable Cause:

The probable cause of this event was the train operator's noncompliance with written procedures due to Metrorail's insufficient safety promotion, training and supervisory oversight to ensure personnel understand and meet safety and operational requirements.

Corrective Actions:

Metrorail distributed a lessons learned document, which was reviewed with newly certified train operators.

The Train Operator received additional training.

WMSC staff observations:

This event demonstrates the importance of regular, effective supervisory oversight to identify and correct gaps in understanding or operations prior to a safety event. In conjunction with effective initial and refresher training, this can significantly reduce practical drift, improve safety, and identify areas for continuous improvement.

The lessons learned document issued following this event was issued after Metrorail abandoned automatic door operations indefinitely due to safety certification and related spillover testing concerns, including those identified in the WMSC's Automatic Train Control and Signaling Audit. However, the document included rules that only apply during automatic door operation, such as the requirement to contact the ROCC if doors do not open automatically.

This event matches Metrorail's station overrun definition as revised in 2020, since this was a Class 1 revenue vehicle, making a scheduled station stop, that failed to stop within the station platform limits and was unable to service the platform under normal door operations.

Metrorail must improve its compliance with two-hour notification requirements.

Staff recommendation: Adopt final report.

Washington Metro Area Transit Authority
Department of Safety and Environmental Management (SAFE)

FINAL REPORT OF INVESTIGATION A&I E21228

Date of Event:	06/04/2021
Type of Event:	Improper Door Operation
Incident Time:	10:06 hours
Location:	Glenmont Station, Track 2
Time and How received by SAFE:	10:14 hours SAFE notified via phone
WMSC Notification Time:	13:44 hours via Email
Responding Safety Officers:	WMATA SAFE: No WMSC: No Other: N/A
Rail Vehicle:	L3220-3221x3116-3117x3213-3212x3242-3243
Injuries:	None
Damage:	None
SMS I/A Incident Number:	20210605#93683MX

Glenmont Station – Improper Door Operation

June 04, 2021
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Abbreviations and Acronyms

ARS	Audio Recording System
CAP	Corrective Action Plan
CCTV	Closed-Circuit Television
CMOR	The Office of Chief Mechanical Officer
IIT	Incident Investigation Team
MSRPH	Metrorail Safety Rules and Procedures Handbook
MTPD	Metro Transit Police Department
NOAA	National Oceanic and Atmospheric Administration
RTC	Rail Traffic Controller
RTRA	Office of Rail Transportation
ROCC	Rail Operations Control Center
SAFE	Department of Safety and Environmental Management
SMS	Safety Measurement System
VMDS	Vehicle Monitoring and Diagnostic System
WMATA	Washington Metropolitan Area Transit Authority
WMSC	Washington Metrorail Safety Commission

Executive Summary

On Friday, June 4, 2021, at approximately 10:10 hours, the Glenmont Station Blockhouse Supervisor contacted a Red Line Buttons RTC to inform them that Train ID #115 at Glenmont Station, Track 2 had door leaves 5 and 6 of the trailing car open off the platform near the end gate. The Train Operator told the Glenmont Station Blockhouse Supervisor that they used Auto Doors, but all the train doors were not on the platform. There were no injuries as a result of this improper door operation event. The Glenmont Station Blockhouse Supervisor provided the Train Operator's name and ID number to the Red Line Buttons RTC and removed the Train Operator from service for post-incident testing.

At approximately 10:14 hours, a Rail Operation Control Center (ROCC) Rail Traffic Controller (RTC) notified a Safety Officer that the Glenmont Station Blockhouse Supervisor reported Train ID #115 doors opened off the platform at Glenmont Station, Track 2. They stated the Train Operator said they used Auto Doors and the doors opened off the platform. A Rail Transportation (RTRA) Supervisor cleared the customers from the consist and completed a ground walk around to ensure there were no injuries or people on the roadway. At approximately 10:23 hours, the ROCC Assistant Superintendent contacted Department of Safety and Environmental Management (SAFE) to clarify that the doors did not open on the opposite side but opened outside of the platform limits and confirmed there were passengers on board the train at the time. The ROCC Assistant Superintendent contacted the Glenmont Station Blockhouse Supervisor to confirm the position of the train doors when they went to the platform to inspect Train ID #115. The Glenmont Station Blockhouse Supervisor stated all train doors were on the platform, but the train was not properly berthed.

Initially, the ROCC RTC reported that the train doors were opened on the opposite side of the platform, however that report was determined to be inaccurate. At approximately 10:33 hours, the ROCC Assistant Superintendent contacted the Glenmont Station Blockhouse Supervisor again to ask how they were notified of the incident. The Glenmont Station Blockhouse Supervisor stated the drop back operator contacted them to report that the train doors were open while the train was not properly berthed. Then the Glenmont Station Blockhouse Supervisor went to the platform to do their own inspection. The Glenmont Station Blockhouse Supervisor saw that the train was inside the end gate, but the train was not properly berthed.

The Vehicle Monitoring and Diagnostic System (VMDS) data revealed the following:

- Train #115 stopped 15 ft. short of the 8-car marker at Glenmont Station.
- Right-side doors (platform side) were manually opened.
- The doors were open for approximately 9 minutes.

The Closed-Circuit Television (CCTV) footage showed that the Train ID #115 Operator looked out of the operator cab window and noticed they were short of the 8-car marker but proceeded to open the doors and exit the consist. Train ID #115 Operator never attempted to move the consist forward to properly berth the consist and never contacted the ROCC to operate the doors in manual mode as required at the time of this event. Train #115 Operator was removed from service for post-incident testing.

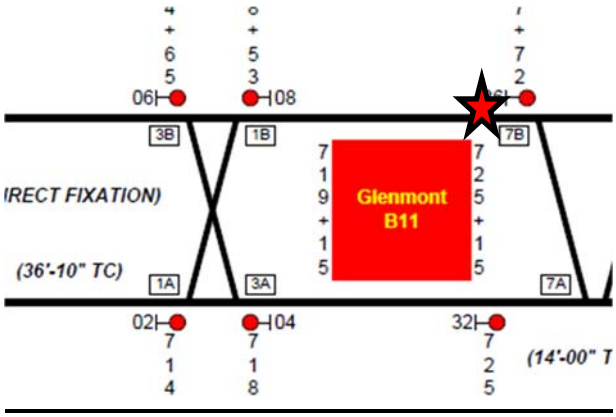
The probable cause of this event was a human factors failure to either request permission from ROCC to adjust the train within the platform limits or follow established door operating procedures,

requesting permission to operate doors manually, and waiting 3-5 seconds before initiating the door open button.

Incident Site

Glenmont Station, Track 2

Field Sketch/Schematics



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 document review
- Formal Interview– SAFE interviewed one person as part of this investigation. SAFE interviewed the following individual:
  - Train Operator
- Documentation Review – Collection of relevant work history information and process documentation contained in WMATA systems of record. These records include:
  - Train Operator Training Records
  - Train Operator Certifications
  - Train Operator 30-Day Work History Review
  - Metrorail Safety Rules and Procedures Handbook (MSRPH)
  - National Oceanic and Atmospheric Administration (NOAA)
  - Rail Operations Control Center (ROCC) Incident Report

- System Data Recording Review – Collection of information contained in Metro Data Recording Systems. This data includes:
    - Audio Recording System (ARS) playback including ROCC ASST SUPT_12063, Ops.1 and Red Line 2 (12052)
    - The Office of Chief Mechanical Officer (CMOR) Incident Investigation Team (IIT)
    - Vehicle Monitoring and Diagnostic System (VMDS)
    - Closed-Circuit Television (CCTV)

Investigation

On Friday, June 4, 2021, at approximately 10:01 hours Train ID #115 entered Glenmont Station at 13 MPH. At approximately 10:02 hours, the Train Operator stopped 15 feet short of the 8-car marker, opened the doors, and exited the operator cab. The drop back operator informed the Glenmont Blockhouse Supervisor that the train doors were opened partially against the trailing end gate and the train was not properly berthed. At approximately 10:10 hours, the Glenmont Station Blockhouse Supervisor contacted the Red Line Buttons RTC to inform them that Train ID #115 at Glenmont Station, Track 2 had door leaves 5 and 6 of the trailing car off the platform near the end gate. The Train Operator told the Glenmont Station Blockhouse Supervisor that they used Auto Doors, but all the train doors were not on the platform. There were no injuries as a result of this improper door operation event. The Glenmont Station Blockhouse Supervisor provided the Train Operator's name and ID number to the Buttons RTC and removed the Train Operator from service for post-incident testing. At approximately 10:11 hours, a RTRA Supervisor boarded Train ID #115, closed the doors, and conducted a walk through to clear passengers that were still on board.

At approximately 10:14 hours, a ROCC RTC notified a Safety Officer that the Glenmont Station Blockhouse Supervisor reported Train ID #115 doors opened off the platform at Glenmont Station, Track 2. They stated the Train Operator said they used Auto Doors and the doors opened off the platform. A Rail Transportation (RTRA) Supervisor cleared the customers from the consist and completed a ground walk around to ensure there were no injuries or people on the roadway. At approximately 10:23 hours, the ROCC Assistant Superintendent contacted SAFE to clarify that the doors did not open on the opposite side but opened outside of the platform limits and confirmed there were passengers on board the train at the time. The ROCC Assistant Superintendent contacted the Glenmont Station Blockhouse Supervisor to confirm the position of the train doors when they went to the platform to inspect Train ID #115. The Glenmont Station Blockhouse Supervisor stated all train doors were on the platform, but the train was not properly berthed.

Initially, the ROCC RTC reported that the train doors were opened on the opposite side of the platform, however that report was determined to be inaccurate. At approximately 10:33 hours, the ROCC Assistant Superintendent contacted the Glenmont Station Blockhouse Supervisor again to ask how they were notified of the incident. The Glenmont Station Blockhouse Supervisor stated the drop back operator contacted them to report that the train doors were not properly berthed. Then the Glenmont Station Blockhouse Supervisor went to the platform to do their own inspection and the doors were still open. The Glenmont Station Blockhouse Supervisor saw that the train was inside the end gate, but the train was not properly berthed.

The Vehicle Monitoring and Diagnostic System (VMDS) data revealed the following:

- Train #115 stopped 15 ft. short of the 8-car marker at Glenmont Station.
- Right-side doors (platform side) were manually opened.

- The doors were open for approximately 9 minutes, partially obstructed by the trailing end platform end gate.
- The trailing car was keyed up at approximately 10:09 hours.
- The RTRA Supervisor closed the doors when they were conducting their walk through to clear customers.

The Closed-Circuit Television (CCTV) footage showed that the Train ID #115 Operator looked out of the operator cab window and noticed they were short of the 8-car marker but proceeded to open the doors and exit the consist. Train ID #115 Operator never attempted to move the consist forward to properly berth the consist and never contacted the ROCC to operator the doors in manual mode. This was a violation of SOP #40- Door Operations/ Station Servicing Procedures. Train #115 Operator was removed from service for post-incident testing.

Chronological Event Timeline

Time	Description:
10:01:35 hours	Train ID #115 entered Glenmont Station at 13 MPH. [CCTV]
10:02:23 hours	Train ID #115 comes to a complete stop 15 feet short of the 8 car-marker, the Train Operator looks at the Operator's cab window and proceeds to open the doors. [CCTV]
10:02:38 hours	The Train Operator exits the train, looks back and sees that the train is not properly berthed and continues to walk away. [CCTV]
10:05:51 hours	A new Train Operator boards the train in what appears to be preparation to start revenue service. [CCTV]
10:09:29 hours	The Glenmont Blockhouse Supervisor went to the train to perform an inspection. [CCTV]
10:10:29 hours	Glenmont Station Blockhouse Supervisor: Contacted Buttons RTC to report that Train ID # 115 at Glenmont Station, Track 2 had doors off the platform. They stated that the Train Operator used Auto Doors, but all the train doors were not on the platform by the gate and they were taking the train out of service. The Train Operator can be heard in the background confirming they used Auto Doors. They provided the Train Operator's name and ID #. They informed the Buttons RTC that a RTRA Supervisor was on the train. [Red Line- 12052]
10:11:30 hours	RTRA Supervisor: Closed the doors on the train and proceeded to conduct a walk through to clear the passengers. [CCTV]
10:12:32 hours	Buttons RTC: Contacted ROCC Assistant Operation Manager to inform them that Glenmont Station Blockhouse Supervisor reported that the Train Operator of Train ID #115 used ATO Doors/Train Berth at Glenmont Station Track 2, and the doors opened off the platform right near the end gate. [Red Line -12052]
10:14:06 hours	Radio RTC: Requested an RTRA Supervisor to complete a ground walk around at Glenmont Station, Track 2 [Ops. 1]
10:14:13 hours	RTRA Supervisor: Informed Radio RTC they were walking through the train to clear all customers and would advise when they were ready to conduct the ground walk around. [Ops. 1]
10:14:26 hours	ROCC Assistant Operation Manager: Contacted Safety Officer to report that the Glenmont Station Blockhouse Supervisor reported Train ID #115 doors opened off the platform at Glenmont Station, Track 2. They stated the train operator said they used train berth and the doors opened off the platform. [ROCC Asst. Sup:12063]

Time	Description:
10:15:48 hours	ROCC Assistant Operation Manager: Contacted MTPD to advise that there was a report that Train ID #115 doors opened off the platform side. [ROCC Asst. Sup:12063]
10:16:18 hours	MTPD: Contacted ROCC Assistant Operation Manager to confirm the lead car was 3243 and that the RTRA Supervisor was about to complete a ground walk around. [ROCC Asst. Sup:12063]
10:17:34 hours	Radio RTC: Granted the RTRA Supervisor foul time to conduct ground walk around. [Ops. 1]
10:17:48 hours	RTRA Supervisor: Confirmed with Radio RTC that foul time was granted, and they would advise when the ground walk around was completed. [Ops.1]
10:22:19 hours	RTRA Supervisor: Contacted Radio RTC to relinquish foul time and inform them the ground walk around was completed. [Ops. 1]
10:22:24 hours	RTC: Informed the ROCC Assistant Superintendent of the train operator's name, division, payroll, and lead car information. [ROCC Asst. Sup:12063]
10:22:27 hours	Radio RTC: Acknowledged RTRA Supervisor relinquished foul time and was back on the platform. [Ops.1]
10:23:14 hours	ROCC Assistant Superintendent: Contacted what sounds like SAFE to clarify that the doors did not open on the opposite side but opened outside of the platform limits and confirmed there were passengers on board the train. [ROCC Asst. Sup:12063]
10:25:28 hours	ROCC Assistant Superintendent: Contacted the Glenmont Station Blockhouse Supervisor to confirm the position of the train doors when they went to the platform to inspect the train. The Glenmont Station Blockhouse Supervisor stated the doors were right on the gate and not off the platform. [ROCC Asst. Sup:12063]
10:31:44 hours	Glenmont Station Blockhouse Supervisor: Contacted the ROCC Assistant Superintendent to confirm next steps. ROCC Assistant Superintendent asked the Glenmont Station Blockhouse Supervisor to complete an incident report. The Glenmont Station Blockhouse Supervisor stated all train doors were on the platform, but the train just was not properly berthed. [ROCC Asst. Sup:12063]
10:32:49 hours	ROCC Assistant Superintendent: Contacted the RTC to confirm the initial report was doors opened on the opposite side but then reported off the platform. [ROCC Asst. Sup:12063]
10:33:22 hours	ROCC Assistant Superintendent: Contacted the Glenmont Station Blockhouse Supervisor to ask where they received the report from. The Glenmont Station Blockhouse Supervisor stated the drop back operator contacted them in person to report that the train doors were not properly berthed then the Glenmont Station Blockhouse Supervisor went to platform to do their own inspection. The Glenmont Station Blockhouse Supervisor saw that the train was inside the end gate, but the train was not properly berthed. ROCC Assistant Superintendent told the Glenmont Station Blockhouse Supervisor to have the operator that reported the incident to complete an incident report. [ROCC Asst. Sup:12063]
10:34:52 hours	ROCC Assistant Superintendent: Contacted SAFE to provide an update that the train was inside the platform gate, but the train was not properly berthed. They said it seemed more like a misalignment. [ROCC Asst. Sup:12063]
11:08:43 hours	ROCC Assistant Superintendent: Informed the RTC that the operator was being removed from service. [ROCC Asst. Sup:12063]

Time	Description:
11:21:05 hours	ROCC Assistant Superintendent: Confirmed with the Radio RTC that the door issue at Glenmont Station, Track 2 was improper train operations. [ROCC Asst. Sup:12063]

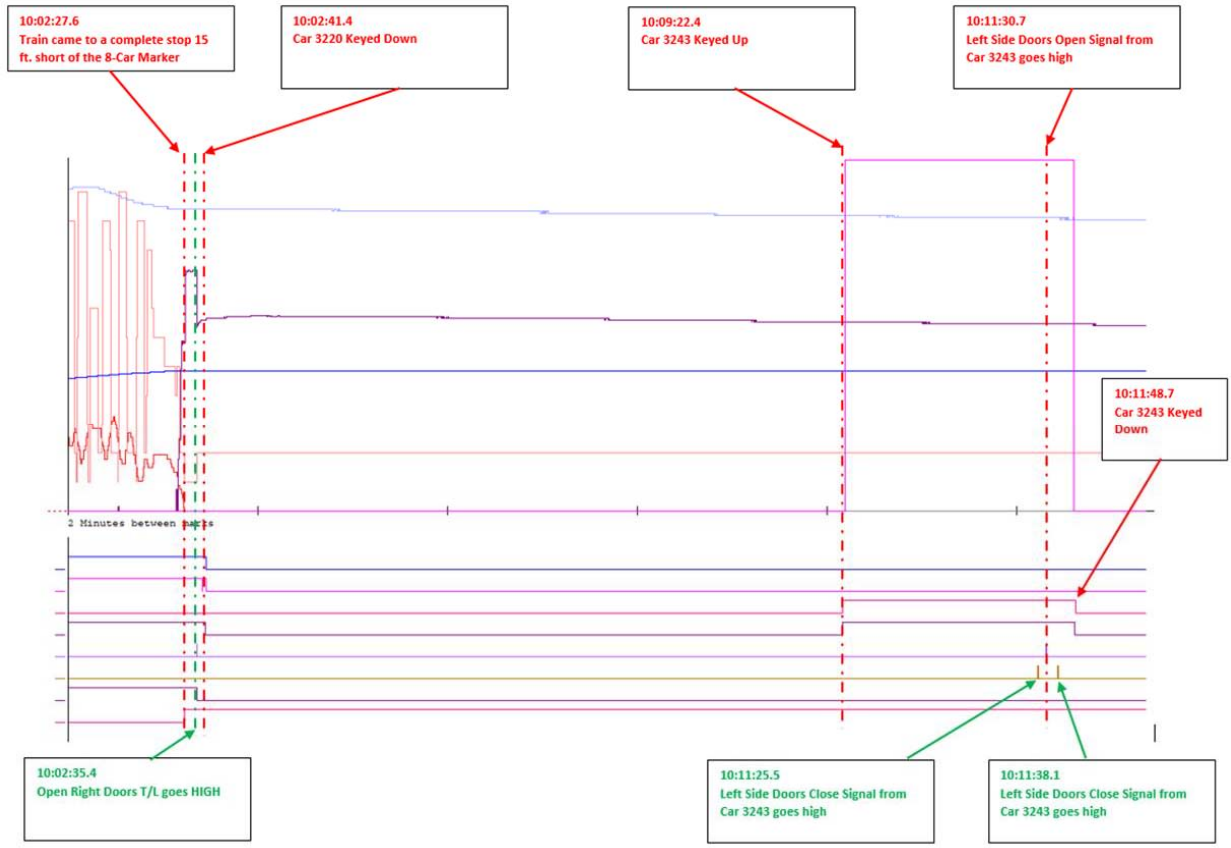
***Note Times above may vary from other system's timelines based on clock settings.*

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

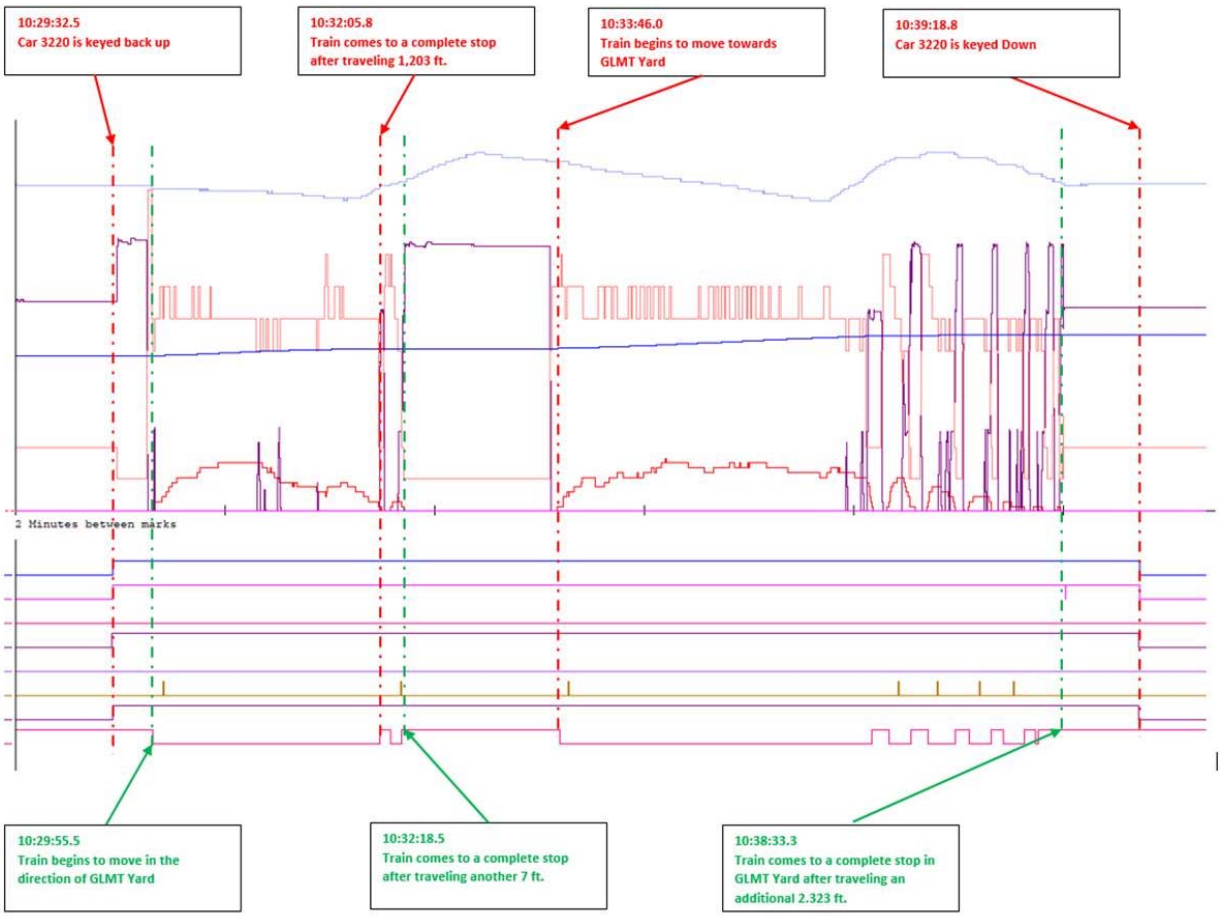
Time	Description
10:01:50.2	Train Enters Glenmont station at 13 MPH, with Master Controller in the P5 Power position
10:01:51.0 - 10:02:24.8	Master Controller alternated between power and Braking modes prior to coming to a stop.
10:02:27.6	Train comes to a complete stop 15 ft. short of the 8-Car Marker
10:02:35.4	Right Open Door Manually activated and Right Door Open Trainline energized
10:02:41.4	Car **3220** is keyed down
10:09:22.4	Trailing Car **3243** is keyed up
10:11:25.5	Left Side Closed Doors Trainline signal goes High (***Right side of Car 3220***)
10:11:30.7	Left Side Open Doors Trainline signal Goes High (***Right side of Car 3220***)
10:11:38.1	Left Side Closed Doors Trainline signal goes High (***Right side of Car 3220***)
10:11:48.7	Trailing Car **3243** is Keyed Down
10:29:32.5	Car **3220** is keyed back up
10:29:53.0	Master Controller Place in P4 Power Mode
10:29:55.5	The train begins to move in the direction of Glenmont Yard
10:29:55.8 - 1-:32:04.4	Master Controller alternated back and forth between Braking and Power Modes, traveling at speeds no greater than 6 mph.
10:32:04.4	Master Controller Moved to B4 Braking Mode, Train speed was 2 MPH.
10:32:05.8	Train comes to a stop after traveling 1,203 ft.
10:32:08.2	Master Controller moved to a P2 Power Mode.

Time	Description
10:32:11.0	The train again begins to move in the direction of Glenmont Yard at a speed no greater than 2 MPH
10:32:17.3	Master Controller Moved to B4 Braking Mode, Train speed was 2 MPH.
10:32:18.4	Train comes to a stop after traveling 7 ft.
10:32:18.5	Master Controller Placed in B5.
10:33:43.1	Master Controller Placed in P2 Power Mode.
10:33:46.0	The train again begins to move in the direction of Glenmont Yard.
10:33:48.4 - 10:38:33.3	Master Controller alternated between Power and Braking Modes until coming to a complete stop into Glenmont yard, after traveling an additional 2,323 ft.
10:39:18.8	Car **3220** was keyed Down.

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

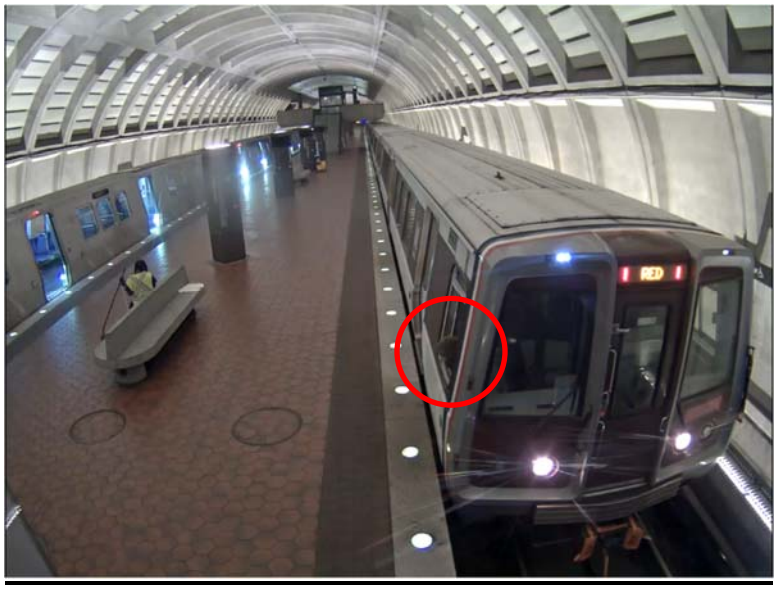


***This diagram shows the speed the consist entered Glenmont Station, the distance it stopped from the 8-car marker, when the doors were opened manually, and when the doors were closed.*



***This diagram shows the activity of the consist when the RTRA Supervisor removed the consist from the platform.*

Closed-Circuit Television (CCTV)



***This image shows Train ID #115 Operator looking out of the cab window noticing they were short of the 8 car-marker.*

***This image shows Train ID #115 Operator looking back outside of the consist seeing it was short of the 8 car-marker.*

***This image shows the trailing car door of Train ID #115 opened against the platform gate.*

***This image shows a RTRA Supervisor conducting a ground walk around.*

Interview Findings

- The Train Operator has been a train operator for 2 years.
- The Train Operator stated they worked the night board, so their bedtime varies.
- They do not have a standard sleep schedule due to working the night board.
- The Train Operator work schedule varies between night and day.
- The Train Operator gets about six hours of sleep on average.
- The Train Operator does not typically work overtime on their days off.
- The Train Operator stated they did not recall what happened because everything happened so fast.
- The Train Operator admitted that the train was not properly berthed.
- The Train Operator stated there was discretion as to what being properly berth means. They stated there is a gray area of room to be properly berthed because the train does not have to be at the 8-car marker. [*Note: This statement is inconsistent with training materials and SOP*]

Findings

- Train #115 stopped approximately 15 feet short of the 8-car marker at Glenmont Station.
- The platform side doors were manually opened.
- The Train Operator did not contact the ROCC to open the doors manually.
- The Train Operator saw that the train was not properly berthed but proceeded to exit the consist.
- The Train Operator thought there was a gray area of when the train is properly berthed.
- The Train Operator failed to follow SOP #40.

Weather

On June 4, 2021, at the time of the incident, NOAA recorded the temperature as 85 ° F, with clear skies throughout the afternoon. The incident occurred in a tunnel section of the roadway. SAFE concluded that weather was not a contributing factor in this incident (Weather source: NOAA) – Location: Washington, DC.)

Human Factors

Fatigue

Evidence of Fatigue

We evaluated conditions at the time of the incident to distinguish whether evidence of fatigue was present. No sign of fatigue was indicated by the available data. No indications of fatigue were evident from the data. The Train Operator reported feeling moderately alert at the time of the incident. The Train Operator reported experiencing no symptoms of fatigue in the time leading up to the incident.

Fatigue Risk

We evaluated incident data for fatigue risk factors. One risk factor for fatigue was present, however the preceding off-period was adequate for sufficient rest. The incident time of day did not suggest an increased risk of fatigue-related impairment. The Train Operator reported some variation in the sleep schedule in the days leading up to the incident. The Train Operator performed day and night work in the days leading up to the incident. The Train Operator was awake for five hours at the time of the incident The Train Operator reported a short sleep duration of 5 hours in the 24 hours leading up to the incident. The off-duty period was 78.75 hours which provides an opportunity for 7-9 hours of sleep. This was less than the Train Operator's usual workday sleep duration. The Train Operator reported no issues with sleep. The Train Operator worked various shifts in the days leading up to the incident.

Post-Incident Toxicology Testing

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

Mitigation to Prevent Recurrence

- Train Operator was removed from service for post-incident testing.
- Train Operator was suspended for 12 days as a result of this incident.
- The Train Operator was retrained on the definition of Station Overrun, Permanent Order T-20-40 Door Operation/Station Servicing Procedures and Permanent Order T-20-28: Moving A Train Without Speed Commands.
- RTRA issued Lessons Learned: Failure to Follow procedures Leads to Improper Door Operations Number: 2021-005

- Notice was posted at all divisions, issued to Rail Supervisors as targeted discussion point during daily touchpoints, and reviewed the material with newly certified Train Operators at their 30/60/90-day refresher session.

Probable Cause Statement

The probable cause of this event was a human factors failure to either request permission from ROCC to adjust the train within the platform limits or follow established door operating procedures, requesting permission to operate doors manually, and waiting 3-5 seconds before initiating the door open button.

SAFE Recommendations/Corrective Actions

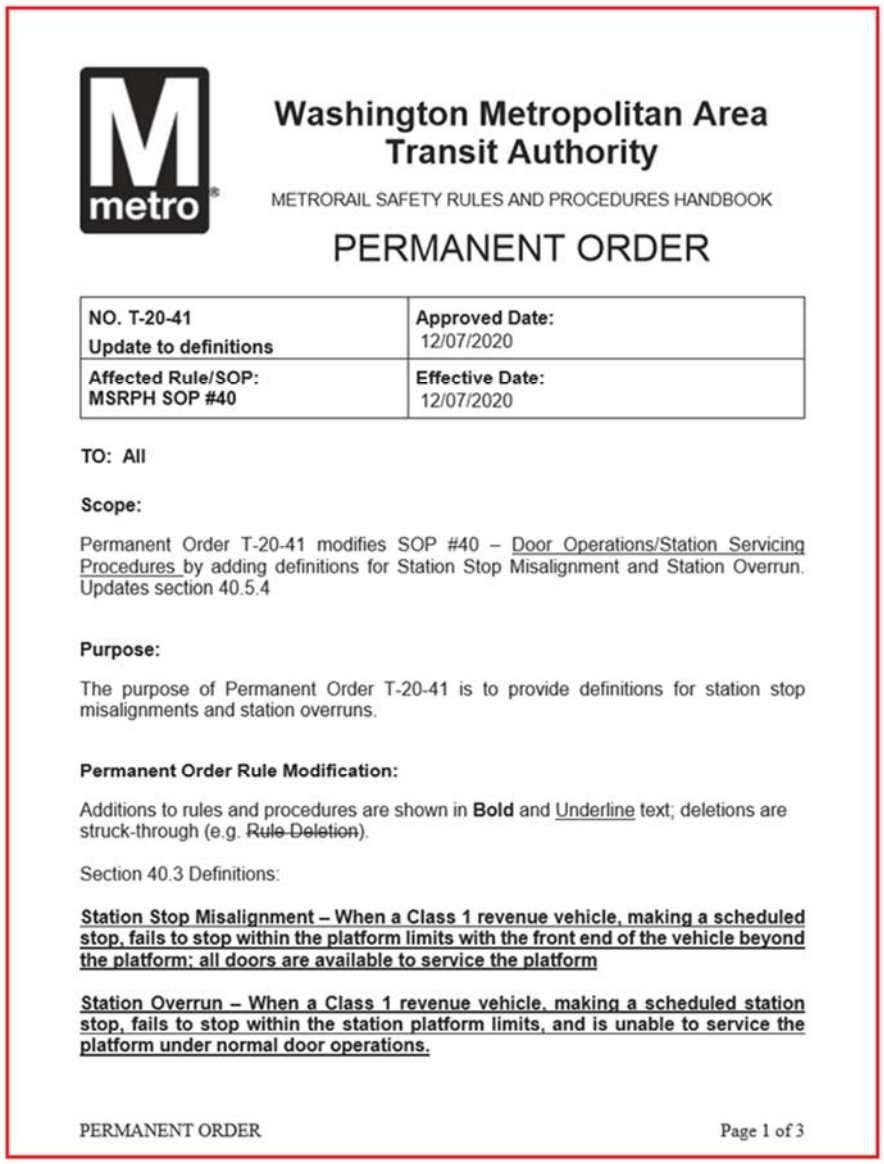
Corrective Action Code	Description
93683_SAFECAPS_RTRA_001 (complete)	(RC-1) RTRA posted Lessons Learned: Failure to Follow procedures Leads to Improper Door Operations Number: 2021-005 in the divisions, issued it to the RTRA Supervisors to discuss with train operators and discussed it during 30, 60, 90 day check ins with new operators.
93683_SAFECAPS_RTRA_002 (complete)	Operator was retrained to focus on the incident. The retraining covered station overruns and T-20-28 (moving train without speed commands)

Appendices

Appendix A – Interview Summary

The Train Operator is a WMATA employee, with two years of experience as a Train Operator and five total years of service, including a previous position as a Bus Operator. The Train Operator did not have any prior safety infractions. The Train Operator stated they felt moderately alert leading up to the improper door operation at Glenmont Station. The Train Operator stated that they did not have any sleep issues and typically get six hours a sleep on average. The Train Operator said they have been working the night board and their work schedule switches between day and night shifts. The Train Operator stated they had worked at least sixteen hours of overtime in the two weeks leading up to the incident. The Train Operator did not work overtime on their scheduled days off. The Train Operator stated they did not recall what happened on June 4, 2021, because everything happened so fast. The Train Operator stated that all the doors were on the platform, but the train was not properly berthed. The Train Operator stated that train cannot move without proper read outs, or you need permission. The Train Operator stated the doors were already opened when they realized they were not properly berthed. The Train Operator stated they did not report that they were not properly berthed because there is discretion of what being properly berthed means (Note: *This statement is not consistent with SOP or training materials*). They mentioned there is a gray area on the platform of room to work with to be properly berthed. They stated they misjudged the gray area of berthing the train.

Appendix B – RTRA Permanent Order T-20-41 Station Servicing Procedures



Washington Metropolitan Area Transit Authority

METRORAIL SAFETY RULES AND PROCEDURES HANDBOOK

PERMANENT ORDER

NO. T-20-41 **Update to definitions**	**Approved Date:** 12/07/2020
Affected Rule/SOP: **MSRPH SOP #40**	**Effective Date:** 12/07/2020

TO: All

Scope:

Permanent Order T-20-41 modifies SOP #40 – Door Operations/Station Servicing Procedures by adding definitions for Station Stop Misalignment and Station Overrun. Updates section 40.5.4

Purpose:

The purpose of Permanent Order T-20-41 is to provide definitions for station stop misalignments and station overruns.

Permanent Order Rule Modification:

Additions to rules and procedures are shown in **Bold** and Underline text; deletions are struck-through (e.g. ~~Rule Deletion~~).

Section 40.3 Definitions:

Station Stop Misalignment – When a Class 1 revenue vehicle, making a scheduled stop, fails to stop within the platform limits with the front end of the vehicle beyond the platform; all doors are available to service the platform

Station Overrun – When a Class 1 revenue vehicle, making a scheduled station stop, fails to stop within the station platform limits, and is unable to service the platform under normal door operations.

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Section 40.5.4 Station Overrun Procedures:

40.5.4.1 In the event a **Class 1 revenue vehicle, making a scheduled station stop, fails to stop within the station platform limits, and is unable to service the platform under normal door operations**, ~~that you rail to stop within the platform limits with front end of train beyond the 8 car marker~~, Operators of trains shall:

a) Immediately advise customers that the train will be holding momentarily with doors closed.

b) Call ROCC and report exact locations of train and number of doors if any beyond platform limits.

c) Follow ROCC's instructions for conducting the following actions:

1) Continuing to the next station – prior to moving make two (2) PA announcements advising customers that the train failed to stop at the proper platform berthing location and must continue to the next station. Also inform customers via the PA directions on how to return to the skipped station.

2) Dropping Left / Right (L/R) Circuit Breakers in lead cab and servicing station. After disabling control to doors on the lead car and opening doors on the platform side, make two (2) PA announcements advising customers on lead car that they must use the emergency bulkhead doors at rear of the first car to enter next car and exit train.

3) Operators must request permission to leave cab and assist customers in lead car with safely opening bulk head doors and verbal directions on exiting the train.

4) If crowded conditions exist making it not possible to exit cab, Operators must immediately inform ROCC and continue to make announcements directing customers in the lead car to next car, periodically viewing customers in lead car to determine when safe to close train doors and move train. Note: Set Door CB's to normal position prior to moving train.

d) Reverse ends and pull train back to station platform -Inform customers via the PA that train failed to stop within the platform limits and that the Rail Operations Control Center has instructed you to operate train back to the platform. Advise customers that you will be leaving the cab and operations will take approximately four minutes.

1) Notify ROCC that you will be reversing ends to pull train back.

2) Key down from original operating cab and walk to trailing operating cab.

3) Key up and announce to customers train will be moving back to

platform to service station.

4) Contact ROCC and request permission to move without speed commands to reposition the train on the platform.
5) Be guided by ROCC instructions.

Approval of Permanent Order T-20-41

Appendix C – RTRA Lessons Learned Number: 2021-005

Office of Rail Transportation

Lessons Learned

Looking back, to effectively move forward

June 15, 2021
Number: 2021-005

Failure to Follow Procedures Leads to Improper Door Operations

INCIDENT SUMMARY

On Friday, June 4, 2021, at approximately 10:01am, the Train Operator of Train 118, which was an 8-car legacy series consist, operated the consist into Glenmont station, Track #2. Upon arrival, Train 118 stopped approximately 15 feet short of the 8-car marker and the operator failed to verify the entire consist was properly berthed on the platform before initiating a door operation. When the operator initiated the right open-door button, doors 5 and 6 of the trailing car opened beyond the end gate. The operator keyed the consist down leaving the doors open in the tunnel beyond the end gate. The drop back operator of Train 118 witnessed the incident and immediately reported the observance to the Terminal Supervisor who, in turn, notified ROCC and instructed the drop back operator to take the train out of service. Following a ground walk around inspection, the operator was removed from service and transported for post-incident testing. There were no reported injuries or damage to equipment following this occurrence.

ROOT CAUSES

This incident's root cause was complacency and failure to follow the proper door opening procedures as outlined in SOP #40, requesting permission to operate doors manually, and waiting 3-5 seconds before initiating the door open button. It should be noted there were no reported discrepancies with the train that could have contributed to this occurrence. ALWAYS REMEMBER, HEAD OUT HANDS DOWN!

LESSONS LEARNED

What happened…	*What should have happened…*
The Train Operator failed to properly berth the train at the 8-car marker.	Operators must make eight-car stops with all trains unless otherwise directed by ROCC (ensure the train is properly berthed on the platform for the number of cars in the consist)
The Train Operator failed to obtain permission to manually open the train doors.	Operators must depress the Train Berth button at 3mph or less and properly berth the train on the platform. When doors fail to open automatically, the operator shall contact ROCC or Terminal Supervisor and obtain permission to open the doors manually.
The Train Operator initiated the door open button prior to sticking their head out to verify the platform side.	Operators must place their head out of the window to confirm platform location and move their hands to their side away from the door control panel for 3-5 seconds prior to opening the train doors.

MSRPH RULES

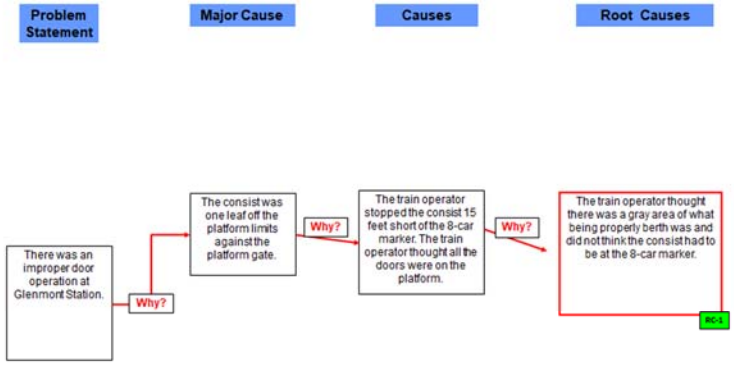
- ✓ GR 1.46 Employees shall not permit unnecessary conversation, reading, lounging, or any other action or condition to divert their attention from the safe and efficient performance of duty.
- ✓ SOP 40.5.1.2.1. Depress the Train Berth button at 3 mph or less

- ✓ SOP 40.5.1.4 If the train doors still fail to open automatically contact ROCC and obtain permission to open the doors manually.
- ✓ SOP 40.5.1.5.1 Make eight-car stops with all trains unless otherwise directed by ROCC (ensure the train is properly berthed on the platform for the number of cars in the consist)
- ✓ SOP 40.5.1.5 Verify the platform side of the train by placing your head out of the cab window and first look and identify the platform. Then look at the doors on the platform side of the train to observe any activity in front of the doors, with your hands to your side approximately five (5) seconds, before reaching up to touch the manual door opening button.

RECOMMENDATIONS

- ✓ Train Operators and all personnel must always be vigilant and aware of their surroundings.
- ✓ Emphasize that all operational personnel abide by SOP 40 when operating trains.
- ✓ Remind all operators to report to the authority (Supervisor, Interlocking Operator, or ROCC) any instructions or procedures that are not clear and await further instructions.
- ✓ Always adhere to established standard operating procedures

Appendix D - Root Cause Analysis



Root Cause Analysis