



Improper Vehicle Movement
At or Near Shady Grove Station and Union Station
March 25, 2025 and March 28, 2025

Document Purpose

This WMSC written report on WMATA Metrorail's safety event investigation 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, feedback, and Metrorail revision, describes the investigation activities, identifies factors causing or contributing to the accident, 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 report) as a unified item for adoption at the Washington Metrorail Safety Commission meeting on March 17, 2026.

WMSC staff recommend adoption of these investigations.

The two improper vehicle movement safety events detailed below occurred in March 2025 and were the result of failure to follow Metrorail Operating Rule 9.8.1, regarding train movement in the absence of speed commands. During both events, train operators moved their trains without speed commands toward trains ahead, risking train collision.

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

- Failure to follow established written policies and procedures, including:
 - Metrorail Operating Rulebook Section 9.8.1: Rail Vehicle Operators shall not move trains with zero speed commands except after notifying the Rail Traffic Controller or Terminal Supervisor and being given permission to move with zero speed commands and either a permissive block going with traffic or an absolute block going against traffic.
 - Metrorail Operating Rulebook Section 8.17.6: Mode 1 is the normal operating mode for Class 1 rail vehicles in revenue service. Mode 1 shall be used when carrying revenue customers except as authorized by the Rail Traffic Controller or as specified in the current General Order.

Investigations W-0414 and W-0415 being considered on March 17, 2026, led to specific corrective actions which have been fully implemented as this investigation report is being presented for WMSC adoption. These include:

- Metrorail conducted a video campaign called "Staying Focused: Preventing Red Signal Overruns and Zero Speed Command Violations".
- WMATA personnel received refresher training

**Safety event summaries:****W-0414 – Shady Grove Station – March 25, 2025 (E25437)**

A train operator operated a Red Line Train 103 from Shady Grove Rail Yard onto the mainline toward Shady Grove Station, without permission from a terminal supervisor or rail traffic controller, as required by Metrorail policy. While moving an 8-car train on the Shady Grove Yard Lead, the train operator was granted an absolute block (clear path in front of the train) to signal A15-32 by the yard interlocking operator. After stopping at the signal, the train operator attempted to reach the Shady Grove Terminal Supervisor twice, without success. There are no terminal supervisors on duty overnight, and the terminal supervisor assigned to the morning shift was not yet on duty. Instead of contacting a rail traffic controller in the control center when the terminal supervisor was unreachable, the train operator moved past the signal, continuing to the Shady Grove Station platform. At this time, another train, Train 101, was properly berthed on the station's platform, which caused Train 103 to lose speed commands. The Train Operator of Train 103 continued toward the station without permission and despite the loss of speed commands, creating the possibility of a collision between the two trains.

After properly berthing at the 8-car maker on the station's platform, the train operator attempted to reach the terminal supervisor again, this time for permission to leave the station at their scheduled departure time. The train operator departed the station without receiving permission.

When the terminal supervisor arrived in the blockhouse (terminal), they contacted both the interlocking operator and the control center to determine if either had given the train operator of Train 103 permission to enter the mainline. When the terminal supervisor determined the train operator had not been permitted to pass signal A15-32, they requested that the train operator be intercepted by a supervisor and removed from service for the improper vehicle movement violation. The train operator was removed from service for post-event toxicology testing in adherence with Metrorail procedure.

W-0415 – Union Station – March 28, 2025 (E25448)

A train operator, operating a train on the Red Line from NoMa-Gallaudet Station toward Union Station, switched from automatic train operation (ATO) mode to manual mode without permission and moved their train without speed commands. During the investigation into this event, several deficiencies were identified, including non-compliance with written procedures and failure to report the safety event, which included a delay in reporting this safety event to the WMSC within the required timeframe.

As the train began to approach Union Station, a rail traffic controller in the Control Center attempted to contact the train operator to instruct them to reduce their speed for schedule adherence. When the rail traffic controller was unable to reach the train operator via radio, the rail traffic controller removed the train's speed commands. When a train loses speed commands, the train operator is required to contact the control center, prior to moving their train. In this case, the train operator did not comply with operating rules and instead entered manual mode, switching from ATO. The train operator then entered into Stop-and-Proceed mode to move the train approximately 666 feet before regaining speed commands and proceeding to Union Station's platform. Stop-and-proceed is a procedure that requires the operator to contact a rail traffic controller or terminal supervisor for permission to enter a numerical code, that releases the train's brakes, when it loses speed commands, allowing the train to move.



The rail traffic controller instructed a rail supervisor to intercept the train at Woodley Park-Zoo/Adams Morgan Station and to accompany the operator to Shady Grove Station. After arriving at Shady Grove Station, the train operator was removed from service for post-event toxicology testing.

During an investigative interview, the train operator indicated that they decided to change operating modes and moved the train without speed commands, despite being familiar with the procedures requiring permission from the rail traffic controller. The train operator also admitted that they did not complete a visual confirmation to determine whether there was a train ahead, risking a collision or derailment.

This event was reported to the WMSC nearly four hours after it occurred, outside of the required 2-hour timeframe, due to late reporting from the control center to the safety information official.

WMSC staff observations

During the investigation into W-0414, the WMSC identified a gap in procedure regarding train operator communications and permissions when the terminal blockhouse is unstaffed by a terminal supervisor. Specifically, while MOR 9.8.1 outlines required communication between the rail vehicle operator and either the terminal supervisor or rail traffic controller when the operator loses speed commands, there is no comprehensive rule or procedure to govern operators in any other instances when the terminal blockhouse is unstaffed, which may lead to similar future events such as the one that occurred on March 25, 2025. WMATA indicated to the WMSC in early March 2026 that they also identified and are working to mitigate this gap in standard operating procedure. Development, implementation, and compliance with written policies and procedures are essential to the safety of the WMATA Metrorail system and all who come in contact with it.



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

FINAL REPORT OF INVESTIGATION A&I E25437

Date of Event:	March 26, 2025
Type of Event:	O-7: Improper Rail Vehicle Movement
Incident Time:	04:56 Hours
Location:	Shady Grove Yard Lead Track 1
Time and How received by Safety:	05:33 Hours/Safety Information Official (SIO)
Washington Metrorail Safety Commission (WMSC) Notification Time:	06:10 Hours
Responding Safety Officers:	None
Rail Vehicle:	Train ID# 103 (L7022-23x7033-32x7006-07x7029-28)
Injuries:	None
Damage:	None
Emergency Responders:	None
Safety Universal Data System (SUDS) Number	20250326#125114MX

Incident Date: 3/26/2025, Time: 04:56 hours
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E25437

Drafted By: SAFE 709 – 05/18/2025 Reviewed By: SAFE 710 – 05/26/2025 Approved By: SAFE 707 – 05/28/2025

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Shady Grove – Improper Rail Vehicle Movement

March 26, 2025

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Abbreviations and Acronyms

AIMS	Advanced Information Management System
AOM	Assistant Operations Manager
ARS	Audio Recording System
CCTV	Closed-Circuit Television
IO	Interlocking Operator
MICC	Metro Integrated Command and Communications Center
MOR	Metrorail Operating Rulebook
NOAA	National Oceanic and Atmospheric Administration
NVR	Network Video Recorder
OM	Operations Manager
RTC	Rail Traffic Controller
RTRA	Office of Rail Transportation
RVO	Rail Vehicle Operator
SIO	Safety Information Official
SUDS	Safety Universal Data System
VMDS	Vehicle Monitoring and Diagnostic System
WMATA	Washington Metropolitan Area Transit Authority
WMSC	Washington Metrorail Safety Commission

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

Executive Summary

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

On Wednesday, March 26, 2025, at 04:56 hours, an Improper Rail Vehicle Movement event occurred when the Rail Vehicle Operator (RVO) of Train ID 103 (L7022-23x7033-32x7006-07x7029-28T), an eight-car 7000 series train traveling from the Shady Grove Yard lead on track 1 to Shady Grove Station, track 1. The Shady Grove Yard Interlocking Operator (IO) granted the RVO an absolute block to signal A15-32, but the RVO passed the signal without the Terminal Supervisor or the Metro Integrated Command and Communications Center (MICC) Radio Rail Traffic Controller (RTC) granting them permission.

The RVO of Train ID 103 attempted to contact Shady Grove Station terminal at 04:56 hours and again 30 seconds later, but never received a response from the Terminal Supervisor. The RVO never attempted to contact the MICC to obtain an absolute or permissive block to Shady Grove Station, track 1 before passing A15-32 signal lunar. At the time of Train ID 103's request, Train ID 101 was properly berthed at Shady Grove, track 1.

Once Train ID 101 departed Shady Grove, track 1 at 05:00 hours, Train ID 103 properly berthed on the platform, opened the train doors, and attempted to contact the Terminal Supervisor for the third time at 05:01 hours to request permission to leave at their scheduled time of 05:08 hours.

At 05:33 hours, the Operations Manager (OM) at the MICC contacted the Safety Information Official (SIO) to inform them of Train ID 103 moving without speed commands and advised them that the RVO would be removed from service.

The probable cause of the Improper Rail Vehicle Movement event on March 26, 2025, at Shady Grove Station was the Rail Vehicle Operator's lack of communication, awareness, and failure to follow the Metrorail Operating Rulebook (MOR). Contributing factors were that the Interlocking Operator failed to inform the RVO to contact the MICC, and the RVO failed to contact the Radio RTC to inform them that they were holding at A15-32 signal when they did not receive a response from the Shady Grove Terminal Supervisor.

Incident Site

Shady Grove Yard lead Track 1 is outdoors, ballasted track near the rear interlocking at Shady Grove Station.

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Field Sketch/Schematics

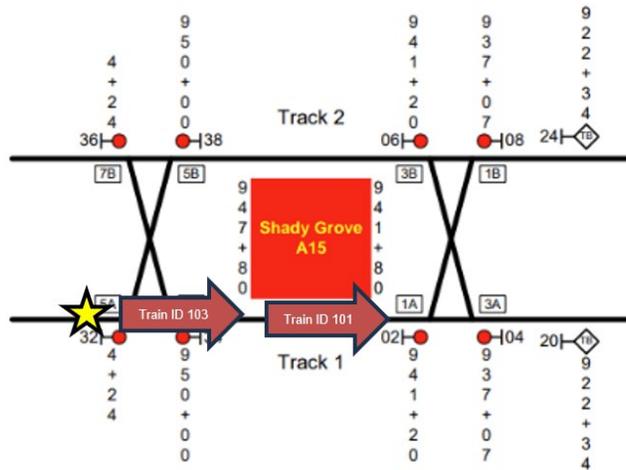


Figure 1 This picture is not to scale. The yellow star indicates the approximate location where Train 103 was given an absolute block to hold its position.

Purpose and Scope

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

Investigative Methods

The investigative methodologies included the following:

- 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 individual:
 - Rail Vehicle Operator – Train ID 103
- 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)
 - RTRA 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
 - Rail Vehicle Operator's Training Records

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- RTRA Post-Accident/Incident Questionnaire
- 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 Wednesday, March 26, 2025, at 04:46 hours, the RVO of Train ID 103, (L7022-23x7033-32x7006-07x7029-28T), an eight-car 7000 series train, contacted the Shady Grove Interlocking Operator to inform them that their train was ready for revenue service, and they were ready to proceed to mainline. At 04:50 hours, the IO gave Train ID 103 an absolute block no closer than 10 feet of A99-22 signal lunar and instructed the RVO to stand by. The RVO repeated back 100% of the IO's transmission. At 04:54 hours, the IO extended the absolute block of Train ID 103 to A15-32 signal and instructed the RVO to "contact" but did not specify who the RVO should contact (i.e., Terminal or MICC).

At 04:56 hours, an Improper Rail Vehicle Movement event occurred when the RVO of Train ID 103 passed A15-32 signal without permission. The Shady Grove IO gave the RVO an absolute block to A15-32 signal, but the RVO passed the signal without the Terminal Supervisor or the MICC Radio RTC granting them permission. The Terminal Supervisor was not in the terminal, and the MICC had control of the interlocking at the time of the incident.

The RVO of Train ID 103 attempted to contact Shady Grove terminal at 04:56 hours and again 30 seconds later, but never received a response from the Terminal Supervisor. The RVO never attempted to contact the MICC to obtain an absolute or permissive block to Shady Grove, track 1 before passing A15-32 signal lunar. At the time of Train ID 103's request, Train ID 101 was properly berthed at Shady Grove Station, track 1 with their train doors opened, waiting for their scheduled leaving time of 05:00 hours.

The Terminal Supervisor observed from the parking lot that Train ID 103 was holding at the roadway instead of at A15-32 signal, which was odd because there was a train already on the platform. At 05:00 hours, Train ID 101 departed Shady Grove track 1, and Train ID 103 properly berthed on the platform and opened the train doors. The RVO attempted to contact the Terminal Supervisor for the third time at 05:01:39 hours to request permission to leave at their scheduled time of 05:08 hours, but no response. The Terminal Supervisor arrived in the blockhouse at 05:07 hours.

At 05:09 hours, the Terminal Supervisor contacted the IO to inquire if they had given the RVO permission to pass A15-32 signal. At 05:11 hours, the Terminal Supervisor contacted the Button RTC to determine if they had given the RVO permission to pass A15-32 signal. The Button RTC stated that they were just as confused and were trying to figure out why Train ID 103 was sitting in that location.

At 05:33 hours, a MICC Operations Manager (OM) contacted the Safety Information Official (SIO) to inform them of Train ID 103 moving without speed commands and advised them that the RVO would be removed from service.

Chronological Event Timeline

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

Time	Description
04:46:18 hours	<u>RVO</u> : Contacted Shady Grove tower to inform them that they had completed their inspection, and Train ID 103 was ready to proceed to the mainline. [Radio SGYD2]
04:46:46 hours	<u>IO</u> : Confirmed that Train ID 103 was standing by ready for the mainline at A99-108. [Radio SGYD2]
04:50:59 hours	<u>IO</u> : Gave Train ID 103 a lunar at A99-108 signal and an Absolute Block no closer than 10ft of A99-22 signal lunar and instructed the RVO to stand by at that location. <u>RVO</u> : Repeated the Absolute Block back to the IO. [Radio SGYD2]
04:54:36 hours	<u>IO</u> : Gave Train ID 103 a lunar at A99-22 and an Absolute Block to A15-32 and instructed the RVO to “contact” but did not specify who the RVO should contact. [Radio SGYD2]
04:56:14 hours	<u>RVO</u> : Attempted to contact Shady Grove terminal to verify the lunar at A15-32 signal. [Radio SGY1]
04:56:55 hours	<u>RVO</u> : Train ID 103’s second attempt to contact Shady Grove terminal to verify the lunar at A15-32 signal. [Radio SGY1]
04:56:56 hours	Train ID 103 passed A15-32 signal without speed commands. [VMDS Report]
05:01:23 hours	Train ID 103 properly berthed on the platform at Shady Grove Station on Track 1 [SPOTS]
05:01:39 hours	<u>RVO</u> : Attempted to contact Shady Grove terminal at A15-02 signal Shady Grove, track 1 to request permission to leave the platform on their scheduled time at 05:08 hours. [Radio SGY1]
05:09:05 hours	Train ID 103 departed Shady Grove Station. [SPOTS]
05:09:10 hours	<u>Terminal</u> : Contacted the IO to find out why Train ID 103 was beyond A15-32 signal when there was a train already berthed on the platform at Shady Grove Station on track 1. <u>IO</u> : Stated that they gave Train ID 103 an Absolute Block to A15-32 signal and instructed the RVO to contact. [Phone]
05:11:31 hours	<u>Terminal</u> : Contacted the Button RTC to find out why Train ID 103 was past the signal when Train ID 101 was still on the platform. <u>Button RTC</u> : Stated that they were trying to figure out why the train was past A15-32 signal and informed the terminal that no one gave Train ID 103 a permissive block or permission to move without speed commands. <u>Terminal</u> : Requested to have the RVO intercepted by a Rail Operations Supervisor. [Phone]
05:18:46 hours	<u>Terminal</u> : Contacted the IO to confirm that the IO only gave Train ID 103 permission to A15-32 signal and instructed the RVO to contact. <u>IO</u> : Confirmed that transmission. [Phone]
05:33:15 hours	<u>AOM</u> : Contacted the SIO to inform them that Train ID 103 moved without speed commands and the RVO will be removed from service. [Phone]

Time	Description
05:34:20 hours	AOM: Notified the OM that the RVO of Train ID 103 would be removed from service. [Phone]

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

Advanced Information Management System (AIMS)

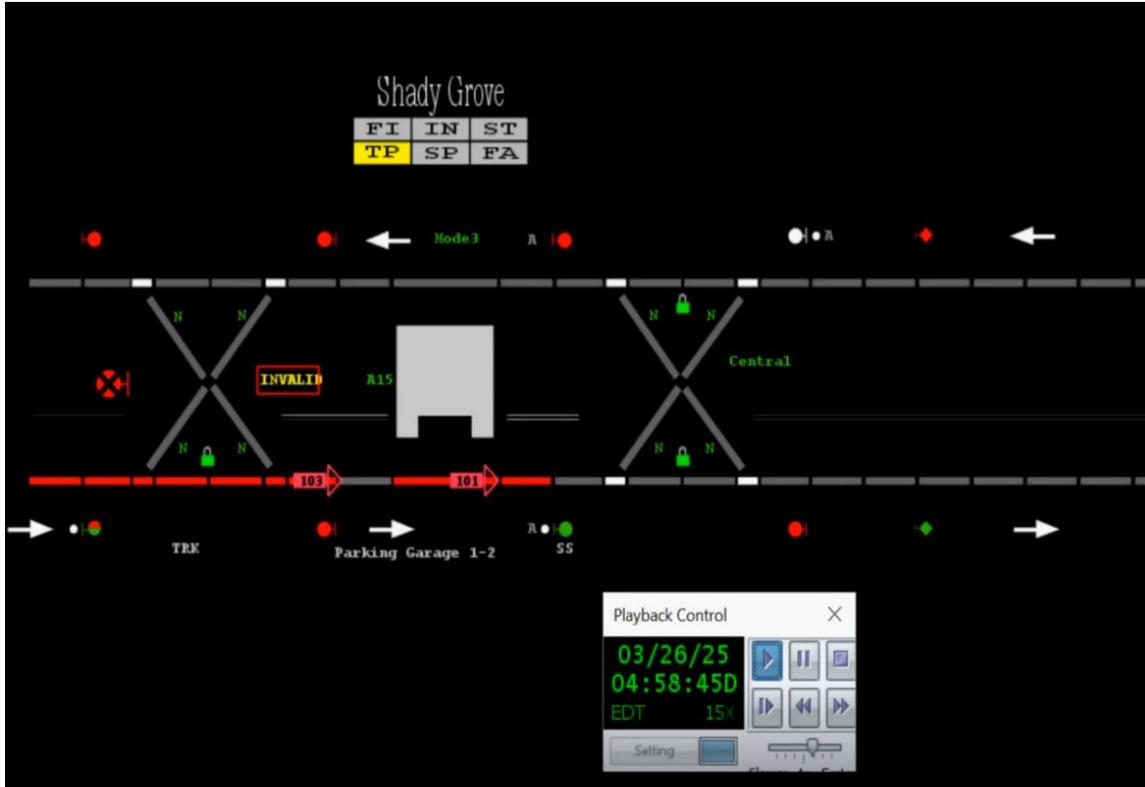


Figure 2 This picture is not to scale. The picture shows Train ID 103 past A15-32 signal while Train ID 101 is properly berthed on Shady Grove, track 1 with the doors open.

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

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

The Incident Investigation Team (IIT) completed the analysis of data from Train ID 103, cars L7022-23x7033-32x7006-07x7029-28, reported for Improper Rail Vehicle Movement at the Shady Grove yard lead Track #1 on March 26, 2025.

Based on the Video Management System (VMS), Train ID 103 was moved from the yard to past A15-32 signal. The train entered Stop and Proceed in the yard and continued to move towards the station. The train only had an absolute block to A15-32 signal. No fault could have contributed to the cause of this incident, the train operated as designed.

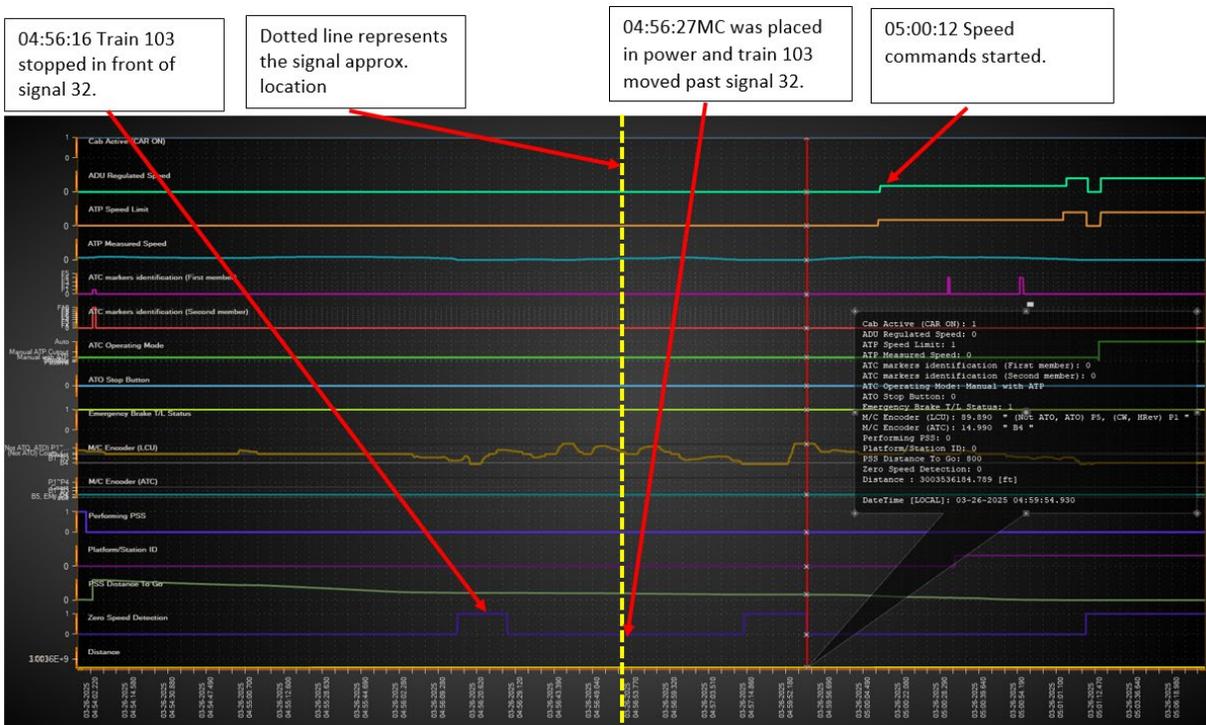
Time	Description
04:56:16 hours	Train 103 stopped in front of signal 32.

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Time	Description
04:56:56 hours	MC was placed in power, and train 103 moved past signal 32.
04:57:13 hours	Train 103 stopped after signal 32.
04:59:54 hours	Train 103 resumed operation and moved to the platform on track 1.
05:00:12 hours	Speed commands started once the train entered the platform block.

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



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

- RVO took an 8-car 7000 series consist out of Shady Grove yard.
- RVO was given an absolute block to A99-22 lunar, then given a block to A15-32 and told to contact the terminal.
- Upon passing A99-22, the RVO turned the radio to SG-Y2 to contact the terminal as instructed to do.
- They repeated their name, car number, number of cars, and train ID but did not hear a repeat back.
- The RVO repeated the information again and still did not receive a repeat back from the terminal.

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- Once they received a lunar at A15-32 and waited until the train ahead of them cleared the platform, they moved their train to the 8-car marker at Shady Grove Station, track 1.
- Once at the 8-car marker, the RVO repeated their train ID, number of cars, verified correct rail alignment, speed commands, and lunar.
- The RVO repeated this information twice and requested permission to leave on their scheduled time.
- They departed Shady Grove station at 05:08 hours and switched over to OPS-1.

Terminal Supervisor (Written Statement)

- Observed ID 103 was beyond A15-32 signal at the pedestrian crosswalk behind Shady Grove terminal on track 1 from the yard lead.
- Observed ID 101 on Shady Grove, track 1 servicing the station, then departing at 05:00 hours.
- At 05:03 hours observed ID 103 proceeded to Shady Grove, track 1, serviced the platform, and departed the station at 05:08 hours.
- Contacted Shady Grove tower via landline at 05:09 hours and asked the Interlocking Operator about the instructions given to Train ID 103 when leaving the yard.
- Notified MICC at 05:11 hours that Train ID was beyond A15-32 signal and exceeded their block.
- Notified Shady Grove division management at 05:15 hours.

Interlocking Operator (Written Statement)

- The RVO contacted the tower at about 04:50 hours, stating ready for mainline.
- They gave the RVO a lunar at A99-108 and an absolute block A99-22 lunar no closer than 10ft of the signal.
- Once traffic was clear, the block was extended from A99-22 to A15-32, no closer than 10ft and contact.

Weather

On March 26, 2025, at the time of the incident, NOAA recorded the temperature as 50°F, with cloudy skies, winds of 12 mph, and 48% humidity at Shady Grove Station. Weather was not a contributing factor in this incident (Weather source: NOAA) – Location: Washington, DC.

Related Rules and Procedures

Metrorail Operator Rulebook (MOR)

MOR 9.8 Speed Commands

9.8.1 Rail Vehicle Operators shall not move trains with zero speed commands except after notifying the Rail Traffic Controller or Terminal Supervisor and being given permission to move with zero speed commands and either a permissive going with traffic or an absolute block going against traffic.

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Human Factors

Evidence 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. No video of the incident was available for review. The Rail Vehicle Operator reported feeling very 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

RVO

A Safety Investigator evaluated incident data for fatigue risk factors. Risk factors for fatigue were present due to the incident occurring at a time of low circadian alertness however, the Rail Vehicle Operator reported keeping a regular sleep schedule, and the employee was off duty the day before the incident. The employee was awake for 2 hours at the time of the incident. The Rail Vehicle Operator reported 6.5 hours of sleep in the 24 hours preceding the incident. The off-duty period was 31 hours, 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 Rail Vehicle Operator complied with the Drug and Alcohol Policy and Testing Program 7.7.3/6.

Findings

- The RVO was given an absolute block by the Shady Grove Tower Interlocking Operator to A99-22 signal (lunar), then to A15-32 signal (lunar), and was told to make contact but was not instructed whom to contact.
- When the RVO attempted to reach the Terminal Supervisor, there was no response, as no one was present in the terminal at the time.
- A train was servicing the platform when Train ID 103 passed A15-32 signal (lunar).
- Train ID 103 did not have speed commands in approach to Shady Grove, track 1.
- The RVO lacked knowledge on whom to contact if the Terminal Supervisor was not present in the blockhouse.
- The IO failed to give clear instructions to the RVO regarding whom to contact when issuing the absolute block to A15-32 signal.
- The RVO did not attempt to contact the MICC to obtain permission to properly berth at Shady Grove, track 1.
- This was the RVO's first time operating a train out of Shady Grove yard.

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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 Radio RTC dispatched a Rail Operations Supervisor to relieve the Rail Vehicle Operator from duty for post-incident testing.

In adherence to the Office of the Chief Mechanical Officer (CMOR) Incident Investigation Team (IIT) Operations Administrative Policy (OAP) 102.06, the MICC took Train ID 103 out of revenue service for post-incident investigation. This action followed the Rail Vehicle Event Investigation Policy, ensuring a thorough examination of the incident.

Probable Cause Statement

The probable cause of the Improper Rail Vehicle Movement event on March 26, 2025, at Shady Grove Station was the Rail Vehicle Operator's lack of communication, awareness, and failure to follow the Metrorail Operating Rulebook (MOR). Contributing factors were that the Interlocking Operator failed to inform the RVO to contact the MICC, and the RVO failed to contact the Radio RTC to report that they were holding at A15-32 signal when they did not receive a response from the Shady Grove Terminal Supervisor.

Recommended Corrective Actions

Corrective Action Code	Description	Responsible Party	Estimated Completion Date
125114_SAFE CAPS_RTRA _001	Video Campaign "Staying Focused: Preventing Red Signal Overruns and Zero Speed Command Violations."	RTRA	Ongoing
125114_SAFE CAPS_RTRA _002	Rail Vehicle Operator to attend re-instruction training.	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

The RVO has been a WMATA employee for four years. They were hired in the Plant Maintenance department and have been employed as an RVO for six months. The RVO holds a Level 2 Roadway Worker Protection (RWP) certification that expires on December 31, 2025.

During the formal interview, the RVO stated they contacted the tower upon arriving to find out what track they were on. They were given an 8-car 7K Series on track 10A. They conducted their interior and exterior inspection and locked their bulkhead door like they normally do. They informed the tower that they had a good train, and they were ready for the mainline.

The tower gave them a lunar, and they proceeded to A99-22 signal lunar. At A99-22 signal lunar, they contacted the tower again, and they gave them an absolute block to A15-32 signal lunar and contact. After they repeated those instructions back, they switched over to the terminal OPS. They then proceeded to the A15-32 signal, which was lunar by the time they got there, but there was a train on the platform.

They contacted the terminal and gave them the same spiel (how many cars, train ID) while going to the platform. No one responded. They once again repeated the information, and again, no one responded, but they still had a lunar at A15-32.

When the platform was cleared, they proceeded to properly berth at A15-02 signal. They waited until their scheduled time of 05:08, and between that time, they gave the spill again, verifying their lunar at A15-02 with correct rail alignment, and again did not receive a repeat back. They did that twice.

They waited until 05:08:27 and closed the doors, and proceeded to Rockville Station to do their first trip as they normally do. They had switched to OPS 1 at this time.

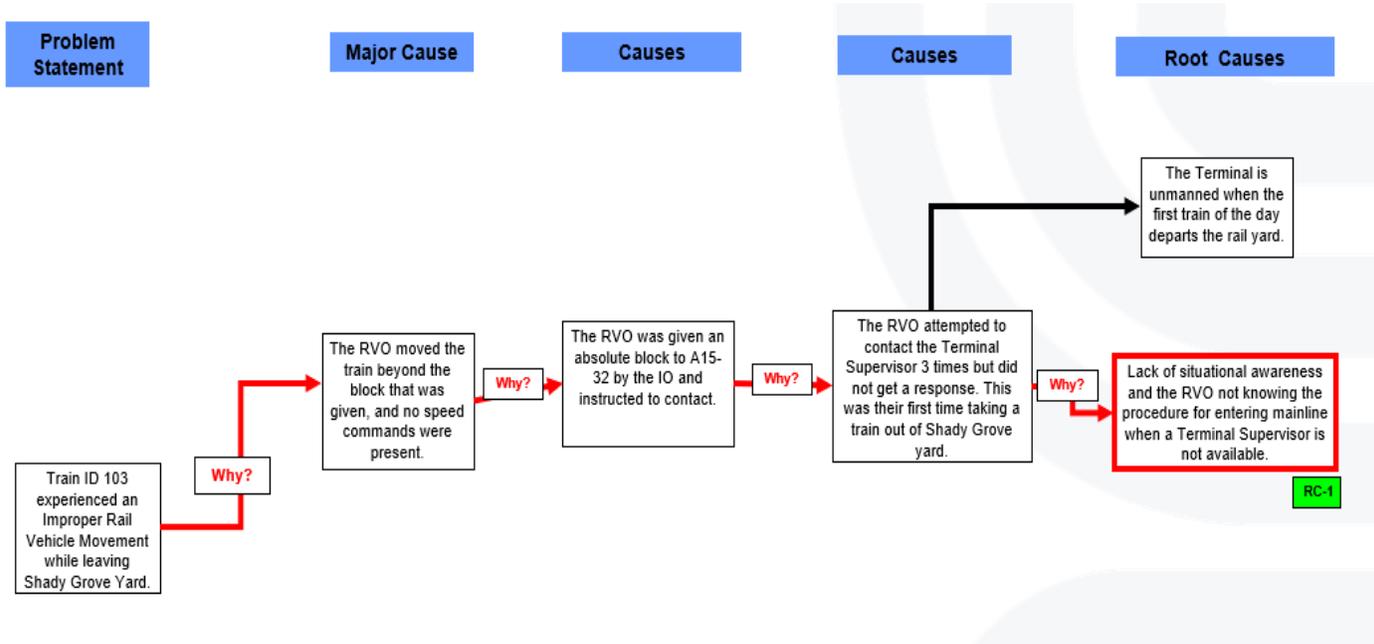
They did not contact the tower to inform them that the terminal did not respond, and did not contact the MICC at any point. They did not know that they were supposed to contact the MICC. This was their first time taking a train out of Shady Grove yard. They stated that they had speed commands when the train ahead on track 1 cleared the platform, then stated they were still on the stop and proceed block because they were leaving the yard, but once they got on the platform, their speed commands were at 22 MPH. The train was being operated in ATO when it left Shady Grove Station. The RVO confirmed that their absolute block was to A15-32 signal and they were never given permission to the platform. They were unaware that they had done anything wrong until a supervisor knocked on their door to take over operations because the MICC said they hadn't contacted anyone before leaving the platform.

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E25437

Drafted By: SAFE 709 – 05/18/2025
Reviewed By: SAFE 710 – 05/26/2025
Approved By: SAFE 707 – 05/28/2025

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Appendix B – Why-Tree Analysis



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 E25437

Drafted By: SAFE 709 – 05/18/2025
 Reviewed By: SAFE 710 – 05/26/2025
 Approved By: SAFE 707 – 05/28/2025



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

FINAL REPORT OF INVESTIGATION A&I E25448

Date of Event:	March 28, 2025
Type of Event:	O-7; Improper Rail Vehicle Movement
Incident Time:	13:50 Hours
Location:	Union Station
Time and How received by Safety:	17:42 Hours, Safety Information Official (SIO)
Washington Metrorail Safety Commission (WMSC) Notification Time:	17:45 Hours
Responding Safety Officers:	None
Rail Vehicle:	Train ID 114 (L3202-03x3144-45x3125-24x3186-87T)
Injuries:	None
Damage:	None
Emergency Responders:	None
Safety Universal Data System Incidents/Accidents (SUDS I/A) Incident Number:	20250328#125199MX

Incident Date: 03/28/2025 Time: 13:50 hours
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E25448

Drafted By: SAFE 710 – 05/25/2025
Reviewed By: SAFE 707 – 05/29/2025
Approved By: SAFE 707 – 05/29/2025

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Union Station – Improper Rail Vehicle Movement

March 28, 2025

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Abbreviations and Acronyms

AIMS	Advanced Information Management System
ARS	Audio Recording System
ATO	Automatic Train Operation
CCTV	Closed-Circuit Television
CMOR	Office of the Chief Mechanical Officer
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
ROQT	Rail Operations Quality Training
ROS	Rail Operation Supervisor
RTC	Rail Traffic Controller
RVO	Rail Vehicle Operator
SDOC	Safety Director On-Call
SIO	Safety Information Official
SMS	Safety Measurement System
VMS	Vehicle Monitoring System
WMATA	Washington Metropolitan Area Transit Authority
WMSC	Washington Metrorail Safety Commission

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

Executive Summary

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

On Friday, March 28, 2025, a Rail Vehicle Operator (RVO) assigned to the Shady Grove Division was operating Train ID 114 (L3202-03x3144-45x3125-24x3186-87T) in Automatic Train Operation (ATO) mode. While approaching Union Station on track 2 after departing NoMa-Gallaudet Station, the train lost speed commands and came to a stop just before the station platform.

The Metro Integrated Command and Communication (MICC) Center Radio Rail Traffic Controller (RTC) attempted to contact the RVO to instruct them to reduce speed for schedule adherence. The RVO did not respond, and the Radio RTC removed the train's speed commands in an effort to slow the train.

The RVO proceeded to move the train manually to Union Station platform without speed commands and without receiving permission from the Radio RTC. After servicing the station, a Rail Operations Supervisor (ROS) boarded the train and observed the RVO's operation towards Shady Grove Station, where the RVO was subsequently removed from service.

The probable cause of the Improper Rail Vehicle Movement event at Union Station on March 28, 2025, was complacency and disregard of established procedures. Specifically, the RVO manually moved the train without speed commands and without obtaining proper authorization from the RTC after the loss of speed commands approaching Union Station.

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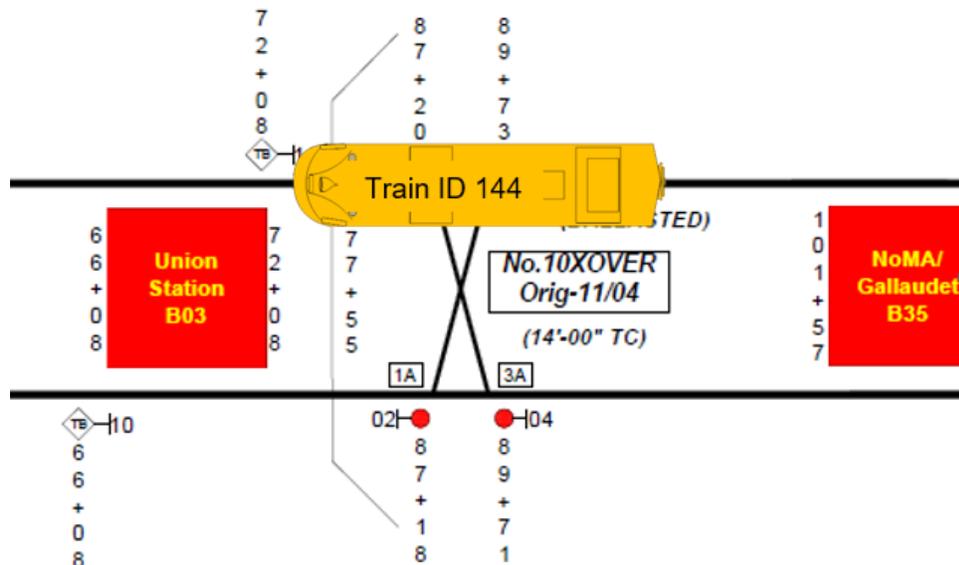
Drafted By: SAFE 710 – 05/25/2025
Reviewed By: SAFE 707 – 05/29/2025
Approved By: SAFE 707 – 05/29/2025

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Incident Site

Union Station, track 2 Chain Marker 72+08

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 two 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). Safety interviewed the following individuals:
 - Rail Vehicle Operator
 - Radio Rail Traffic Controller
- 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:
 - RVO Training Records

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- RVO Certifications
 - RVO 30-Day work history review
 - Metrorail Operating Rulebook (MOR)
 - National Oceanic and Atmospheric Administration (NOAA)
- System Data Recording Review – Collection of information contained in Metro Data Recording Systems. This data includes:
 - Audio Recording System (ARS) playback
 - The Office of Chief Mechanical Officer Incident Investigation Team (IIT) Vehicle Monitoring System (VMS)
 - Advance Information Management System (AIMS)

Investigation

On March 28, 2025, at approximately 13:46 hours, Train ID 144 (L3202-03x3144-45x3125-24x3186-87T) departed NoMa-Gallaudet Station operating in ATO mode toward Union Station, as confirmed by Vehicle Monitoring System (VMS) data.

At the time, the train was identified by the MICC as being several minutes ahead of schedule. The Radio RTC, working solo while their partner was on break, attempted to contact the RVO via radio to advise a speed reduction for line management purposes.

At 13:47:50 hours, speed commands were removed by the Radio RTC as a further effort to regulate the train's movement and contact the RVO. This decision coincided with a canceled turnback signal between Judiciary Square and Union Station, as verified by Advanced Information Management System (AIMS). The train continued without speed commands and came to a full stop 2,255 feet from the departure point, as recorded by VMS.

At 13:48:08 hours, the Stop-and-Proceed mode was activated, and the train began moving with the Master Controller in power position P1. Over the next 666 feet, the train operated without speed commands before regaining them at 13:48:59 hours. At that point, the train continued into the Union Station platform in manual mode, coming to a stop at the 8-car marker by 13:49:26 hours.

AIM and ARS data indicate that shortly after the unauthorized movement, the RTC and Assistant Operations Manager (AOM) reviewed playback data and confirmed the RVO's transition from ATO to Manual mode without clearance. The RTC communicated with a Rail Operations Supervisor (ROS) to intercept the RVO. At 14:04 hours, the ROS was directed to board the train at Woodley Park Station and accompany the RVO to Shady Grove Station.

At 13:50 hours, the RTC contacted the RVO to inquire about train mode and confirmed the improper movement. At 14:45 hours, the RVO was officially removed from service at Shady Grove Station by the ROS.

During a formal interview, the RVO stated that speed commands dropped unexpectedly while operating under ATO. Without receiving or requesting permission, the RVO manually transitioned to Mode 2 Level 1 and proceeded to the platform, citing impatience due to radio traffic. The RVO acknowledged familiarity with the rules requiring authorization to switch modes and to move without speed commands but failed to follow them. The RVO also stated this was the final trip of their shift and admitted the decision was made without visual confirmation of a train ahead.

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The RTC, during a separate interview, explained that they canceled the turnback to initiate communication with the RVO and manage schedule adherence. The RTC noted that canceling a turnback is not standard practice and was done at their discretion. The RTC observed the unauthorized mode switch through AIMS but had not received training on alternate tools available within AIMS, such as holding trains with doors open.

At 17:05 hours, the Safety Information Official (SIO) was notified of the Improper Rail Vehicle Movement event after contacting the MICC in response to an inquiry from the Safety Director On-Call (SDOC).

Chronological Event Timeline

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

Time	Description
13:47:50 hours	Speed commands were removed from turnback. [IIT Report & AIMS]
13:48:08 hours	The train's mode of operation was switched from ATO to Manual. [IIT Report]
13:48:11 hours	Stop and Proceed Mode was initiated. [IIT Report]
13:48:13 hours	Train ID 144 began moving towards Union Station without speed commands. [IIT Report]
13:49:26 hours	Train ID 144 comes to a complete stop at Union Station, 8-car marker. [IIT Report]
13:51:15 hours	<u>Radio RTC</u> : Requested confirmation if Train ID 144 had speed commands while at Union Station on track 2. <u>Train ID 144</u> : Acknowledged that they did have speed commands at Union Station. [Radio, Ops1]
13:52:51 hours	<u>Radio RTC</u> : Requested Train ID 144, current train mode of operation. [Radio, Ops 1]
13:53:05 hours	<u>Radio RTC</u> : Advised ROS that they removed Train ID 144 speed commands, and the RVO moved the train without speed commands in manual mode. Advised that they had to confirm via AIMS playback. [Phone]
13:53:15 hours	<u>Radio RTC</u> : Instructed Train ID 144 to continue servicing stations. <u>Train ID 144</u> : Acknowledged. [Radio, Ops 1]
14:04:18 hours	<u>Radio RTC</u> : Advised the ROS that they removed Train ID 144 speed commands (at Union Station) and that they switched modes of operation from ATO to manual, moving the train without speed commands. Advised the ROS to board the train and ride with the RVO to Shady Grove Station. [Phone]
14:08:45 hours	<u>ROS</u> : Advised that they were waiting at Woodley Park Station for Train ID 144. [Radio, Ops 1]
14:24:37 hours	<u>Rail 2</u> : Request that the RVO of Train ID 144 be moved from service. <u>Button RTC</u> : Acknowledged. [Phone]
14:45:49 hours	<u>ROS</u> : Advised Rail 2 that they were at Shady Grove Station and removed the RVO from service. [Phone]
16:54:01 hours	<u>SDOC</u> : Inquired if an Improper Rail Vehicle Movement event occurred. <u>SIO</u> : Nothing was reported. However, they will contact the MICC to inquire about it. [Phone]
17:05:44 hours	<u>Rail 1</u> : Notified SIO of the Improper Rail Vehicle Movement event. [Phone]

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

Advanced Information Management System (AIMS)



Figure 1 - (orange arrow) depicts red turnback-no speed commands. (yellow circle) depicts train is operating in ATO - shaded triangle at 13:47 hours.

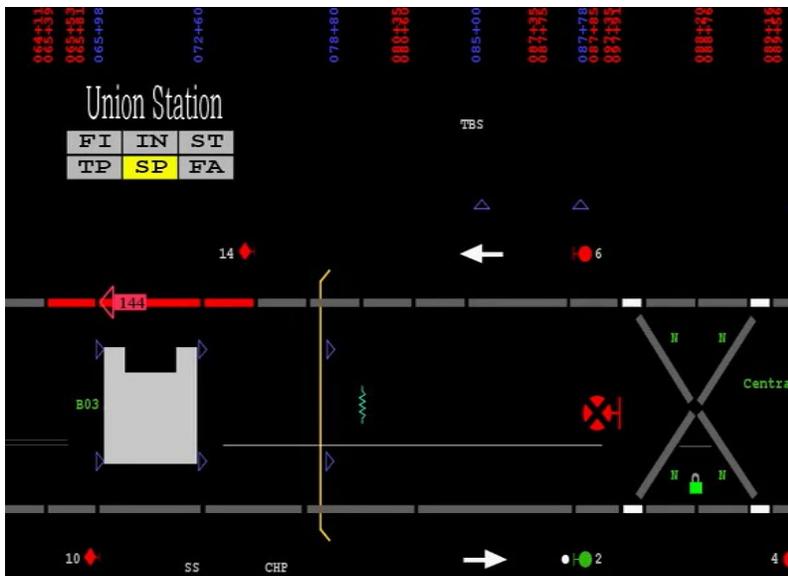


Figure 2 - Train ID 144 is pass the turnback and operating in manual mode at 13:49 hours.

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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, Incident Investigation Team, completed an analysis of the data retrieved from Train ID 144 (L3202-03x3144-45x3125-24x3186-87T) reported for Improper Rail Vehicle Movement.

Based on the VMS data, train ID 144 with lead car 3202 departed from NoMa-Gallaudet (B35-2) in the direction of Union Station (B03-2). Train operating in ATO mode.

The speed commands dropped to 0 MPH. FSBR was de-energized, and the B4 rate was applied, bringing the train to a complete stop 2,255 feet after NoMa-Gallaudet. The train operating mode was switched from ATO to Manual mode.

The Stop and Proceed mode was initiated, the Master controller was placed in P1, and the train began to move without speed commands. The speed commands were received after the train traveled 666 feet using stop and proceed mode while continuing in the direction of Union Station.

Timeline of events:

Time	Description of Events	MC Position	Train Speed	Regulated Speed	ATP Speed Limit	Distance travel from B35-2
13:46:48.117	Train ID 144, Lead car 3202, departed from Noma-Gallaudet (B35-2) toward Union Station (B03-2). Train operating in ATO mode.	P5	0 MPH	35 MPH	35 MPH	0 feet
13:47:26.736	Speed Commands are reduced from 35 MPH to 28 MPH. Master Controller is placed in B4 rate.	B4	33 MPH	28 MPH	28 MPH	1,526 feet
13:47:32.236	Speed Commands are reduced from 28 MPH to 22 MPH. Master Controller is placed in B4 rate.	B4	25 MPH	22 MPH	22 MPH	1,752 feet
13:47:38.220	Speed Commands are reduced from 22 MPH to 15 MPH. Master Controller is placed in B4 rate.	B4	19 MPH	15 MPH	15 MPH	1,933 feet
13:47:50.316	Speed Commands drop to 0 MPH, and the train speed is 13 MPH, 2,184 feet after departing NoMa-Gallaudet. FSBR is de-energized, Full-Service brake is applied.	B4	13 MPH	0 MPH	0 MPH	2,184 feet
13:47:57.128	The train comes to a complete stop. Zero speed is energized. Train operating in ATO mode.	B4	0 MPH	0 MPH	0 MPH	2,255 feet

Time	Description of Events	MC Position	Train Speed	Regulated Speed	ATP Speed Limit	Distance travel from B35-2
13:48:08.136	The train operating mode is switched from ATO to Manual mode.	B4	0 MPH	0 MPH	0 MPH	2,255 feet
13:48:11.720	Stop and Proceed Mode was initiated	B4	0 MPH	0 MPH	0 MPH	2,255 feet
13:48:13.896	The Master Controller is placed in P1. The train began to move under stop and proceed mode. No speed commands.	P1	0 MPH	0 MPH	1 MPH	2,255 feet
13:48:59.264	The train regains speed commands. After traveling 2,921 feet from Noma-Gallaudet. 666 feet using stop and proceed mode.	Coast	14 MPH	45 MPH	45 MPH	2,921 feet
13:49:00.480	Train ID 144, Lead car 3202 cab entered the Union Station "B03-2" station platform limits. In Manual mode .	P2	14 MPH	45 MPH	45 MPH	
13:49:26.908	The train comes to a complete stop at Union Station, 8-Car Marker. The Station is serviced.	B4	0 MPH	40 MPH	40 MPH	
13:52:24.323	The train operating mode is switched from Manual to ATO mode.	B4	0 MPH	40 MPH	40 MPH	
13:52:35.652	The Master Controller is placed in the P5 Power position, and the train moves toward the Judiciary square.	P5	0 MPH	40 MPH	40 MPH	

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

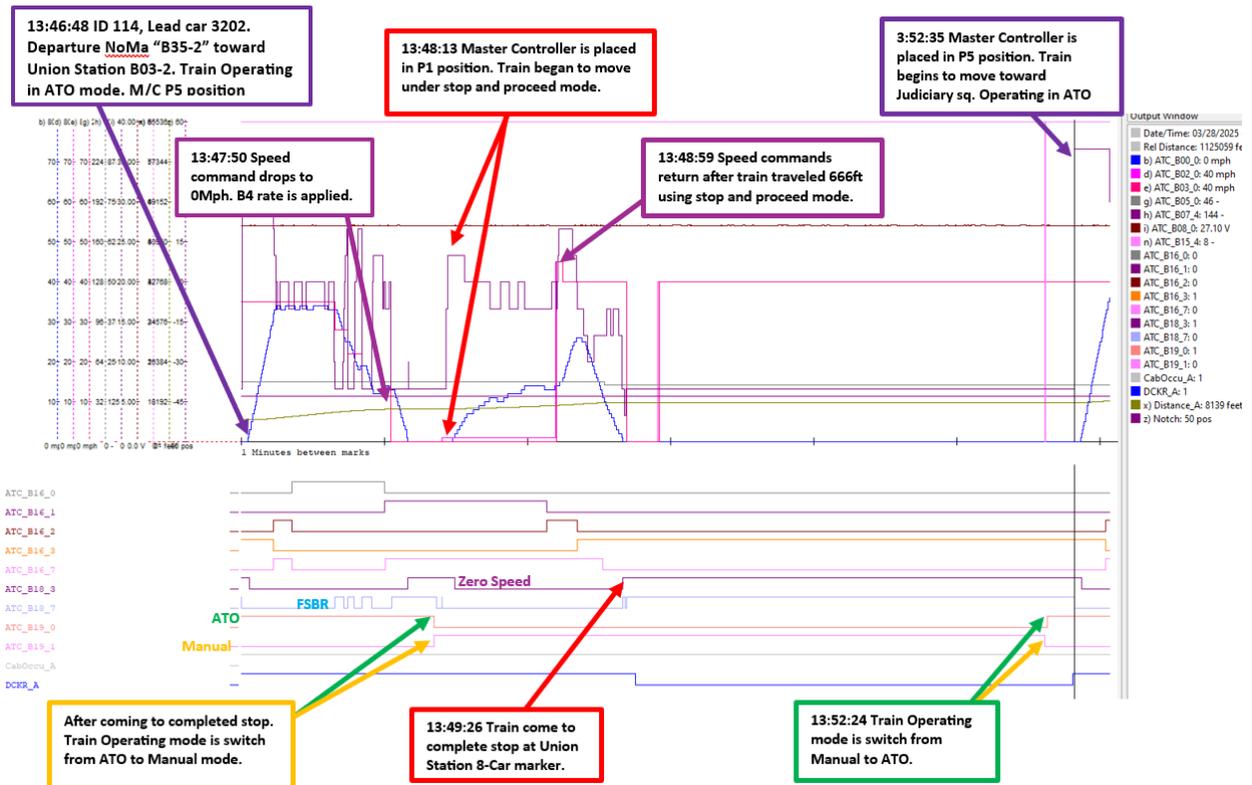


Figure 3 - VMS graph from railcar 3202.

Office of Rail Transportation

Adopted from Office of Rail Transportation report:

The Office of Rail Transportation reported that at 13:50 hours, the Metro Integrated Command and Communication (MICC) Center Radio RTC contacted Train ID 144 via radio to inquire if they had speed commands. The Radio RTC instructed a ROS to board the train because the RVO was moving the train without speed commands in approach to Union Station, track 2. A MICC Assistant Operations Manager notified the Shady Grove Division Superintendent of the violation and received approval to remove the RVO from service. The RVO was removed from service at Shady Grove Station by the ROS.

The RVO has been a WMATA employee since December 18, 2022, and an RVO since December 31, 2024.

Interview Findings and Written Statements

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

Rail Vehicle Operator

- RVO manually switched from ATO without obtaining proper clearance due to impatience while awaiting a clear radio channel.
- The train was still under ATO when speed commands dropped.
- RVO acknowledged awareness of required procedures but did not follow them at the time of the incident.

Radio Rail Traffic Controller

- Radio RTC was working alone because their partner stepped away on a brief break.
- The Radio RTC observed Train ID 144 several minutes ahead of schedule and made multiple attempts to slow the train down for line management.
- Radio RTC cancelled the turnback signal between Judiciary Square and Union Station.
- Radio RTC observed via AIMS the RVO switch from ATO to Manual and move the train without speed commands.

Weather

On March 28, 2025, at the time of the incident, NOAA recorded the temperature as 69°F, with cloudy skies, winds of 13 mph, and 30% humidity. The weather was not a contributing factor in this incident (Weather source: NOAA) – Location: Washington, D.C.)

Related Rules and Procedures

Metrorail Operator Rulebook (MOR)

8.4 Arrival and Departure of Revenue Rail Vehicles

8.4.4 Rail Vehicle Operators shall not run ahead of their schedules unless instructed to do so by Rail Traffic Controller.

8.17 Rail Vehicle Mode of Operations

8.17.1 Rail Vehicle Operators shall not change operating modes on the mainline without authorization from the Rail Traffic Controller or as instructed in the General Orders, except when changing from Mode 1 to Mode 2 to adjust a train within the platform limits.

9.8 Speed Commands

9.8.1 Rail Vehicle Operators shall not move trains with zero speed commands except after notifying the Rail Traffic Controller or Terminal Supervisor and being given permission to move with zero speed commands and either a permissive block going with the traffic or an absolute block going against traffic.

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Human Factors

Fatigue

Signs and Symptoms of Fatigue

RVO

SAFE examined signs and symptoms of fatigue that may have been present at the time of the incident. No video of the involved person was available to ascertain whether signs of fatigue were present. 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

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 employee reported some variation in the sleep schedule in the days leading up to the incident. The employee reported not keeping the same sleep schedule in the past seven days. The employee worked the morning shift in the days leading up to the incident. The employee was awake for eleven hours and thirty-eight minutes at the time of the incident. The employee reported seven hours of sleep in the 24 hours preceding the incident. The off-duty period was fourteen hours and thirty minutes, which provides an opportunity for 7-9 hours of sleep. This was more than the employee's usual workday sleep durations. 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

- RVO was operating in ATO before losing speed commands and came to a stop outside the platform at Union Station.
- RVO manually moved the train without speed commands and permission from RTC.
- RVO switched from ATO to manual mode without notifying the RTC and receiving permission to do so.
- This was the last trip of the day for the RVO.
- ROS boarded Train ID 144 at Woodley Park Station.
- RVO was removed from service at Shady Grove Station.

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 Radio RTC dispatched a Rail Operations Supervisor to relieve the Rail Vehicle Operator from duty for post-incident testing.

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In adherence to the Office of the Chief Mechanical Officer (CMOR) Incident Investigation Team (IIT) Operations Administrative Policy (OAP) 102.06, the MICC took Train ID 144 out of revenue service for post-incident investigation. This action followed the Rail Vehicle Event Investigation Policy, ensuring a thorough examination of the incident.

Probable Cause Statement

The probable cause of the Improper Rail Vehicle Movement event was operator error. Specifically, the RVO manually moved the train without speed commands and without obtaining proper authorization from the RTC after the loss of speed commands approaching Union Station.

Recommended Corrective Actions

Corrective Action Code	Description	Responsible Party	Estimated Completion Date
125199_SAFE CAPS_RTRA _001	The RVO will receive refresher training with ROQT Training. (Reinstructed on moving without speed commands on Mainline)	SRC RTRA	Completed
125199_SAFE CAPS_RTRA _002	Video Campaign “Staying Focused: Preventing Red Signal Overruns and Zero Speed Command Violation”.	SRC RTRA	Completed

Appendices

Appendix A – Interview Summaries

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

Rail Vehicle Operator

The RVO has been a WMATA employee since December 18, 2022, and an RVO since December 31, 2024. RVO holds an RWP Level 2 certification that expires in December 2025.

During a formal interview, RVO stated that while approaching Union Station from Rhode Island Ave., speed commands dropped unexpectedly while operating under ATO mode. Without requesting or receiving proper permission, RVO manually switched to manual mode out of impatience due to radio traffic congestion and moved to the platform. RVO acknowledged awareness of the requirement to request a block and permission to switch operating modes but chose to act without doing so. RVO was not aware of any specific radio traffic at the time and did not hear any active speak commands.

The incident occurred during the last trip of RVO's shift. RVO admitted to being impatient but not rushed and reported that the decision to switch modes was made without seeing a train ahead. Upon reflection, RVO stated that they should have waited and followed proper procedures by requesting permission to switch modes.

Radio Rail Traffic Controller

Radio RTC is a WMATA employee with 24 years of service and two years of experience working in the MICC as a Rail Traffic Controller. At the time of the incident, the RTC was working alone at the console while their partner was on a brief personal break. No trainees were present.

During a formal interview, the RTC stated that while monitoring train operations on the Red Line, Train ID 144 was observed operating several minutes ahead of schedule. Multiple attempts were made to contact the Rail Vehicle Operator (RVO) via radio to slow the train for line management purposes; however, the RVO did not respond. In an effort to prompt a response and manage train spacing, the RTC canceled the turnback between Judiciary Square and Union Station. Despite this action, the RVO remained unresponsive and continued operating in Automatic Train Operation (ATO) mode.

Upon reaching the canceled turnback, the train lost speed commands as expected. The RTC observed via AIMS that the RVO switched from ATO (Mode 1) to manual (Mode 2 Level 1) and moved the train without proper authorization to Union Station platform. The RVO then switched the train back to ATO upon arrival.

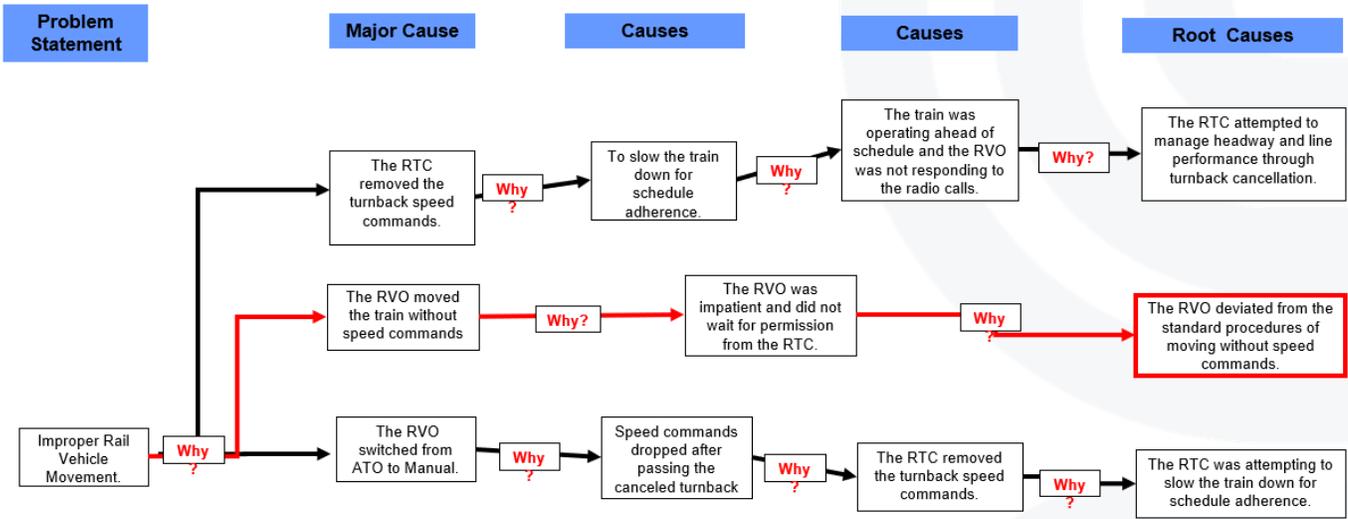
Following the incident, the RTC and Assistant Operations Manager (AOM) reviewed system playback to confirm the unauthorized movement.

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Appendix B – Why-Tree Analysis



Root Cause Analysis

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