



WMSC Commissioner Brief: W-0128 – Improper Vehicle Movement – Franconia-Springfield Station – July 16, 2021

Prepared for Washington Metrorail Safety Commission meeting on December 7, 2021

Safety event summary:

A Metrorail Train Operator assigned to the Shady Grove Division who was working an additional shift out of the Alexandria Division operated a train with passengers on board in the wrong direction from the Franconia-Springfield Station platform at 6 a.m. on Monday, August 16, 2021. Passengers were then on the train in the tail track for approximately 10 minutes.

The Train Operator had brought the train from the Alexandria Rail Yard to Franconia-Springfield Station. At that point, the operator should have reversed ends to prepare to operate back northbound with a final destination of Largo Town Center. Instead, the operator remained at the same end of the train after berthing in the station (as would be proper if they were starting a Red Line trip from Shady Grove Yard and Shady Grove Station). The Train Operator did not know that they were supposed to reverse ends at Franconia-Springfield Station, which is the end of the line, and said they did not know they were going into the tail track. The WMSC is reviewing the sufficiency of Metrorail's lack of territory familiarization requirements as part of the WMSC's ongoing Rail Operations Audit (draft report in development).

The investigation also identified that Metrorail provides limited information to management, such as Assistant Superintendents, about their responsibilities and the procedures that they are required to oversee compliance with.

After opening the doors on the platform, at 5:45 a.m., the Train Operator entered stop and proceed mode. This is not aligned with Metrorail's written rules and procedures that require doors to remain open on the platform until speed commands are available or explicit permission is granted to enter stop and proceed mode as part of an absolute block.

At 5:59 a.m., the Train Operator told the Terminal Supervisor that they were holding at signal J03-42 with a lunar (proceed) signal and no speed commands. J03-42 is the signal leading to the tail tracks beyond the station that are not used by trains in revenue service. The Terminal Supervisor did not respond to the initial communication. Ambient audio recordings suggest the Terminal Supervisor may have stepped away from their work location.

From 5:30 a.m. until 5:58 a.m., including around the time the Terminal Supervisor stepped away, non-work-related audio is audible on ambient recordings. In an interview, the Terminal Supervisor stated that they regularly prop the door to an adjacent break room open where there is a television, and they speak with operators through that door. In part, the Terminal Supervisor stated this is due to radio communication system challenges. However, observations as part of the investigation demonstrated that the television in the break room did not appear to work and that the audio levels detected by the ambient microphone were higher than if the sound had been coming from the television in the next room. The computer at the Terminal Supervisor's work location has audio speakers attached. The television shows playing were most likely from the Terminal Supervisor's work computer. The WMSC requested internet browsing history from that computer, but Metrorail stated there were no records for the 2 hours surrounding this event. Review of internet browsing history and ambient audio recordings for other periods in the weeks prior to this event from the same location and same Terminal Supervisor demonstrated regular use of video streaming services, which are not allowed under Metrorail policy.



The Train Operator repeated their transmission. The Terminal Supervisor responded, but did not repeat back the Train Operator's transmission. The Terminal Supervisor stated that J03-06 signal (the signal at the opposite end of the platform, controlling movement in the direction of Van Dorn St. Station) would be lunar shortly for a crossover move from Track 2 to Track 1. The Terminal Supervisor gave that instruction prior to actually setting the route, which is contrary to Metrorail rules and procedures requiring the route to be set prior to providing movement instructions. The Terminal Supervisor also did not recognize the Advanced Information Management (AIM) system display indication that the Train Operator was keyed up at the incorrect end of the train. The Train Operator acknowledged the crossover move, but did not fully repeat back the Terminal Supervisor's transmission. Signal J03-42, the signal in the direction of the trail tracks, was already flashing lunar (proceed) to indicate a crossover move into the center tail track. The Train Operator moved the train forward toward the tail tracks.

The Terminal Supervisor then asked the Train Operator why they moved into the tail track. The Train Operator stopped the train after it had moved 266 feet. This was approximately 23 seconds after the train began moving into the tail track. The Terminal Supervisor first asked the Train Operator to reverse ends to move in the proper direction, then instructed the Train Operator to continue into the tail track due to another train entering the station. The Train Operator again entered stop and proceed mode to continue into the tail track. The Terminal Supervisor dispatched the train that was in the station on Track 1 into service to allow room for the train in the tail track to return to the platform. The Train Operator reversed ends and returned to the platform approximately 10 minutes after entering the tail track.

Metrorail removed the Train Operator from service for post-event drug and alcohol testing but did not remove the Terminal Supervisor from service for post-event testing as required by Metrorail policy.

The Train Operator had previously been identified as not following roadway worker signals on August 12, 2019, operating a train that overran a station on August 12, 2019, and as being involved in an improper door operation on May 17, 2020.

The Train Operator had worked 13 consecutive days prior to this safety event, creating fatigue risk. Metrorail is required to address compliance with its fatigue policy through open corrective action plans (CAPs), including those identified in the Fitness for Duty Audit issued in August 2021.

Probable Cause:

The probable cause of this event was Metrorail's lack of physical characteristics training and territory familiarization requirements, Metrorail's inadequate supervisory oversight of and training on terminal operations, and insufficient supervisory oversight to ensure compliance with radio communications protocols. Contributing to this event was the environment in terminal supervisor work areas that includes noise and distractions.

Corrective Actions:

Metrorail will install CCTV cameras at all terminal locations and yard towers.

Metrorail will ensure all phone communications are recorded in terminal locations and yard towers.

Metrorail distributed a lessons learned document focused on communication and lead familiarization.

Metrorail is conducting a safety stand down that includes a focus on communication and roadway operation procedures.



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Metrorail Safety Officers are spot checking terminals and towers, and are encouraging Rail Transportation to conduct additional similar checks.

WMSC staff observations:

Metrorail is allowing operations personnel to work without territory familiarization or similar physical characteristics training. The WMSC is reviewing the sufficiency of Metrorail's lack of territory familiarization requirements as part of the WMSC's ongoing Rail Operations Audit (draft report being developed).

Metrorail has had prior events, such as W-0046 with an interlocking operator distracted by watching videos during a derailment, that have demonstrated opportunities for improved supervisory oversight, but has not effectively developed consistent spot checks in person or by managers independently pulling and reviewing ambient audio recordings. These checks would help ensure that terminal supervisor and interlocking operator work areas are conducive to their safety critical work, and improve the opportunity to identify and correct procedural compliance prior to a safety event occurring. The WMSC has also identified similar issues during inspection activities and is further addressing this issue in the Rail Operations Audit. The installation of CCTV cameras, ensuring complete recording of phone communications at terminal and yard locations, and implementing spot checks are important steps toward these safety improvements.

Metrorail should develop training or certification requirements for managers such as Superintendents and Assistant Superintendents on the policies and procedures they are supposed to be overseeing. Metrorail must take advantage of the corrective actions in this report to install recording devices in terminals and towers by developing and instituting regular monitoring of these systems.

Metrorail should consider adjusting the design of its stop and proceed mode awareness tools so that the system resets after door operations or extended periods where the train is stopped, and so that it cannot be activated when a train is not permitted to move, such as when the doors are open.

Metrorail may consider clearly communicating to Terminal Supervisors if personnel are working shifts or positions that are unusual for them.

Metrorail stated that Rail Transportation (RTRA) conducted an independent investigation, however this investigation appears to be a disciplinary action, not a safety investigation, despite the titles of the forms used ("Periodic Performance Review Form" and "Investigation Report").

Metrorail did not interview the Train Operator involved in this event as part of this investigation to identify additional opportunities for safety improvements due to the timing of the Train Operator's return following this event and the additional available information related to this event that provides sufficient detail to identify root causes and corrective actions. Metrorail disciplined the Train Operator following this event.

Staff recommendation: Adopt final report.



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

FINAL REPORT OF INVESTIGATION A&I E21371

Date of Event:	08/16/2021
Type of Event:	Improper Rail Vehicle Movement
Incident Time:	0600 hours
Location:	Franconia-Springfield, Track 2
Time and How received by SAFE:	0658 hours SAFE IMO
WMSC Notification Time:	0658 hours
Responding Safety Officers:	WMATA SAFE: No WMSC: No Other: N/A
Rail Vehicle:	Train ID 401, L7032-7033.7189-7188.7166-7167.7251-7250T
Injuries:	None
Damage:	None
Emergency Responders:	None
SMS I/A Incident Number:	20210830#95294

Franconia-Springfield – Improper Rail Vehicle Movement

August 16, 2021

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Abbreviations and Acronyms

AIMS	Advanced Information Management System
ARS	Audio Recording System
CMOR	Office of Chief Mechanical Officer
COMR	Office of Radio Communication
ER	Event Recorder
IIT	Incident Investigation Team
MC	Master Controller
MSRPH	Metro Safety Rules Procedures Handbook
NTSB	National Transportation Safety Board
NVR	Network Video Recorder
OPMS	Operations Management Services
ROQT	Rail Operations Quality Training
RTC	Rail Traffic Controller
RTRA	Office of Rail Transportation
RSDAR	Rail Supervisor Daily Activity Report
SMNT	Office of System Maintenance
SOP	Standard Operating Procedure
VMDS	Vehicle Monitoring and Diagnostic System
WMSC	Washington Metrorail Safety Commission

Washington Metropolitan Area Transit Authority
Department of Safety & Environmental Management

FINAL REPORT OF INVESTIGATION A&I E21371

Executive Summary

On Monday, August 16, 2021, Blue Line Train ID 401 Train Operator operated in non-revenue service from Alexandria Yard towards Franconia-Springfield Station from lead car 7032. The Train Operator was assigned to Shady Grove Division, working an additional shift at Alexandria Division. At approximately 05:44 hours, Train ID 401 Train Operator arrived at Franconia-Springfield Station and properly berthed at the 8-car marker on Track 2 as one of the first trains for revenue service to operate inbound towards Largo Town Center Station.

Upon arrival, Train ID 401 performed a left-side door operation and allowed customers to board. Network Video Recording (NVR) playback and Office of Chief Mechanical Officer (CMOR) Incident Investigation Team (IIT) analysis supported that Train ID 401 entered stop and proceed on the console after performing a left-side door operation at approximately 05:45 hours. Audio Recording Services (ARS) playback determined that Train ID 401 Train Operator did not request permission to perform this action.

Train ID 401 Train Operator remained in the lead car (7032) after arrival on track 2 and appeared to review work-related documentation while awaiting their departure time. After approximately 14 minutes (approximately 05:59 hours), Train ID 401 Train Operator notified the Franconia-Springfield Terminal Supervisor that they were holding at J03-42 signal Track 2, with a lunar and no speed commands. The Terminal Supervisor did not respond to the initial contact. A review of Franconia-Springfield ambient audio revealed the Terminal Supervisor appeared to step away from their station prior to the transmission from Train ID 401 at approximately 05:58 hours.

The Terminal Supervisor then advised Train ID 401 Train Operator that a train was approaching the station and the J03-06 signal would be “coming to you” for a crossover move from track 2 to track 1. ARS playback indicated that the Train ID 401 Train Operator replied to the Terminal Supervisor by stating “I copy, crossing over from two to one.”

Further review of ambient audio playback determined that the Terminal Block House Supervisor did not understand the Train Operator’s transmission, asking themselves “what are they talking about J03-42 signal,” however, the Supervisor never corrected the Train Operator.

At approximately 06:00 hours, the Train ID 401 Train Operator then performed a left door closing operation and proceeded with Train ID 401 beyond the J03-42 signal, which displayed a flashing lunar aspect. The Terminal Supervisor contacted Train ID 401 Train Operator by radio to determine why the Train Operator moved into the tail track.

Station physical characteristics are different at Franconia-Springfield and Shady Grove Stations. Shady Grove Train Operator’s enter from the yard, pull into the station, then continue forward into revenue service. It would be unusual for this Train Operator to reverse ends to start service, if they usually go into service from Shady Grove. Franconia-Springfield Train Operators will leave Alexandria Yard and alight towards Franconia Terminus Station, bypassing one station before arriving at Franconia Station, and then reversing ends to travel back in the downtown direction.

According to CMOR IIT analysis, Train ID 401 Train Operator stopped their consist 266.69 feet beyond the 8-Car Marker on Track 2 after the Terminal Supervisor communicated the improper movement. The Terminal Supervisor instructed Train ID 401 Train Operator to continue into the tail track. Train ID 401 Train Operator entered stop and proceed mode a second time at 06:01 hours.

As the train moved into the tail track, a third train entered the platform limits on track 2, preventing the train from returning directly to the platform. In order to return the train from the tail track to the platform, the Terminal Supervisor dispatched the train on track 1 into service. The Train Operator of Train ID 401, which was re-blocked as Train ID 402, reversed ends and keyed up on Car 7150 at approximately 06:06 hours. Train ID 402 arrived at the 8-car marker from the tail track and performed a left door operation at approximately 06:10 hours, 10 minutes after entering the tail track.

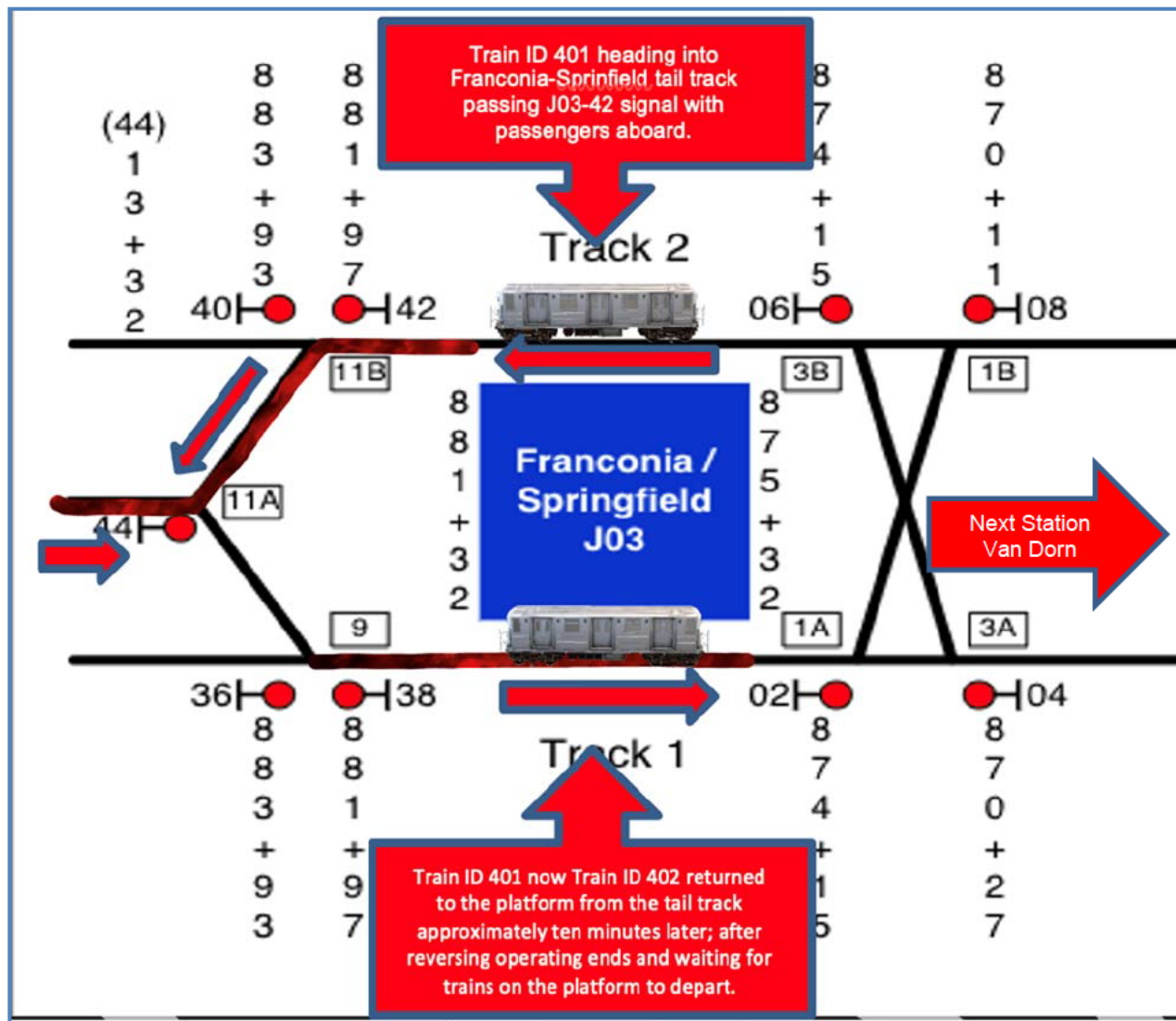
RTRA removed the Train Operator from service for post-incident toxicology testing. RTRA then removed Train ID 401 from service for post-incident investigative processes. The Terminal Supervisor was not removed from service for post-incident testing.

The probable cause of this Improper Rail Vehicle Movement violation at Franconia-Springfield on August 16, 2021, was inadequate oversight of terminal operations. Contributing factors were the improper use of stop-and-proceed mode, the use of non-standard radio language, and missed 100% repeat-back. Another potential contributing factor was a noisy environment in the terminal supervisor's work area.

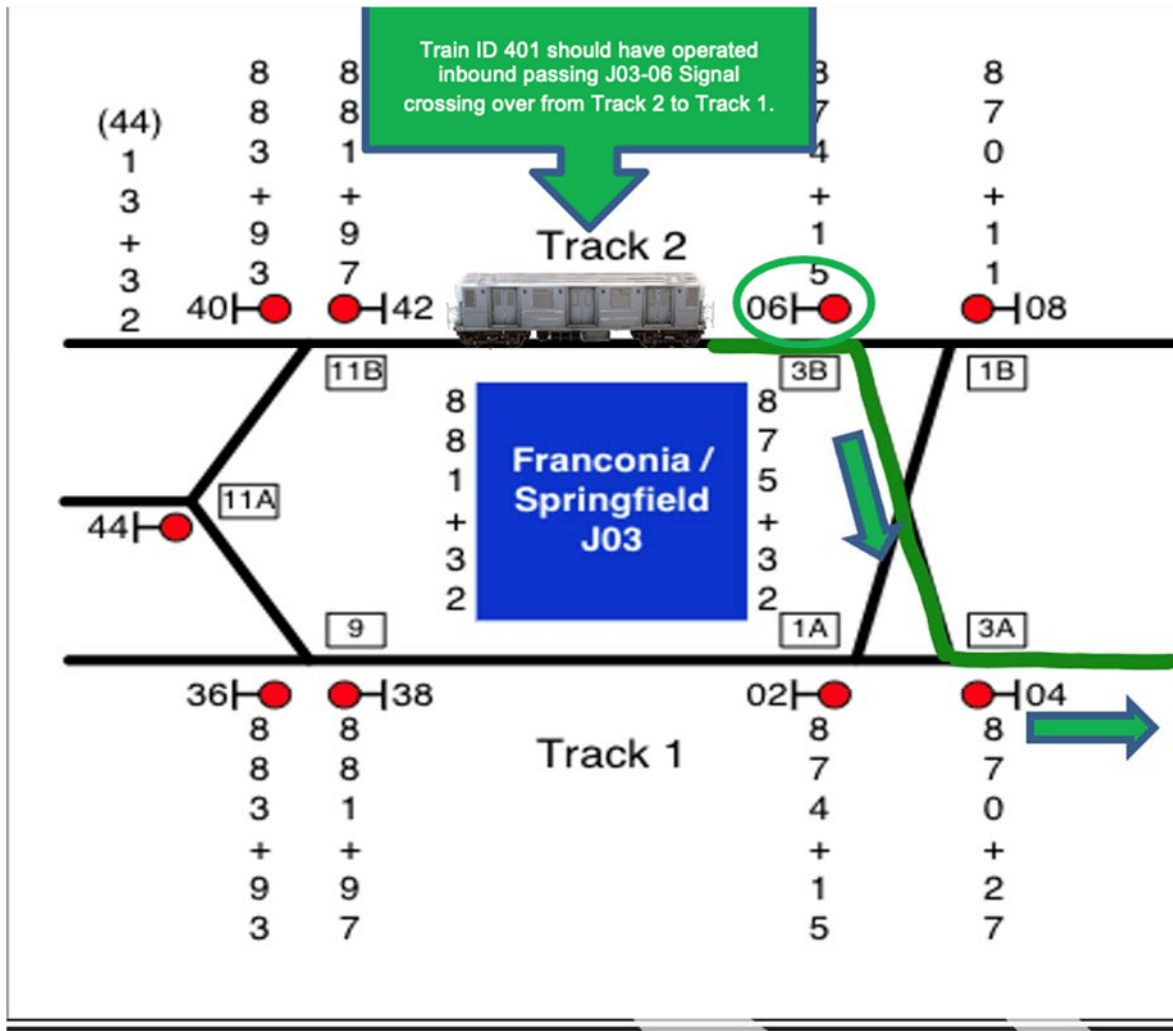
Incident Site

Franconia-Springfield Station, Track 2

Field Sketch/Schematics



*Not to scale



**Not to scale*

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.

Investigation Process and Methods

Upon receiving the notification of an Improper Rail Vehicle Movement at the Franconia-Springfield Station on August 16, 2021, SAFE launched an investigation into this event. SAFE team members worked with relevant Washington Metropolitan Area Transit Authority (WMATA) subject matter experts to review the incident's facts and data.

Investigation Methods

The investigative methodologies included the following:

Formal Interviews – SAFE conducted three interviews as part of this investigation. Interviews included persons present at, during, and after the incident, those directly involved in the response process, and managers responsible for the process. The interviews included:

- Train Operator [Written Statement]
- Terminal Supervisor
- Alexandria Division RTRA Assistant Superintendent

***Note: As of the date of this report, SAFE did not interview the Train Operator due to the operator taking unscheduled leave for an undetermined amount of time. As a result, SAFE used the written statement for this investigative report.*

- Informal Interviews – Collected through conversations with individuals during the investigation to provide background and supporting information.
 - RTRA Line Director
 - Alexandria Division RTRA Assistant Superintendent
 - Shady Grove Division RTRA Assistant Superintendent
 - Rail Operations Quality Training (ROQT) Director
- Documentation Review – A collection of relevant work history information and process documentation contained in Metro systems of record. These records include:
 - Training Procedures & Records
 - Certification
 - The 30-Day work history review
 - Office of Rail Transportation Incident Investigation Report
 - Metrorail Safety Rules and Procedures Handbook (MSRPH)
 - National Oceanic and Atmospheric Administration (NOAA)
 - Rail Supervisor Daily Activity Report (RSDAR) [Pending]
 - Terminal Supervisor Manual
- System Data Recording Review – A collection of information in Metro Data Recording Systems. This data includes:
 - Audio Recording System (ARS) playback [Radio and Ambient]
 - Network Video Recording (NVR) playback

Investigation

On Monday, August 16, 2021, a Red Line division Train Operator working at Alexandria Division operated in non-revenue service as Train ID 401 from Alexandria Yard to Franconia-Springfield Station. The Train Operator was assigned to Shady Grove Division, working an additional shift at Alexandria Division. The Train ID 401 Train Operator arrived at Franconia-Springfield Station and properly berthed at the 8-car marker on Track 2 as the first train for revenue service to operate inbound towards Largo Town Center. Note: at Shady Grove, Train Operators enter from the yard, pull into station, then continue forward into revenue service. It would be unusual for this Train Operator to reverse ends to start service, if they usually go into service from Shady Grove.



Figure 1- Train ID 401 Train Operator entering Franconia-Springfield Station, Track 2.

Upon arrival, Train ID 401 performed a left-side door operation, which allowed customers to board the train. After opening the doors, the Train Operator entered Stop-and-Proceed mode. While waiting at the station, Train ID 401 reviewed work-related documentation for approximately 14 minutes before departure.



Figure 2: Train ID 401 observed reviewing work-related train manifest from 0550 hours - 0558 hours while properly berthed at the 8-car marker.

At approximately 05:59 hours, the Train ID 401 Train Operator notified the Franconia-Springfield Terminal Supervisor that they were holding at J03-42 signal Track 2, with a lunar and no speed commands. The flashing lunar depicted on the NVR forward-facing camera of Lead car 7032 playback indicated a crossover from Track 2 to Tail Track 3 was set.

The Terminal Supervisor did not respond to the initial contact. A review of Franconia-Springfield ambient audio revealed the Terminal Supervisor stepping away from their station prior to the transmission from Train ID 401 at approximately 05:58 hours.

A review of ambient audio in the Franconia-Springfield Block House also revealed non-work-related audio [possibly television or radio] prominently audible from approximately 05:30 hours until approximately 05:58 hours.

A site visit performed by SAFE identified that the break room adjacent to the Terminal Supervisor's work area is equipped with two televisions. The televisions are mounted on two walls on opposite ends of the break room. Neither television is mounted facing the Terminal Supervisor's work area. However, one television is positioned to the left of the door opening, and the other is not within the line of sight of the desk area. The dispatcher door is equipped with self-closing hinges.

The ambient microphone in the Terminal Supervisor's work area is positioned directly above the Terminal Supervisor's desk. The television in the operator's lounge is approximately 30-35 feet away. The computer at the desk is equipped with speakers.

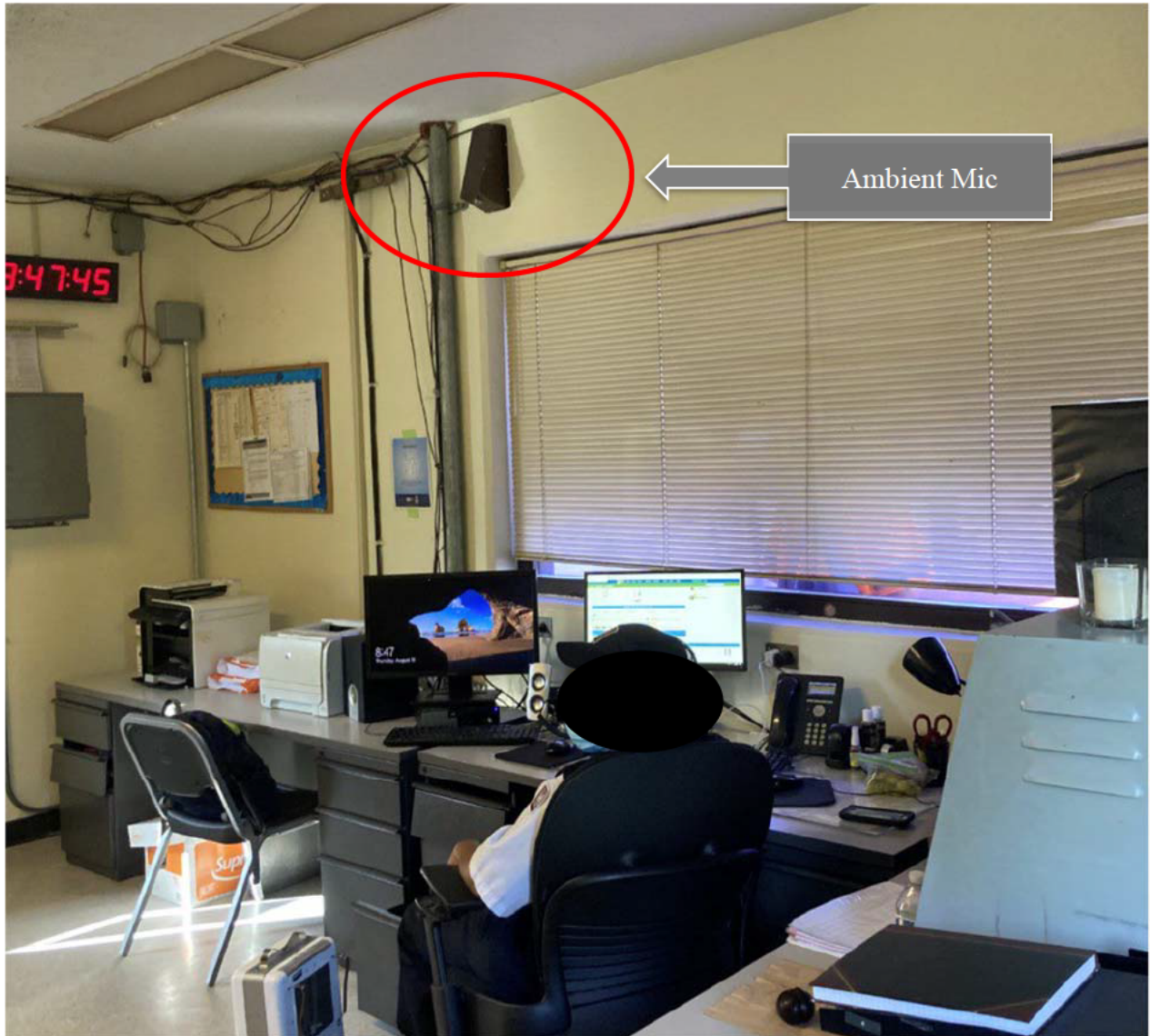


Figure 3 - Terminal Supervisor Desk and Ambient Mic location.

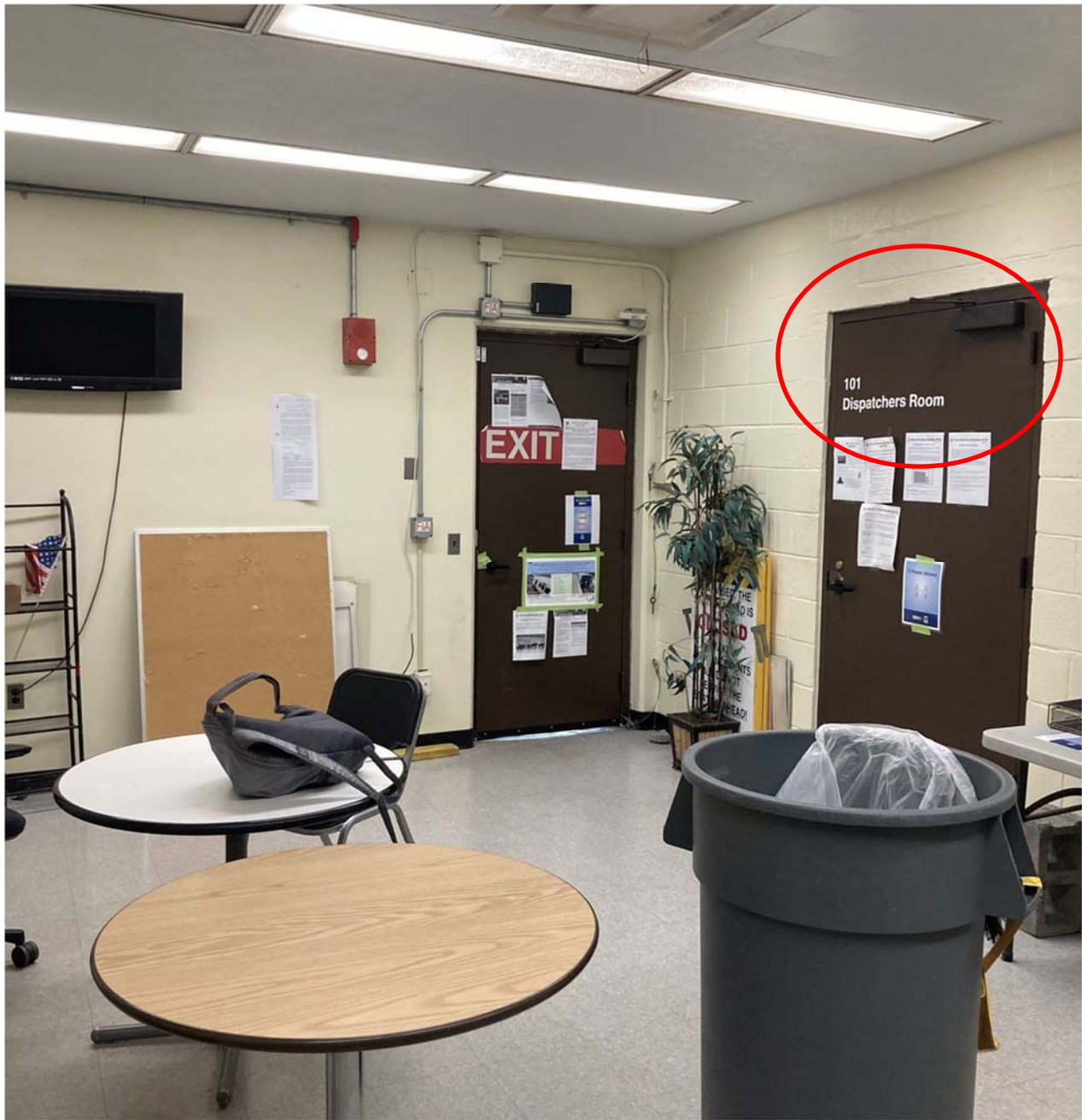


Figure 4 - Operators lounge adjacent to Dispatchers Room (Terminal Supervisor work area).



Figure 5 - This TV is positioned on the opposite end of the dispatcher's office door, out of their line of sight.

After receiving no response, the Train ID 401 Train Operator repeated the transmission. The Terminal Supervisor responded and advised the Train ID 401 Train Operator that a train was approaching the station on track 2. A lunar would be set at J03-06, and they would cross over from track two to track one. From the Train Operator's perspective, the J03-06 signal was located on the trailing end of their consist, in the direction of Largo Town Center.

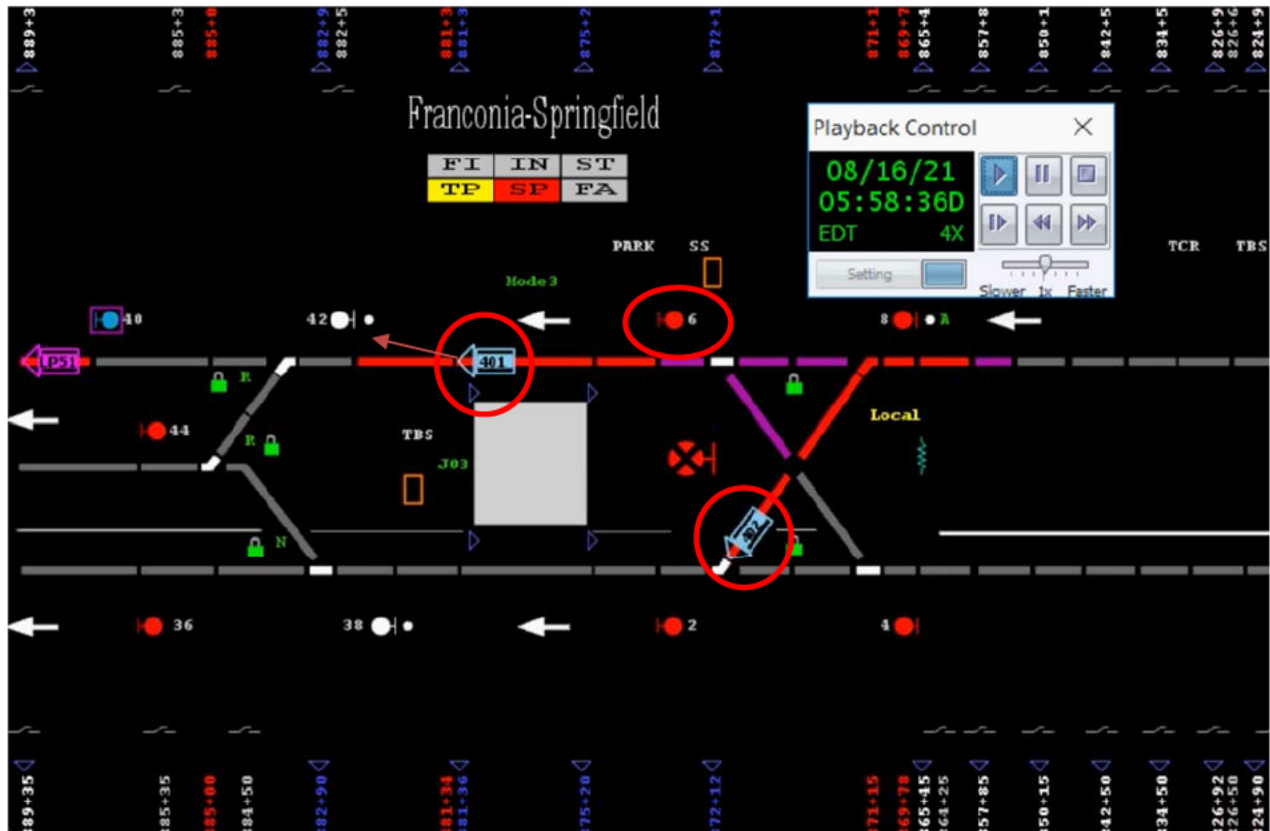


Figure 6 - Train ID 401 Keyed up facing J03-42 Signal and Train ID 402 crossing over from Track 2 to Track 1.

Train ID 401 Train Operator replied to the Terminal Supervisor: "I copy, crossing over from two to one," which is an incomplete 100% repeat-back.

Train ID 401 Train Operator then performed a left door closing operation and operated Train ID 401 beyond the J03-42 signal, which displayed a flashing Lunar aspect.



Figure 7 - Train ID 401 Train Operator began to operate towards Franconia-Springfield Tail Track with a flashing lunar.

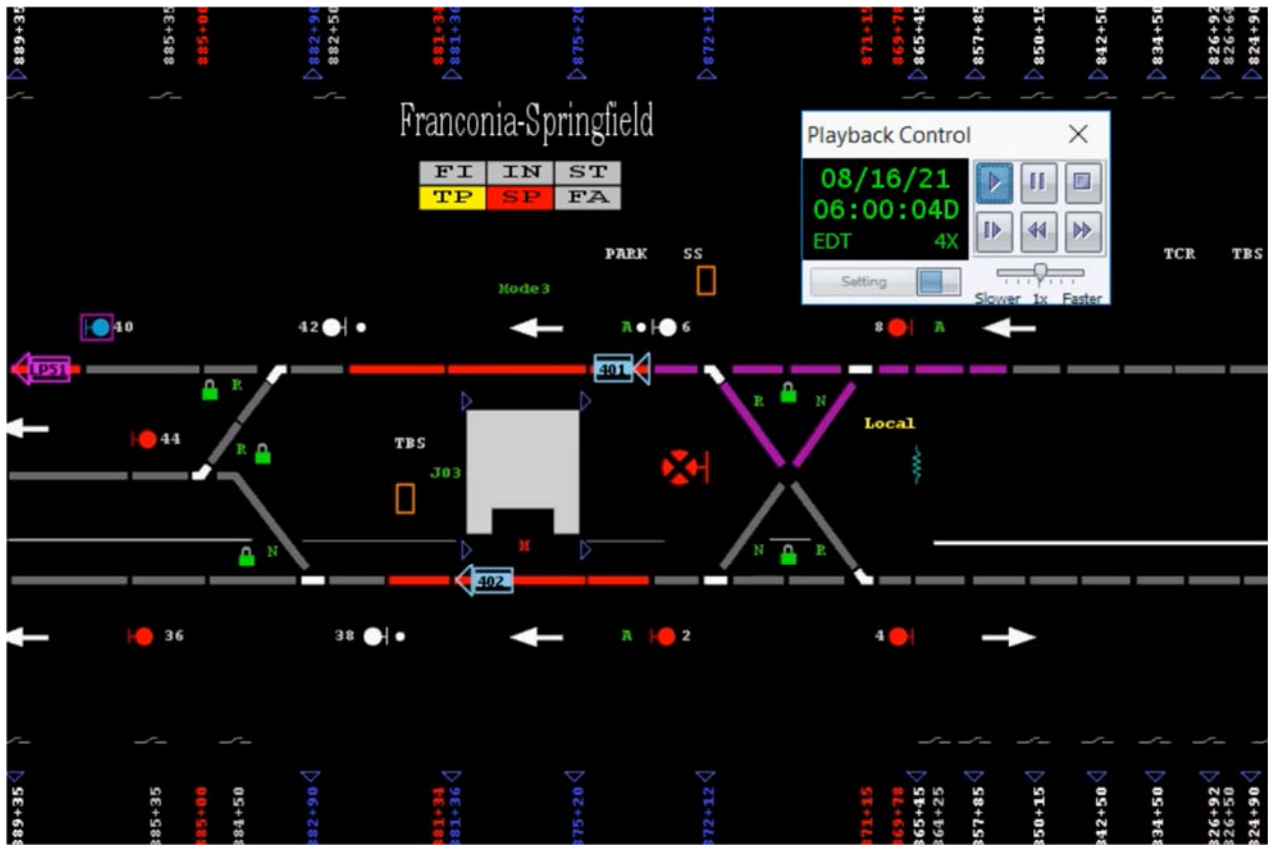


Figure 8 - AIMS playback showed Train ID 401 destination not consistent with direction of travel

According to AIMS playback, Train ID 401 began moving towards the tail track area at approximately 06:00 hours.

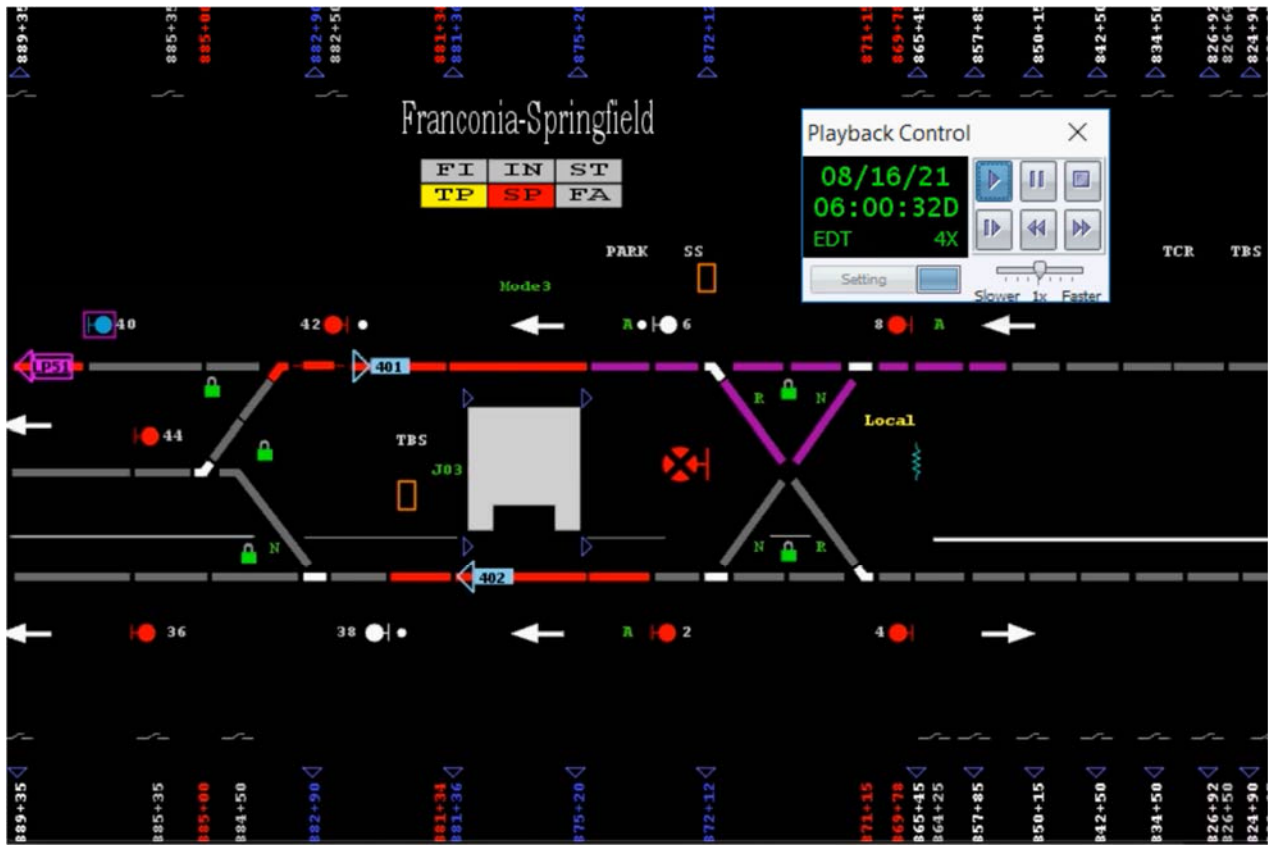


Figure 9 - Train ID 401 moving towards tail track area.

The Terminal Supervisor contacted Train ID 401 Train Operator to identify why the Train Operator was moving into the tail track. The Train Operator stated, "I promise you; I was not aware I was going into the tail track to reverse. I was sitting on the platform. [Unintelligible audio.]" The Terminal Supervisor responded, "I never informed you that you were going into the tail track. Franconia-Springfield is the last stop. You were supposed to reverse ends and be ready to go downtown."

Franconia-Springfield Terminal Supervisor instructed Train ID 401 Train Operator to continue into the tail track and reverse operating ends.



Figure 10 - Train ID 401 Train Operator continued into the tail track as directed after stopping within the interlocking.

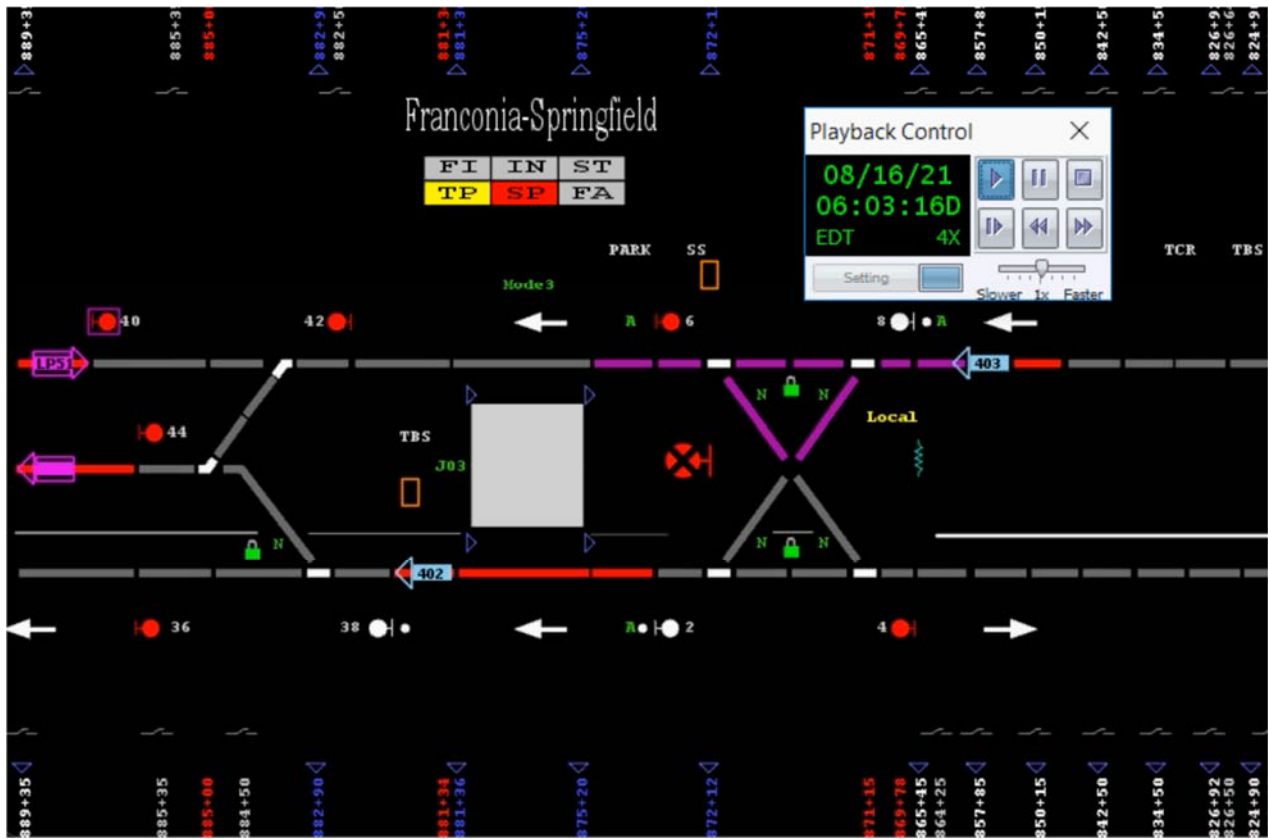


Figure 11 – Train ID 401 cleared signal 44 in the tail track area at approximately 06:03 hours. Train 403 passing lunar signal J03-08 and entering the platform on track 2.

In order to open space on the platform for the train in the tail track, the Terminal Supervisor instructed Train ID 402 berthed at the 8-car marker on track 1 to change their destination code to Train ID 401 and proceed in service towards Largo Town Center.

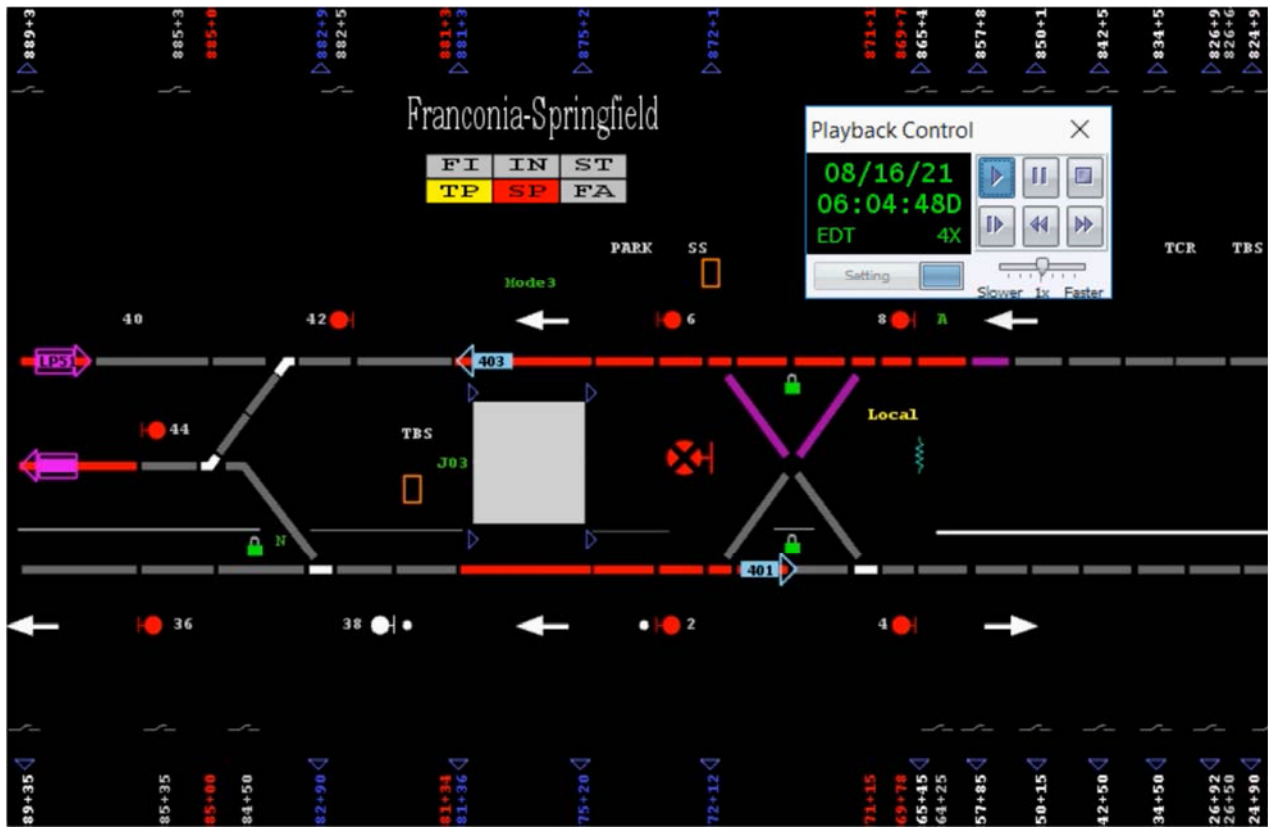


Figure 12 - Train ID 402 changed to Train ID 401 and departed the station. Train ID 403 arrived on track 2, and the incident train was still in the tail track area.

The Terminal Supervisor instructed the Train ID 401 Train Operator in the tail track to change their Train ID to 402 and proceed to the 8-car marker verifying their lunar at 44 signal crossing over from track 3 to track 1. Train ID 401, now Train ID 402, confirmed the Terminal Supervisor's instruction.

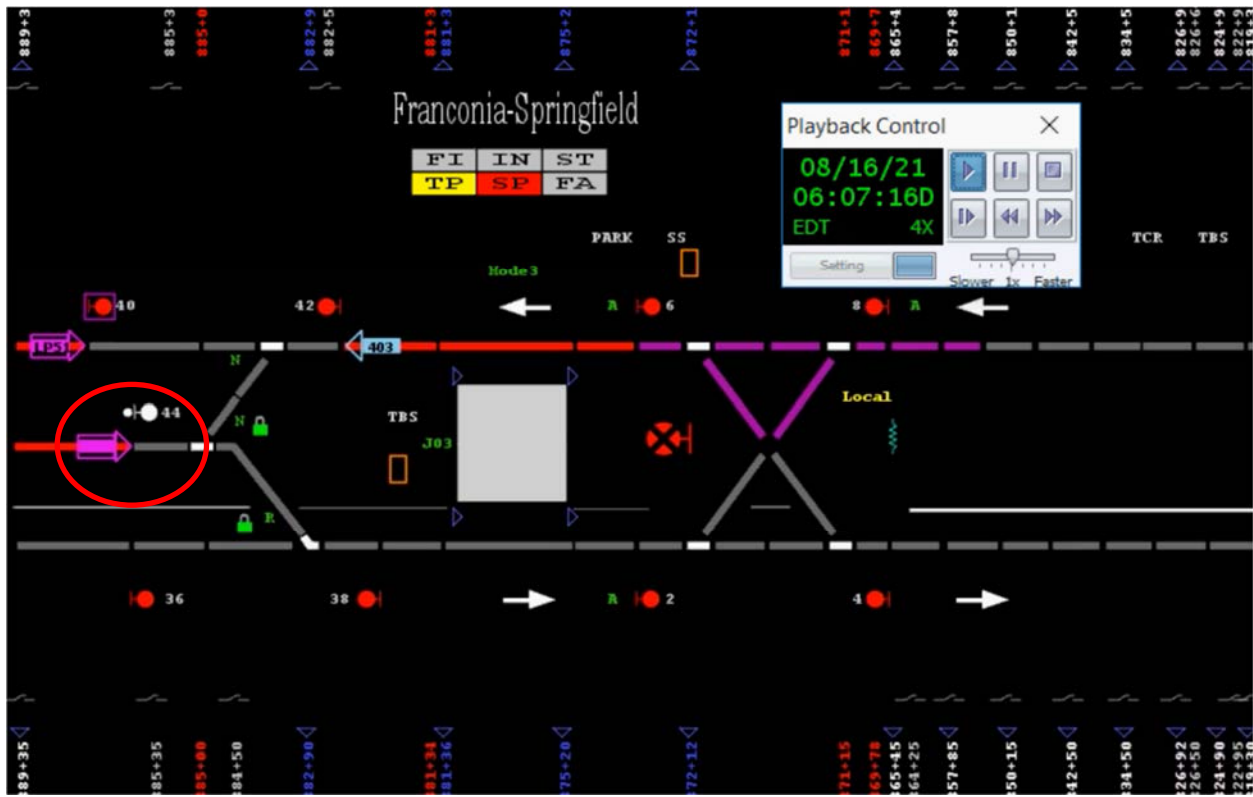


Figure 13 - Train ID 401, reassigned as 402, received a lunar at J03-44 Signal at approximately 06:07 hours.

The incident train, re-blocked as Train ID 402, berthed at the 8-car marker on track 1 and performed a left-side door operation.

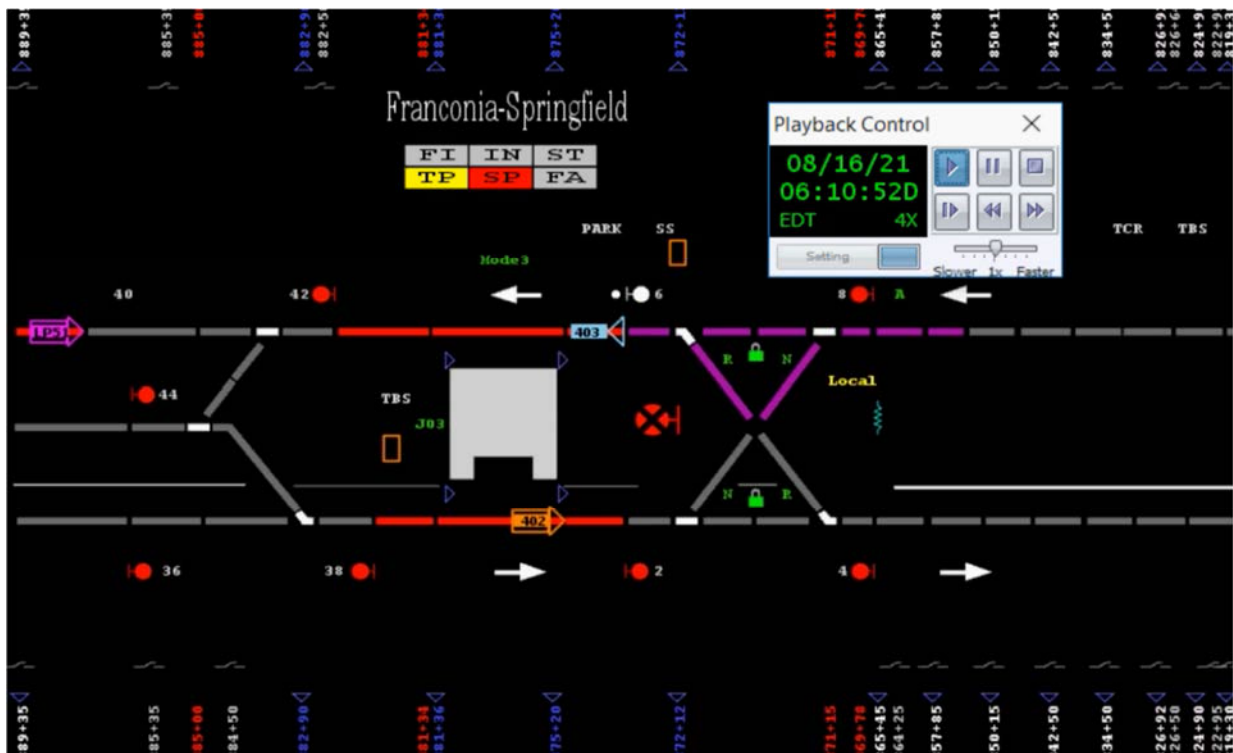


Figure 14 - Train ID 402 Berthed at the 8-car marker from the tail track at approximately 06:10 hours and performed a left door operation.

Upon their return to the platform on track 1, RTRA removed Train ID 402 Operator from service for post-incident toxicology testing. RTRA then removed Train ID 401 from service for post-incident investigative processes, and the Terminal Supervisor was not removed from service. The Assistant Superintendent was not familiar with the WMATA drug and alcohol testing procedures.

Chronological Event Timeline

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

Time	Description
05:44 hours	<u>Train ID 401 Train Operator:</u> Train ID 401 Train Operator arrived at Franconia-Springfield Station and properly berthed at the 8-car marker on Track 2 (AIMS Playback)
05:58 hours	<u>Train ID 401 Train Operator:</u> “401 Track 2 Verifying that lunar at J03-42 no speed commands over.” The Terminal Supervisor did not respond. [Yard 1 Radio]
05:59 hours	<u>Train ID 401 Train Operator:</u> “401 track 2 holding at J03-42 no speed commands over.” <u>Terminal Supervisor:</u> “There’s a train coming in, lunar coming to you Juliet 03 06 crossing over two to one 8-car marker”. <u>Train ID 401 Train Operator:</u> “I copy that, crossing over from two to one.” [Yard 1 Radio]
06:00 hours	<u>Terminal Supervisor:</u> “Um 401.” <u>Train ID 401 Train Operator:</u> No response. <u>Terminal Supervisor:</u> “401.” <u>Train ID 401 Train Operator:</u> “This is 401 over.” <u>Terminal Supervisor:</u> “Question to you is why are you going in the tail track? “Take your train back, cross over 42; you are going to reverse ends.” <u>Train ID 401 Train Operator:</u> “I copy that.” [Yard 1 Radio]
06:01 hours	<u>Terminal Supervisor:</u> “Train Operator on 401; keep your train moving towards the tail track.” <u>Train ID 401 Train Operator:</u> “Keep moving towards the tail track, okay.” [Yard 1 Radio]
	The Terminal Supervisor notified ROCC, their Assistant Superintendent, and division clerk of the event between this time.
06:04 hours	<u>Train ID 401 Train Operator:</u> “This is 401. I was holding on the platform. I did not know I was going to the tail track to reverse ends, over.” [Yard 1 Radio]
06:05 hours	<u>Terminal Supervisor:</u> “Operator identify.” <u>Train ID 401 Train Operator:</u> [Identified themselves by name]. <u>Train ID 401 Train Operator:</u> “I promise you; I was not aware I was going into the tail track to reverse. I was sitting on the platform. [Unintelligible audio].” <u>Terminal Supervisor:</u> “I never informed you that you were going into the tail track. Franconia-Springfield is the last stop. You were supposed to reverse ends and be ready to go downtown. We will talk about it. Standby, Lunar coming to you at 44.” <u>Train ID 401 Train Operator:</u> Confirmed the transmission. [Yard 1 Radio]
06:06 hours	<u>Terminal Supervisor:</u> “Verify that lunar at Juliet 03 44 crossing over from 3 to 1 permissive block to the 8-car marker.” [Yard 1 Radio]

Time	Description
06:07 hours	Terminal Supervisor: "You can bring it up, Juliet 03 44 crossing over from 3 to 1 8 car marker unintelligible. Make it 402, please. Train ID 401 Train Operator: "I copy that, 402." [Yard 1 Radio]
06:10 hours	Train ID 402 Berthed at the 8-car marker from the tail track at approximately 06:10 hours and performed a left door operation. [AIMS Playback]

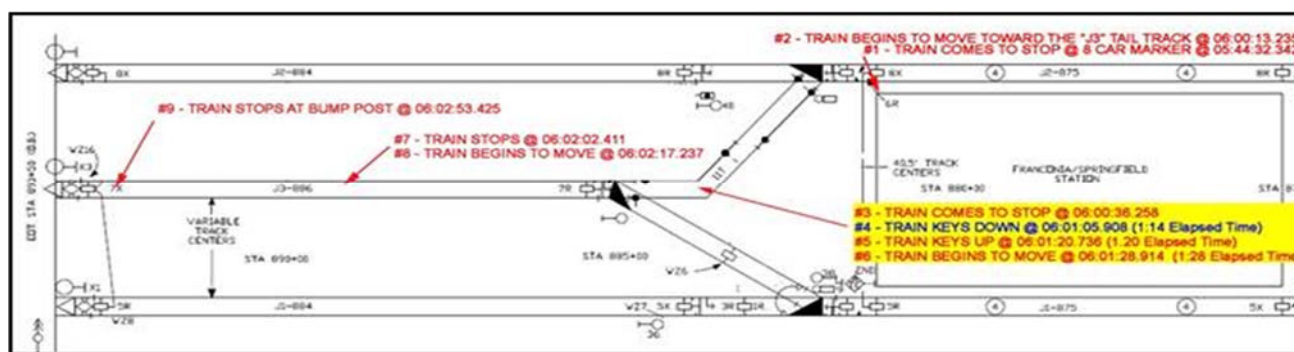
Note: Times above may vary from other systems' timelines based on clock settings.

Office of Chief Mechanical Officer (CMOR) Incident Investigation Team (IIT)

Based on the CMOR IIT data analysis, there was no fault with Train ID 401 that would have contributed to this incident.

The graphic below depicts Train ID 401 moving from Franconia Platform J03 Track 2 to Tail (Middle) Track J3-886

- The times shown in the Graphic were adopted from the Video Playback Time and did not match the ER Data Time exactly.
- The Time shown during video playback is only the Elapsed Time of the video file being reviewed.

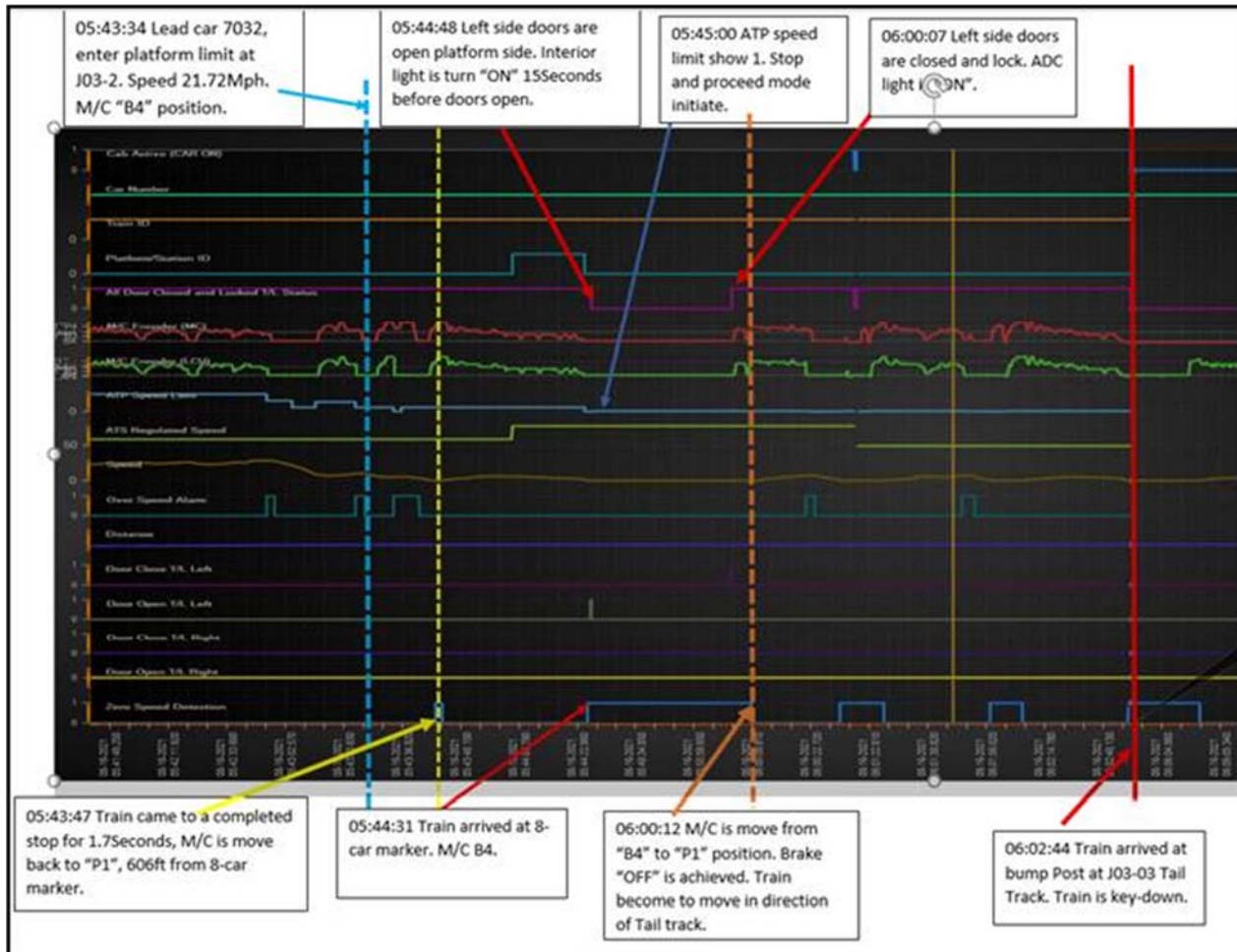


Description of Events (ER Log Data for Car 7032):

Time	Description
05:43:34 hours	Lead car 7032 enters platform limit at Franconia-Springfield Track 2, speed of 21.72 MPH, with the Master Controller in a "B4" Braking Mode.
05:43:47 hours	The train came to a complete stop for 1.7 seconds; Master Controller was moved back to "P1", 606 ft from 8-Car Marker.
05:44:31 hours	The train arrived at 8-Car Marker. Master Controller "B4" Braking Mode.
05:44:48 hours	Left side doors are open platform side; Interior lights turned "ON" 15 seconds before doors were open.
05:45:00 hours	ATP Speed limit showed 1. Train enter Stop and Proceed Mode.
06:00:07 hours	Left side doors are closed and lock. ADC light is "ON."

Time	Description
06:00:16 hours	Master Controller moved from "B4" to "P1-P4" position. Brake "OFF" is achieved. The train begins to move towards Franconia-Springfield Tail Track (J03).
06:00:27 hours	Train indicated an over speed alarm, speed 15.73 MPH, Master Controller in "P1-P4". Master Controller at LCU show "B4". 162.36 ft beyond 8-Car Marker Track 2.
06:00:36 hours	The train is switched from J03-2 to J03-886 Tail Track.
06:00:51 hours	The train came to a complete stop, 266.69 ft beyond 8-Car Marker Track 2.
06:01:05 hours	The train is keyed-down.
06:01:15 hours	The train is keyed-up.
06:01:17 hours	ATP Speed limit showed 1. Train enter Stop and Proceed Mode. <i>Note: ATP limit of Zero means no speed commands are present. ATP limit of 1 is the indication that the trains Stop and Proceed was activated.</i>
06:01:19 hours	Master Controller is moved from "B4" to "P1-P4". The train continued into J03-03 Tail Track.
06:02:44 hours	The train arrived at bump post at J03-886 (Middle) Tail Track. The train is key-down.

ER Graphic (Car 7032):

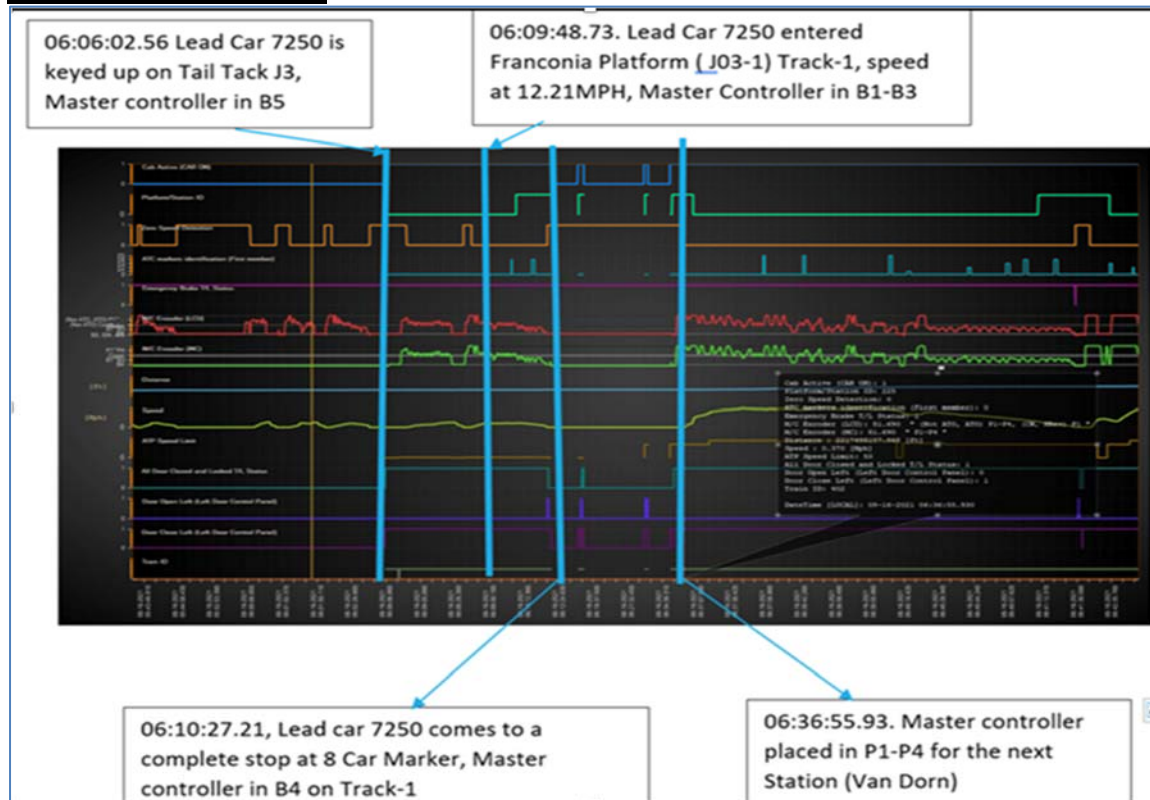


- Train ID 401 moving from Tail (Middle) Track =J03-886 to Platform J03 Track 1:

Description of Events (ER Log Data for Car 7250):

Time	Event
06:06:02 hours	Lead Car 7250 is keyed up on J3-886 Tail Track
06:08:57 hours	Master Controller is placed in P1-P4 and began moving towards the Franconia Platform J03 Track 1
06:09:48 hours	Lead Car 7250 entered Franconia Station Platform (J03-1) at speed 12.21 MPH, and the Master Controller was placed in B1-B3
06:10:27 hours	Lead Car 7250 comes to a complete stop at 8 Car Marker on Track-1 with Master controller in B4
06:10:29 hours	The door open pushbutton was depressed, and left side doors opened.

ER Graphic (Car 7250):



Office of Rail Transportation (RTRA)

RTRA conducted an independent investigation surrounding the Franconia-Springfield Station Improper Rail Vehicle Movement event and determined the following:

The Terminal Supervisor did not give proper read back to the Train Operator when incorrect instructions were repeated back. Additionally, the lounge area audio levels may have contributed to the event. See *Appendix B*.

“On Monday, August 16, 2021, Train Operator [redacted employees name] was working Alexandria run AX-36 which was scheduled to depart Franconia-Springfield terminal at 5:58am. At approximately 5:55am, Operator [redacted employees name] contacted Unit 25 while holding at signal J03-42 lunar to request permission to depart the Franconia-Springfield station at their scheduled time. Operator [redacted employees name] was instructed to stand by for a lunar signal at J03-06 due to a train crossing in front of her entering Franconia-Springfield. Operator [redacted employees name] then moved her train without speed commands at signal J03-42 into the tail track at Franconia-Springfield with customers aboard their train. After being instructed to continue into the pocket track and reversing ends to bring the train back to the platform she was removed from service and transported for post incident testing.

[redacted employees name], was instructed to submit an incident report concerning this incident. In the submitted report you stated, “I came into the platform berth the train at the 8-car marker facing J03 42 track 2. I opened my doors and waited for my leaving time. About 5:57am I contacted OCC and I said lunar J0342and ROCC responded contact terminal I contacted the terminal and said J0342 and the terminal supervisor gave me permission to leave. I tried making contact 2 to 3

times prior to my leaving time. When he responded he seemed to be rushing.”

[redacted employees name], the audio of the communications between you and Unit 25, as well as engineering reports from the consist that you operated were obtained. An investigation was conducted, and it was determined that when you contacted Unit 25 you were never given permission to depart Franconia-Springfield terminal. He stated to you that a train was coming in and a lunar signal was coming to you at J03/06 crossing over 2 to 1; 8-car marker head out. You responded by saying “I copy that, crossing over 2 to 1 over.” You then moved your train towards the tail track. You stated to Unit 25 that while holding at J03/42 lunar you did not have any speed commands and the engineering report for the consist confirmed that. It was also determined by the engineering reports that you entered stop and proceed mode to move the train without speed commands.” See appendix C.

The Office of System Maintenance (SMNT) The Office of Radio Communication (COMR)

COMR conducted a comprehensive Radio operational test at Franconia Station and tail track. COMR reported no trouble found at this time; the radio system is functioning as designed.

Applicable Rules and Procedures

Communication

Train Operator and Terminal Supervisor

MSPRH Cardinal Rule 1.79 Personnel - Shall not take any action until they are positive that all radio transmissions or receptions are heard, fully understood, and acknowledged. Individual radio transmissions shall, at all times, be repeated by the receiver so the transmitter can confirm the message was received completely and by the intended receiver. Whenever the transmitter has completed their transmission and is turning the airtime over to the receiving party for acknowledgment or reply, they are to end their communication with the word “over.” Speed restrictions must always be acknowledged by each Rail Vehicle Operator, even when a blanket message is sent out from Central Control, through 100 percent word for word repeat back from the Rail Vehicle Operators to Central Control or the Tower.”

Terminal Supervisor

MSPRH Cardinal Rule 1.79.2 - “When communicating with Rail Vehicles, personnel are to identify the train ID or unit ID by the complete number series. This method of positive train/unit identification shall be consistently used when transmitting and acknowledging information. Examples: Train ID 404 shall be identified as “four zero four.” Train ID 414 shall be identified as “four fourteen” instead of “four one four.” Train 932 shall be identified as “nine thirty-two.” PM-32 shall be identified as “PM thirty-two” instead of “PM three two.”

MSRPH Cardinal Rule 1.1 – “Failure of any employee to abide by established rules and procedures or failure to use sound judgment, regardless of the time, place or circumstance, so as to compromise the safety of the public or fellow employees.”

Train Operation

Permanent Order NO. T-20-28 – Modification to Operating Rule 3.79 moving a train with zero speed commands. Approved August 27, 2020.

3.79.1. Upon losing speed commands on the platform, the operator may NOT adjust the train in the same direction of traffic to service the station without contacting ROCC or terminal supervisor for permission. After servicing the station, the operator must keep their train doors open until such time when the operator has received speed commands, a proper signal aspect (Lunar or –Flashing) along with contacting the ROCC or terminal supervisor for permission to leave and an absolute block for the move if speed readouts commands do not return (Reference Standard Operating Procedure (SOP 40).

MSRPH Operating Rule 3.22 Mode 2 - Level 2 is the normal operating mode in yards. On the mainline, vehicles shall not be operated in Mode 2-Level 2 unless specifically authorized by ROCC to "operate in Mode 2 with zero speed commands," except as stated in 3.79. Operators shall move vehicles in either P1 or P2 while moving in the yards or with zero speed commands on the mainline unless directed otherwise by the Interlocking Operator in the yard or by ROCC while on the mainline.

Interview Findings

Based on the investigation launched into the Franconia-Springfield Improper Rail Vehicle Movement event, SAFE conducted two interviews via Microsoft Teams, including the investigation team and WMSC. These interviews were conducted over three days after the event and identified the following key findings associated with this event:

Terminal Supervisor

The Terminal Supervisor said, *"I usually have my door open for operators in the morning because they speak background noise and things like that sometimes; it gets difficult because our radio communication up at Franconia-Springfield is typically not the best, so I try and communicate with them as much as possible.*

Train ID 401 asked for a lunar or asked me for a time to leave. I informed Train ID 401 that a train was crossing over to Track 1, just standby. Train ID 401 Train Operator repeated their lunar at J03-42 signal at that time. I took a pause and said [to myself] they are at the wrong signal. I informed Train ID 401 Train Operator that your lunar is at J03-06 going downtown. At that time, Train ID 401 Train Operator closed their doors and proceeded on. The Train Operator never reversed ends on their train; I did see the Train Operator keyed up. The Train Operator never repeated back at all.

When it happened, I made sure I closed all my doors and zoned in what's going here when Train ID 401 Train Operator closed the doors and stopped in the interlocking. For me, the safety thing was to go ahead and take it down reverse and bring it back up instead of doing anything extra to make things dangerous at Franconia- Springfield."

The Terminal Supervisor informed the Train ID 401 Train Operator during a face-to-face conversation after the incident and stated, "once you come to the end of the line, there is no more stations past that. What was your thinking at the time?" The Train Operator said: "I have no idea." After giving the set of instructions, the Terminal Supervisor said that they did not hear Train ID 401 Train Operator repeat back. The Terminal Supervisor did not instruct Train ID 401 to make announcements to their customers.

The Terminal Supervisor said they were the only person in the blockhouse before and during the event. The Terminal Supervisor said they did not step away from the terminal during the event.

The Terminal Supervisor did not note any concerns with their hiring and onboarding process; however, they did mention that the course is accelerated.

The Terminal Supervisor noted they did not watch or listen to any non-work-related audio. The Terminal Supervisor said the background noise from the adjacent operators' lounge and the door is normally left open to communicate with the Train Operators. The Terminal Supervisor noted they were familiar with the electronic device policy and prohibited the use of computers or electronic devices while on duty.

Division Assistant Superintendent

The Assistant Superintendent stated, "I informed ROCC the Train Operator needed to be removed from service. I requested I get an incident report from the train operator and documentation of post-incident testing. I did not have any other interactions with those individuals."

The Assistant Superintendent said, "there was no thought in their mind to remove the Terminal Supervisor from service. The information I received from ROCC was that the Terminal Supervisor gave the train operator a set of instructions, and the Train Operator did not follow them. The terminal supervisor stated the same thing." The Assistant Superintendent said they requested audio from ROCC for the event, and they did not have audio playback access. After listening to the audio, the Assistant Superintendent said the Train Operator did not give back the specific repeat back, and the Terminal Supervisor did not correct the repeat back.

The Assistant Superintendent said, "the instructions were not verbatim, and there was a disconnect and breakdown in communication." During the interview, the Assistant Superintendent checked their email and noted that they received a copy of the terminal audio on August 17, 2021, at 13:55 hours, and said they listened to the audio the same day.

After reviewing the ambient microphone recording from the terminal, the Assistant Superintendent mentioned some background noise coming from the terminal, "something like a television program or movie." The Assistant Supervisor did discuss findings with the Terminal Supervisor. The Assistant Superintendent said, "there is a lounge where the operators gather in between their runs waiting for the next run, and there is a television in the operators' lounge. There is distance between the operators' lounge and terminal supervisor, but the volume is loud on that television. the volume was that area."

The Assistant Superintendent stated they are familiar with the post-incident toxicology testing form that reads, "Can the employee performance be completely discounted as a contributor to the event." However, that did not cross their minds when they decided to remove the Train Operator from service for post-incident toxicology testing.

The Assistant Superintendent said, "the onboarding process was relatively short and not well thought out for someone new coming into the system. The Assistant Superintendent reported not receiving any documentation relative to their position and did not know where to find them, for example, Terminal Supervisor procedures. The Assistant Superintendent said there are no diagrams or work instructions for their position.

When discussing the process for covering open work within the division, the Assistant Superintendent reported that the Alexandria Division Clerks reach out to other divisions to see if another individual would like to work. The Assistant Superintendent said there is no script to ensure the Train Operator has not worked over the allotted time or is familiar with the line, i.e., checking

work history, training, or system of record details. However, the Trapeze scheduling system provides checks and balances to prevent excessive time on a particular day.

The Assistant Superintendent is not a certified Train Operator, and the Assistant Superintendent was not familiar with Standard Operating Procedure (SOP) 1A on first inquiry. When asked what their responsibilities were during an emergency, they were able to generally state the role and responsibilities of the RTRA Forward Liaison and On-Scene Commander. The Assistant Superintendent stated that they observe the Terminal Supervisor bi-weekly and listed to radio communications daily while in the office.

The Assistant Superintendent stated there is no signage requiring that the Terminal Supervisor dispatch room and lounge door be closed, and is not aware of any procedures outlining such responsibilities.

Train Operator (from written statement)

“I came into the platform, berth the train at the 8-car marker facing J03-42 track 2. I opened my doors and waited for my leaving time. About 0557 hours, I contacted ROCC, and I said lunar at j03-42, and ROCC responded contact the terminal. I contacted the Terminal Supervisor (and they) gave me permission to leave. I tried making contact with the terminal supervisor two to three times prior to my leaving time. When the Terminal Supervisor did respond, they seemed to be rushing. “

Immediate Mitigation to Prevent Recurrence

- RTRA removed the Train Operator from service, pending investigation and post-incident toxicology test results.
- RTRA removed the incident consist from service for CMOR IIT and CMNT post-incident investigative efforts.
- SAFE will Conduct random/daily inspections of the tower/terminal locations.
- SAFE will work with IT on the scope and pricing of CCTV installation. This may take up to a year based on sourcing the correct cameras (computer chip shortage).
- SAFE will work with IT to ensure all phones are recorded via NICE.
- SAFE will work with PLNT on signage of the terminal locations, similar to tower placards.
- RTRA and SAFE will continue to passively monitor these areas via NICE.

Investigative Findings

- Train ID 401 Train Operator entered stop and proceed mode while on the Track 2 platform without permission.
- The Terminal Supervisor and Train Operator did not use 100 percent repeat back when communicating about the planned move from Track 2 to Track 1.
- The Terminal Supervisor did not respond nor correct the Train Operator's last transmission before moving their consist.
- The Terminal Supervisor gave verbal instructions to the Train Operator to look for their lunar before setting the route. Based on AIMS and ARS playback, the Terminal Supervisor gave instructions for the lunar at 0559 hours. The Terminal Supervisor set the J03-06 signal to a lunar aspect at 0600 hours.
- RTRA management did not remove the Terminal Supervisor from service for post-incident toxicology testing.
- The Train Operator was involved in two safety violations within three years. These included a station overrun on August 12, 2019, and an improper door operation on May 17, 2020.

- A Quality Assurance Audit revealed that before the station overrun on August 12, 2019, the Train Operator failed to acknowledge the worker's proceed signal and failed to stop their train when given an improper hand signal from Rockville to Twinbrook stations on track 2.
- The Train Operator was unfamiliar with the physical characteristics of the tail track locations and terminal station signal identification.
- The Train Operator worked 13 consecutive days leading up to the incident.
- The Train Operator is a Red Line Division operator and was working overtime at the time of the incident.
- The customer(s) on board the train were in the tail track area for approximately ten minutes.
- The Franconia-Springfield blockhouse work environment contained non-work-related audio playing at a volume high enough to be clearly audible on the ambient microphone in the Terminal prior to the incident and after Train 401 first arrived on track 2.

Weather

At the time of the incident, National Oceanic and Atmospheric Administration (NOAA) recorded the temperature as 71°F with an overcast. The relative humidity was 94% with ten-mile visibility. SAFE has concluded that weather was not a contributing factor in this incident (Weather source: NOAA – Location: Washington, DC.)

Human Factors

Fatigue

Evidence of Fatigue – Terminal Supervisor

Conditions at the time of the incident were evaluated to distinguish whether evidence of fatigue was present. No evidence of fatigue was indicated by the available data. Video of the involved person was not available to ascertain whether evidence of fatigue was present. The Terminal Supervisor 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 – Terminal Supervisor

Incident data was evaluated for fatigue risk factors. No significant risk factors for fatigue were identified. The incident time of day (6:00 hours) did not suggest an increased risk of fatigue-related impairment. The employee worked day shifts in the days leading up to the incident. Based on the employee's reported bed and wake times the day before the incident, the employee slept a total of six hours in the sleep period preceding the incident and was awake for 2.5 hours at the time of the incident. The employee reported a total of seven hours of sleep in the 24 hours preceding the incident. The off-duty period preceding the incident was 13.25 hours long, which provided an opportunity for 7-9 hours of sleep. The employee reported usual workday sleep durations of seven hours and no issues with sleep.

Evidence of Fatigue - Train Operator

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

Due to an unscheduled leave of absence for an undetermined amount of time, SAFE was unable to interview the Train Operator following the incident. Therefore, the employee's level of alertness and the presence of symptoms of fatigue in the time leading up to the incident could not be confirmed.

Fatigue Risk – Train Operator

Incident data was evaluated for fatigue risk factors. The Train Operator's work schedule indicated that the employee worked day shifts for 13 consistent days leading up to the incident.

The off-duty period preceding the incident was 11.16 hours long, which provides the opportunity for 7-9 hours of sleep; however, the employee's bed and wake times on the day preceding the incident and usual workday sleep durations could not be confirmed. The employee's total number of sleep hours in the sleep period preceding the incident and hours awake at the time of the incident could therefore not be determined.

Although the employee's work schedule is a possible indicator for fatigue, due to the lack of the above-noted sleep information, the presence of fatigue risk factors contributing to the incident could not be thoroughly evaluated with a modeling analysis.

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.

Based on information received from ROCC and the Terminal Supervisor, RTRA management staff did not remove the Terminal Supervisor for post-incident toxicology testing. The available information at the time of the event required that the Terminal Supervisor be removed from service.

Work History

Train Operator

- The Train Operator had two safety violations within the past three years. A station overrun on August 12, 2019, and an Improper door operation on May 17, 2020.
 - A Quality Assurance Audit revealed that before the station overrun on August 12, 2019, the Train Operator failed to acknowledge the workers' proceed hand signal and failed to stop their train when given an improper hand signal from Rockville to Twinbrook stations on track 2.
- The Train Operator worked 13 consecutive days leading up to the event.

Terminal Supervisor

- The Terminal Supervisor had one safety violation within the past three years. The Terminal Supervisor dispatched a defective train from Franconia-Springfield Station on October 5, 2020.
- The Terminal Supervisor had one non-compliance violation on October 10, 2020, for not completing their monthly ride proficiency test.

Probable Cause

The probable cause of this Improper Rail Vehicle Movement violation at Franconia-Springfield on August 16, 2021, was inadequate oversight of terminal operations and inadequate training. Contributing factors were the improper use of stop-and-proceed mode, the use of non-standard radio language, and missed 100% repeat-back. Another potential contributing factor was a noisy environment in the terminal supervisor's work area.

Recommendations/Corrective Actions

Corrective Action Code	Description	Responsible Party	Due Date
95294_SAFECAPS_IT_001	(RC-1, CF-1) IT department shall install CCTV cameras at all terminus locations to include interlocking operator towers.	IT/SRC	6/2022
95294_SAFECAPS_IT_002	(RC1, CF-1) IT shall ensure all phone communications are recorded in terminus and Interlocking Operating Towers.	IT/SRC	6/2022
95294_SAFECAPS_RTRA_003	(CF-2) RTRA shall distribute a Lessons Learned to discuss improper communication and lead familiarization.	RTRA/SRC	Completed 9/17/2021
95294_SAFECAPS_OPMS_004	(RC1, CF1) COO shall conduct a Safety Stand down outlining RWP, communication, and Roadway Operating procedures.	COO/SRC	12/31/2021
95294_SAFECAPS_RTRA_005	(RC-1, CF-1) Work with IT to restrict the types of allowable accessible site/usage at terminal/tower computers, ideally to replicate the same restrictions as ROCC.	RTRA/SRC	12/31/2021
95294_SAFECAPS_RTRA_006	(RC-1, CF-1) Continue to have supervisors monitor the areas as part of their management oversight activities.	RTRA/SRC	12/31/2021

Appendices

Appendix A – Interview Summaries

The below narrative summarizes the interview with SAFE 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.

Terminal Supervisor

The Terminal Supervisor is a WMATA employee with seven years of experience and seniority as a Terminal Supervisor. The Terminal Supervisor has worked at terminal locations during their tenure, and the Terminal Supervisor's last certification was in August 2020.

SAFE asked the Terminal Supervisor to describe the events surrounding August 16, 2021. The Terminal Supervisor said, "I logged in and called Central, turned on my computer. I usually have my door open for operators in the morning because they speak background noise and things like that sometimes; it gets difficult because our radio communication up at Franconia-Springfield is typically not the best, so I try and communicate with them as much as possible."

Train ID 401 Train Operator entered Franconia-Springfield track 2. Train ID 401 arrived as an early morning train and was out of service upon arrival. Train ID 401 Train Operator goes into service, and customers board Train ID 401. Train ID 401 asked for a lunar or asked me for a time to leave. I informed Train ID 401 that a train was crossing over to Track 1 just standby. Train ID 401 Train Operator repeated their lunar at J03-42 signal at that time. I took a pause and said [to myself] they are at the wrong signal. I informed Train ID 401 Train Operator that your lunar is at J03-06 going downtown. At that time, Train ID 401 Train Operator closed their doors and proceeded on. The Train Operator never reversed ends on their train; I did see the Train Operator keyed up. The Train Operator never repeated back at all. If you are facing southbound Franconia-Springfield, the tail track is right in front of you; it does not look like you're heading downtown at all. The Train Operator had a prime mover sitting right in front of them.

The Terminal Supervisor further stated, "luckily, I set the lunars at the station for Train Operators to cross over just in case to prevent someone coming up in the morning and run red signal. When it happened, I made sure I closed all my doors and zoned in what's going here when Train ID 401 Train Operator closed the doors and stopped in the interlocking. For me, the safety thing was to go ahead and take it down reverse and bring it back up instead of doing anything extra to make things dangerous at Franconia- Springfield.

The Terminal Supervisor stated this was their first interaction with Train ID 401 Train Operator, and the Train Operator noted this was not their first incident on the railroad. The Terminal Supervisor said Train ID 401 Train Operator only contacted the terminal one time and only stated, "permission on my schedule. When the train arrived on Track 1, I then gave Train ID 401 permission at J03-06. Well, before then, that is when I took the pause and said, well, you cannot go anywhere right now; hold on. I paused for a second and said, no, you are at the wrong signal. Your train is heading downtown at J03-06; where are you basically, and that is when the doors closed."

The Terminal Supervisor said there are a couple of variables to move the train. You have to enter, stop and proceed to move the train into the tail track. The Terminal Supervisor informed the Train ID 401 Train Operator during a face-to-face conversation after the incident and stated, "once you come to the end of the line, there are no more stations past that. What was your thinking at the time?" The Train Operator said: "I have no idea." After giving the set of instructions, the Terminal Supervisor said that they did not hear Train ID 401 Train Operator repeat back. The Terminal Supervisor said, "the safest thing to do was instruct Train ID 401 Train Operator to continue to Track 3, reverse ends, and come back on Track 1. Knowing that there were customers on, I did not want to scare the Train operator cause them to be frantic." They did not inform Train ID 401 Train Operator to make announcements to their customers.

The Terminal Supervisor said they were the only ones in the blockhouse before and during the event. The Terminal Supervisor made notifications to ROCC, Superintendent, and Depot clerk to report the event. The Terminal Supervisor said they did not step away from the terminal during the event. The Terminal Supervisor did not note all discrepancies during their onboarding process; however, they did mention that the course is accelerated.

The Terminal Supervisor noted they did not watch or listen to any audio. The Terminal Supervisor said the background noise from the adjacent operators' lounge and the door is normally left open to communicate with the Train Operators. The Terminal Supervisor noted they were familiar with the electronic policy and prohibited the use of computers or electronic devices while on duty.

Assistant Superintendent

The Assistant Superintendent is a WMATA employee with eight (8) months of experience and seniority as an Assistant Superintendent. The Assistant Superintendent was previously employed as a Rail Transportation Safety Analyst at the NTSB.

"When I was made aware of the incident, I received a call from ROCC and told a train was heading into the tail track of Franconia-Springfield they were supposed to go from track 2 to track 1 and a lunar signal. The Terminal Supervisor instructed the train operator to move the train from track 2 to track 1. The terminal Supervisor instructed the operator to stop the train reverse ends and head back out of the tail track. Once I reached the information, I told them the train operator needed to be removed from service. I requested I get an incident report from the train operator and documentation of post-incident testing. I did not have any other interactions with those individuals."

The Assistant Superintendent said, "there was no thought in their mind to remove the Terminal Supervisor from service. The information I received from ROCC was that the Terminal Supervisor gave the train operator a set of instructions, and the Train Operator did not follow them. The terminal supervisor stated the same thing." The Assistant Superintendent said they requested audio from ROCC for the event, and they did not have audio playback access. After listening to the audio, the Assistant Superintendent said the Train Operator did not give back the specific repeat back, and the Terminal Supervisor did not correct the repeat back. The Assistant Superintendent said, "the instructions were not verbatim, and there was a disconnect and breakdown in communication." The Assistant Superintendent said they received the audio recording 72 hours after the event, outside the WMATA's toxicology testing parameters. However, during the WMSC interview questioning, the Assistant Superintendent checked their email and provided the WMSC with a date of August 17, 2021, at 1355 hours, and said they listened to the audio the same day. The Assistant Superintendent reported they forwarded the audio playback to the line director and requested them to "take a listen and tell me what you think." After reviewing the ambient, the Assistant Superintendent mentioned some background noise coming from the terminal, "something like a television program or movie." The Assistant Supervisor did discuss findings with the Terminal Supervisor. The Assistant Superintendent said, "there is a lounge where the operators gather in between their runs waiting for the next run, and there is a television in the operators' lounge. There is distance between the operators' lounge and terminal supervisor, but the volume is loud on that television. the volume was that area."

The Assistant Superintendent stated there is no signage that the Terminal Superior dispatch room and lounge door requiring it to be closed or aware of any procedures outlining such responsibilities.

The Assistant Superintendent stated they are familiar with the post-incident toxicology testing form that reads, "*Can the employee performance be completely discounted as a contributor to the*

event.” However, that did not cross their minds when they decided to remove the Train Operator from service for post-incident toxicology testing.

The Assistant Superintendent received a call from the line director. Their instructions were to get the incident report form from the Terminal Supervisor and did not expound on any details about removing anyone else from service.

When asked about their onboarding experience, the Assistant Superintendent said, “the onboarding process was relatively short and not well thought out for someone new coming into the system. The Assistant Superintendent reported not receiving any documentation relative to their position and did not know where to find them, for example, Terminal Supervisor procedures. The Assistant Superintendent said there are no diagrams or work instructions for their position.

Alexandria division clerks reach out to other divisions to see if another individual would like to work. If that individual accepts, then they come over to work. The Assistant Superintendent said there is no script to ensure the Train Operator has not worked over the allotted time or is familiar with the line, i.e., checking work history, training, or system of record details.

The Assistant Superintendent is not a certified Train Operator, and the Assistant Superintendent is not familiar with Standard Operating Procedure 1A. Reinstated weekly operation forms that address uniforms slip trips, and fails, terminal operations, radio procedures, and administrative duties. The Assistant Superintendent monitors the Terminal Supervisor bi-weekly.

Train Operator (per written statement)

“I came into the platform, berth the train at the 8-car marker facing J03-42 track 2. I opened my doors and waited for my leaving time. About 0557 hours, I contacted ROCC, and I said lunar at J03-42, and rock responded contact the terminal. I contacted the Terminal Supervisor gave me permission to leave. I tried making contact with the Terminal Supervisor 2 to 3 times prior to my leaving time. When the Terminal Supervisor did respond, they seemed to be rushing. “

Appendix B – RTRA Investigative Report



RTRA PERIODIC PERFORMANCE REVIEW FORM

Supervisor [REDACTED]

Payroll: [REDACTED] Review Date: 8/16/2021

Reason(s) for Review of Job Performance

- | | |
|---|--|
| <input type="checkbox"/> Outstanding Job Performance | <input type="checkbox"/> Failure to submit incident report in a timely manner. |
| <input type="checkbox"/> Displayed poor technical skills | <input type="checkbox"/> Failed to reinstruct employee or write violation |
| <input type="checkbox"/> Late reporting to work | <input type="checkbox"/> Failure to complete required inspections/audits |
| <input type="checkbox"/> Failed to submit Reports and/or Audits
(Proficiency Ride) | <input type="checkbox"/> Failure to respond to radio/ ROCC in a timely manner |
| <input type="checkbox"/> Failure to follow instructions | <input type="checkbox"/> Failed to enforce rules/procedures |
| <input checked="" type="checkbox"/> Poor/Improper Terminal Operations | <input type="checkbox"/> Failed to document incident |
| <input type="checkbox"/> Unprofessional conduct, profanity | <input type="checkbox"/> Failure to substantiate sick leave or plan annual leave
in advance |
| | <input checked="" type="checkbox"/> Other |

Brief Explanation and Policy Reference

On August 16, 2021, Supervisor [REDACTED] was working Franconia Terminal. At approximately 5:43am, Operator [REDACTED] Train ID 401, which was an 8 car, 7K series consist arrived at Franconia-Springfield Station, Track #2. Shortly after servicing the station, the train operator, had not reversed ends, notified the Terminal Supervisor [REDACTED] that she had a lunar at J03-42 signal. This information was repeated a second time by Operator [REDACTED] Supervisor [REDACTED] you failed to acknowledge the transmission. You were unaware that train ID 401 was keyed up and facing J03-42 signal which is the governing signal leading into the pocket track. Therefore, Operator [REDACTED] Train ID 401 entered the pocket track with customers aboard the consist. Note: Train ID 401 operator should have been facing J03-06 signal for service towards Largo Town Center.

[REDACTED] Franconia-Springfield Terminal Supervisor, you failed to give the proper read back of the instructions for permission to depart Franconia-Springfield terminal. You should've repeated transmissions and requested repeat back from the operator. The terminal door to the operator lounge should have been closed to help minimize distractions, so you can hear all radio transmissions clearly. You stated to Operator [REDACTED] (ID 401) that"

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Attachment 1 – RTRA Investigative Report page 1 of 3

Incident Date: 08/16/2021 Time: 0600 hours.
Final Report – Improper Rail Vehicle Movement
E21371

Drafted By: SAFE 704 – 11/17/2021
Reviewed By: SAFE 70 – 11/26/2021
Approved By: SAFE 70 – 11/26/2021

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a train was coming in and a lunar signal was coming at J03-06 crossing over 2 to 1, 8car marker head out. Train Operator [REDACTED] responded by saying "I copy that crossing over 2 to 1 over." She proceeded to move the train in towards the trail track" Operator [REDACTED] stated to you she was holding at J03- 42 lunar, did not have any speed commands. The improper radio procedures or lack of performing the correct sequence of radio repeats resulted in a rules violation that could have been prevented. This incident caused a delayed to mainline and inconvenience to WMATA's customers.

I [REDACTED] Alexandria Superintendent have listened to the audio tape and verified the occurrences were accurate.

Your acceptance of the position as a RTRA Supervisor indicated your willingness to perform all functions of the position in a satisfactory manner. This is a vital position within Rail Transportation and requires supervisors to comply with rules and procedures.

Mr. [REDACTED] you are in violation of the following MSRPH Rules:

GR 1.1 Failure of any employee to abide by established rules and procedures or failure to use sound judgment, regardless of the time, place, or circumstance, to compromise the safety of the public or fellow employees.

GR 1.79 Personnel shall not take any action until they are positive that all radio transmissions or receptions are heard, fully understood, and acknowledged. Individual radio transmissions shall, at all times, be repeated by the receiver so the transmitter can confirm the message was received completely and by the intended receiver. Whenever the transmitter has completed their transmission and is turning the airtime over to the receiving party for acknowledgment or reply, they are to end their communication with the word "over."

GR 1.79.1 Positive Identification must be established prior to transmitting a message. Positive identification includes the transmitter stating their Train/Equipment Number or Unit ID Number, location, and track number at the beginning of a transmission and the receiver repeating back the Train/Equipment Number or Unit ID Number, location, and track number when acknowledging the radio call.

This PERIODIC PERFORMANCE REVIEW (PPR) will serve to advise you that this performance is unacceptable and will not be tolerated. All conversations must be complete and confirmed that any instructions given can be carried out in its entirety.

Therefore, the following disciplinary action is deemed necessary. You are hereby suspended for three (3) working days without pay. Your suspension will begin on October 05, 2021 and return to duty on October 10, 2021.

Your work record will reflect this disciplinary suspension imposed. Since this incident will be considered a part of your work record, it will be considered in determining any future employment actions, as appropriate. This discipline is a step in any progressive discipline that may apply to you.

WMATA hopes that you will learn from this incident and become a better employee by following all of the Authority's rules and regulations for the safety of everyone around you and the efficient operation of the Authority.

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Attachment 1 – RTRA Investigative Report page 2 of 3

114

1000 JOURNAL OF CLIMATE

10/4/21

Intendent/Designer

[illegible]

Attachment 1 – RTRA Investigative Report page 3 of 3

Drafted By: SAFE 704 – 11/17/2021
Reviewed By: SAFE 70 – 11/26/2021
Approved By: SAFE 70 – 11/26/2021

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WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

INVESTIGATION REPORT		DIVISION Shady Grove		GARAGE N/A		FILE NO. N/A	
DATE OF OCCURRENCE August 16, 2021		TIME 5:59AM		VEHICLE NO. N/A		BLOCK NO. N/A	
LINE Blue		LOCATION Franconia-Springfield (J03)		DESTINATION Largo Town Center (G05)			
TYPE OF CASE Violation of MSRP 3.22				REPORTED BY Rail Supervisor [REDACTED]			
NAME OF EMPLOYEE INVOLVED [REDACTED]				EMPLOYEE NO. [REDACTED]			
NATURE OF OCCURRENCE Moving a Train with Zero Speed Commands							
1. SUMMARY OF INCIDENT INVESTIGATION 2. SUMMARY OF EMPLOYEE STATEMENT 3. RULE(S)/POLICY VIOLATED 4. ANALYSIS OF FACTS /EVIDENCE IN SUPPORT OF RULE(S) VIOLATED 5. ASSESSMENT OF DISCIPLINE							
1. On Monday, August 16, 2021, Train Operator [REDACTED] was working Alexandria run AX-36 which was scheduled to depart Franconia-Springfield terminal at 5:30am. At approximately 5:55am, Operator [REDACTED] contacted Unit 25 while holding at signal J03/42 lunar to request permission to depart the Franconia-Springfield station at her scheduled time. Operator [REDACTED] was instructed to stand by for a lunar signal at J03/06 due to a train crossing in front of her entering Franconia-Springfield. Operator [REDACTED] then moved her train without speed commands at signal J03/42 into the tail track at Franconia-Springfield with customers aboard her train. After being instructed to continue into the pocket track and reversing ends to bring the train back to the platform she was removed from service and transported for post incident testing. 2. M [REDACTED], you were instructed to submit an incident report concerning this incident. In the submitted report you stated, "I came into the platform berth the train at the 8 car marker facing J03 42 track 2. I opened my doors and waited for my leaving time. About 5:57am I contacted OCC and I said lunar J0342and ROCC responded contact terminal I contacted the terminal and said J0342 and the terminal supervisor gave me permission to leave. I tried making contact 2 to 3 times prior to my leaving time. When he responded he seemed to be rushing."							
ACTION TAKEN Level III/ Thirteen (13) Point Safety Operational Violation/ Final Written Warning Five (5) Day suspension Without Pay Twenty-One / (21) Total DAP Points							
DATE September 13, 2021		ACTION TAKEN BY: [REDACTED]		SIGNATURE [REDACTED]		TITLE Assistant Superintendent	
EMPLOYEE SIGNATURE: Employee not available. Sent by certified mail to the employees address in on file on September 13, 2021							
I certify that the above has been called to my attention, and I understand that my signature does not imply admission of guilt							
EMPLOYEE MAY WRITE A STATEMENT IN THIS SPACE							

4.21 (6/79)

Office of Bus Service (BUSV) or RAIL

Yellow: Employee

068 00 0736 R1

Attachment 2 – RTRA Train Operator Investigative Report page 1 of 3.

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

Investigation Report Continuation Sheet



Page # 2 of 2

3. M [REDACTED] this incident has been investigated and the following rules and procedures were violated:

General Rule 1.1 All employees of WMATA, regardless of rank or title, shall be knowledgeable of the rules set forth in this manual that apply to the actions that they take, as well as rules and procedures contained in documents pertaining to their specific work assignments. The Roadway Worker in Charge (RWIC) and/or Escort shall be responsible for ensuring WMATA contractors and visitors abide by the rules set forth in this manual as it pertains to specific work assignments. Failure of any employee to abide by established rules and procedures or failure to use sound judgment, regardless of the time, place or circumstance, so as to compromise the safety of the public or fellow employees will result in the employee's immediate removal from service, pending an investigation. Disciplinary action will include permanent disqualification from safety sensitive positions or dismissal.

General Rule 1.79 Personnel shall not take any action until they are positive that all radio transmissions or receptions are heard, fully understood, and acknowledged. Individual radio transmissions shall, at all times, be repeated by the receiver so the transmitter can confirm the message was received completely and by the intended receiver. Whenever the transmitter has completed their transmission and is turning the airtime over to the receiving party for acknowledgment or reply, they are to end their communication with the word "over."

General Rule 1.79.1 Positive Identification must be established prior to transmitting a message. Positive identification includes the transmitter stating their Train/Equipment Number or Unit ID Number, location, and track number at the beginning of a transmission and the receiver repeating back the Train/Equipment Number or Unit ID Number, location, and track number when acknowledging the radio call.

Operating Rule 3.22 Mode 2 - Level 2 is the normal operating mode in yards. On the mainline, vehicles shall not be operated in Mode 2-Level 2 unless specifically authorized by ROCC to "operate in Mode 2 with zero speed commands", except as stated in 3.79. Operators shall move vehicles in either P1 or P2 while moving in the yards or with zero speed commands on the mainline unless directed otherwise by the Interlocking Operator in the yard or by ROCC while on the mainline.

Operating Rule 3.79 Train Operators shall not move trains with zero speed commands except after notifying ROCC 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 (see SOP #15).

4. M [REDACTED], the audio of the communications between you and Unit 25, as well as engineering reports from the consist that you operated were obtained. An investigation was conducted, and it was determined that when you contacted Unit 25 you were never given permission to depart Franconia-Springfield terminal. He stated to you that a train was coming in and a lunar signal was coming to you at J03/06 crossing over 2 to 1; 8-car marker head out. You responded by saying "I copy that, crossing over 2 to 1 over." You then moved your train towards the tail track. You stated to Unit 25 that while holding at J03/42 lunar you did not have any speed commands and the engineering report for the consist confirmed that. It was also determined by the engineering reports that you entered stop and proceed mode to move the train without speed commands.
5. M [REDACTED] in determining the appropriate disciplinary penalty for your actions, the Shady Grove Division Managers considered many factors. The records of WMATA indicate that you have been an employee since August 19, 2013. You have been a Train Operator since October 4, 2015. Your performance record indicates that prior to this violation, you accumulated a total of eight (8) Discipline Administration Program (DAP) points for violating rule 1.14 on March 2, 2020 and rule 1.5 on August 13, 2021.

Attachment 2 – RTRA Train Operator Investigative Report page 2 of 3.

(It should be noted, the use of positive performance points lessened the point accumulation from 16 points to eight (8) points). I have reviewed the circumstances of the most current violation and do not find any mitigating factors to consider that would impact the implementation of the guidelines provided under the DAP. Based upon the nature of this violation, you are assessed thirteen (13) points which is being added to your current performance record of eight (8) points. Subsequently, your total points under the DAP are twenty-one (21) which constitutes a five (5) working day suspension without pay and a final warning. Your suspension dates are as follows September 15,16,17,18 and 19, 2021. You will return to work on September 22, 2021. This letter will also serve as a warning that any future operational/safety incidents of any nature or an accumulation of twenty-four (24) points under the DAP will result in progressive disciplinary actions to include discharge from the Washington Metropolitan Area Transit Authority. Be advised, this incident is a Level 3 Safety/Operational Violation and your performance during the incident was unacceptable and warrants immediate corrective action.

██████████ you can elect to use all available vacation leave for lost wages for this suspension. You are aware that invoking the vacation payment for lost wages you have forfeited your right to grieve this suspension as stated in Section 104 d of the Collective Bargaining Agreement.

Yes _____ No _____ Signature _____ Date _____

A copy of this incident will be kept in your personnel file.

EMPLOYEE NAME: _____ EMPLOYEE #: _____

DATE: _____

4.21B (3/93)

Attachment 2 – RTRA Train Operator Investigative Report page 3 of 3.



Improper Communication & Unfamiliarity Leads to Train Incident

INCIDENT SUMMARY

On Monday, August 16, 2021, a Shady Grove Division Train Operator was working an overtime assignment at Alexandria Division. The operator was operating Train ID 401, which was an 8-car, 7k series consist. The train departed Alexandria Yard at approximately 5:34am and operated in non-revenue service to Van Dorn Street. Upon arrival to Van Dorn Street, the train was placed in service; and after servicing the station, the operator continued to Franconia-Springfield. Train 401 arrived at Franconia-Springfield, Track #2 at approximately 5:43am. Shortly after servicing the station, the train operator, who had not reversed ends, informed the terminal supervisor that they had a lunar at **J03-42 signal**. This information was repeated a second time by the operator after the Terminal Supervisor failed to acknowledge the transmission. The Terminal Supervisor was unaware the train was keyed up and facing J03-42 signal which is the governing signal leading into the pocket track. **Note: From this location, the operator should have been facing J03-06 signal for service towards Largo Town Center.**

Upon responding, the terminal supervisor stated that a train was in the process of crossing over from Track #2 to Track #1 and once the train cleared, the operator had permission to depart. Shortly afterwards, the operator proceeded past J03-42 signal and entered the pocket track, with customers aboard the consist. There were no reported injuries or damage to equipment, however customers aboard the consist encountered a delay.

ROOT CAUSES

The operator was unfamiliar with the layout of Franconia-Springfield station. This led to the operator failing to reverse ends upon arrival to the station for service back to mainline.

The television in the operator's lounge was too loud and served as a distraction for the terminal supervisor when transmitting and receiving messages over the radio.

Both the train operator and terminal supervisor failed to receive proper repeat backs in accordance to GR 1.79.

LESSONS LEARNED

What happened...	What should have happened...
The operator failed to reverse ends upon arrival to Franconia-Springfield for service back to mainline.	The operator should have reversed ends upon arrival to Franconia-Springfield for service towards Largo Town Center.
The operator was keyed up and facing J03-42 signal while communicating with the terminal supervisor prior to departure	The operator should have been keyed up and facing J03-06 signal while communicating with the terminal supervisor prior to departure
The operator informed the terminal supervisor that their train was holding at J03-42 signal.	The terminal supervisor should have immediately ascertained the exact location of the train and had the operator to reverse ends.
The door to the operator's lounge was open and the noise from the television, etc. served as a distraction for the terminal supervisor.	The terminal supervisor should have closed the door to help minimize distractions to hear all radio transmissions clearly.
The terminal supervisor did not use the proper radio verbiage when communicating with the train operator.	The terminal supervisor should have used the proper radio verbiage when communicating with the train operator. For example , "Upon verifying your lunar at J03-06 signal, speed commands, and correct alignment you have permission to depart on schedule."
The terminal supervisor failed to receive a proper repeat back from the operator upon transmitting directives over the radio.	The terminal supervisor should have repeated transmissions and requested repeat backs from the operator.

RTRA Lessons *Learned*

*Looking back,
to effectively move forward*

MSRPH RULES

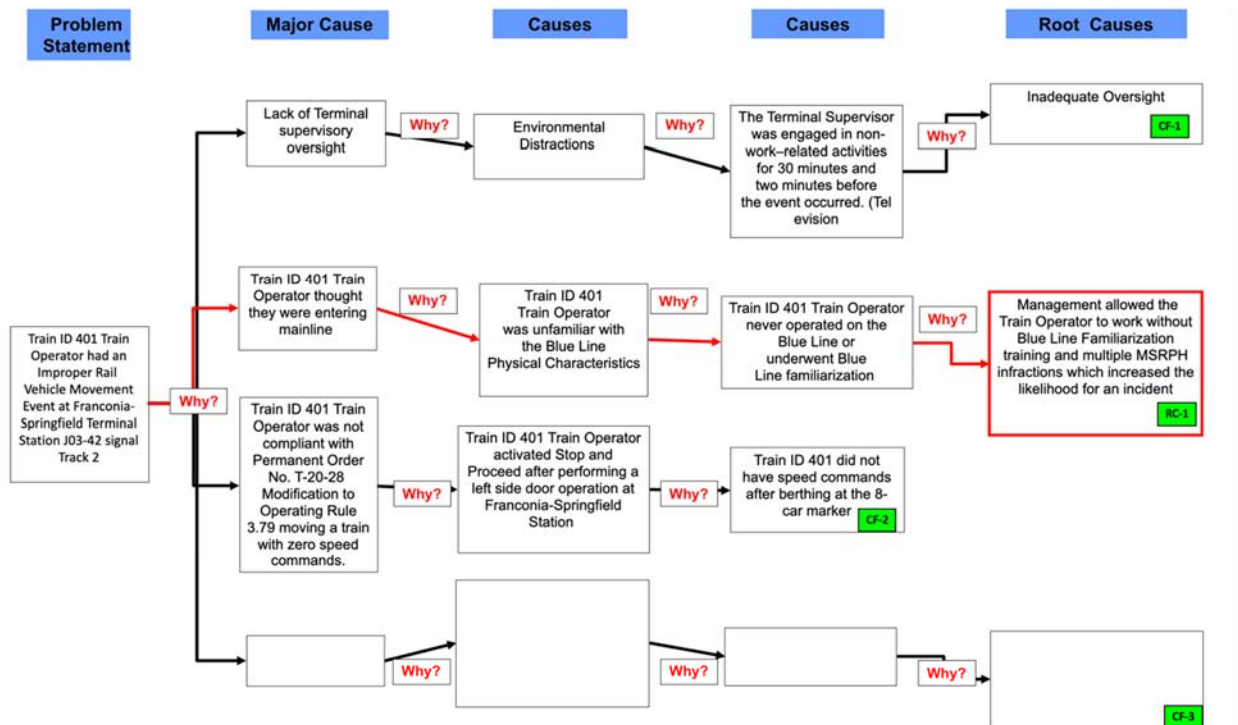
- ✓ GR 1.79 Employees shall not take any actions until they are positive that all radio transmissions or receptions are heard, fully understood and acknowledged. Individual radio transmissions shall be repeated by the receiver so the transmitter can confirm the message was received completely and by the intended receiver.

RECOMMENDATIONS

- ✓ Emphasize that all operations personnel abide by all Standard Operating Procedures when operating trains.
- ✓ Emphasize the importance of operators being attentive to instructions from Supervisors and ROCC, as well as confirming these instructions before moving their train.
- ✓ Stress the importance of operators following the established procedures for departing terminals; to include confirming rail alignment, speed commands, and a lunar signal.
- ✓ Minimize all distractions when communicating directives, and when transmitting and receiving messages over the radio.
- ✓ Do not move trains without having a full understanding of instructions and directives.



Appendix E – Root Cause Analysis



Root Cause Analysis



Attachment 1 – Root Cause Analysis Page 1 of 1.