



**Safety and Operations Committee**

**Board Information Item III-A**

**Rail Safety Program Updates**

Washington Metropolitan Area Transit Authority

## Board Action/Information Summary

☐ Action ☒ Information

Document  
Number:  
205714

Resolution:  
☐ Yes ☒ No

**Presentation Name:**

Rail Safety Program Updates

**Project Manager:**

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**Project Department:**

Rail Services and Safety & Readiness

**Purpose/Key Highlights:**

This presentation provides an update on three parts of the Rail Safety Program:

- Return-to-Duty Processes
- Automatic Train Operation as prevention of Red Signal Overruns
- Incident on Thursday, February 15 and resulting investigation and actions

The program aligns with our Strategic Transformation Plan's goals of Service Excellence.

**Interested Parties:**

None

**Background:**

Return-to-Duty Processes: Thursday, February 8, Rail Operations discovered that three train operators, who returned to duty after long-term absences, were operating trains without current certifications. The train operators were immediately removed from service and scheduled for recertification. Rail Operations investigated and reviewed the certification records and identified a gap in the return to duty process. There is no indication that this issue is more widespread.

Red Signal Overruns: There were two red signal overruns by revenue trains during the week of February 11, 2024. The first occurred on Tuesday, February 13 at Rhode Island Avenue station, followed by one on Thursday, February 15 at West Falls Church station. Passengers were safely removed from the impacted trains and both operators were removed from service.

Eastern Market station Smoke Incident: On Thursday, February 15, a fire and smoke event happened at Eastern Market Metrorail station. Collector shoe assembly (draws electric power to the train by contacting third rail) dislodged, dragged and grounded, causing a second collector shoe on same railcar to fail in station limits.

## **Discussion:**

### **Return-to-Duty Processes**

The return to duty process occurs after a long-term absence (30 days or more). A train operator returning to duty is required to (1) complete required training (courses dependent upon the length of absence); and (2) have a current certification. The certifications of three train operators lapsed while they were on leave. The return to duty process did not identify that these operators needed to recertify in addition to completing required training. So, while the three train operators successfully completed the required training, the current return to duty process did not require confirmation that the train operators also had current certifications. Train operators are required to recertify every two years.

Rail Operations is working closely with the Technical Training & Development and Digital Modernization offices to revamp and improve the return to duty process and update it from paper to electronic forms. A required confirmation that an operator has a current certification will then be included in the form sent to Technical Training & Development and the employee's manager will be required to sign-off on the form (confirming that training has been completed and that the operator has a current certification) prior to an operator returning to duty.

Currently, rail operator training is managed by Technical Training & Development under Safety & Readiness and rail operator certification is managed by Rail Operations under the Operations organization. As part of the realignment, the rail operator certification function is in the process of moving under Technical Training & Development.

### **Automatic Train Operation as Prevention of Red Signal Overruns**

A red signal overrun occurs when a train passes a red signal without the authority of the Rail Traffic Controller (RTC). There have been seven red signal overruns by revenue service trains in the last 12 months, which is an increase compared to previous years. The plan for returning to automatic train operations (ATO) will reduce red signal overruns by removing the potential for human error and preventing the

operator from passing a red signal. ATO on the Red Line is expected July 2024, as previously discussed at the January 25, 2024 Rail Program Update.

In the meantime, Rail Operations is increasing supervisory oversight and communication with train operators by performing one-on-one conversations in the field. Rail Operations will also continue to adjust training based on the frequency of events to ensure all train operators are aware of proper procedures. Operations is also continuously evaluating operators through its Uniform Rules Compliance program, including speed command audits to verify that train operators are obeying safety rules. Finally, the introduction of Point & Call will teach operators to physically point at signals, similar to operations in New York and Japan.

### **Collector Shoe Assembly Investigation and Actions**

Railcar Maintenance & Engineering immediately started fleet inspection of all railcars after the incident, starting with the 7000-series. The fleet inspection has included downloading data from all affected trains that provides insight into vehicle behavior. As of 6pm, February 20, 2024, 35 collector shoe assemblies have been found with visible fractures, which corresponds to about a 1.6% failure rate. Railcar Maintenance & Engineering staff are also engaged with the Original Equipment Manufacturer (OEM) on the visible fractures found and will continue with data analysis to determine a root cause of the collector shoe failures.

In parallel with the fleet inspection, Infrastructure is performing visual track inspections on all lines and deploying a Track Geometry Vehicle to inspect the Silver, Red, and Green lines. These lines were chosen based on where cars with fractures have been in service since their periodic inspection.

While Railcar Maintenance & Engineering continues to investigate the root cause, Rail Operations is implementing several actions to assist with train operator awareness of potential risk. Rail operations issued notices to all train operators and rail traffic controllers to continue to focus on power-related warnings on train control displays. Rail operations is also deploying additional managerial and mechanic staff in the field as well as developing power-related awareness training for operators.

### **Funding Impact:**

This presentation is informational and not a request for action or funding.

### **Previous Actions:**

None

### **Next Steps:**

### **Return-to-Duty Processes**

To ensure that the gap in the return-to-duty process is closed, Rail Operations is working to affix certification date decals to train operator badges and will ensure badges are checked prior to work issuance. Rail Operations is also partnering with Safety & Readiness to develop a procedure and checklist to confirm all returning operators receive required training.

Safety & Readiness is conducting an internal audit of operator certification records and will also be reviewing and re-writing the current Performance Standards for Train Operations. The revised processes are to be implemented by June 30, 2024.

### **Automatic Train Operation as prevention of Red Signal Overruns**

Rail Operations will be introducing Point & Call defensive operations, which is a best practice across the industry, to help mitigate red signal overrun incidents. In addition, the Uniform Rules Compliance Program will perform continuous evaluation utilizing audit data including speed command audits.

### **Collector Shoe Assembly Investigation and Actions**

Railcar Maintenance & Engineering will begin inspections on the legacy fleet and Infrastructure will continue to perform track inspections.

### **Recommendation:**

Information Only

# Rail Safety Program Updates

Safety & Operations Committee  
February 22, 2024



# Service Excellence, a strategic goal from Your Metro, the Way Forward

Focus today



## Service excellence

Deliver safe, reliable, convenient, equitable, accessible, and enjoyable service for customers.



## Talented teams

Attract, develop, and retain top talent where individuals feel valued, supported, and proud of their contribution.



## Regional opportunity & partnership

Design transit service to move more people and equitably connect a growing region.



## Sustainability

Manage resources responsibly to achieve a sustainable operating, capital, and environmental model.

## Objectives of Service Excellence

**Safety & security** | Ensure all customers and employees feel safe and secure using and delivering services

**Reliability** | Provide dependable service that the community trusts

**Convenience** | Deliver frequent and accessible service that modernizes and enhances the customer experience

# Agenda

Train Operator Return-to-Duty Process

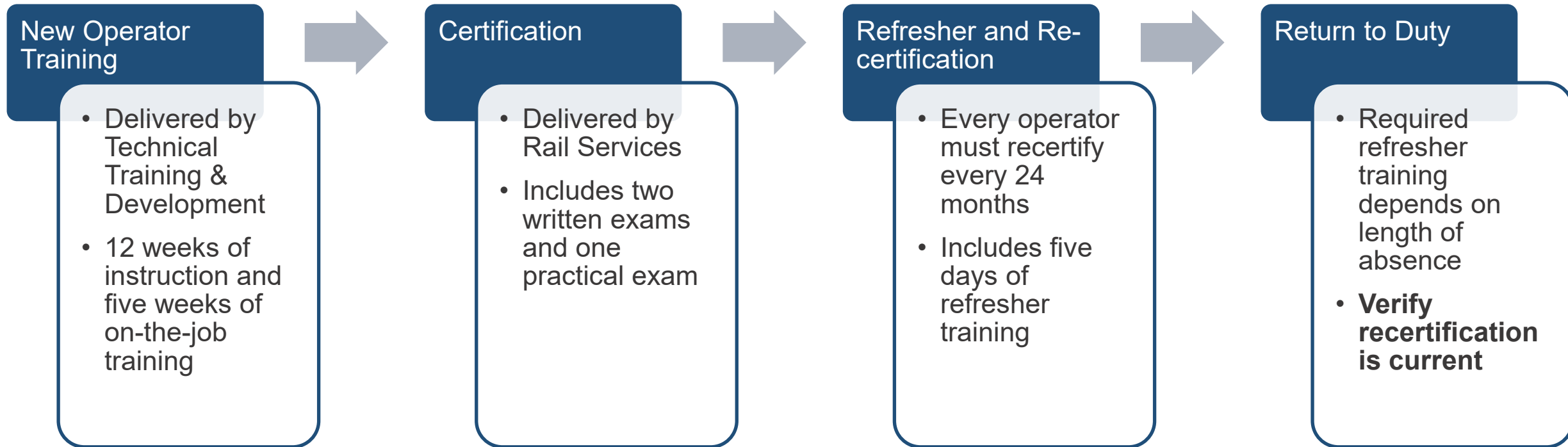
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Red Signal Overruns

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February 15 Incident Investigation Update

# Current training and certification elements



# Gap in Return-to-Duty Process

- Return-to-Duty process initiated after an absence of 30 days or more
- Returning train operator must
  - 1) Complete required refresher trainings
  - 2) Have a current recertification
- Three train operators received required training, but recertifications had expired
- Previous process did not require confirmation of current recertifications
- Immediate actions
  - Train operators removed from service
  - Scheduled for recertification



# Improving Return-to-Duty and Certification Processes

### **Actions taken to date**

- Audit & Compliance conducting an internal, independent audit
- Return-to-Duty training document updated

### **Improving Return-to-Duty Actions underway**

- Recertification date decals will be affixed to operator badges and checked prior to work issuance
- Develop procedure and checklist to confirm all returning operators receive any required training
- Digital Modernization automating Return-to-Duty process and developing electronic forms

### **Certification Program Improvements Actions underway**

- Safety & Readiness conducting internal audit of operator certification records
- Expedite realignment of moving train operator certification to Safety & Readiness by June 30
- Safety & Readiness reviewing and re-writing Performance Standards for Train Operations to be implemented by June 30

# Return to ATO will reduce red signal overruns

## What is a red signal overrun?

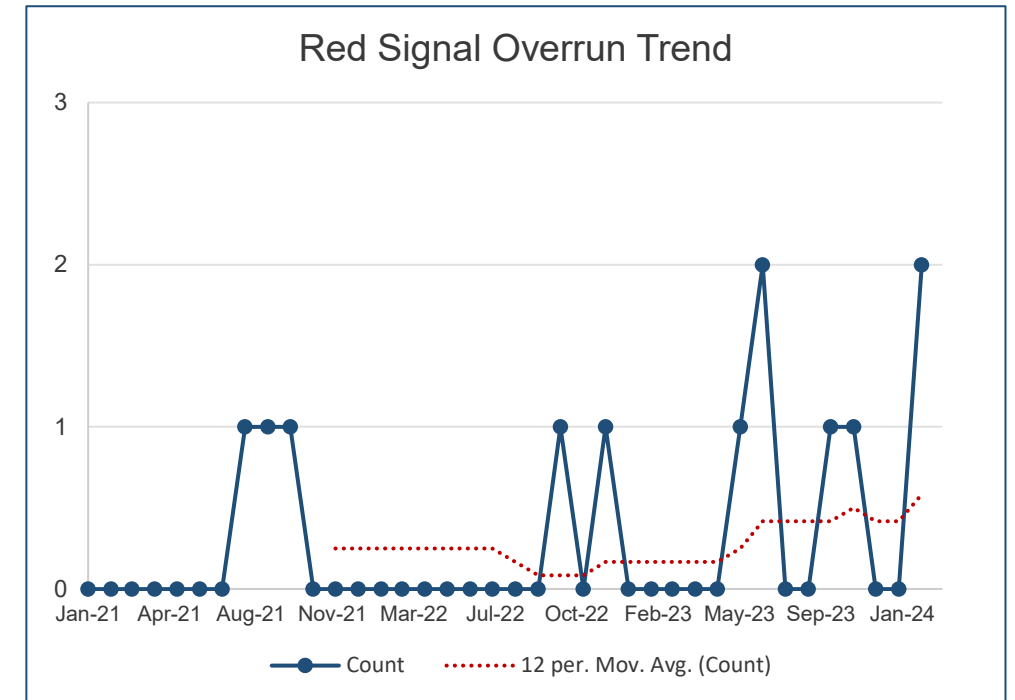
- A train passing a red signal without the authority of the Rail Traffic Controller

## Return to ATO

- Simulated service in Automatic Train Operations (ATO) expected spring 2024
- Will prevent operators from passing red signals

## Actions underway

- Continuous evaluation through the Uniform Rules Compliance Program including speed command audits
- Increasing supervisory oversight and communication
- Adjustments to training based on frequency of events
- Introduce Point & Call defensive operations (industry best practice)



# Eastern Market Smoke Incident on Feb.15, 2024

## What happened

- Collector shoe assembly (draws electric power to the train by contacting third rail) dislodged
- Dragged and grounded causing second collector shoe on same railcar to fail in station limits
- Resulted in smoke and fire

## Incident response

- Operations personnel immediately evacuated the train and station
- Metro's updated ventilation and evacuation procedures worked as intended
- Metro's Office of Emergency Preparedness, Metro Transit Police Department, DC FEMS, and MPD responded at the incident and coordinated well with the Metro Integrated Command and Communications Center



# Actions taken to find a probable cause

### Actions by Railcar Maintenance & Engineering

- Fleet inspection of all railcars, starting with the 7000-series
- Data downloads from all affected trains
- 35 collector shoe assemblies with visible fractures (about 1.6% failure rate) as of 6pm Tuesday
- Engaging Original Equipment Manufacturer on fractures found
- Continue to collect data to determine a root cause of collector shoe assembly fractures

### Actions by Infrastructure

- Visual inspection of all lines
- Track Geometry Vehicle inspections on Silver, Red, and Green lines

### Operational actions

- Issued notices to operators and rail traffic controllers to continue to focus on power-related warnings on train control displays
- Deploying additional managerial and mechanic staff in the field
- Developing heightened power-related awareness training for operators

