



WMSC Commissioner Brief: W-0037 – Derailment at Alexandria Yard entrance August 27, 2019

Prepared for Washington Metrorail Safety Commission meeting on August 4, 2020

Safety event summary:

A hi-rail vehicle entering the Alexandria Yard derailed at Switch 7B at approximately 10:35 p.m. on August 27, 2019. At the time, the area was shut down as part of a summer-long work zone. The vehicle had been in use for work near Van Dorn Street station.

The rear rubber tire of the vehicle rode up the inside rail of the switch, lifting the vehicle and causing the derailment.

Metrorail's contractor reported the vehicle was moving at a "walking speed" of a few miles per hour at the time of the derailment.

Metrorail Automatic Train Control employees were at the location setting switches manually. They identified no damage to the switch due to the derailment.

There were no injuries reported.

While the incident occurred at night, weather conditions were clear and were excluded as a contributing factor.

Corrective Actions:

As corrective actions or mitigations, Metrorail said the vehicle was removed from service for inspection by the contractor.

WMSC staff observations:

Metrorail claimed that the contractor doing work in the shutdown area had "sole jurisdiction" over the event, however this is not the case. Metrorail is responsible for oversight of its contractors, and the WMSC is responsible for oversight of the entirety of the Metrorail system, including areas that are under construction.

Staff recommendation: Adopt final report.

FINAL REPORT OF INVESTIGATION A&I E19450

SMS 20190828#82544

Date of Event:	08/27/2019
Type of Event:	Derailment
Incident Time:	22:35 hrs.
Location:	7B Switch, Track 2 at CM 540+50
Time and How received by SAFE:	Email 23:38 hrs.
Safety Officer Response:	Yes
Time of Safety Officer Arrival:	22:55 hrs.
Time of Safety Officer Departure:	23:15 hrs.
Rail Vehicle:	Hi-Rail Unit-VD1
Injuries:	None
Damage:	None
Emergency Responders:	SAFE, TRST, ATC

Executive Summary

On Tuesday, August 27, 2019, Maintenance Operation Control (MOC) notified SAFE at 22:38 hrs., that at approximately 22:35 hrs., Mobile Command Unit 3 reported Hi-Rail Unit (HRU) VD1, a contract unit operated by a contractor, derailed at switch 7B while entering Alexandria yard.

Automatic Train Control (ATC) personnel responded and reported no damage to any ATC components. The HRU was re-railed without further incident and removed from service and from WMATA's property. No major or minor damage was reported on the HRU.

No injuries were reported as a result of this incident. The Equipment Operator (E/O) and Pilot Operator (P/O) were removed from service for post-incident testing and subsequently interviewed by SAFE.

Notification

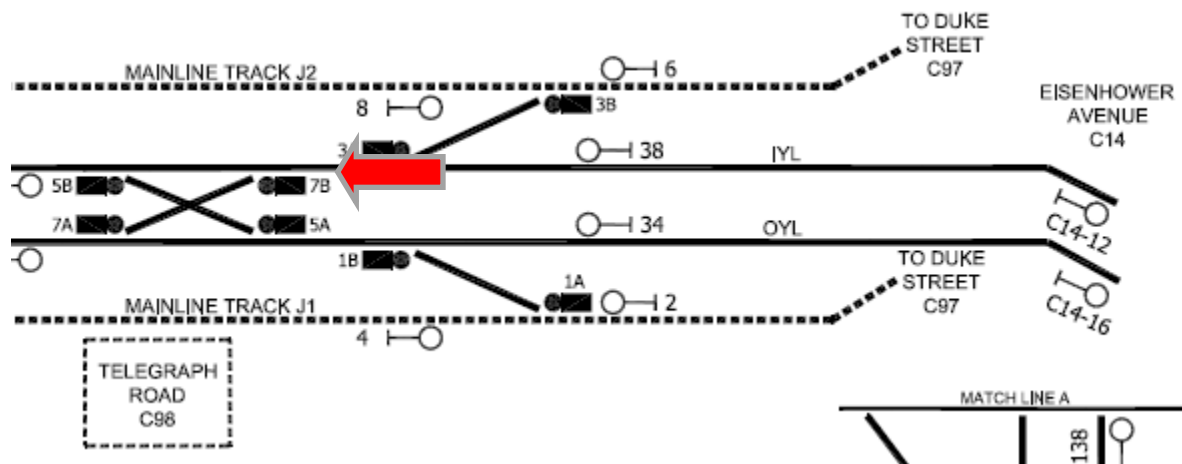
Title	Time	Comment:
WMSC	23:18 hrs.	Email Notification
CMC	23:18 hrs.	CMC - Email Notification

Incident Site

The incident area was located at 7B Switch, Track 2 at Chain Marker (CM) 540+50. The area is described as a:

- Yard lead to Alexandria Yard

Field Sketch/Schematics



Investigation

Equipment Operator (E/O) and Pilot Operator (P/O)

Per E/O and P/O Interview Statements, HRU VD-1 was traveling inbound on Track 2 from Van Dorn Street Rail Station toward Alexandria Rail Yard. The Unit was moving in the forward position at this time. The HRU VD-1 cleared C98-06 (Track 2 - Outbound). While in a reverse move, VD-1 successfully traversed Switches 3B and 3A; however, while attempting to traverse switch 7B, it appears that the rear single tire rode on top of the switch housetop causing the HRU to climb off the Running Rail and ultimately causing the Unit to derail.

At this point, the ATC personnel were on scene guiding the Unit through the switch points as they were manually setting routes as assigned by Mobile Command.

The Department of Transportation (DOT) inspection expires 4/2020, and WMATA inspection expires 9/2019. Based on preliminary findings, it is most probable that the rear rubber road tires of the Unit climbed on the guard rail, and the Hi-rail gear wheels lost their normal relationship with the running rail and subsequently derailed.

ATC

Reportedly, between 22:40 hrs., and 23:40 hrs., ATC personnel inspected the track component, and no damage was reported.

Weather

At the time of the incident, the temperature was 70°F and clear. SAFE has concluded that weather was not a contributing factor in this incident (Weather source: National Oceanic Atmospheric Administration (NOAA) – Location: Alexandria, VA.)

Findings

- This HRU had been inspected and approved for use on the WMATA Roadway
- ATC inspected the track component, and no damage was reported

Conclusion

Based on the salient facts identified as part of this investigation, SAFE has reached the following conclusion on the causal factors per contractor incident report:

- Based on the contractor incident report (see attachment 1), while on the trip back from Van Dorn Station to Alexandria Yard, the HRU went through a switch before the entrance to Alexandria Yard. Halfway through the switch, the tire made contact with the inside rail of the switch, causing the HRU rail gear to dismount the track.
- The incident happened in an Authorized Construction Site (ACS) area. It's the contractor's responsibility to investigate and correct any discrepancy found unless it's a major safety concern or emergency, then the ACS will be lifted. Not all derailments have the same level of severity although in definition they are the same. In this case, this derailment occurred when the Hi-Rail vehicle was traversing through a switch at walking speed. The derailment is still considered a safety concern, but not major because the outcome does not encapsulate the following; death or severe injury to customers, contractors or employees, fires that may potentially result in death/injuries, damage to property or other emergency that poses life threatening conditions by not lifting the ACS. Therefore not all derailments can be deemed as a major safety concern. Additionally, SAFE Construction does assist/provide guidance to the contractor as needed in correcting discrepancies. SAFE Construction and the contractors have an open line of communication regarding all safety matters. There was no data to support an improper operation by the E/O of the HRU that may have contributed to this incident. Reportedly, the HRU moved normally over the switch, and contact with the switch caused the rear tire to jump up. Per SAFE Construction, normal moves over a switch at walking speed will not cause a Hi-Rail vehicle tire to jump.

Considering all the facts gathered from this investigation, SAFE has no further information regarding E19450.

Immediate Mitigation

- Removed the HRU from service for post-incident inspection by the contractor
- Removed the E/O and P/O from service for post-incident testing and SAFE interview
- Re-rail the HRU VD-1

Corrective Action

No further action necessary

Attachment



INCIDENT ALERT

INCIDENT TYPE: AUTO / EQUIPMENT
/ PROPERTY

Date and Time: 8/27/19 10:30PM

District Name: Eastern District

Internal/External: Internal

Project Name: WMATA 6 Yellow/Blue Line

Description (What happened?)

While on the trip back from Van Dorn to the Alexandria Yard, the truck went through a switch before the entrance to the yard. Halfway through the switch, the tire caught the inside rail of the switch, causing the trucks rail gear to dismount the track.

Causal Factors (Why did the incident happen?)

1. Work Place Environment / Layout

- Routine activity without thought

Details: Crept over the switch just like normal, and a piece of the switch cause the rear tire to jump up.

2. N/A

Details:

3. N/A

Details:

Corrective Measures (How can the incident be prevented in the future?)

- No corrective measures needed crew followed the procedure properly.

Reconstruction Photos:



2019

Attachment 1 – Contractor incident report.

Photos



Photo 1 – 7B Switch indicates clamped switch points.



Photo 2 – The rider rear side HRU wheel climbed the housetop of the switch and derailed.



Photo 3 – HRU Serial Number



Photo 4 – HRU Certificate of Inspection. This Approval expires in September 2019