FINAL REPORT OF INVESTIGATION A&I E19325

June 25, 2019

Doors Failed to Open

W-0023

Adopted by the Washington Metrorail Safety Commission at its meeting on March 12, 2020.

Washington Metrorail Safety Commission
777 North Capitol Street, NE, Suite 402
Washington, DC 20002

FINAL REPORT OF INVESTIGATION A&I E19325

SMS 20190625#81026

Date of Event:	06/25/2019
Type of Event:	Door Failed To Open
Incident Time:	06:26 hrs.
Location:	Smithsonian (D02), Track 2
Time and How received by SAFE:	07:00 hrs. On-Call Phone
Safety Officer Response:	No
Time of Safety Officer Arrival:	N/A
Time of Safety Officer Departure:	N/A
Rail Vehicle:	**L3020**-3021.3089-3088.3074-3075.3058-3059T
Injuries:	None
Damage:	N/A
Emergency Responders:	N/A

Executive Summary

On Tuesday, June 25, 2019 at approximately 06:28 hrs., Train Operator (T/O) operating Orange Line Train ID 918 (**L3020**-3021.3089-3088.3074-3075.3058-3059T) berthed at Smithsonian (D02) station, Track 2 experienced doors failed to open on the entire consist from the lead car event. The T/O removed himself from the cab without notifying ROCC to perform the door operation from the third car back within the consist to service the station. The T/O then notified ROCC that they were unable to open the doors, and after opening the doors from the third car, he was then unable to close the doors when initiating the close door command from door control panel on the lead car.

Per ROCC instructions, passengers aboard Train ID 918 were offloaded at D02 station and the affected consist was subsequently transported to West Falls Church Yard (K99) for post-incident inspection.

Based on salient facts identified as part of this investigation (ARS, CCTV, CENV data), SAFE is in concurrence with CMNT and CENV. Train ID 918 doors failed to open and close as a result of a defective close push-button on left door control panel which allowed a door close signal to remaining active (pushed in) position. This resulted in the train doors failing to open and close from the lead car while it was keyed up. When the T/O keyed down and went to the third car in the affected consist, there was no signal from the lead car preventing the doors to open or close. Therefore, upon open door push-button activation, in the third car, doors were allowed to open and later close without failure.

Drafted By: SAFE 704 - 08/26/2019
Reviewed By: SAFE 701 – 08/27/2019
Approved By: SAFE 70 – 08/29/2019

SAFE further concludes, the T/O failed to immediately notify ROCC of the failure prior to attempting to troubleshoot the failure in accordance Metrorail Safety Rule and Procedure Handbook (MSRPH) SOP (Defective Trains) 34.5.1.1.1.

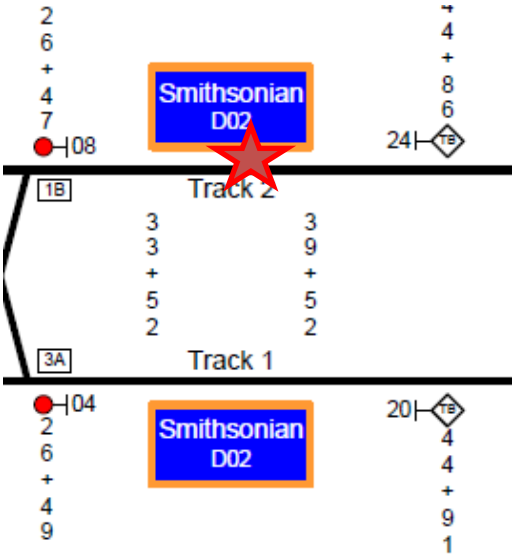
Notification

Title	Time	Comment:
WMSC	07:50 hrs.	Email

Incident Site

D02, Track 2

Field Sketch/Schematics



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Investigation

Office of Rail Transportation

Train Operator (T/O)

During SAFE interview, the T/O stated, after berthing Train ID 918 at D02 station, Track 2. The Train doors failed to initiate via right side door control open push-button. Therefore, the T/O took it upon himself to go to the third car within the consist to service the station. Upon arriving back to the cab (lead car 3020), the T/O was unable to close the doors. The T/O stated, they contacted ROCC and notified them of the failure. While moving through the consist to ensure customers were clear, the T/O initiated the close door push-button from the third car in the consist. Upon completion, ROCC instructed the T/O to initiate door interlocking bypass to get the train moving. Thereafter, the T/O confirmed instruction accordingly and left the station.

Closed Circuit Television

Based on CCTV platform footage at D02 station, it revealed the following information related to doors failing to open event:

06:26:53 – Train ID 918 properly berthed at the 8-car marker D02, Track 2

06:27:18 – The T/O leaves the cab area and runs towards the rear of the affected car

06:27:58 – Train ID 918 doors open on the platform side

06:29:34 – The T/O leaves the cab area of car 3020 a second time

06:30:13 – The T/O initiates the door closed push-button and doors begin to close

Audio Recording System

Based on ARS, SAFE came to the following conclusion related to the rail vehicle involved:

06:28:17 – The T/O notified ROCC there was a problem with Train ID 918; doors failed to open Therefore, they had to open the doors from the third car within the consist to service the station

06:28:41 – ROCC requested the T/O for their Train ID and location

06:28:44 – The T/O stated, this is Train ID 918 Track 2 D02 station. I had a problem opening the doors on the consist, I had to open them from another car

06:29:00 – ROCC requested car numbers on Train ID 918

06:29:04 – The T/O stated, the car number was 3020 and doors are now failing to close upon push button activation

06:29:11 – ROCC instructed Train ID 918 to offload train and ensure customers are clear

06:31:08 – ROCC requested an update from the T/O of Train ID 918

06:31:14 – The T/O stated, they performed a walk through and verified the train was clear of customers on all 8-cars

06:31:22 – ROCC instructed the T/O Train ID is Now 718, verify clear of customers

06:33:04 – The T/O stated, verified train was clear of customers, and the train had all doors closed at the time.

Human Factors

Years of Service

The Washington Metropolitan Area Transit Authority (WMATA) employee has been a T/O 11-years with 12 years of WMATA service. The T/O was certified at the time of incident and possessed a valid Road Way Protection (RWP) Level 2 ID. The T/O did not have any operational incidents in the last 3 years and was familiar with the Orange Line.

Fatigue

Based on SAFE's review of the T/O's 30-day work history, it was determined that the controller's hours of service were in accordance with WMATA's *Fatigue Risk Management Policy 10.6* and *Hours of Service Limitations for Prevention of Fatigue Policy 10.7*.

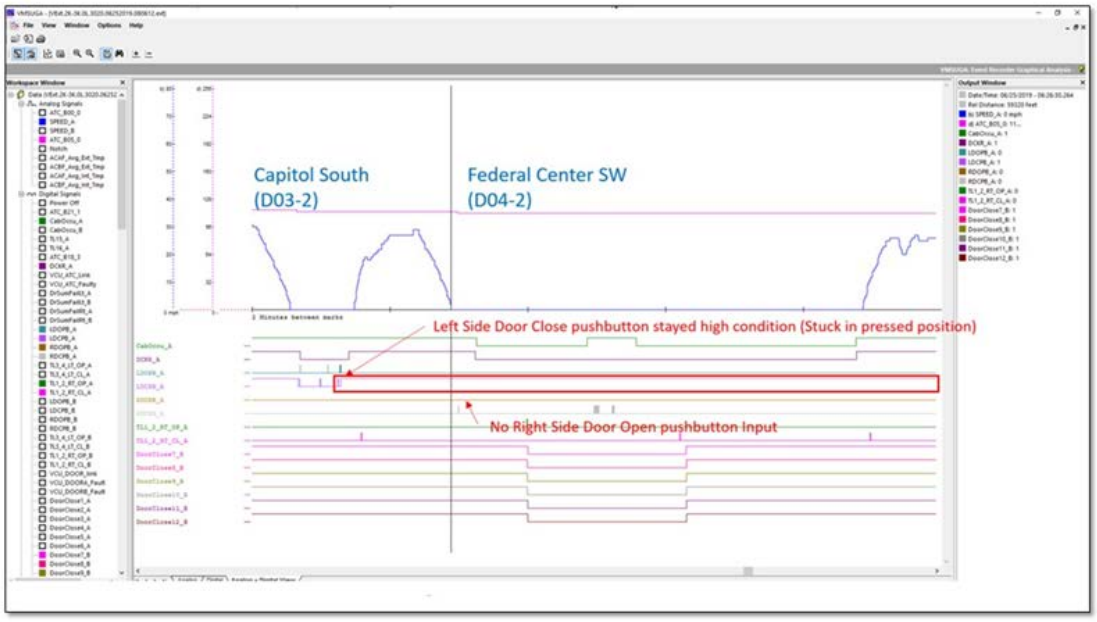
Post-Incident

After reviewing the T/O's post-incident testing results, it was determined that the T/O was not in violation of the Drug and Alcohol Policy and Testing Program 7.7.3/5, therefore, being under the influence of a controlled substance has been excluded as a contributing factor.

Vehicles Program Services

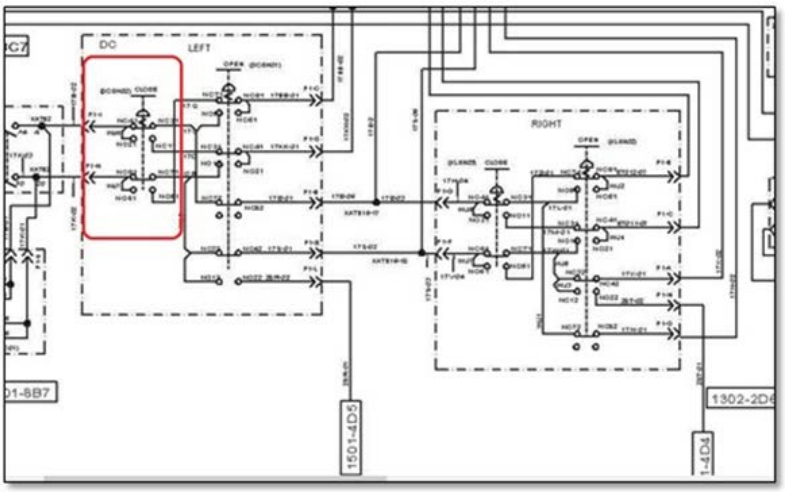
After review of Event Log data on car 3020, CENV determined the following:

CENV analyzed the VMS for 3020-3021. According to the VMS, the Left Door Close push-button failure caused the reported incident. Seen below screenshot, left door close push button status was stuck in a High condition (pressed position) after operator closed the left side doors at Capitol South station the push-button never (released) recovered.



CENV recommendations to CMNT:

- Check the Left Door Close push button condition and R/R if necessary.



Office of Car Maintenance (CMNT)

CMNT personnel performed a Daily Inspection (DI) on all the cars (**L3020**-3021.3089-3088.3074-3075.3058-3059T) affected as a result of this event and on the morning of June 25th, 2019. No additional defects were identified. Additionally, CMNT performed the

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required Service Bulletin (SBB)-624 on all cars within the consist prior to revenue service on June 25, 2019.

CMNT removed and replaced the defective left door control panel, operations test performed with no failures.

Weather

At the time of the incident, the temperature was 65° F, and clear. SAFE has concluded that weather was not a contributing factor in this incident (Weather source: National Oceanic Atmospheric Administration (NOAA) – Location: Washington DC.)

Findings

CCTV showed

- The T/O performed doors operations from the third car to open and close the doors
- Train ID 918 did have all doors closed with exterior lights extinguished.
- CENV identified the left doors close push-button signal stayed high resulting in the failure
- CMNT did perform SBB-624. No anomalies identified.

Conclusion

Based on salient facts identified as part of this investigation (ARS, CCTV, CENV data), SAFE is in concurrence with CMNT and CENV. Train ID 918 doors failed to open and close as a result of a defective close push-button on left door control panel which allowed a door close signal to remaining active (pushed in) position. This resulted in the train doors failing to open and close from the lead car while it was keyed up. When the T/O keyed down and went to the third car in the affected consist, there was no signal from the lead car preventing the doors to open or close. Therefore, upon open door push-button activation, in the third car, doors were allowed to open and later close without failure.

SAFE further concludes, the T/O failed to immediately notify ROCC of the failure prior to attempting to troubleshoot the failure in accordance MSRPH SOP (Defective Trains) 34.5.1.1.1.

SAFE has no further information to disclose regarding this event and recommends its closure.

Immediate Mitigation to Prevent Recurrence

- RTRA re-instructed the T/O in accordance to MSRPH SOP 34 Defective trains.

Corrective Action

No corrective actions were taken as a result of this event.

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