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WMSC Commissioner Brief: W-0231– Evacuation for Life Safety Reasons – Mt. Vernon Sq Station – February 4, 2023

Prepared for Washington Metrorail Safety Commission meeting on June 13, 2023

Safety event summary:

A Train Operator reported that a rider spilled or sprayed a chemical on a Green Line train, leading Metrorail to evacuate the train for life safety reasons at Mt. Vernon Sq Station on February 4, 2023 at approximately 6:44 p.m.

The Train Operator reported a strong smell on the lead car at 6:39 p.m. prior to the train reaching Shaw-Howard U Station. The Rail Traffic Controller instructed the Train Operator to offload the train at Mt. Vernon Sq Station. The Train Operator continued past Shaw-Howard U Station without stopping at 6:41 p.m. There was no communication between the Train Operator and Rail Traffic Controller regarding not stopping at Shaw-Howard U Station. The Train Operator stopped the train at Mt. Vernon Sq. Station at 6:44 p.m. where they evacuated riders from the train.

The Train Operator reported that the spill was contained to the lead car, and that they would have to move to the other end of the train to operate safely. The Rail Traffic Controller therefore directed the Train Operator to move the train without passengers to Greenbelt Station and provided the appropriate signals and switch alignment. As the Train Operator was bringing the train to Greenbelt Station, they improperly stopped and opened the doors at Columbia Heights Station. The operator later stated that they had forgotten they were out of service, but they verified the train was clear of riders before continuing on. By the time the train arrived at Greenbelt Station at approximately 7:15 p.m., there was no longer a bleach odor. Metrorail left the doors open on the train at the Greenbelt platform to provide additional ventilation for the car. The train was placed back into service toward Branch Ave Station at 8:45 p.m.

Probable Cause:

The probable cause of this evacuation was a Train Operator reporting a chemical smell on a train.



Washington Metropolitan Area Transit Authority
Department of Safety (SAFE)
Office of Safety Investigations (OSI)

FINAL REPORT OF INVESTIGATION A&I E23078

Date of Event:	02/04/2023
Type of Event:	Evacuation for Life Safety Reasons
Incident Time:	18:44 hours
Location:	Mount Vernon Square Station, Track 2
Time and How received by SAFE:	18:45 hours via MAC
WMSC Notification Time:	19:12 hours
Responding Safety Officers:	WMATA SAFE: No WMSC: No Other: No
Rail Vehicle:	Train ID 504 [L7134-7135.7509-7508.7526-7527.7511-7510T]
Injuries:	None
Damage:	None
Emergency Responders:	None
SMS I/A Number	20230207#106032

Mount Vernon Square Station – Evacuation for Life Safety Reasons
February 4, 2023

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Abbreviations and Acronyms

AIMS	Advanced Information Management System
ARS	Audio Recording System
CMNT	Office of Car Maintenance
I/A	Incidents/Accidents
MAC	Mission Assurance Coordinator
MSRPH	Metrorail Safety Rules and Procedures Handbook
NOAA	National Oceanic and Atmospheric Administration
OSI	Office of Safety Investigations
ROCC	Rail Operations Control Center
ROCS	Rail Operations Control System
RTC	Rail Traffic Controller
RTRA	Office of Rail Transportation
SAFE	Department of Safety
SMS	Safety Measurement System
WMATA	Washington Metropolitan Area Transit Authority

Washington Metropolitan Area Transit Authority (WMATA)
Department of Safety (SAFE) – Office of Safety Investigations

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

Executive Summary

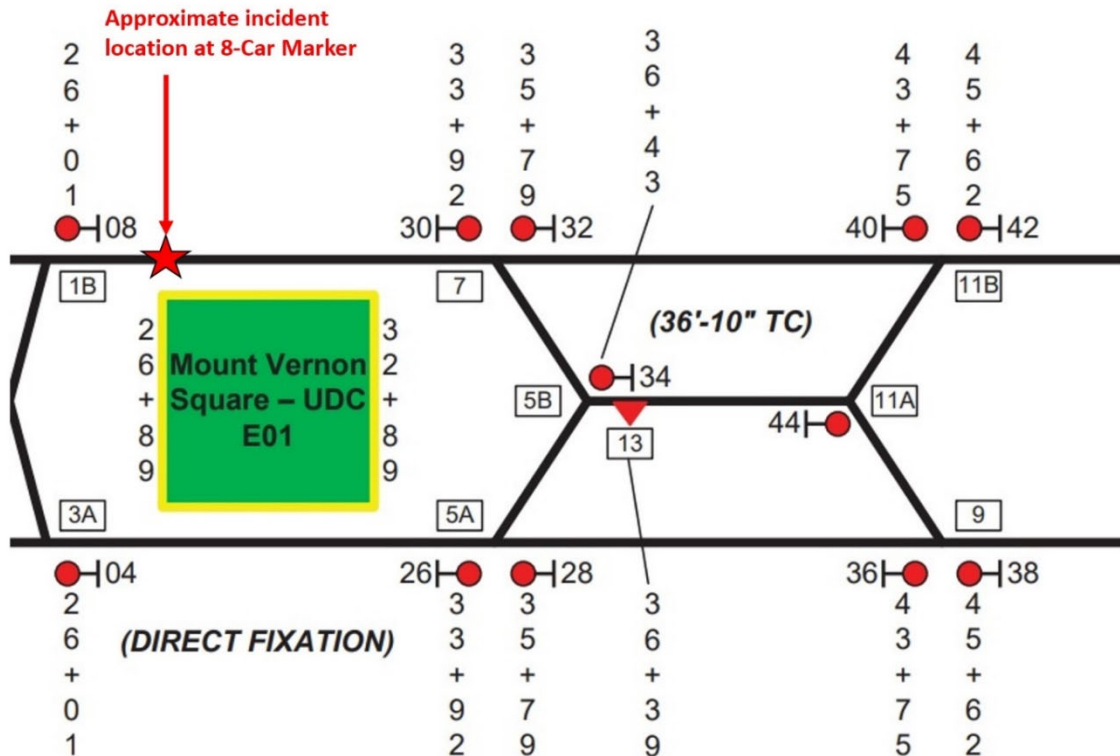
On Saturday, February 4, 2023, at 18:44 hours, the Train Operator of inbound Train ID 504 [L7134-7135.7509-7508.7526-7527.7511-7510T] offloaded their customers at Mount Vernon Square Station, Track 2 due to a reported chemical spill on Car 7134. The Train Operator of Train ID 504 contacted the Rail Operations Control Center (ROCC) to report a strong odor of bleach aboard the car. The Radio Rail Traffic Controller (RTC) instructed the Train Operator to offload the train for further inspection. Train ID 504 was removed from revenue service, and the Train Operator was instructed to proceed to Greenbelt Station. No injuries or damages were reported as a result of this incident.

The incident train was evacuated and removed from service for cleaning. The probable cause of the evacuation for life safety reasons at Mount Vernon Square Station was a chemical spill by a customer onboard the train. The investigation did not identify significant deficiencies in communication or non-compliance with established evacuation procedures.

Incident Site

Mount Vernon Square Station, Track 2

Field Sketch/Schematics



Purpose and Scope

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

Investigative Methods

The investigative methodologies included the following:

- Documentation Review – A collection of relevant work history information and process documentation contained in Metro systems of record. These records include:
 - Metrorail Safety Rules and Procedures Handbook (MSRPH)
 - National Oceanic Atmospheric Administration (NOAA)
 - Rail Operations Control System (ROCS) SPOTS Report
- System Data Recording Review – A collection of information contained in Metro Data Recording Systems. This data includes:
 - Audio Recording System (ARS) playback
 - Advanced Information Management System (AIMS) playback

Investigation

Based on findings, at 18:44 hours, on Saturday, February 4, 2023, the Train Operator of inbound Train ID 504 [L7134-7135.7509-7508.7526-7527.7511-7510T] offloaded their customers at Mount Vernon Square Station, Track 2 due to a reported chemical spill on Car 7134. The Train Operator of Train ID 504 contacted ROCC to report the incident at 18:39 hours. The Train Operator reported that a customer spilled bleach onboard Car 7134. The Radio RTC instructed the Train Operator of Train ID 504 to offload the train for further inspection. The Train Operator reported that the spill was contained to car 7134. Train ID 504 was removed from revenue service, and the Train Operator was directed to proceed to Greenbelt Station. The Terminal Supervisor inspected the incident train, and they reported no smell of bleach. The train remained at the Greenbelt platform with the doors open to allow for ventilation.

Based on AIMS data, Train ID 504 bypassed Shaw-Howard Station at 18:41 hours on Track 2 in approach Mount Vernon Square Station by direction from ROCC. Train ID 504 arrived to offload customers at Mount Vernon Square Station at 18:44 hours. At 18:54 hours, the incident train proceeded in non-revenue service to Greenbelt Station via Track 1. There were no injuries or damages reported as a result of this incident.

Chronological ARS Timeline

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

Time	Description
18:39 hours	<u>Radio RTC</u> : Radio RTC received a report from the Train Operator of Train ID 504 of a chemical spill onboard car 7134. The Train Operator reported a customer was spraying bleach but could not identify the specific source. The Radio RTC advised the Train Operator MTPD was requested. directed Train Operator to offload customers at Mount Vernon Square Station. [OPS 3]
18:40 hours	<u>Radio RTC</u> : Radio RTC dispatched an RTRA Supervisor to Greenbelt Station to assist with the incident. [OPS 3]

Time	Description
18:41 hours	<u>Radio RTC</u> : Radio RTC advised the Train Operator of Train ID 504 MTPD has been notified and inquired if they could identify the customer. The Train Operator could not identify the source and stated their eyes were burning. [OPS 3]
18:42 hours	<u>Radio RTC</u> : The Radio RTC directed the Train Operator of Train ID 504 to offload customers at Mount Vernon Square Station. The Train Operator acknowledged. [OPS 3]
18:43 hours	<u>Radio RTC</u> : The Radio RTC instructed the Train Operator of Train ID 504 to turn off EV, key down and reverse ends in the direction of Greenbelt Station. The RTC also asked if the Train Operate the train safely. The Train Operator acknowledged. [OPS 3]
18:44 hours	<u>Train Operator of Train ID 504</u> : Offloaded customers at Mount Vernon Square Station, Track 2. [Spots Report]
18:47 hours	<u>Radio RTC</u> : Radio RTC instructed an RTRA Supervisor to exit Train ID 503 at Mount Vernon Square Station to assist. RTRA Supervisor acknowledged. [OPS 3]
18:50 hours	<u>Train Operator of Train ID 504</u> : Train Operator of Train ID 504 reported the train was clear of customers. [OPS 3]
18:53 hours	<u>Train Operator of Train ID 504</u> : Train Operator of Train ID 504 departed Mount Vernon Square Station, Track 2, and proceeded towards Greenbelt Station on Track 1. [Spots Report]
18:54 hours	<u>Radio RTC</u> : Radio RTC instructed the Train Operator of Train 504 to re-designate the Train ID to 704 and proceed towards Greenbelt Station in non-revenue service. [OPS 3]
18:56 hours	<u>Radio RTC</u> : Radio RTC instructed the Train Operator of Train ID 504 to change their Train ID to 704. Train Operator acknowledged. [OPS 3]
19:15 hours	<u>Train Operator of Train ID 704</u> : Train ID 704 arrived at Greenbelt Station for cleaning of Car 7134. [Spots Report]
20:45 hours	<u>Train Operator of Train ID 704</u> : Train ID 704 was re-designated to Train ID 508 in revenue service at Greenbelt Station, Track 2. [Spots Report]

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

Advanced Information Management System (AIMS)

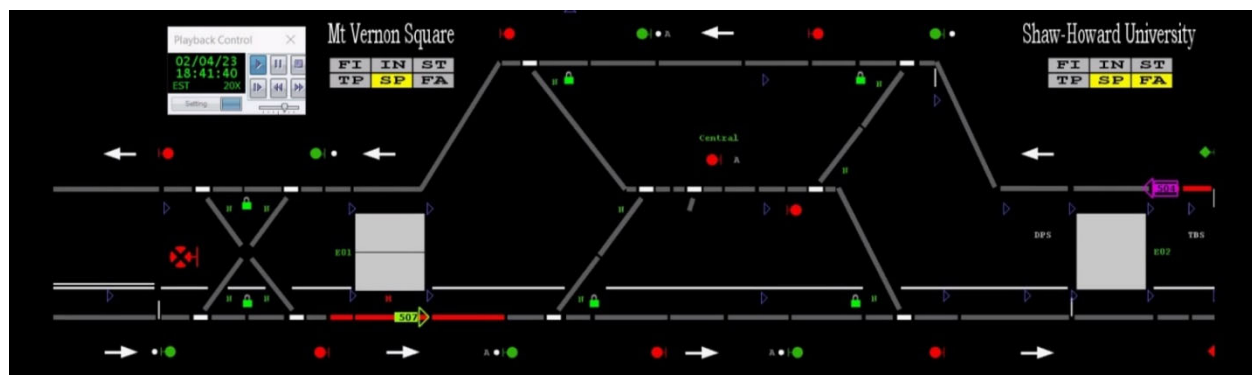


Image 1 - Train ID 504 approaching Shaw-Howard Station, Track 2 at 18:41 hours.

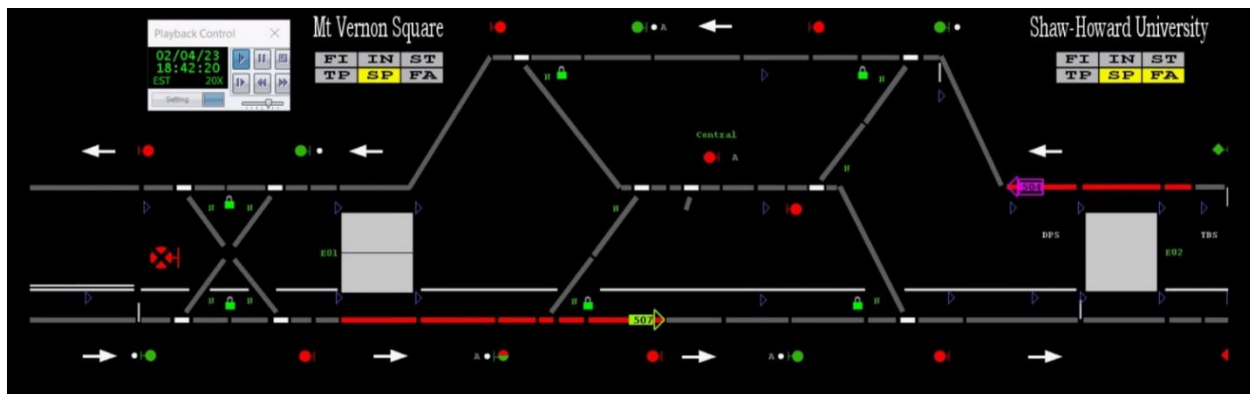


Image 2 - Train ID 504 bypassed Shaw-Howard Station, Track 2, at 18:42 hours.

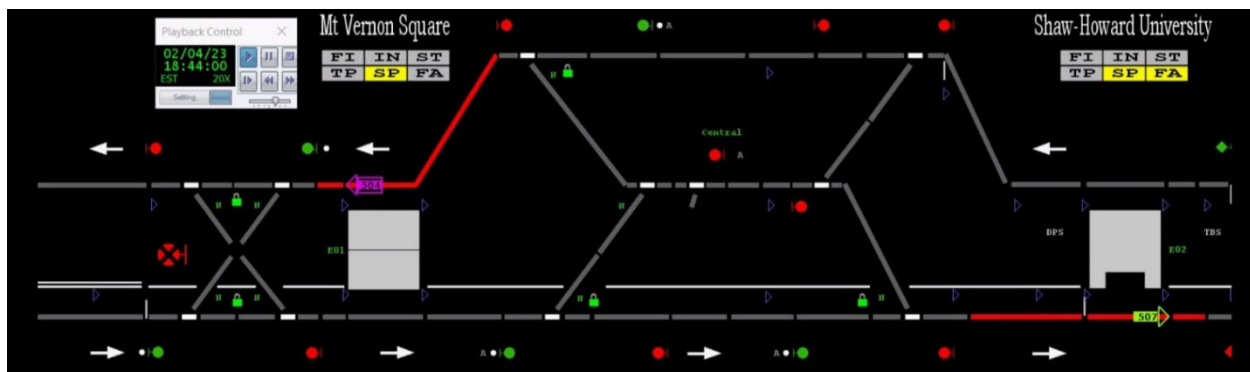


Image 3 - Train ID 504 approaching the 8-Car Marker at Mount Vernon Square Station, Track 2, at 18:44 hours.

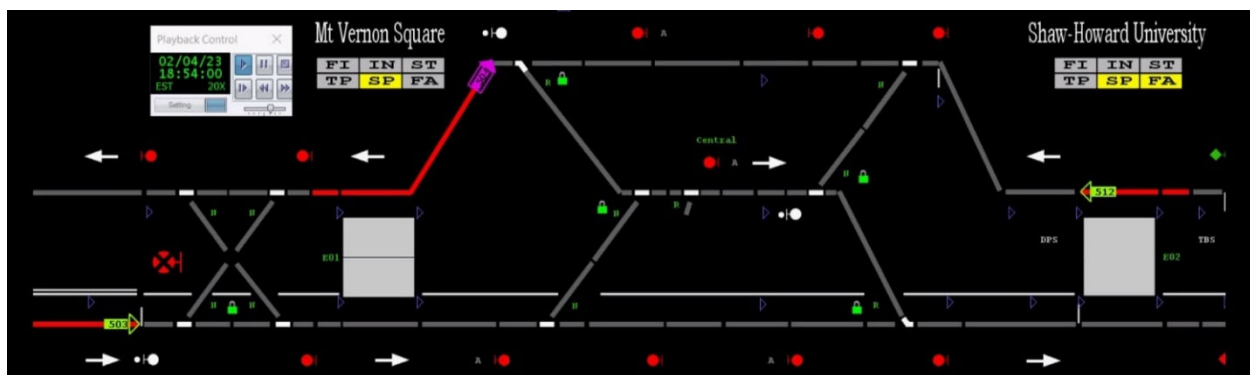


Image 4 - Train ID 504 reversed ends and proceeded in the direction of Greenbelt Station, Track 2, at 18:54 hours.

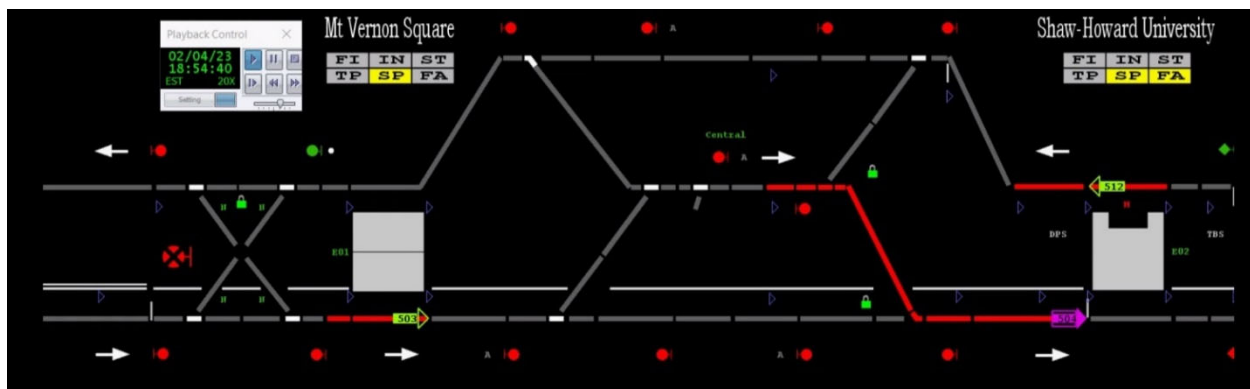


Image 5 - Train ID 504 approaching Shaw-Howard Station, Track 1, at 18:54 hours.

Radio Rail Traffic Controller (RTC)

The Radio RTC reported they received a call from the Train Operator of Train ID 504 of a clear substance on the train. The RTC directed the Train Operator to offload their customers at Mount Vernon Station and dispatched an RTRA Supervisor to assist. The RTC stated they received a report from the Terminal Supervisor that nothing was found on the train.

Office of Car Maintenance (CMNT)

CMNT personnel performed cleaning of Car #7134 on February 4, 2023, between the hours of 22:30 and 06:30. CMNT personnel conducted a major cleaning of Car #7134 on March 8, 2023. There was no reported odor of bleach. (See Appendix B).

Office of Rail Transportation (RTRA)

An RTRA Supervisor boarded Train ID 504 at Mount Vernon Square Station to assist with the offloading of customers. The Train Operator proceeded to Greenbelt Station, and the train was inspected by the Terminal Supervisor. There was no finding of the bleach odor by the Terminal Supervisor. The train remained at the Greenbelt platform with the doors open for ventilation until 20:47 hours.

Weather

On February 4, 2023, at the time of the incident, NOAA recorded the temperature as 31° F, 13 MPH winds, passing clouds, and 38% humidity. This event occurred within a tunneled section of the rail system. Weather was not a contributing factor in this incident (Weather source: NOAA – Location: Washington, DC)

Related Rules and Procedures

- SOP #38 – Unknown Substance Response Procedure

Findings

- ROCC received a report that a customer released bleach in Car 7134.
- ROCC instructed the Train Operator of Train ID 504 to offload customers at Mount Vernon Square Station, Track 2, and redesignate it as Train ID 704.
- Train ID 704 proceeded to Greenbelt Station for cleaning.

Immediate Mitigation to Prevent Recurrence

- ROCC removed Train ID 504 from revenue service and redesignated it as Train ID 704.
- Train ID 704 was inspected and cleaned at Greenbelt Station.

Probable Cause Statement

The probable cause of the evacuation for life safety reasons at Mount Vernon Square Station was a reported chemical spill onboard the train. The incident train was evacuated and removed from service for cleaning. The investigation did not identify significant deficiencies in communication or non-compliance with established evacuation procedures.

Recommended Corrective Actions

There were no Recommended Corrective Actions related to the emergency response for this event.

Appendices

Appendix A – Rail Operations Control System (ROCS) Spots Report

Select Platform: and/or Select ID: Leave blank to remove criteria
 and/or Select 4-digit car number: 7134 Leave blank to remove criteria
 Select Date: Feb 4 2023 Select Times (0-24HRS): From 18:00 To 21:00

Generate Report

ID	Platform	length	dcode	Right door open	Right door close	dwel	Left door open	Left door close	dwel	Head Arrived	Tail cleared	cars	Headway door open to door open
504	E05-1	8	44				18:00:44	18:01:03	19	18:00:09	18:01:44	7510-7511.7527-7526.7508-7509.7135-7134	-
504	E06-1	8	44				18:03:59	18:04:15	16	18:03:22	18:04:40	7510-7511.7527-7526.7508-7509.7135-7134	3:15
504	E07-1	8	44	18:07:20	18:07:49	29				18:06:44	18:08:11	7510-7511.7527-7526.7508-7509.7135-7134	3:21
504	E08-1	8	44	18:09:57	18:10:59	62				18:09:24	18:11:20	7510-7511.7527-7526.7508-7509.7135-7134	2:37
504	E09-1	8	44				18:14:04	18:14:20	16	18:13:27	18:14:44	7510-7511.7527-7526.7508-7509.7135-7134	4:07
504	E10-2	8	43	18:19:20	18:19:31	11	18:19:33	18:20:42	69	18:17:15	18:21:07	7510-7511.7527-7526.7508-7509.7135-7134	5:16
504	E09-2	8	43				18:24:22	18:24:33	11	18:23:35	18:24:55	7134-7135.7509-7508.7526-7527.7511-7510	5:02
504	E08-2	0	1	18:27:35	18:27:56	21				18:28:18		7134-7135.7509-7508.7526-7527.7511-7510	3:13
504	E07-2	8	1	18:30:04	18:30:13	9				18:29:32	18:30:36	7134-7135.7509-7508.7526-7527.7511-7510	2:29
504	E06-2	8	1				18:33:14	18:33:30	16	18:32:36	18:33:52	7134-7135.7509-7508.7526-7527.7511-7510	3:10
504	E05-2	8	1				18:36:09	18:36:23	14	18:35:32	18:36:46	7134-7135.7509-7508.7526-7527.7511-7510	2:55
504	E04-2	8	1				18:38:29	18:38:47	18	18:37:48	18:39:09	7134-7135.7509-7508.7526-7527.7511-7510	2:20
504	E03-2	8	1				18:40:48	18:41:04	16	18:40:14	18:41:29	7134-7135.7509-7508.7526-7527.7511-7510	2:19
504	E02-2	8	1							18:41:51	18:43:07	7134-7135.7509-7508.7526-7527.7511-7510	-
504	E01-2	8	1				18:44:23	18:44:51	28	18:43:34	18:53:47	7134-7135.7509-7508.7526-7527.7511-7510	3:35
504	E02-1	8	1							18:54:31	18:55:13	7510-7511.7527-7526.7508-7509.7135-7134	-
504	E03-1	8	1							18:55:46	18:56:21	7510-7511.7527-7526.7508-7509.7135-7134	-
704	E03-1	0	92							18:57:01	18:57:05	7510-7511.7527-7526.7508-7509.7135-7134	-
704	E03-1	0	92							18:57:06	18:57:08	7510-7511.7527-7526.7508-7509.7135-7134	-
704	E03-1	0	92							18:57:10	18:57:12	7510-7511.7527-7526.7508-7509.7135-7134	-
704	E04-1	0	92				18:58:51	18:59:33	42	18:58:10	19:04:59	7510-7511.7527-7526.7508-7509.7135-7134	14:28
704	E05-1	8	92							19:05:59	19:06:26	7510-7511.7527-7526.7508-7509.7135-7134	-
704	E06-1	8	92							19:08:09	19:08:37	7510-7511.7527-7526.7508-7509.7135-7134	-
704	E07-1	8	92							19:10:46	19:11:14	7510-7511.7527-7526.7508-7509.7135-7134	-
704	E08-1	8	92							19:12:29	19:12:55	7510-7511.7527-7526.7508-7509.7135-7134	-
704	E09-1	8	92							19:15:04	19:15:28	7510-7511.7527-7526.7508-7509.7135-7134	-
508	E10-2	8	44	20:45:36	20:45:45	9	20:45:46	20:46:44	58	20:44:26	20:47:06	7510-7511.7527-7526.7508-7509.7135-7134	106:45
508	E09-2	8	44				20:49:58	20:50:15	17	20:49:21	20:50:36	7134-7135.7509-7508.7526-7527.7511-7510	4:22
508	E08-2	8	44	20:53:08	20:53:26	18				20:52:38	20:53:47	7134-7135.7509-7508.7526-7527.7511-7510	3:10
501	E07-2	0	1	20:55:33	20:55:52	19				20:54:59	20:56:13	7134-7135.7509-7508.7526-7527.7511-7510	2:25
501	E06-2	8	1				20:58:36	20:58:53	17	20:58:07	20:59:14	7134-7135.7509-7508.7526-7527.7511-7510	3:03

Diagram 1 – ROCS Spots Report displaying Train ID 504 movements through Mount Vernon Square and Greenbelt Stations.

Appendix B – Office of Car Maintenance (CMNT) Maximo Work Order



Washington Metropolitan Area Transit Authority Maintenance and Material Management System Work Order Details

Page 1 of 2
MX76PROD

Work Order #: 17657588
Type: ACT



Status: CLOSE
03/09/2023 09:47

Work Description: CMNT, MAJOR CLEANING
Job Plan Description: CMNT, MAJOR CLEANING

Work Information			
Asset: R7134	7134, RAIL CAR, KAWASAKI, 7000 AC, A CAR	Owning Office: CMNT-CMNT-CMNT	Parent:
Asset Tag: R7134		Maintenance Office: CMNT-ALEX-INSP	Create Date: 02/06/2023 08:17
Asset S/N: 7134		Labor Group: CMNT	Actual Start: 03/07/2023 07:25
Location: 1213	C99, ALEXANDRIA YARD	Crew:	Actual Comp: 03/08/2023 00:22
Work Location: 1213	C99, ALEXANDRIA YARD	Lead:	Item: K18050001
Failure Class: CMNT001	RAIL CAR	GL Account: WMATA-02-33350-50499160-041-*****-OPR**	
Problem Code: 2734	PREVENTIVE MAINTENANCE INSPECTION	Supervisor: [REDACTED]	Target Start: 02/11/2023 00:00
Requested By:		Requestor Phone:	Target Comp: 02/11/2023 00:00
			Scheduled Start:
Create-Mileage: 443666.0		Complete-Mileage: 449496.0	
Task IDs			
Task ID			
10	PERFORMED LEVEL 3 MAJOR CLEANING		
	ALL TASK REQUIRED WITHIN THE MAJOR CLEANING FOR A,B & C INSPECTIONS:		
	1. PICK UP TRASH AND DEBRIS		
	2. INSPECT AND CLEAN GRAFFITI		
	3. INSPECT AND CLEAN BODILY FLUIDS		
	4. CLEAN PARTITIONS		
	5. CLEAN WINDSCREENS		
	6. CLEAN WINDOWS		
	7. CLEAN CAB AREA		
	8. CLEAN CAB AREA CAMERA ENCLOSURES		
	9. CLEAN PASSENGER AREA SEATS		
	10. CLEAN HEAD LINERS AND SIDE LINERS		
	11. CLEAN DOOR FRAMES AND LEAFS		
	12. CLEAN LIGHT DIFFUSERS		
	13. CLEAN OVERHEAD VENTS AND HEATER VENTS		
	14. CLEAN DOOR OPERATOR ACCESS PANELS		
	15. CLEAN PASSENGER AREA CEILINGS		
	16. CLEAN INTERIOR DESTINATION AND MAP SIGNS		
	17. CLEAN PASSENGER AREA CAMERA ENCLOSURES		
	18. CLEAN STANCHIONS AND HAND RAILS		
	19. SWEEP AND STEAM CLEAN FLOORING / VACUUM AND SHAMPOO CARPETS		
	20. BUFF FLOORING - C- INSP. ONLY		
	21. CLEAN AND STORE EQUIPMENT		
Component:	000-300 RAIL CAR; 2K/3K/6K/7K	Work Accomp: CLEANED	Reason: SCHEDULED
Status:	CLOSE	Position:	Warranty?: N

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03/27/2023 15:57

Incident Date: 02/04/2023 Time: 18:44 hours
Final Report – Evacuation for Life Safety Reasons
E23078

Drafted By: SAFE 702 – 03/27/2023
Reviewed By: SAFE 704 – 04/04/2023
Approved By: SAFE 71 – 04/05/2023

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Washington Metropolitan Area Transit Authority
Maintenance and Material Management System
Work Order Details

Page 2 of 2
MX76PROD

Work Order #: 17657588
Type: ACT



Status: CLOSE
03/09/2023 09:47

Work Description: CMNT, MAJOR CLEANING
Job Plan Description: CMNT, MAJOR CLEANING

Actual Labor										
Task ID	Labor		Start Date	End Date	Start Time	End Time	Approved?	Regular Hours	Premium Hours	Line Cost
10			03/07/2023	03/08/2023	21:00	00:00	Y	03:00	00:00	\$98.01
Total Actual Hour/Labor:								03:00	00:00	\$98.01
Failure Reporting										
Cause	Remedy			Supervisor			Remark Date			
2476	NO DEFECT: NORMAL SERVICES PERFORMED			3192	TESTED / INSPECTED			03/08/2023		
Remarks: CMNT, MAJOR CLEANING COMPLETED										

WT_plust_woprint.rptdesign

03/27/2023 15:57

Incident Date: 02/04/2023 Time: 18:44 hours
Final Report – Evacuation for Life Safety Reasons
E23078

Drafted By: SAFE 702 – 03/27/2023
Reviewed By: SAFE 704 – 04/04/2023
Approved By: SAFE 71 – 04/05/2023

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