

FINAL REPORT OF INVESTIGATION A&I E18159

April 23, 2018
Collision with Object

Adopted by the Metrorail Safety Commission at its meeting on June 11, 2019.

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



FINAL REPORT OF INVESTIGATION A&I E18159**SMS 20180424#70584**

| | |
|--|---|
| Date of Event: | April 23, 2018 |
| Type of Event: | Collision with Object |
| Incident Time: | 04:51 hrs. |
| Location: | Minnesota Avenue Rail Station (D-09) |
| Time and How received by SAFE: | 07:30 hrs. (April 24, 2018) - Notification |
| Safety Officer Response: | None |
| Time of Safety Officer Arrival: | N/A |
| Time of Safety Officer Departure: | N/A |
| Rail Vehicle: | (T)PM36xF506xF516(L) |
| Injuries: | None |
| Damage: | Concrete Chute Assembly on F516, ETS Box D-93, Handrails (inbound and outbound) TK1 |
| Emergency Responders: | None |

Executive Summary

On Tuesday, April 24, 2018, SAFE received notification of a collision event that occurred on Monday, April 23, 2018 at 04:51 hrs involving a 3 unit consist that included Prime Mover (PM)36 coupled to Flat (F)506 and Flat (F)516 respectively. F516 contained a Concrete Batch Plant Unit that made contact with Emergency Trip station (ETS) Box D93 positioned on the outbound end of the Minnesota Avenue Rail Station, Track 1.

Damage was identified on the concrete chute assembly mounted to F516, ETS Box D-93, and the handrails located at both the entrance and exits, inbound/outbound respectively on Track 1.

The Track Supervisor transported the PM Equipment Operator (E/O) and Flagman (FM) for post incident testing. There were no injuries reported as a result of this incident.

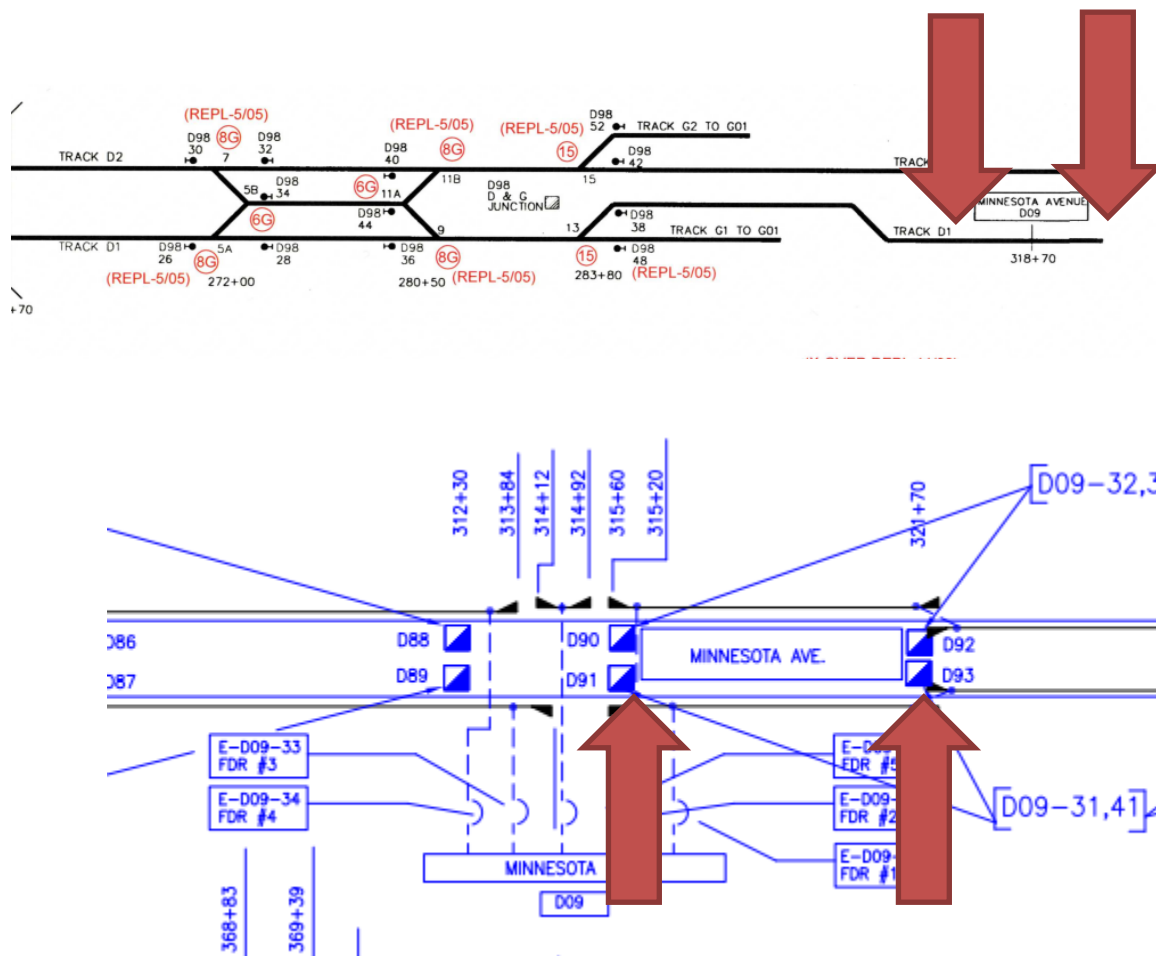
Notification

| Title | Time | Comment: |
|--------------|-------------------------|-----------------|
| FTA | 12:06 hrs. 4/24/2018 | FWSO Email |
| TOC | 12:06 hrs. 4/24/2018 | FWSO Email |

Incident Site

Minnesota Avenue Rail Station (D09) – Track 1 - Outbound

Field Sketch/Schematics



Investigation

It was revealed through station platform video that T 04:51 hrs on Monday, April 23, 2018, PM 36 coupled to F506 and F516 (flat car mounted with a Concrete Batch Plant) was operating through Minnesota Avenue Rail Station with PM 36 pushing the unit and F516 leading on track 1 with the concrete auger/chute improperly extended. The consist was in route to New Carrollton Yard (D99) for storage. As the consist traveled through a curve leading into Minnesota Ave station, the unsecured chute repositioned and inhibited the dynamic envelope of the right of way. This resulted in the extended auger/chute making contact with the continuous handrail on the inbound end of the Minnesota Avenue platform as the unit entered the station. The auger/chute dragged along the extent of the platform for 600 feet (end-gate to end-gate) and made contact with ETS Box D93 located at the outbound end of the D09 platform, Track 1.

Date: 4/23/2018 Time: 04:51 hrs.

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Drafted By: SAFE 702 – 12/01/2018
Reviewed By: SAFE 701 – 12/09/2018
Approved By: SAFE 70 – 5/24/2019

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It was later revealed through review of the radio audio recordings that the E/O originally notified Rail Operations Control Center (ROCC) after stopping approximately 100 feet after being involved in the incident mentioned above and reported a mechanical issue with the unit; however never reported damage incurred on the unit or station components. Furthermore, the Supervisor was notified of the incident by the E/O who failed to inform ROCC. Subsequently, SAFE was notified of the incident later that day when it was reported that the ETS box was damaged by a Track inspection crew. ETS Box D93 was mounted to the outbound end handrail and sustained significant damage; however, the function of the ETS Box remained serviceable. PM-36 with flats F506 and F516 were taken out of service. Both the E/O and Flagman were taken out of service and escorted for post incident testing.

Interviews

Days Off – Sun/Mon
Seniority Date: 4/14/2015

E/O reported after seeing a dust cloud while leaving the D09 station and identifying the concrete assembly of the batch plant hanging of the center rail of the vehicle, the E/O took a full-service brake to investigate the event.

During interview with SAFE, the E/O reported that he was unaware of his track unit coming in contact with any obstructions at the time of the incident; however, station video revealed that the Flagman aboard PM36 was in the Flagman's booth while the unit was moving.

a Supervisor was notified of the incident.

Flagman:

The Flagman responsibilities are to ensure the signals, and switches are in correspondence during operation in conjunction to observing platforms, roadway, track, and any other hazard on the roadway.

The Flagman was assigned by supervisory personnel prior to the unit leaving Addison road (G03) location in direction of D99 Yard for storage. While en route, the Flagman stated hearing a noise and saw dust emitting from the unit. Once the unit came to a stop, the Flagman reportedly stated, the E/O asked if he heard the noise. The Flagman acknowledged hearing the noise and further stated, after investigation, it was discovered the Batch Plant Auger Chute was protruding from the unit which positioned the Auger/Chute outside the dynamic envelope of the track equipment resulting in the chute to subsequently make contact with an ETS box. The Flagman stated, upon leaving G03

Station, the Auger was secured mechanically, and the Auger/Chute was strapped down with a bungee cord. The Flagman stated, an inspection of the unit was performed prior to leaving G03 station, the Auger/Chute was verified secure, and not outside the dynamics envelope of the unit prior to departure. The Flagman was reportedly positioned in the designated location (the cab area on the unit) during the incident, which is adjacent to the Auger/Chute. Per the Flagman statement, while flagging the unit, he was very attentive. The Flagman stated, he did not hear the Auger/Chute scraping/dragging on the platform before impact. The Flagman further stated, the E/O performed an inspection of the platform after the event and identified the damage to the ETS Box. The Flagman then stated, the E/O notified the Track Supervisor and Maintenance Operation Control of the event. Due to the event, The E/O and Flagman were unable to reposition the damaged Auger/Chute therefore, additional personnel arrived to assist with securing the Auger/Chute in efforts to transport the unit back to D99 Yard. E/O and flagmen reportedly was sent down for Post-incident testing the following day.

Human Factors

Fatigue

Based on SAFE's review of the personnel involved 30-day work histories, it was determined that the TRST personnel hours of service was 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 Testing

After reviewing the TRST personnel post-incident testing results, it was determined that the TRST personnel were 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.

- Track Supervisor was notified about the incident
- Track Supervisor stated in the interview with SAFE that no notification was made to the ROCC about the incident and as a result, no notification was made to SAFE about the collision.
- CTEM reported damage to the auger/chute and repairs were made. (See attachment 3)
- The E/O and Flagman were disciplined and sent for re-instruction. (See attachment 1)
- The Track Supervisor was verbally counseled by TRST management about the importance of communicating incidents to the proper channels in a timely manner

Immediate Mitigation

1. PM36 was taken out of service for Post Incident Inspection
2. Flatcar containing the Concrete Batch Plant was taken out of service for Post Incident Inspection
3. E/O and Flagman were transported to JGB for Post Incident testing

Weather

At the time of the incident, the temperature was 45° F, and Scattered Clouds. SAFE has concluded that weather was not a contributing factor in this incident (Weather source: National Oceanic Atmospheric Administration (NOAA) - Location: Washington, DC.)

Findings

- PM36 was pushing two (2) flatcars, F506 and F516 respectively towards Minnesota Avenue Rail Station, Track 1 in route to New Carrollton Yard
- F516 contained a Concrete Batching Plant
- The improperly extended auger/chute on F516 came in contact with a continuous handrail on the inbound end of the platform, Track 1
- The chute made contact and rode on top of the platform edge from end-gate to end-gate and subsequently made contact with ETS Box D93
- PM36 came to a stop at Chain Marker (CM) D1-329+00 after the E/O noticed dust on the platform
- E/O notified ROCC via radio that a quick stop was needed

Conclusion

Based on the facts, SAFE has concluded that this incident was a result of Operator and Flagman error. Both E/O and Flagman failed to identify that the auger/chute impeded the dynamic envelop of the right of way and caused damage to the ETS box and chute. Moreover, the E/O failed to notify ROCC that an incident occurred delaying the investigation process. Retraining was served to both employees for their operational failings. SAFE has no further request and recommends E18159 for closure.

Corrective Action

1. TRST shall take the appropriate action to include but not limited to re-training and any other action deemed necessary to support prevention of repeated improper Operation:

- a. Completion of retraining of E/O commenced and was completed on 5/31/2018 see attachment 3
- b. Completion of retraining of the Flagman commenced and was completed on 7/01/2018 see attachment 4

Attachments

RE-INSTRUCTION FOR WMATA EMPLOYEES (TRST)

★★★★★ (0)

You can view the Schedule, Grades and Attendance, Notes and Attachments, Payment Details and Approvals associated with the Class by selecting the corresponding links. You can view the Class Details by selecting the Class Name and view the progress of a Learning Component by selecting the corresponding Learning Component Name.

| | | | |
|----------------------|----------------------------|---------------------|---|
| Class Code | OPRTREINSTRUCT-20180531ILT | Class Name | RE-INSTRUCTION FOR WMATA EMPLOYEES (TRST) |
| Type | Classroom | Contact | |
| Price Per Seat | -- | Drop Charge | -- |
| Enrollment Status | Completed | Confirmation Number | 1453249 |
| Start Date | 05/31/2018 | End Date | 05/31/2018 |
| Last Enrollment Date | 03/05/2018 | Last Drop Date | -- |
| | | Duration | 1 Days |

Progress
Schedule
Grades and Attendance
Notes and Attachments
Payment Details
Approvals

Class Progress

| | | | |
|----------------|-----------|----------|------|
| Progress | Completed | Grade | Pass |
| Passing Status | Pass | Comments | |

Instructor

Class Syllabus

You must complete this class by 05/31/2018.
To receive credit for this class you must complete all required tasks.

1 RE-INSTRUCTION FOR WMATA EMPLOYEES (TRST)

| | |
|----------|-----------|
| Required | Sessions |
| Progress | Completed |

Attachment 1 –E/O Re-instruction training

RE-INSTRUCTION FOR WMATA EMPLOYEES (TRST)

★★★★★ (0)

You can view the Schedule, Grades and Attendance, Notes and Attachments, Payment Details and Approvals associated with the Class by selecting the corresponding links. You can view the Class Details by selecting the Class Name and view the progress of a Learning Component by selecting the corresponding Learning Component Name.

| | | | |
|----------------------|----------------------------|---------------------|---|
| Class Code | OPRTREINSTRUCT-20180701ILT | Class Name | RE-INSTRUCTION FOR WMATA EMPLOYEES (TRST) |
| Type | Classroom | Contact | |
| Price Per Seat | — | Drop Charge | — |
| Enrollment Status | Completed | Confirmation Number | 1467705 |
| Start Date | 07/01/2018 | End Date | 07/01/2018 |
| Last Enrollment Date | 03/05/2018 | Last Drop Date | — |
| | | Duration | 1 Days |

[Progress](#) [Schedule](#) [Grades and Attendance](#) [Notes and Attachments](#) [Payment Details](#) [Approvals](#)

Class Progress

Progress Completed

Grade Pass

Passing Status Pass

Comments 

Instructor

Class Syllabus

You must complete this class by 07/01/2018.

To receive credit for this class you must complete all required tasks.

1 [RE-INSTRUCTION FOR WMATA EMPLOYEES \(TRST\)](#)

Required Sessions

Progress Completed

Attachment 2 – Flagman Re-instruction training



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

Page 1 of 1
MJO8PROD

Work Order #: 1423265
Type: CM



Status: CLOSE
05/22/2018 06:48

Work Description: CYLINDER BROKE ON SHOOT See work order# 14232687

Job Plan Description:

refer to wo#14232687 ticket should have been made on CP516 not F516

Work Information

| | | | |
|------------------------|--|---|--------------------------------|
| Asset: MF516 | CTEM, FLAT CAR, SN F516 | Owning Office: TRST-STRC-ALEX | Parent: |
| Asset Tag: MF516 | | Maintenance Office: CTEM-NCAR-HVYR | Create Date: 04/24/2018 21:44 |
| Asset SN: F516 | | Labor Group: CTEM-GBLT-HVY | Actual Start: 04/24/2018 21:48 |
| Location: 1230 | D09, NEW CARROLLTON YARD | Crew: | Actual Comp: 05/16/2018 07:19 |
| Work Location: 13038 | D01, NEW CARROLLTON YARD, BUILDING (D) FIELD BASE TEST, 1ST FLOOR, CTEM SHOP | Lead: | Item: CTEM49200003 |
| Failure Class: CTEM014 | WORKING COMPONENTS | GL Account: WMATA-02-33380-50499070-041-*****_OPR** | |
| Problem Code: 1918 | LIFTING SYSTEM | Supervisor: [REDACTED] | Target Start: |
| Requested By: | | Requestor Phone: 443824-1894 | Target Comp: |
| Chain Mark Start: | | Chain Mark End: | Scheduled Start: |
| Create-Mileage: 0.0 | | Complete-Mileage: 0.0 | |

Task IDs

| | | |
|------------|---------------------------------|---------------------------------|
| Task ID | 10 | CYLINDER FOR CEMENT SHOOT BROKE |
| Component: | 000-400-AE0 CTEM_FLAT CAR_FLEET | Work Accompl: INSPECTED |
| Reason: | INSPECTION | Status: CLOSE |
| Position: | | Warranty?: N |

Actual Labor

| Task ID | Labor | Start Date | End Date | Start Time | End Time | Approved? | Regular Hours | Premium Hours | Line Cost |
|---------|------------|------------|------------|------------|------------|------------|---------------|---------------|------------|
| 10 | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |

Failure Reporting

| Cause | Remedy | Supervisor | Remark Date |
|-----------------------------------|---------------|------------|-------------|
| 1551 DEFECTIVE PART | 2825 REPAIRED | [REDACTED] | 05/16/2018 |
| Remarks: See work order# 14232667 | | | |

WT_plant_woprint.rptdesign

12/4/2018 12:44

Attachment 3 – CTEM report of damage and repair to auger/chute

Photos

Date: 4/23/2018 Time: 04:51 hrs.

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Photo 1 - ETS Box D93



Photo 2 - ETS Box D93



Photo 3 -Damaged Chute Secured



Photo 4- Second Section of Chute Damaged



Photo 5 - Damaged Chute