



**WMSC Commissioner Brief: W-0040 – Collision at New Carrollton Yard Grade Crossing on October 23, 2019**

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

**Safety event summary:**

A Metrorail flat car being shoved by a prime mover collided with a Metrorail van at the grade crossing closest to the vehicle entrance to New Carrollton Yard on October 23, 2019 at approximately 5:30 a.m. The van was totaled. There were no significant injuries reported.

An equipment operator and a flagman were on the rail vehicles. The flat car stopped at the crossing for approximately 20 seconds.

As the flat car began to move forward, the van driver (AA Mechanic ATC employee) continued through a stop sign at the grade crossing. The flat car struck the driver's side of the van.

After the collision, the van driver indicated that he interpreted the flagman's "proceed" signal given to the equipment operator with a flashlight as a "proceed" signal that was intended for the van to move through the crossing.

**Probable Cause:**

The miscommunication between the vehicles, the use of flashlight signals in place of required positive radio communication between the flagman and equipment operator, and the failure of the van driver to stop at the stop sign contributed to the collision.

**Corrective Actions:**

As corrective actions, Metrorail issued a safety bulletin on roadway crossing safety to all departments on November 12, 2019. ATC personnel also received a lessons learned document focused on the importance of following traffic signage when driving in rail yards and elsewhere.

Metrorail also committed to enrolling the van driver in a defensive driving course, however the first course he was directed to report to was full, and a class he was enrolled in later was postponed due to the public health emergency. Metrorail has committed to enrolling the employee in the class when instruction resumes.

**Staff recommendation:** Adopt final report.

**FINAL REPORT OF INVESTIGATION A&I E19563**

**SMS 20191023#83815**

<b>Date of Event:</b>	10/23/2019
<b>Type of Event:</b>	Collision
<b>Incident Time:</b>	05:30 hrs.
<b>Location:</b>	New Carrollton Yard Roadway Crossing
<b>Time and How received by SAFE:</b>	05:35 hrs., SAFE On-Call Phone
<b>Safety Officer Response:</b>	Yes
<b>Time of Safety Officer Arrival:</b>	05:37 hrs. (Office on Location)
<b>Time of Safety Officer Departure:</b>	06:50 hrs.
<b>Rail Vehicle:</b>	Flat Car (F)505-Prime Mover (PM) 47 and WMATA Non-revenue vehicle
<b>Injuries:</b>	None
<b>Damage:</b>	Significant damages to the WMATA Non-revenue vehicle
<b>Emergency Responders:</b>	ATC, SAFE, CMNT, TRST, MTPD

**Executive Summary**

On Wednesday, October 23, 2019, at 05:35 hrs., the Rail Operations Control Center (ROCC) notified SAFE of Flatcar (F) 505 making contact with WMATA's Non-revenue vehicle (WNRV) 22516 at New Carrollton Yard Roadway Crossing within the New Carrollton Yard, which is the first grade crossing entering the yard. See photo 1. The event was captured by the yard Closed Circuit Television (CCTV) video at 05:30 hrs.

The Flatcar with the Flagman positioned outside of the Flagman's booth was being pushed when the consist made contact with the driver's side of the WNRV at the Roadway crossing. Medical assistance was dispatched for the driver of the vehicle, but the employee declined medical transport. No injuries were reported at the time of the incident. Significant damages have been reported to the WNRV. The dollar amount for the significant damages is unknown. The WNRV was removed from service and sent to the scrap yard due to repairs being beyond economical repair

(see attachment 2 for purchase price and the vehicle's current status from Maximo). The Automatic Train Control (ATC) AA Mechanic employee, Equipment Operator (E/O), and Flagman (F/M) were transported for post-incident testing and an interview with SAFE. Both vehicles involved were removed from service for post-incident inspection.

Closed Circuit Television Video (CCTV) footage revealed the following information related to the collision event:

- The Flatcar, coupled to the Prime Mover, was being pushed and stopped at New Carrollton Yard Roadway Crossing at 05:29 hrs., for approximately 20 seconds. The unit then started to move as the WNRV approached the stop sign.
- The stop sign was located prior to the New Carrollton Yard Roadway crossing.
- The ATC employee operating the WNRV failed to come to a complete stop, colliding with the class 2 rail vehicle.

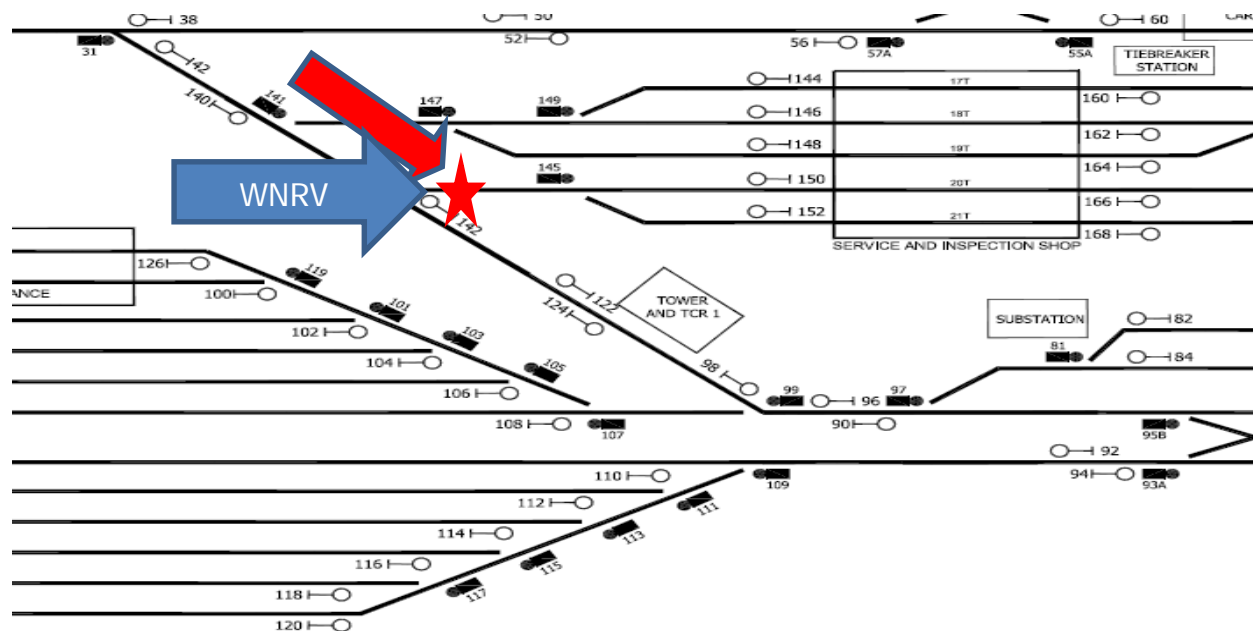
### **Notification**

<b>Title</b>	<b>Time</b>	<b>Comment:</b>
<b>WMSC</b>	07:07 hrs.	Email Notification
<b>FTA CMC</b>	07:07 hrs.	Email Notification

### **Incident Site**

The incident area was located at New Carrollton Yard Roadway Crossing.

## Field Sketch/Schematics



## Investigation

During the investigation, SAFE conducted the following interviews:

### Office of Track and Structures (TRST)

Per the Equipment Operator (E/O) Interview Statement:

- The E/O did not report a history of sleep issues
- The E/O indicated he was holding the unit at New Carrollton Yard 140 signal and notified the Tower that he was holding at that signal.
- The E/O indicated that the Tower gave him instructions to verify lunars at 124 signal and gave him an absolute block to clear 82 signal.
- The E/O indicated that he then proceeded to the New Carrollton Yard Roadway grade crossing, where he stopped, honked his horn, received positive communication from his F/M to proceed with his flashlight, and then he started to proceed.
- The E/O indicated that he had a lunar, and as he started to proceed, he noticed the WNRV out of his peripheral view run the stop sign in front of the unit.
- The E/O stated he used the service brake and activated the emergency braking, but the WNRV had already made contact with the unit.

Per the Flagman (F/M) Interview Statement:

- The F/M did not report a history of sleep issues
- The F/M indicated that the unit was stopped at New Carrollton Yard Roadway grade crossing and the E/O copied his block to clear signal 82, they received a lunar, the E/O honked his horn, and the F/M used his flashlight to let the E/O know he can proceed.
- The F/M stated once the unit started to move, the WNRV appeared to try and beat the train through the Roadway grade crossing and made contact with the unit. The F/M advised he was unsure if the employee operating the WNRV stopped at the stop sign or not.
- The F/M indicated when he gave the E/O the proceed signal to indicate it was safe to move the unit at that time because he had a clear visual line of sight, and he received lunars to proceed, which gave him the right of way.

### **Automatic Train Control (ATC)**

Per the AA Mechanic ATC employee Interview Statement:

- The ATC employee did not report a history of sleep issues
- The ATC employee indicated that as he was operating the WNRV approaching the New Carrollton Yard Roadway grade crossing, the rail vehicle was stopped.
- The ATC employee indicated that he saw the F/M with a flashlight, and he thought the F/M was waving him to go through the grade crossing so that the rail vehicle can proceed.
- The ATC employee continued operating the WNRV and made contact with the rail vehicle.
- The ATC employee stated he spoke with the F/M after the accident and asked if he was waving him to proceed, and the F/M stated no, I was waving my E/O.
- The ATC employee stated that he couldn't remember if he made a complete stop at the stop sign.
- The ATC employee stated he was the only occupant in the vehicle, and there were no distractions at the time of the accident.
- The ATC employee stated that he did not have clear positive communication with the F/M to proceed and assumed that he could continue due to him seeing the waving flashlight.

## **Human Factors**

### Fatigue

Based on SAFE's review of the ATC employee 30-day work history, it was determined that the ATC employee 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 ATC employee post-incident testing results, it was determined that the ATC employee 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.

## **Weather**

At the time of the incident, the temperature was 58°F and clear with no rain or fog. SAFE has concluded that weather was not a contributing factor in this incident (Weather source: National Oceanic Atmospheric Administration (NOAA) – Location: New Carrollton, MD.)

## **Findings**

- The ATC employee failed to come to bring the WNRV to a complete stop at the stop sign, which was a contributing factor to this accident. The incident was a Preventable Accident per Metro's Policy Instructions (P/I) 1.9/7, 3.13, which states, *"an accident that occurs because the driver failed to do everything reasonably expected to avoid it."*

## **Immediate Mitigation to Prevent Recurrence**

- The Flatcar, the Prime Mover and the WNRV were removed from service for post-incident inspection
- The ATC Employee, E/O, and F/M were removed from service for post-incident testing and a SAFE Interview

## Conclusion

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

1. The driver of the WNRV did not obey the posted Traffic sign (STOP). The driver did not make a complete stop before entering the roadway crossing, which caused PM to collide with the motor vehicle.
2. The driver assumed the flagman aboard the flatcar was signaling him to proceed through the roadway crossing without stopping.

SAFE has concluded this event was a result of human error from the driver (ATC employee). SAFE has created and distributed to all WMATA departments, a safety bulletin on roadway crossing safety. See attachment 2. Considering all the facts gathered from this investigation, SAFE has no further information regarding E19563.

## Corrective Action Plans

1. ATC management will enroll ATC employee involved in the accident in a WMATA driving skills course defensive driving class. **ATC employee was scheduled for Defensive Driving Class on 12/09/2019. ATC employee was not allowed to attend the 12/09 class due to it being full. ATC employee was told to report anyway and see if the instructor would allow him to attend. He did not. The next class was offered in January 2020, but the ATC employee was out of the country on vacation. The ATC employee was then enrolled in the March 17, 2020 class but that was cancelled due to COVID-19. ATC management is currently trying again to enroll the employee once the defensive driving classes resumes. See attachment 4.**
2. ATC Management will create and distribute Lessons Learned document to ATC personnel that places emphasis on the importance of adherence to all traffic signage during street running and WMATA Rail Yard driving operation. Lessons Learned document was **completed on 10/30/2019**. See attachment 1.
3. SAFE developed and distributed a Safety Bulletin on Roadway Crossing Safety to all WMATA departments. SAFE issued Safety Bulleting SB #19-11a — Roadway Crossing Safety **on 11/12/2019**. See attachment 2.

## Attachments

ATCM Office of Safety, Compliance, and OJT



# Lessons Learned

Date:  
10/30/2019



means



### Incident Description:

On Wednesday 10/23/19 at approximately 0530 in the morning there was a collision between a WMATA motor vehicle (#22516) and a Rail Track vehicle (Prime Mover 47). The collision occurred at the railroad crossing in New Carrollton Yard. Fortunately there were no injuries however there was substantial damage to the motor vehicle. The driver of the motor vehicle (ATC employee) reported that he visually saw the PM47 stopped in advance of the crossing. He also reported receiving the proceed signal from the flagman of the Prime mover. Personnel on PM47 reported making a complete stop before entering the crossing. The operator of PM47 received the proceed signal from his Flagman, honked the horn and proceeded through the crossing. PM47 collided (plowed) with the motor vehicle. After colliding with the motor vehicle the PM continued pushing the motor vehicle several feet before coming to a complete stop. Pictures of accident are located on page 2.

### Investigation Results:

The results of the investigation (video) revealed that the driver of the motor vehicle (#22516) did not obey the Traffic sign (STOP). The driver did not make a complete stop before entering the railroad crossing.

### Recommendations:

- Improve skills of driver by attending "Defensive Driving Training Class"
- Create and distribute Lessons Learned explaining the importance of following all Traffic Signs (including WMATA Rail Yards).

What happened...	What should have happened
<ul style="list-style-type: none"><li>• Driver of vehicle #22516 did not stop at the stop sign.</li><li>• Driver of vehicle #22516 assumed the flagman was communicating with him.</li></ul>	<ul style="list-style-type: none"><li>• Driver of #22516 should have stopped for the stop sign before entering the railroad crossing.</li><li>• Due to the nature of this scenario the driver should have confirmed the proceed signal was directed at him.</li></ul>

### LESSONS LEARNED

- Traffic signs are devices placed along, beside, or above a highway, roadway, pathway, or other route to guide, warn, and regulate the flow of traffic.
- Failure to obey traffic signs may cause collisions which could lead to fatalities, injury, or property damage.

Page 1



# Lessons Learned



Attachment 1 – ATC Lessons Learned Report.



# Safety Bulletin

SB #19-11a

November 2019

## Roadway Crossing Safety



During the morning hours of October 23, 2019, a WMATA Non-Revenue vehicle made contact with a moving Class II Rail Vehicle within the New Carrollton Yard roadway crossing. Fortunately, there were no injuries reported as a result of this incident; however, there was significant damage to the WMATA Non-Revenue vehicle.

All employees are required to adhere to posted and painted traffic signage (e.g., speed limit, fire lane restrictions, etc.), including stop signs posted at roadway crossings within rail yards. Class I and Class II Rail Vehicles **always** have the right of way; all other vehicles must stop and yield the right of way to the Rail Vehicles.

At roadway grade crossings, the following requirements apply:

1. Bring WMATA Non-Revenue and other automotive vehicles to a complete **STOP**, check that Rail Vehicles are clear of the crossing area and approach, then slowly proceed across the track(s).
2. If crossings are equipped with crossing gates, **STOP** WMATA Non-Revenue and other automotive vehicles at stop sign on approach to roadway crossing. Slowly proceed across the track(s) only after the crossing gates have been fully raised, the flashing lights and audible bells are off, and ensuring tracks are visually clear.
3. Equipment Operators and Flag Persons shall use positive radio communication when traversing yard roadway crossings. When applicable, Flag Persons must remain in a position of safety within the Flag Person's booth and be prepared to place the rail vehicle's brakes in the emergency position by utilizing the emergency brake valve positioned in the booth.

Rail Vehicle Operators are reminded of MSRP 3.92 which states in part, **"At all roadway crossings in yards, rail vehicle operators shall bring their vehicles to a stop and shall sound their horns before crossing."**

*If you have any questions regarding this Safety Bulletin, please contact your Regional Safety Officer or call the Safety Hotline at 202-249-SAFE (7233).*

## Attachment 2 – Safety Bulletin on Roadway Crossing Safety

From: [REDACTED]  
To: [REDACTED]  
Subject: Fwd: New Registrations.xlsx  
Date: Saturday, July 11, 2020 11:34:08 AM

[REDACTED]  
Assistant Superintendent ATCM  
[REDACTED]

From: [REDACTED]  
Sent: Saturday, July 11, 2020 11:04:58 AM  
To: [REDACTED]  
Cc: [REDACTED]  
Subject: RE: New Registrations.xlsx

[REDACTED]  
The email thread is the vehicle asset information ....the purchase price and vehicle current status from Maximo.

Asset:	SV022516	SV022516, PASSENGER VAN 8 PERSON, BLACK EKW
Asset Tag:	SV022516	
Life Cycle		
Purchase Price:	28,497.0000	Installation Date: 7/25/12
Repair Limit (%):		Replacement Cost: 0.0000
Asset Condition:	3	3 - SOME MODERATELY DEFECTIVE OR DETERIORATED COMPO
Sold To:		Sale Date:
Sale Amount:		
Sale Memo:		
Purchase Information		

Asset Name::	
SV022516	
Asset::	
SV022516	SV022516, PASSENGER VAN 8 PERSON, BLACK EKWENSI, 202-
Belongs To::	
Domicile Location::	
1230	D99, NEW CARROLLTON YARD
Operational Status::	
REM FR SER	REMOVED FROM SERVICE
Status Reason::	
SCRAP	BEYOND ECONOMICAL REPAIR
Facility Location:	
Tag/Alias:	
C-75181	
Barcode::	
504986	
DynaCOR Device Address:	
Maintenance Office::	SVMT CARMEN TURNER
BMNT-SVMT-CMTR	
Owning Office::	SVMT FOR CHIEF
BMNT-COO-RAIL	OPERATING OFFICE DATA

From: [REDACTED]  
 Sent: Saturday, July 11, 2020 10:44 AM  
 To: [REDACTED]  
 Cc: [REDACTED]  
 Subject: Fwd: New Registrations.xlsx

[REDACTED],  
 Do you have record of non revenue vehicle 22516 being totaled back in Dec 2019.  
 We need some form of correspondence stating the body shop totaled it for MAXIMO purposes.

Thanks

[REDACTED]  
 Assistant Superintendent ATCM  
 [REDACTED]

Attachment 3 – Purchase price and vehicle current status from Maximo.

**From:** [REDACTED]  
**To:** [REDACTED]  
**Cc:** [REDACTED]  
**Date:** Saturday, July 11, 2020 9:33:50 AM  
**Attachments:** [image004.png](#)

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[REDACTED] was not allowed to attend the 12/09 class due to it being full in ELM. [REDACTED] was told to report anyway and see if the instructor would allow him. [REDACTED] did not. The next class was offered in Jan but [REDACTED] was out of the country on vacation. [REDACTED] was then enrolled in the 3/17 class but that was cancelled due to COVID. We're trying again for a fourth time once the defensive driving classes resume.

[REDACTED]  
Assistant Superintendent ATCM  
[REDACTED]

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Attachment 4 – Defensive driving class.

### Photo



Photo 1 – The first grade crossing entering the yard.