

#### WMSC Commissioner Brief: W-0218 - Collision - New Carrollton Rail Yard - January 11, 2023

Prepared for Washington Metrorail Safety Commission meeting on May 16, 2023

#### Safety event summary:

A Metrorail Swingmaster hi-rail crane vehicle (SM 08), which the investigation later demonstrated had a flaw that prevented the Equipment Operator from turning the vehicle, crashed into three other vehicles parked in the New Carrollton Rail Yard on January 11, 2023 at 9:10 a.m. The collision damaged a Metrorail vehicle and a Metrorail employee's personal vehicle, and led to contact of the hook of the SM 08 boom with the windshield of another Metrorail employee's personal vehicle. All three of the vehicles were parked and unoccupied at the time. The Metrorail vehicle (Ford Escape) had significant damage to the front and driver side (repairs by Metrorail's body shop of front end, coolant and electrical system totaled an estimated \$7,760.48), one of the personal vehicles (Jaguar XJ) had damage to the driver side (repairs to front end, floor and front door totaled an estimated \$1,996.92), and the personal vehicle that was struck by the hook of the boom was not damaged. SM 08 sustained minor damage.

The Equipment Operator was attempting to move SM 08 (over the road on rubber tires) to the Car Track Equipment Maintenance (CTEM) Building after it had been dropped off from a flatbed trailer just outside the yard entrance. The vehicle was being brought to CTEM maintenance personnel for maintenance, however, due to the layout of the yard, the flatbed trailer was stopped outside the entrance to the yard and the Swingmaster needed to be driven on rubber tires to the CTEM building. As the Equipment Operator turned the vehicle around the corner from the yard entrance toward the vehicle access to the CTEM building, the Equipment Operator lost control of the vehicle. The investigation suggests that the Equipment Operator did not immediately apply braking as they instead attempted to correct the steering issue. In an investigative interview, the Equipment Operator said the steering wheel locked while turning. This was partially corroborated by post-event vehicle examination that showed this occur on this vehicle for left turns, but was not immediately repeatable for right turns. Separately, personnel reported that there were known operational issues regarding these Swingmaster vehicles at Metrorail.

The collision was not reported to the Rail Operations Control Center until approximately 35 minutes after it occurred. During that time, personnel working in the yard had responded to the collision location outside of their work building and started to examine the damage. Traffic (both on the rails and rubber tires) was able to safely continue in and out of the yard throughout this event.

Metrorail removed SM 08 and other similar new Swingmaster units from service, and requested adjustments from the equipment manufacturer for those units: SM 07, SM 08, SM 09, SM 10, SM 11, and SM 12.

The WMSC's May 2021 audit of Roadway Maintenance Machines Inspection, Maintenance, and Training found that Metrorail had previously procured Roadway Maintenance Machines such as Swingmasters without following its safety certification process.

#### **Probable Cause:**



The probable cause of this event was Metrorail's insufficient action on and steps to prevent known safety issues related to the operation of these vehicles, which led to Metrorail missing the opportunity to identify and address this specific hazard prior to a collision.

#### **Corrective Actions:**

- Due to this investigation:
  - Completed
    - Metrorail provided additional training to the operator on Swingmaster operation.
  - o Ongoing
    - Metrorail is keeping these new Swingmaster units out of service until corrective actions are developed and completed. Metrorail is working with the equipment manufacturer to determine the specific corrective actions.
- Examples of other related open CAPs
  - Ongoing
    - C-0084 was created to address the 2021 roadway maintenance machine (RMM) audit finding that Metrorail is not following and does not have effective safety certification and acceptance procedures for new RMMs. Among other items under this CAP, WMATA has committed to develop an acceptance procedure and ensure implementation of the safety certification process. (Expected completion date July 2024)
    - C-0118 resulted from an August 2021 WMSC Directive that found that Metrorail does not consistently follow its safety certification process, which leads to project activation and use without proper hazard identification and mitigation, putting Metrorail customers, personnel and first responders at risk. WMATA has committed to performing a Current State Gap Analysis, updating the Safety Certification Program Plan Evaluation Criteria based on that analysis and determining mitigations and corrective actions.
  - Completed
    - C-0089 was created to address a 2021 RMM audit finding that equipment operator certification for specific vehicles do not expire or require recertification. As part of this CAP, WMATA developed a training matrix for refresher and recertification training for all RMM equipment and a training schedule with a recertification cycle.

#### WMSC staff observations:

The WMSC is developing a draft report for a Roadway Maintenance Machine Audit (Triennial Audit cycle 2).



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

## FINAL REPORT OF INVESTIGATION A&I E23022

Date of Event:	January 11, 2023
Type of Event:	Collision
Incident Time:	09:10 hours
Location:	New Carrollton Rail Yard
Time and How received by SAFE:	10:19 hours, Mission Assurance Coordinator (MAC)
WMSC Notification Time:	10:00 hours – Phone Notification/Event Scene
	Release
	10:27 hours – Email Notification
Responding Safety Officers:	WMATA: OSO, OEP
	WMSC: N/A
	Other: N/A
Rail Vehicle:	Swing Master (SM-08)
Injuries:	None
Damage:	SM-08 – Scratches and paint transfer
	WMATA Vehicle 28516 – Front-end and driver side
	Employee Vehicle #1 – Dent, scratches, and paint
	transfer
Emergency Responders:	Metro Transit Police Department (MTPD), Prince
	George's County Police Department (PGCPD)
SMS I/A Incident Number:	20230111#105436MX

### New Carrollton Yard – Collision

## January 11, 2023

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## **Abbreviations and Acronyms**

Audio Recording System
Corrective Action Plan
Closed-Circuit Television
Vehicle Program Services
Car Track Equipment Maintenance
Metrorail Safety Rules and Procedures Handbook
Mission Assurance Coordinator
Metro Transit Police Department
National Oceanic and Atmospheric Administration
Office of Emergency Preparedness
Operations Management Services
Office of Operations Safety Oversight
Prince George's County Police Department
Office of Rail Transportation
Rail Operations Control Center
Department of Safety
Office of Track and Structures
Technical Skills Maintenance Training
Safety Measurement System
Service Vehicle Maintenance
Washington Metropolitan Area Transit Authority
Washington Metrorail Safety Commission

#### Washington Metropolitan Area Transit Authority Department of Safety – 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 January 11, 2023, at 09:10 hours, an Office of Track and Structures (TRST) Equipment Operator was transporting Swing Master (SM-08) from the New Carrollton Rail Yard entrance to the Car Track Equipment Maintenance (CTEM) building. While traversing a right-hand turn in the road, the Equipment Operator lost control of the unit and struck WMATA vehicle 28516. The collision caused vehicle 28516 to strike a WMATA employee's personal vehicle and the hook from the boom attached to SM-08 contacted the windshield of a second WMATA employee's personal vehicle. No injuries were reported because of this event.

The Rail Operations Control Center (ROCC) was notified, which resulted in additional personnel notifications and response to the event scene. Personnel responded from Metro Transit Police Department (MTPD), Prince George's County Police Department (PGCPD), Office of Emergency Preparedness (OEP) and the Office of Safety Oversight (OSO).

SM-08 sustained scratches and paint transfer. The unit was moved to the CTEM building and placed out of service for post incident inspection. The Equipment Operator reported that the wheels "locked up" and they were unable to straighten out of the turn. The preliminary inspection identified a reproduceable condition where sudden turns to the left (rotating the steering wheel counterclockwise) required significant force of effort.

WMATA vehicle 28516 sustained damage to the front and driver side resulting in the vehicle being towed to a local body shop for repairs. Personal Vehicle #1 sustained damage to the driver side, was fully operational, and moved by the owner. Personal Vehicle #2 did not sustain any damage, was fully operational and moved by the owner.

TRST removed the Equipment Operator from service for post-incident toxicology testing.

The probable cause of the Collision event on January 11, 2023, was a mechanical failure when SM-08 wheels locked in a turning position. A Contributing Factor was the delayed application of braking by the Operator. An additional contributing factor was an erroneous end-of-stroke detected by the steering relief valve limiting hydraulic flow to the steering cylinder.

#### Incident Site

New Carrollton Rail Yard – In front of Building A

#### **Field Sketch/Schematics**



\*Locations are approximate. Not to scale.

## Purpose and Scope

The purpose of this accident 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.

## Investigation Process and Methods

Upon receiving the notification of the Collision event at New Carrollton Yard on January 11, 2023, SAFE dispatched a cross-functional team to assess the scene and conduct the subsequent investigation. SAFE team members worked with relevant WMATA subject matter experts to review the incident's facts and data.

## Investigative Methods

The investigative methodologies included the following:

- Physical Site Assessment
- Formal Interviews SAFE interviewed one individual as part of this investigation. The interview included persons present at, during, and after the incident, those directly involved in the response process, and representatives from the Washington Metrorail Safety Commission (WMSC). SAFE interviewed the following individual:
  - Equipment Operator
- Documentation Review Collection of relevant work history information and process documentation contained in WMATA systems of record. These records include:
  - Employee Training Procedures & Records
  - Metro Safety Rules and Procedures Handbook (MSRPH)
  - National Oceanic Atmospheric Administration (NOAA) data
  - MTPD Event Report
  - Maximo Report
- System Data Recording Review Collection of information contained in Metro Data Recording Systems. This data includes:
  - Audio Recording System (ARS) playback
  - Closed-Circuit Television (CCTV)

### Investigation

On January 11, 2023, at 09:10 hours, a TRST Equipment Operator transporting SM-08 from the New Carrollton Rail Yard entrance to the CTEM building located within the New Carrollton Rail Yard lost control of the unit and struck WMATA vehicle 28516. The collision caused vehicle 28516 to strike WMATA Employee personal vehicle #1 and the hook from the boom attached to SM-08 contacted the windshield of WMATA Employee personal vehicle #2. No injuries were reported as a result of this event.

The Closed-Circuit Television (CCTV) revealed that at 09:10 hours, SM-08 was offloaded onto Garden City Drive and entered New Carrollton Rail Yard. The unit did not appear to be moving at an excessive rate of speed. As the unit completed a right turn around a curve, SM-08 collided with a WMATA owned vehicle (28516) and ultimately contacted two other personally owned vehicles.



Image 1 – Images from the event involving SM-08.

The Audio Recording System (ARS) revealed that at 09:45 hours the RTRA Line Director contacted and notified the ROCC Operations Manager (OM) of the collision. At 09:52 hours, the MTPD Dispatcher notified MTPD units of the accident. At 09:58 the MAC notified the Washington Metrorail Safety Commission (WMSC) and received an Event Scene Release.

At 10:00 hours, an MTPD Officer advised that they were on the scene and the accident did not involve rail vehicles; the event occurred in the yard's parking area and was not impeding the flow of traffic in or out of the yard. At 10:28 hours, an MTPD Officer requested PGCPD to the scene at 10:35 hours, MTPD Dispatch advised that PGCPD was en route. At 10:51 hours, PGCPD arrived at New Carrollton Rail Yard. At 11:11 hours, SM-08 was moved to the CTEM Building. At 11:57 hours, an MTPD Officer advised MTPD Dispatch that all units were clear from the scene.

SM-08 sustained scratches and paint transfer due to the event. The unit was moved to the CTEM building where it was removed from service for post- incident inspection. WMATA vehicle 28516 sustained damage to the front and driver side resulting in the vehicle being towed to a local body shop for repairs. WMATA Employee Personal Vehicle #1 sustained damage to the driver side, was fully operational and moved by the employee. WMATA Employee Personal Vehicle #2 did not sustain any damage, was fully operational and moved by the employee.

During the interview, the Equipment Operator stated that they began operating SM-08 after the unit was transported to the entrance of New Carrollton Rail Yard for storage at the CTEM building. While operating the vehicle at no greater than 5MPH, they made a right turn and noticed the steering wheel locked. The Equipment Operator began to panic and attempted to stop the unit. Within seconds the unit collided with a WMATA vehicle.

PGCPD determined that a report was not required since there were no injuries and property damage only.

"Vehicles Program Services (CENV) inspected SM-08, and an anomaly could be reproduced where the effort to steer left (rotating the steering wheel counterclockwise) would be abnormally high in sudden and unanticipated manner. Though not fully characterized yet, this condition is intermittent but more reproduceable during rapid wheel rotation as opposed to slow turning. The condition could not be reproduced for right turns. Three (3) affected units of the same model were placed out of service pending corrective action from the original equipment manufacturer (OEM).

"The symptom is an erroneous end-of-stroke detected by the steering relief valve limiting hydraulic flow to the steering cylinder. Currently, the OEM is investigating a steering circuit design issue. The remedy, when determined, will need to be incorporated in the new fleet of Swing Loaders. The units remain out-of-service until the cause is resolved. When resolved, additional training will not be required as normal operation will be restored. A finalized CENV report is pending resolution. The OEM is still investigating the root cause. (CENV reports)"

TRST provided a Report of Findings which determined that TRST was unable to rule out a steering defect with SM-08. While not found to be at fault, the Equipment Operator will receive appropriate re-training through Operations Management Services/Technical Skills Maintenance Training (OPMS/TSMT).

SVMT towed WMATA Vehicle 28516 to a local autobody shop for repairs. The front bumper, grille, front lamps, hood, fender radiator support, coolant and electrical system were replaced. The cost for the repairs totaled \$7,760.48.

WMATA Employee personal vehicle #1 was transported to a local autobody shop for repairs. The front bumper, grille, front lamps, hood, fender pillars, rocker & floor and front door were replaced or repaired. The cost for the service totaled \$1,996.82.

## Chronological Event Timeline

Time	Description
09:10:00 hours	SM-08 was offloaded on Garden City Drive and entered New Carrollton Yard. [CCTV]
09:10:54 hours	SM-08 collided with vehicles at New Carrollton Yard. [CCTV]
09:11 hours to 09:44 hours	The Equipment Operator exited the vehicle to observe the damage. Personnel from CTEM arrived on scene, observed the damage and secured the vehicle. Vehicle owners arrived on scene and observed the damage. [CCTV]
09:45:35 hours	RTRA Line Director notified ROCC OM of the collision at New Carrollton Yard. [Phone]
09:52:11 hours	MTPD Cruiser at ROCC notified MTPD Dispatch of the event at New Carrollton Yard. [Radio MTPD-1X]
09:52:28 hours	MTPD Dispatcher notified MTPD units of the accident at New Carrollton Rail Yards. [Radio MTPD-1X]
09:53:38 hours	MTPD Officer #1 advised the dispatcher that the officer would be en route to the New Carrollton location. [Radio MTPD-1X]
09:58:06 hours	MAC notification to the WMSC. Event Scene release at 10:00 hours. [Phone]
10:00:12 hours	MTPD Officer #1 advised that they were on the scene and the accident did not involve the rail; it occurred in the parking area of the yard. [Radio MTPD-1X]
10:08:21 hours	MTPD Officer #1 advised that no injuries were reported, and that the incident was not impeding the flow of traffic in/out of the yard. [Radio MTPD-1X]
10:08:58 hours	MTPD Officer #1 requested that the vehicles involved in the incident not be moved until units were at the scene. [Radio MTPD 1-X]
10:09:04 hours	MTPD Officer #1 confirmed that they were standing by, and no vehicles involved will be moved. [Radio MTPD 1-X]
10:15:17 hours	MTPD Officer #1 reported being at the scene with MTPD Officer #2. [Radio MTPD 1-X]
10:28:07 hours	MTPD Officer #2 requested PGCPD. [Radio MTPD 1-X]
10:35:00 hours	MTPD Dispatch advised that PGCPD was en route. [Radio MTPD 1-X]
10:44:27 hours	MTPD Officer #2 reported that they were still waiting for PGCPD to arrive. [Radio MTPD 1-X]
10:51:17 hours	PGCPD arrived at New Carrollton Yard. [CCTV]
11:11:41 hours	SM-08 was moved to the CTEM Building. [CCTV]
11:57:41 hours	MTPD Officer #2 advised the dispatcher that all units were clear from the scene. [Radio MTPD 1-X]

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

Note: Times above may vary from other system's timelines based on clock settings and reporting source.

### Vehicle Program Services (CENV)

Adopted from email report of findings:

"CENV have been investigating the January 11, 2023, SM-08 incident. Initial findings are as follows:

While inspecting SM08, an anomaly could be reproduced where the effort to steer left (rotating the steering wheel counterclockwise) would be abnormally high in sudden and unanticipated manner. Though not fully characterized yet, this condition is intermittent but more reproduceable during rapid wheel rotation as opposed to slow turning. The condition could not be reproduced for right turns. The root cause has not been determined. CENV and CTEM are in contact with the vehicle OEM to determine whether this is due to a failed component or a design issue. CENV will release a report when a determination and plan of action is known."

On March 3, 2023, CENV provided the following:

Three (3) affected units are out of service pending corrective action from the Original Equipment Manufacturer (OEM). The units are under warranty and the manufacturer is conducting tests and performing analysis on the equipment.

On March 6, 2023, CENV provided the following:

The units are out-of-service until resolved. When resolved, additional training will not be required as normal operation will be restored. A finalized CENV report is pending resolution. The OEM is still investigating the root cause. The symptom is an erroneous end-of-stroke detected by the steering relief valve limiting hydraulic flow to the steering cylinder. Currently, the OEM is investigating a steering circuit design issue. The remedy, when determined, will need to be incorporated in the new fleet of Swing Loaders (SM07-SM12)."

### Office of Track and Structures (TRST)

Adopted from TRST report of findings:

"TRST is unable to rule out steering defect with SM08. While not found to be at fault, the Equipment Operator will receive appropriate re-training through OPMS/TSMT."

#### Service Vehicle Maintenance (SVMT)

SVMT towed WMATA automobile 28516 to a local autobody shop for repairs. The front bumper, grille, front lamps, hood, fender radiator support, coolant and electrical system were replaced. The cost for the repairs totaled \$7,760.48.

#### Interview Findings

As part of the investigation launched into the event, SAFE interviewed one individual. The interview identified the following key findings associated with this event. Findings detailed below include reported information from involved personnel and may conflict with other data sources contained in the report.

#### Equipment Operator

- The Equipment Operator stated that SM-08 was transported to New Carrollton Rail Yard for maintenance, arriving on a flatbed trailer.
- SM-08 was offloaded from the trailer onto Garden City Drive because the flatbed trailer could not be operated into the yard.
- The Equipment Operator stated that after passing the Security Guard Post, they made a right turn and felt the steering wheel "locking up."
- The Equipment Operator stated that they went a "panic mode," while attempting to stop SM-08 and within seconds SM-08 collided with a WMATA vehicle causing damage.
- The Equipment Operator stated that they experienced operating this type of equipment (SM-08) three times and that their training consisted of classroom instruction.

#### Weather

On January 11, 2023, at the time of the incident, NOAA recorded the temperature as 44°F, with partly cloudy skies. SAFE has concluded that weather was not a contributing factor in this incident. (Weather source: NOAA – Location: New Carrollton, MD)

#### Human Factors

#### Evidence of Fatigue

Conditions were evaluated at the time of the incident to distinguish whether evidence of fatigue was present. The Equipment Operator reported feeling fully alert at the time of the incident. Equipment Operator reported experiencing no symptoms of fatigue in the time leading up to the incident.

### Fatigue Risk

The incident data was evaluated for fatigue risk factors for the Equipment Operator. Risk factors for fatigue were not present. Since fatigue evidence and risk factors were not present, the biomathematical fatigue modeling application (SAFTE-FAST Web SFC) was not applied.

### Post-Incident Toxicology Testing

WMATA's Drug and Alcohol Program determined that the Equipment Operator complied with the Drug and Alcohol Policy and Testing Program 7.7.3/6.

#### Work History

The Equipment Operator has not had any safety violations in the last three years.

### **Findings**

- The Equipment Operator reported limited experience with the unit. They estimated this was the third time they had operated a unit such as SM-08.
- The Equipment Operator did not immediately apply braking to stop the unit.
- CENV identified an anomaly that caused a sudden left (rotating the steering wheel counterclockwise) turn to be difficult and was similar to the event described by the Equipment Operator.

#### Immediate Mitigation to Prevent Recurrence

- TRST removed the Equipment Operator from service for post-incident toxicology testing.
- SM-08 was removed from service for post-incident inspection.
- Three (3) affected Swing Loader units were placed out of service pending corrective action.

#### Probable Cause Statement

The probable cause of the Collision event on January 11, 2023, was a mechanical failure when SM-08 wheels locked in a turning position. A Contributing Factor was the delayed application of braking by the Operator. An additional contributing factor was an erroneous end-of-stroke detected by the steering relief valve limiting hydraulic flow to the steering cylinder.

## **Recommended Corrective Actions**

Corrective Action Code	Description	Responsible Party	Estimated Completion Date
105436_SAFE CAPS_OPMS _001	Equipment Operator to attend re-training on Swing Master operations.	OPMS	Completed
105436_SAFE CAPS_CENV _001	Provide root cause and corrective action plan upon completion of testing and analysis of equipment by the Original Equipment Manufacturer.	CENV/CMNT	09/30/2023
105436_SAFE CAPS_CENV _002	Identified Swing Master units to remain out of service until the evaluation and any corrective action(s) is/are completed.	CENV/CMNT	Ongoing

### **Appendices**

### Appendix A – Interview Summary

The narrative below summarizes the statements made by the personnel involved. As such, times and details may conflict with the data contained in systems of record.

The Equipment Operator is a WMATA employee with 7 years of service. The Equipment Operator holds a Roadway Worker Protection (RWP) Level 4 that expires in July 2023.

The Equipment Operator provided details about the collision that occurred on January 11, 2023, at the New Carrollton Yard.

The Equipment Operator stated that SM-08 was transported to New Carrollton Rail Yard for maintenance, arriving on a flatbed trailer. SM-08 was offloaded from the trailer onto Garden City Drive because the flatbed trailer could not be operated into the yard. The Equipment Operator said they operated SM-08 into the yard towards the to-the-maintenance shop. The Equipment Operator stated that after passing the Security Guard Post, they made a right turn and felt the steering wheel "locking up." The Equipment Operator stated that they went a "panic mode," while attempting to stop SM-08. The Equipment Operator stated that within seconds SM-08 collided with a WMATA vehicle causing damage.

The Equipment Operator stated that they experienced operating this type of equipment (SM-08) three times and that their training consisted of classroom instruction. The Equipment Operator stated that the weather conditions were sunny and dry.

## Appendix B – MTPD Event Report

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	Event Report						
Contractor 1	Metro Transit Po				ORI-DCMTP00		
A second	Closed	f Report	MTPD CCN 2023-00		Local Jurisdiction Prince Georges County		
Event Location	n						
Street 4700 Garden	City Dr		City, State NEW CARRO	LLTON, MD 20785			
The second second					-		
From	Date and Time of Event To 11/2023 9:25:00 AI	м			Time Reported 23 9:53:24 AM		
Reporting Officer (Pri	int) Bod	ige #	4	Second Officer (Print)	Badge #		
Supervisor's Name (E	lectronically Approved)						
Incidents							
Incident:	an artic			Location Type:			
Damaged Pro	operty			Parking Lot/Garage			
12.000.000.000.000							
Involved Party	1						
Last Name, First I	MI:				DOB: 10/30/1963		
Address Type:	Address (Stree	t) City, State Zip	:		10/30/1903		
H - Home							
Turne Phone:	Phone Number						
Type Phone: M - Mobile	Phone Homes						
Email:		2013 - C					
Age:	Sex:		Roce:	Ethnicity:	Resident Status:		
59	Female		Black or African	Not of Hispanic Origin	Resident		
100000 A			American	ongin			
Description	Height: 5' 2"	Weight: 185	Eyes Color:	Complex: Medium	Ciothing:		
Driver's License #:			0/L Stote: Maryland		SSN:		
		1.0					
Occupation: Superintende	ent	Place of Emp			Place of Birth:		
300 7th St Sv	s – Addl. Contact Info: wWashington, DC	20024					
Notes: New Carrolto	on Rail Yard Superi	intendent					
Employee ID							
Involved Party	/						

MTPD CCN: ORI-DCMTP0000 Event Report Page 1 of 7

Drafted By:	SAFE 711 – 03/10/2023	Page 15
Reviewed By:	SAFE 71 – 03/10/2023	
Approved By:	SAFE 71 – 03/13/2023	

Last Name, First MI:					008: 3/4/1970	
Address Type: H - Home	Address (Stree	t) City, State Zip	:			
Type Phone: M - Mobile	Phone Number	r:				
Email:						
Age: 52	sex: Male		Roce: Black or African American	Ethnicity: Not of Hispanic Origin	Resident Status: Nonresident	
Description	Height: 6' 1"	Weight: 185	Eyes Color: Brown	Complex: Light	Clothing:	
Driver's License #:			D/L State: District of C	olumbia	SSN:	
Occupation: Place of Emp TRST WMATA					Place of Birth:	
Work/School Address – A 300 7th St SwW		20024				
Notes: Works out of Br	anch Ave					

Involved Party					12.0425	
Last Name, First MI.					DOB: 5/26/1981	
Address Type:	Address (Stree	t) City, State Zip	2	10		
H - Home						
Type Phone:	Phone Numbe	<u>c</u>				
M - Mobile		2				
Email:						
Age:	Sex:		Roce:	Ethnicity:	Resident Status:	
41	Male	Male		Unknown		
			American			
Description	Height:	Weight:	Eyes Color:	Complex:	Clothing:	
	5' 6"	270	100	Medium Brown	1 - 12 - 12 - 12 - 12 - 12 - 12 - 12 -	
Driver's License #:			D/L State:		SSN:	
			Maryland			
Occupation: Place of Emp					Place of Birth:	
Work/School Address -	Addl. Contact info:					
300 7th St SW	Washington, DC	20024				
Notes:	dated and				838	
Driver of striki	ng vehicles Supe	rvisor, Wor	ks out of Branch	Ave. Employee ID		

Involved Party			
Last Name, First MI:		DOB:	
Address Type:	Address (Street) City, State Zip:	1920	
W - Work	300 7th St SWWashington, DC 20024		

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Incident Date: 01/11/2023 Time: 09:10 hours Final Report – Collision E23022 

Type Phone:	Phone Numbe	MC .				
M - Mobile						
Email:						
Age:	Sex: Male		Roce: White	Ethnicity: Hispanic Origin	Resident Status:	
Description	Height:	Height: Weight:		Complex: Light	Clothing:	
Driver's License #:	12	40.	D/L State:	A.F. BREAM	SSN:	
Occupation: Place of Emp SAFETY WMATA					Place of Birth:	
Work/School Address	Addl. Contact Info: Washington, DC	20024				
Notes: Works for SAFE	ETY. Employee	D#	Works out of N	IEWC Yard		

				DOB: 11/7/1961	
Address (Stree	nt) City, State Zip				
Phone Numbe	r:		2		
1.19		100	10.0 BR00	and Aller a	
Sex: Male	A STATE AND A STAT		Ethnicity: Not of Hispanic Origin	Resident Status:	
Height:	Weight:	Eyes Color:	Complex:	Clothing:	
		D/L State:		SSN:	
				Place of Birth:	
			3		
	Phone Numbe Sex: Male Height: ddl. Contact Info: /ashington, DC	Phone Number: Sex: Male Height: Weight: Place of Em WMATA dul. Contact Infec /ashington, DC 20024	Sex: Race: White Weight: Eyes Color: D/L State: D/L State: VMATA	Phone Number:  Phone Number:  Sex: Male  Not of Hispanic Origin  Height: Veight: Eyes Color: Complex: D/L State:  Place of Employment: WMATA  ddl. Contact Info: //ashington, DC 20024	Address [Street] City, State Zip:         Phone Number:         Sex:       Race:         Male       White       Not of Hispanic         Origin       Origin         Height:       Weight:       Eyes Color:         D/L State:       SSN:         Place of Employment:       Place of Birth:         WMATA       Place of Birth:

Involved Party									
Last Name, First MI: WMATA	2					DOB:			
Address Type:         Address (Street)         City, State Zip:           W - Work         300 7th St SWWashington, DC 20024									
Type Phone: W - Work	Phone Numbe	Phone Number:							
Email:									
Age:	Sex:		Roce:	Ethnicity:	Resident Status:				
Description	Height:	Weight:	Eyes Color:	Complex:	Clothing				
Driver's License #:			D/L State:		SSN:				

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Drafted By:	SAFE 711 – 03/10/2023	Page 17
Reviewed By:	SAFE 71 – 03/10/2023	
Approved By:	SAFE 71 – 03/13/2023	

Occupation:	Place of Employment:	Place of Birth:
Work/School Address - Addl. Contact Info:		
Notes:		

Type         Code         Class         WMATA Owned         Age         Fill Marnet         Recovered         Re           Other Heavy Equipment         15         Value Totals         Intervention	Property I	nformation														
Other Heavy Equipment         15         Value Totals           Van. Year         Mole         Color         Style         Tot #         Store         Year         V/V           Property Recovered Date         # Storen Venices         # Recovered Venicles         Is any property in custody of a police agency? ()/Yes, explained only           Information Only         Property Status         Property Status         Nets: If more than 3 drug types, select the 2 most imports amounts. Then select "Over 3 Drug Types", as the third, to represent the remaining drug.           Property Notes:         Striking Vehicle.         Vehicle number SM08           Type         Color         Color         Store           Type         Mote         Color         Store         Year           Year         Vehicle         Color         Vehicle         Recovered           Type         Color         Color         Vehicle         Recovered           Type         Color         Color         Store         Year         Velice           Type         Mote         Color         Store         Year         Velice         Recovered           Velice         Mote         Color         Store         Tot #         Store         Year         Velice           Velice <td< td=""><td></td><td></td><td>Cod</td><td>•</td><td></td><td>Clas</td><td>5</td><td>WMA7</td><td>A Owned</td><td>Age</td><td></td><td>ket</td><td></td><td></td><td>Recovered</td></td<>			Cod	•		Clas	5	WMA7	A Owned	Age		ket			Recovered	
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uspected Drug Type (if this event is a drug case, check up to three applicable boxes and write the estimated amount on the line.)  Note: If more than 3 drug types, select the 2 most importa amounts. Then select "Over 3 Drug Types", as the third, to represent the remaining drugs.  Toperty Notes:  Code Code Code Code Code Code Code Cod	nformati	on Only					Property Stat	us								
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White       Size       Item of the state         inoperty Recovered Date       # Stalen Vehicles       # Recovered Vehicles       Is any property in custody of a police agency? [/[Yes, explained below]]         Property Recovered Date       # Stalen Vehicles       # Recovered Vehicles       Is any property in custody of a police agency? [/[Yes, explained below]]         Destroyed/Damaged/Vandalized       Property Status       Destroyed (If this event is a drug case, check up to three applicable baxes and write the estimated amount on the line.)         Note: If more than 3 drug types, select the 2 most importe amounts. Then select "Over 3 Drug Types", as the third, to represent the remaining drugs.         roperty Notes:       No injuries. Car unoccupied. Minor damage and drivable.			-		-	-		Too #						VIN	6	
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	Suspected Dr	ug Type (if this event	is a drug	case, check u				write the	Not	e: If more	e than 3 drug en select "Ov	types, : ver 3 Dri				
Type Code Class WMATA Owned Age Fair Market Recovered Re	vo injurie	s. car unoccup	ied. W	mor dama	ge and		able.									
	Type		Cod	•		Clas	5	WMAT	A Owned	Age	Fair Mar	ket	Recovered		Recover	

Event Report Page 4 of 7

Drafted By:	SAFE 711 - 03/10/2023	Page 18
Reviewed By:	SAFE 71 – 03/10/2023	
Approved By:	SAFE 71 – 03/13/2023	

2020 Fe Property Recovered Destroyed/Da Suspected Drug Typ Property Notes: Heavy damage Narrative Informa	amaged/Va	Model Escape # Stolen ndalized is a drug case, check		Value T Style SUV - Sport Utility Vehicle Recovered Vehicle: Property Stat plicable boxes and	Tog #	low) nated amount on th Note: If more that	pia pay of a police a re line.)	gency? ()] Yes, explain ect the 2 most important listin Types", as the third, to
2020 Fe Property Recovered Destroyed/Da Suspected Drug Typ Property Notes: Heavy damage Narrative Informa	amaged/Var	Escape # Stolen ndalized	WHI- White	Style SUV - Sport Utility Vehicle Recovered Vehicle: Property State	Tog #	District Column ony property in cust low) mated amount on th Note: If more that amounts. Then se	of 2020 pia pay of a police a re line.)	gency? (If Yes, explain
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Property Recovered Destroyed/Da Suspected Drug Typ Property Notes: Heavy damage Narrative Informa	amaged/Var amaged/Var	# Stolen	White Vehicles 5	Sport Utility Vehicle Recovered Vehicle Property Stat	be	Columi any property in cust low) nated amount on th Note: If more that amounts. Then se	pia pay of a police a re line.)	gency? (If Yes, explain
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Suspected Drug Typ Property Notes: Heavy damage Narrative Informa	pe (if this event i		up to three ap			Note: If more that amounts. Then s	n 3 drug types, sele lect "Over 3 Drug 1	
Suspected Drug Typ Property Notes: Heavy damage Narrative Informe	pe (if this event i		up to three ap	plicable boxes and	write the estir	Note: If more that amounts. Then s	n 3 drug types, sele lect "Over 3 Drug 1	
Narrative Inform	e.#28516							
-	gh roller veh	hicle lost steeri the NEWC rail						ned vehicle and d.
If second CCN is ava								

Event Report Page 5 of 7

Narrative

I, Officer and the vehicle and vehicle of the vehicle and no injuries were reported. The white Jaguar sustained minor damage to the driver side and was fully operational and was moved by Mrs. The white Jaguar sustained minor damage to the driver side and was fully operational and was moved by Mrs. The white Jaguar sustained minor damage to the driver side and did not take a report because there were no injuries and it was just property damage. No injuries were reported. The high rail vehicle was driven to the shop in the NEWC rail yard to be serviced.

MTPD CCN: ORI-DCMTP0000 Event Report Page 6 of 7

Incident Date: 01/11/2023 Time: 09:10 hours Final Report – Collision E23022 
 Drafted By:
 SAFE 711 - 03/10/2023
 Page 20

 Reviewed By:
 SAFE 71 - 03/10/2023
 Approved By:
 SAFE 71 - 03/13/2023

#### Appendix C – Maximo Report

#### Washington Metropolitan Area Transit Authority Maintenance and Material Management System Work Order Details Page 1 of 2 MX76PROD Work Order #: 17604839 Type: CM Status: FINISHED 03/06/2023 13:52

Work Description: OUTSIDE LABOR, NEWTOWN AUTOBODY, WMATA ACCIDENT FRONT END DAMAGE, TOW TO NEWTOWN AUTOBODY Job Plan Description:

					Work Information	n						
	Asset: S	SV028516	SV028516, PASSENGER TR		Owning Office: BMNT-COO-RAIL				Parent:			
	Asset Tag: S	SV028516			Maintenance Office:	BMNT-SVMT-	AFSV	Create Date: 01/12/2023 06:21				
	Asset S/N: 1	IFMCU9GE	8KUA25783		Labor Group:				Actual S	tart: 01/17/202	3 09:43	
	Location: 1	1428	C93, ALEXANDRIA YARD, BI	UILDING (C)	Crew:	SVMTOSLB			Actual Co	mp:		
Wor	Work Location: 3611 T38, CARMEN TURNER FACILITY, BUILDING (F) BUS2, 1ST FLOOR HEA OVERHAUL BODY SHOP				Lead:				ľ	tem: SVMTV06	52	
Fa	ilure Class: S	SVMT019	BODY		GL Account: WMATA-01-32380-50305030-041-******************OPR**							
Prof	Problem Code: 1020 ACCIDENT DAMAGE (WMATA)			TA)	Supervisor:				Target S	tart:		
Rec	Requested By:				Requestor Phone:				Target Co	mp:		
Chain	Mark Start:				Chain Mark End:				Scheduled S	tart:		
Crea	ate-Mileage: 5	54896.1			Complete-Mileage:	0.0						
		er constraint				1000 AD						
ask IDs												
Task IDs Task ID 10	TOW TO NE	EWTOWN #	NUTOBODY									
Task ID 10	111110000000000000000000000000000000000	M NEW CAR	ROLTON RAIL YARD TO NEWTO	WN AUTO BODY Work Accomp: TC	OWED	Reason: RO	DAD CALL	Status: FINIS	HEI Position:	War	ranty?: N	
Task ID 10	TOWED FROM	M NEW CAR	ROLTON RAIL YARD TO NEWTO		)WED	Reason: RC	DAD CALL	Status: FINIS			ranty?: N	
Task ID 10 Component:	TOWED FROM	M NEW CAR	ROLTON RAIL YARD TO NEWTO		DWED End Date	Reason: RC	DAD CALL	Status: FINIS	HEI Position: Regular Hours	War Premium Hours		
Task ID 10 Component: Actual Labor	TOWED FROM	M NEW CAR	ROLTON RAIL YARD TO NEWTO	Work Accomp: TC					Regular	Premium	Line Cos	
Task ID 10 Component: Actual Labor Task ID	TOWED FROM	M NEW CAR	ROLTON RAIL YARD TO NEWTO	Work Accomp: TC Start Date	End Date	Start Time	End Time 08:00	Approved?	Regular Hours 02:30	Premium Hours	Line Co: \$105.7	
Task ID 10 Component: Actual Labor Task ID	TOWED FROM 1: 000-100 SEF Labor	M NEW CAR	ROLTON RAIL YARD TO NEWTO	Work Accomp: TC Start Date	End Date	Start Time	End Time 08:00	Approved? N	Regular Hours 02:30	Premium Hours 00:00	Line Co: \$105.7	
Task ID 10 Component: Actual Labor Task ID 10	TOWED FROM 1: 000-100 SEF Labor	M NEW CAR	ROLTON RAIL YARD TO NEWTO	Work Accomp: TC Start Date	End Date	Start Time	End Time 08:00	Approved? N I Actual Hour/Labo	Regular Hours 02:30	Premium Hours 00:00	Line Co \$105.7 \$105.7	
Task ID 10 Component: Actual Labor Task ID 10 Actual Materi	TOWED FROM	M NEW CAR	ROLTON RAIL YARD TO NEWTO HICLE m Description INV#7415@NEWTOWI	Work Accomp: TC Start Date 01/17/2023	End Date 01/17/2023 ED FRONT BUMPER,	Start Time 05:30	End Time 08:00 Tota	Approved? N I Actual Hour/Labo	Regular Hours 02:30 r: 02:30	Premium Hours 00:00 00:00	ranty?: N Line Co: \$105.7 \$105.7 \$105.7 Line Co: \$7,760.4	

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Document 1 - Maximo Work Order 17604839, Page 1 of 1

03/9/2023 07:51

#### Appendix D – Autobody Estimate



#### CALIBER - CLINTON

Workfile ID:

Federal ID:

State EPA:

e8018711

33-0730794

RESTORING THE RHYTHM OF YOUR LIFE 6715 Old Alexandria Ferry Road, Clinton, MD 20735 Phone: (301) 868-8840 FAX: (301) 868-3243

Estimate

				Junnare						
RO N	umbe	er:								
Custon	ner:		Insurance:	Adjuster:		Estima	itor;			
			CUSTOMER PAY	Phone:		Create	Date:	2/1/2023		
				Claim:						
				Loss Date:						
				Deductible:						
_										
2013 ]	AGU XJ	AWD 4D SED 6-3.0L	Supercharged Gasoline Direct Injection	ń						
VIN:			Interior Color:		Mileage In:		Vehicle (	Dut:		
License			Exterior Color:		Mileage Out:					
State:	e: Production Date: Condition					n: Job #:				
Line	Ver	Operation	Description	Qty	Extended Price \$	Part Type	Labor	Туре	Paint	
1	E01		***Preliminary online estimate or	nly***						
z	E01		***Cost of repairs may change a physical inspection***	fter						
3	E01		FRONT BUMPER & GRILLE							
4	E01	Overhaul	O/H bumper assy			OEM	3.0	Body		
5	E01		FRONT LAMPS							
6	E01	Remove/Install	LT R&I headlamp assy				0.3	Body		
7	E01		FENDER							
8	E01	Blend	LT Fender (ALU)						1.	
9	E01	Remove/Install	LT Fender liner				0.4	Body		
10	E01	Remove/Install	LT Vent Base				0.3	Body		
11	E01		PILLARS, ROCKER & FLOOR							
12	E01	Remove/Install	LT Rocker molding XJ				0.8	Body		
13	E01	Repair	LT Rocker molding XJ				1.5	Body	1.	
14	E01		Add for Clear Coat						0.	
15	E01		FRONT DOOR							
16	E01	Repair	LT Door shell (ALU)				5.0	Body	2.0	
17	E01		Overlap Major Non-Adj. Panel						(0.2	
18	E01		Add for Clear Coat						0.4	
19	E01	Remove/Install	LT Belt molding chrome				0.3	Body		
20	E01	Remove/Install	LT Mirror base w/o side camera				0.6	Body		
21	E01	Remove/Install	LT Handle, outside				1.0	Body		
22	E01	Remove/Install	LT R&I trim panel				0.6	Body		
23	E01		MISCELLANEOUS OPERATION	NS						

T = Tavable Item, MPD = Related Prior Damage, AA = Appearance Allowance, UPD = Unrelated Prior Damage, PDR = Pelntiess Dent Repuir, A/M = Altermarket, Recht = Rechnomed, Reman = Remanufactured, OEM = New Original Equipment Manufacturer, Recor = Re-cored, RECOND = Reconditioned, LKQ = Like Kind Quality or Used, Diag = Diagnostic, Elec = Electrical, Mech = Mechanical, Ref = Refinish, Struc = Structural

3/9/2023 4:43:01 PM

Document 2 - Autobody Estimate - Employee Vehicle #1, Page 1 of 2

Page 1

#### Estimate

#### **RO Number:**

2013 JAGU XJ AWD 4D SED 6-3.0L Supercharged Gasoline Direct Injection

24	E01	Remove/Replace	Cover car/bag			OEM	0.2	Body	
25	E01	Remove/Replace	A/M Clips/Fasteners & Retainers	1	6.00T	Other			
26	E01	Remove/Replace	Corrosion Protection / Primer	1	15.00T	Other	0.3	Body	
27	E01		Clean and Retape	2	6.00	Other	0.6	Body	
28	E01		Flex Additive	1	12.00T	Other			
29	E01		Mask Jambs, Opening, Entry	1	12.00	Other	0.3	Body	
30	E01	Refinish	Color Tint						0.5
31	E01		VEHICLE DIAGNOSTICS						
32	E01		Pre-repair scan	1	40.00	Other	0.5	Body	
33	E01		Post-repair scan	1	80.00	Other	0.5	Body	

Estimate Totals	Discount \$	Markup \$	Rate \$	Total Hours	Total \$
Parts					171.00
Labor, Body			69.00	16.2	1,117.80
Labor, Refinish			69.00	5.9	407.10
Material, Paint			47.00	5.9	277.30
E.P.C.					5.00
Subtotal					1,978.20
Sales Tax					18.62
Grand Total					1,996.82
Net Total					1,996.82

Estimate Version	Total \$
Original	1,996.82
Insurance Total \$:	0.00
Received from Insurance \$;	0.00
Balance due from Insurance \$:	0.00
Customer Total \$:	1,996.82
Received from Customer \$:	0.00
Balance due from Customer \$:	1,996.82

#### TERMS AND CONDITIONS OF REPAIR SERVICES

1.Payment Upon Completion and Authority to Endorse Checks.Customer agrees that he/she is fully responsible & liable for timely payment of all charges for labor, parts, material & accessories, sublet repairs, and any other charges incurred under these Terms & Conditions, and payment in full shall be made prior to the release of the vehicle.To facilitate timely payment,Customer hereby authorizes Caliber & its authorized employees, to act in Customer's place for the purpose of endorsing, on Customer's behalf, all insurance checks made payable to Caliber and Customer, or to Customer,regarding authorized repairs to the vehicle described in this agreement with such limited authorization terminating upon full payment for the repairs of the vehicle.

2.Additional Repairs.Customer may authorize Caliber to conduct additional repairs that are discovered following closer inspection or disassembly orally, in written form, or via electronic messaging & all such additional repairs shall be listed on the final invoice.

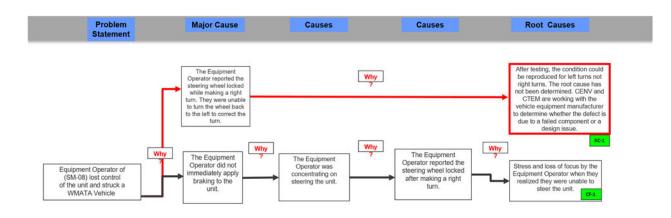
3.Sublet Repairs, Repair Location and Authority to Operate Vehicle.Customer acknowledges & authorizes Caliber, including its subcontractors &

T = Taxable Item, RPD = Related Prior Damage, AA = Appearance Allowance, UPD = Unrelated Prior Damage, PDR = Paintless Dent Repair, A/M = Aftermarket, Rechr = Rechromed, Reman = Remanufactured, DEM = New Original Equipment Manufacturer, Recor = Re-cored, RECOND = Reconditioned, LKQ = Like Kind Quality or Used, Diag = Diagnostic, Elec = Electrical, Mech = Mechanical, Ref = Refinish, Struc = Structural 3/9/2023 4:43:01 PM

Page 2

#### Document 3 - Autobody Estimate – Employee Vehicle #1, Page 2 of 2

### Appendix E - Root Cause Analysis



Root Cause Analysis

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

