UNITED STATES AIR FORCE
GROUND ACCIDENT INVESTIGATION BOARD REPORT

UA-HMMWV, R/N 10L00805

90th Missile Security Forces Squadron
90th Missile Wing
F.E. Warren Air Force Base, Wyoming

TYPE OF ACCIDENT: Motor Vehicle

LOCATION: Weld County, Colorado

DATE OF ACCIDENT: 16 September 2023

BOARD PRESIDENT: Major General Mark A. Weber, USAF

Conducted IAW Air Force Instruction 51-307

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

JUN 18 2025

ACTION OF THE CONVENING AUTHORITY

The report of the ground accident investigation board, conducted under the provisions of AFI 51-307, that investigated the 16 September 2023 mishap in Weld County, Colorado, involving a HMMWV with registration number 10L00805, assigned to the 90th Missile Security Forces Squadron, F.E. Warren Air Force Base, Wyoming, substantially complies with the applicable regulatory and statutory guidance and on that basis is approved.

THOMAS A. BUSSIERE
General, USAF
Commander

EXECUTIVE SUMMARY
UNITED STATES AIR FORCE
GROUND ACCIDENT INVESTIGATION

UA-HMMWV, R/N 10L00805
WELD COUNTY, COLORADO
16 SEPTEMBER 2023

On 16 September 2023, at approximately 1830 hours local time (L), the Airman First Class Mishap Vehicle Operator (MVO) of an Up-Armored High Mobility Multipurpose Wheeled Vehicle (UA-HMMWV), registration number (R/N) 10L00805, traveling from the Oscar Flight Area (Oscar) missile fields in Weld County, Colorado (CO) to F.E. Warren Air Force Base (FEW), Wyoming (WY) failed to negotiate a turn resulting in a rollover in which the front seat Airman First class Mishap Passenger (MPAX) sustained fatal injuries. At the time of the mishap on Weld County Road 112 (CR 112), MVO was following another UA-HMMWV (Vehicle 1) in the Mishap Convoy (MC), which was driven by Senior Airman Operator 1 (OP1) with Airman First Class Passenger 1 (PAX1) in the front seat. All members of the MC were assigned to the Maintenance Support Team (MST), 90th Missile Security Forces Squadron (90 MSFS), 90th Security Forces Group (90 SFG) at FEW.

On 16 September 2023, the MC was scheduled to provide security at the Oscar-7 Launch Facility (Oscar-7) (missile silo) for maintenance personnel on site. The MC departed FEW at 0755L and arrived at the Oscar-1 Missile Alert Facility (MAF) at 0932L where they picked up the Mishap Vehicle (MV) and Vehicle 1. The MC then traveled to Oscar-7 where they met with maintenance at approximately 1200L to provide security for maintenance operations. Maintenance operations concluded at 1805L, and the MC departed Oscar-7 at approximately 1812L with MVO and MPAX trailing Vehicle 1 in the MV.

Between 1828L and 1832L, while traveling west-bound on CR 112 (a dirt-gravel road) at approximately 45 miles per hour (MPH), MVO lost control of the MV. The MV began sliding and turned 180-degrees counter-clockwise until its right front tire caught on the south-side edge of CR 112 flipping the vehicle upside down into the ditch beside the road. As the MV rolled, both front doors of the MV opened. MPAX was not wearing her seatbelt and was ejected from the MV. The MPAX sustained fatal injuries when the MV landed on her.

At the intersection of CR 112 and CR 390, PAX1 noticed the MV was no longer following Vehicle 1 and alerted OP1 who stopped the vehicle. At 1830L, a civilian driver present at the Mishap Site (MS) called 9-1-1. At 1833L, PAX1 received notification from MVO and Witness (WIT) 5 that the MV had rolled over and MPAX had been ejected. PAX1 returned to MS and checked MPAX's pulse at the direction of 9-1-1 dispatch but could not confirm a pulse. The Weld County Sheriff's department were the first law enforcement on scene followed by the Pawnee Fire and Banner Ambulance at 1903L. At 1916L, the initial military response team arrived at MS. At 1918L, emergency services personnel pronounced MPAX deceased.

SUMMARY OF FACTS
UA-HMMWV, R/N 10L00805
WELD COUNTY, COLORADO
16 SEPTEMBER 2023

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ACRONYMS AND ABBREVIATIONS

20 AF	20th Air Force
20 AFI	20th Air Force Instruction
90 LRS	90th Logistics Readiness Squadron
90 MSFS	90th Missile Security Forces Squadron
90 MSOS	90th Missile Support Operations Squadron
90 MW	90th Missile Wing
90 SFG	90th Security Forces Group
ABS	Antilock Braking System
AF	Air Force
AFB	Air Force Base
AFGSC	Air Force Global Strike Command
AFGSCI	Air Force Global Strike Command Instruction
AFI	Air Force Instruction
AFMAN	Air Force Manual
DAFI	Department of Air Force Instruction
DPAS	Defense Property Accountability System
Capt	Captain
CC	Commander
CO	Colorado
CR	County Road
EMS	Emergency Services
FEW	F.E. Warren AFB
FMIS	Fleet Management Information Systems
FSC	Flight Security Controller
ft	Feet
GOV	Government
GSU	Geographically Separated Unit
IAW	In Accordance With
ICBM	Intercontinental Ballistic Missile
L	Local
LF	Launch Facility
LRS	Logistics Readiness Squadron
MAF	Missile Alert Facility
MAJCOM	Major Command
MCC	Missile Combat Crew
MMOC	Missile Maintenance Operations Center
MC	Mishap Convoy
MPAX	Mishap Passenger
MPH	Miles Per Hour
MS	Mishap Site
MSC	Missile Security Control
MSFS	Missile Security Forces Squadron
MSgt	Master Sergeant
MST	Maintenance Support Team
MV	Mishap Vehicle
MVO	Mishap Vehicle Operator
MWI	Mission Wing Instruction
NAF	Numbered Air Force
NC3	Nuclear Command, Control, and Communication
OLVIMS	On-Line Vehicle Interactive Management System
OP1	Operator 1
OTI	One Time Inspection
PAX1	Passenger 1
PPE	Personal Protective Equipment
QTP	Qualification Training Package
R/N	Registration Number
SAR	Search and Rescue
SB	Service Bulletin
SFG	Security Forces Group
SFGI	Security Forces Group Instruction
SSgt	Staff Sergeant
TO	Technical Order
TDY	Temporary Duty
TCTO	Time Compliance Technical Order
UA-HMMWV	Up-Armored High Mobility Multipurpose Wheeled Vehicle
USAF	United States Air Force
US DOT FHA	United States Department of Transportation's Federal Highway Administration
VMS	Vehicle Maintenance Section
WY	Wyoming

SUMMARY OF FACTS

1. AUTHORITY AND PURPOSE

a. Authority

On 22 November 2023, General Thomas A. Bussiere, Commander (CC) Air Force Global Strike (AFGSC), appointed Major General Mark Weber to conduct a ground accident investigation of the 16 September 2023 mishap of an Up-Armored High Mobility Multipurpose Wheeled Vehicle (UA-HMMWV), R/N 10L00805, that occurred in Weld County, Colorado (CO) on CR 112 near Grover, CO (Tabs O-2, X-3, and Y-4 to Y-5). The board members conducted the ground accident investigation at F. E. Warren (FEW), Wyoming (WY) from 28 November 2023 through 22 December 2023 in accordance with (IA W) Air Force Instruction (AFI) 51-307, *Aerospace and Ground Accident Investigations*, dated 18 March 2019 (Tab DD-86). General Bussiere also appointed the following members: Captain (Capt) Legal Advisor, Capt Medical Member, Master Sergeant (MSgt) Maintenance Member, MSgt Security Forces Member, and Staff Sergeant (SSgt) Recorder (Tab Y-4 to Y-5).

b. Purpose

IAW AFI 51-307 this accident investigation board conducted a legal investigation to inquire into all the facts and circumstances surrounding this Air Force ground accident, prepare a publicly releasable report, and obtain and preserve all available evidence for use in litigation, claims, disciplinary action, and adverse administrative action.

2. ACCIDENT SUMMARY

On 16 September 2023, at approximately 1812L, the Mishap Convoy (MC) departed Oscar-7 in Weld County, CO in route to FEW (Tabs O-2, V-2.7, and EE-137). Airman First Class Mishap Vehicle Operator (MVO) was driving with Airman First Class Mishap Passenger (MPAX) in the front passenger (right) seat trailing Vehicle 1 driven by Senior Airman Operator 1 (OP1) with Airman First Class Passenger 1 (PAX1) in the front passenger (right) seat (Tabs O-3, R-19, and EE-137). At 1828L, while driving approximately 45 MPH west-bound on dirt-gravel road, CR-112, MVO lost control of the Mishap Vehicle (MV) (Tabs O-2 to O-4 and EE-3). The MV slid and turned 180-degrees counter-clockwise while still traveling west-bound on CR-112 until it began to roll with the right side leading and rolled halfway over onto its right side and roof (Tabs O-3, EE-137, EE-146, and EE-150). As the MV rolled, MPAX was not wearing her seatbelt and was ejected from the MV (Tabs X-3 and EE-137). MPAX sustained fatal injuries when the MV came to rest in the ditch beside the road on top of her. (Tabs S-5, X-3, EE-137, and EE-191).

3. BACKGROUND

The MV was assigned to the 90 Missile Security Operations Squadron (MSOS), a unit of 90 SFG (Tabs U-775 and CC-9). MVO and MPAX were assigned to the 90 MSFS at FEW (Tab T-21 and Tab T-23).

a. AFGSC

AFGSC, activated 7 August 2009, is a major command (MAJCOM) with headquarters at Barksdale Air Force Base (AFB), Louisiana, in the Shreveport-Bossier City community (Tab CC-3). AFGSC is responsible for the nation's three intercontinental ballistic missile (ICBM) wings, the Air Force's entire bomber force, to include B-52, B-1 and B-2 wings, the B-21 Raider program, Air Force Nuclear Command, Control and Communications (NC3) systems, and operational and maintenance support to organizations within the nuclear enterprise (Tab CC-3).

b. 20th Air Force (20 AF)

20 Air Force (AF) is a Numbered Air Force (NAF) with headquarters at FEW, WY, in the Cheyenne community (Tab CC-6). 20 AF is responsible for the Nation's three intercontinental ballistic missile (ICBM) wings, one nuclear operations support wing and one geographically separated unit (GSU) (Tab CC-6). As the missile NAF for AFGSC, 20 AF is responsible for operating, maintaining, securing and supporting the AF's ICBM force (Tab CC-6). 20 AF provides on-alert, combat ready ICBMs to the President (Tab CC-6).

c. 90th Missile Wing (90 MW)

FEW, WY, is home to the 90 MW, which activated 1 July 1963, with the original designation of the 90th Strategic Missile Wing (Tab CC-8). FEW became the nation's first operational ICBM base with the introduction of the Atlas missile in 1958 (Tab CC-8). Today, the Mighty Ninety operates Minuteman III ICBMs on full alert 24-hours a day, 365 days a year (Tab CC-8).

d. 90 SFG

90 SFG is composed of six squadrons, with approximately 1,250 personnel (Tab CC-9). The 90, 790, and 890 MSFS provide security for 15 missile alert facilities and 150 launch facilities (Tab CC-9). 90 SFS provides installation and weapons storage area security, police services, pass and registration functions, and reports and analysis duties (Tab CC-9). The 90 MSOS provides command and control for the missile field and access control for all missile field forces, security forces training and equipment support, as well as providing security for convoys, tactical response forces and missile maintenance operations and counter small unmanned aerial system support (Tab CC-9). The 90th Ground Combat Training Squadron, based in Guernsey, WY, provides intermediate to advanced security forces skills training designed to counter and destroy threats identified in the Nuclear Security Threat Capabilities Assessment (Tab CC-9).

e. 90 MSFS

90 MSFS provides security for missile alert facilities and launch facilities (Tab CC-9).

f. UA-HMMWV – Model M1165A1B3

The M1165A1B3 is an expanded capacity UA-HMMWV designed to be air transportable and sling-loaded by helicopter (Tab EE-7 to EE-8). The vehicle seats a four-member crew and can be used for various missions, from command and control to armed patrol, and includes a weapons mount and turret (Tab EE-7). UA-HMMWVs are intended for use over all types of roads and cross-country terrain in all weather conditions without sacrificing mobility, dependability, or performance (Tab EE-7). The M1165A1 provides protection for the crew, weapons components, and ammunition, coming standard with underbody armor, rocker armor, lower windscreen deflector armor, and energy-absorbing seats (Tab EE-7 to EE-8). The further customized M1165A1B3 includes the B3 kit, which provides gapless mine and ballistic protection by adding perimeter armor, overhead armor, and a rear ballistic bulkhead (Tab EE-7 to EE-8). The UA-HMMWV's armor configuration allows for a maximum payload of 2,230 lbs (Tab EE-8).

g. 90 MW Missile Fields

The 90 MW missile field complex is an area consisting of 9,600 square miles across three states, WY, CO, and Nebraska (Tab CC-9). The missile field complex is comprised of 15 flight areas (Alpha through Oscar) with each one having its own missile alert facility (MAF) (also known as launch control centers) for command and control (Tabs O-16 and CC-9). Each MAF is responsible for providing armed Security Forces responses to 10 Launch Facilities (LF) (also known as missile silos) (CC-9). In total, the missile field complex has 15 MAFs and 150 LFs (Tabs O-16 and CC-9).

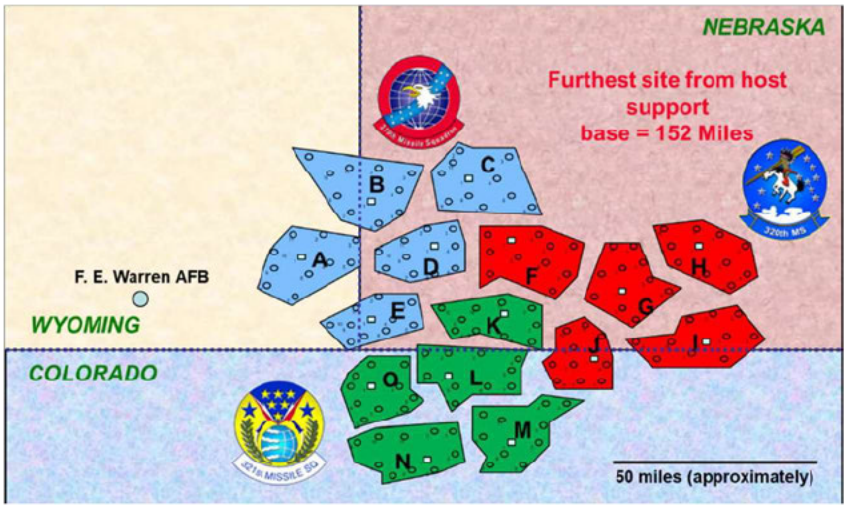


Figure 3-1 (Tab O-16)
90 MW Missile Field Complex

4. SEQUENCE OF EVENTS

a. Summary of Accident

On 16 September 2023, MC was scheduled to arrive at FEW at 0700L with an arming time of 0730L (Tab V-2.12). Prior to departing FEW for a routine missile security mission at the Oscar-1 MAF, MC received a guardmount briefing from Witness (WIT) 5 at Building 34 on FEW (Tab V-12.3 to V-12.4). The briefing consisted, among other things, of ground safety, vehicle safety, weapons safety, road conditions and approved routes, nuclear surety standards, and preconditions for deadly force (Tabs V-12.4 to V-12.5 and AA-3 to AA-6).

MC departed FEW for the Oscar-1 MAF at 0755L (Tabs V-2.7 and DD-17). WIT5 transported MC to Oscar-1 MAF in a regular government owned vehicle (GOV) "soft truck" (Tab V-12.3 to V-12.4). Two UA-HMMWVs, including the MV, were staged at Oscar-1 MAF the night of 15 September 2023 and the drivers were transported to FEW by WIT13 (Tab V-2.7, V-12.4, and V-23.12 to V-23.13). MC arrived at Oscar-1 MAF at approximately 0917L (Tabs K-13 and DD-17). MVO, MPAX, and OP1 entered the MAF to pick up the vehicles and use the bathrooms, MPAX did not process on to the MAF (Tab K-13). Prior to departing Oscar-1 MAF for Oscar-7, MVO, OP1, PAX1 received a safety brief and were advised to accomplish a pre-departure checklist and gear check (Tab K-15). MC departed Oscar-1 MAF at approximately 0932L for Oscar-7 after picking up the UA-HMMWVs (Tabs K-15, R-18, and DD-17).

Travel time from Oscar-1 MAF to Oscar-7 is less than 50 minutes (Tab EE-11). MC waited for the maintenance team to arrive, and they arrived at approximately 1200L (Tab R-18). At 1240L, OP1 and PAX 1 processed onto Oscar-7 and MVO and MPAX provided off-site security at Oscar-7 (Tab K-24). At 1548L, the MC left Oscar-7 but processed back onto the LF for the maintenance team to complete additional maintenance (Tabs K-24, R-18, V-1.4, and V-2.7).

The MC outprocessed Oscar-7 at 1805L and departed Oscar-7 at 1812L (Tabs K-24, V-2.7, and DD-18). MVO requested that OP1 proceed first in his UA-HMMWV, because MVO's cellphone was almost out of battery, and he would not be able to use it to navigate back to FEW (Tabs R-19). Members are to navigate to and from the missile fields and within the missile fields using a 90 MW Route Folder that shows the approved primary and secondary routes (Tabs V-5.16 to V-5.17, V-12.5, , and EE-9 to EE-12). MC was briefed on the road conditions and routes prior to departing FEW (Tab V-12.5). Teams are not allowed to use cellphones to navigate (Tabs V-5.16 to V-15.17 and BB-24).

Prior to departing Oscar-7, MVO stated he ensured that MPAX had her seatbelt and helmet on (Tab R-28). MVO does not know if MPAX removed either while traveling to FEW (Tab R-28). MVO removed his helmet prior to the mishap because it was obscuring his vision (Tab R-28). The photos taken post mishap indicate MPAX was not wearing her helmet (Tab X-3). The coroner testified there were no injuries consistent with MPAX being constrained by a seatbelt at the time of the mishap (Tab X-3). While operating or traveling in a UA-HMMWV, each member is required to wear a helmet, a seatbelt, and long sleeve shirt (Tabs V-12.10 to V-12.12, BB-13 to BB-14, BB-24, and BB-30).

As the MC began the return drive from Oscar-7 to FEW, MVO drove the MV with MPAX as his right seat front passenger (Tab EE-137). IAW AFGSC Instruction (AFGSCI) 91-210, MPAX was not qualified to be the front right seat passenger in the missile field complex, because she had not completed her vehicle training (Tabs G-30 and BB-5 to BB-6).

The driver in a UA-HMMWV is not to exceed 25 MPH on gravel roads and 55 MPH on paved roads (Tab EE-12). The route from Oscar-7 to FEW should take approximately 112 minutes (Tab V-23.19 and Tab EE-10). The route to FEW from Oscar-7, prior to reaching the MS, travels along all gravel roads, see Figure 4-1 (Tab V-23.19 and EE-13). Sunset on 16 September 2023 occurred at 1904L (Tab W-4). The distance between Oscar-7 and the mishap site is approximately 10.4 miles (Tab EE-13).

Figure 4-1 (Tab EE-13)
Google Maps: O-07 to Mishap Site

Figure 4-2 (Tab DD-11)
40 MPH Sign Approaching Mishap Site

MVO described that he was on the road for approximately 15 minutes before the mishap occurred (Tab R-19). 16 September 2023 was not the first time MVO traveled on CR 112 (Tab EE-14). The default speed limit on unposted Weld County Roads is 55 MPH (Tabs O-3 and EE-12). The Weld County recommended speed limit approaching the curve where the mishap occurred is 40 MPH (Tab DD-11).

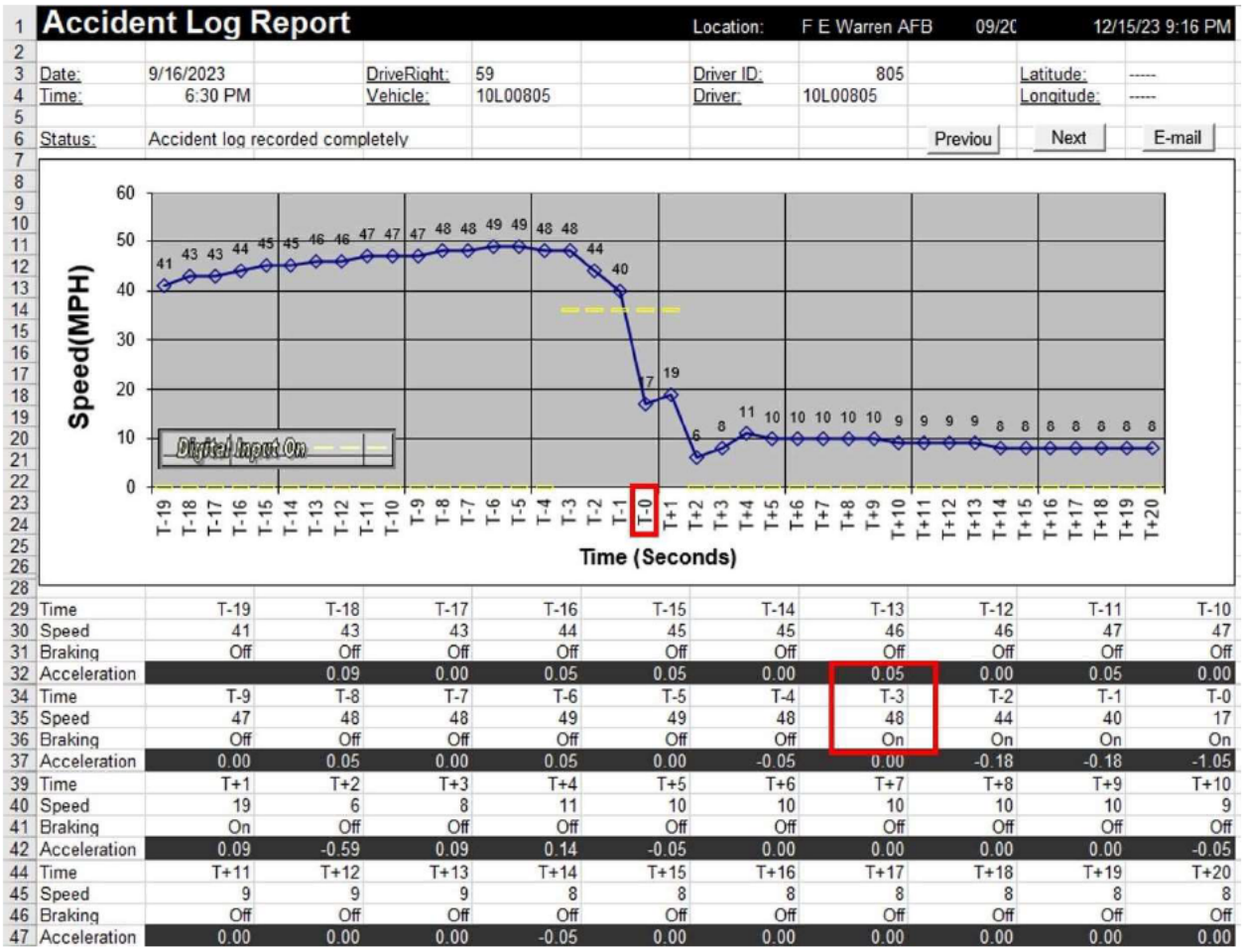
The mishap occurred between approximately 1828L and 1832L at 40.79856°N and -104.13128°W (Tabs K-35, O-2 to O-3, and EE-2). With a departure time of approximately 1812L and a mishap time at the earliest of 1828L and latest of 1832L, the average speed of the MV for the entire route was between 31 MPH and 39 MPH (Tabs K-35, O-2 to O-3, BB-38, and EE-2).

As MVO followed OP1 along the route, his vision was impaired by the sun in his eyes and by the dust created by Vehicle 1's passage, compounded by the "terrible" windshields in the MV (Tab R-19).

Figure 4-3 (Tab S-119)
Recreation of Mishap Conditions

At the time of the mishap, MVO was approximately 20 feet (ft) behind OP1's vehicle and focusing on OP1's taillights to not lose Vehicle 1 (Tab R-28). The MV was traveling between 40 MPH and 49 MPH at the time of the mishap (EE-2).

At the time of the mishap, the MV was equipped with a DriveRight tracking system (Tab V-11.5). DriveRight can track eight data parameters when installed in a vehicle, which are set by AFGSC (Tab V-11.5). The DriveRight on the MV was set to track brake application, acceleration, deceleration, speed, and accident data (Tab V-11.5). When certain parameters are met, such as exceeding an authorized speed or being involved in an accident, the system starts recoding data and events (Tab V-11.5). The DriveRight on the MV was set to start recording speed and send a report if the driver exceeded 58 MPH (Tab V-11.6). For an accident, the system records the data from 19 seconds before the event until 19 seconds after the event and send a report (Tab V-11.6). At 1813L, 17 minutes before the mishap, DriveRight recorded the MV traveling at 56 MPH on a gravel road (Tab EE-44). In the 19 seconds preceding the mishap, which DriveRight records at 1830L, the MV was traveling between 40 MPH and 49 MPH, see Figure 4-4 (Tab EE-2). MVO began applying brakes to the MV approximately 3 seconds prior to the mishap, see Figure 4-4 (Tab EE-2).



Accident Log Report Location: F E Warren AFB 09/2(12/15/23 9:16 PM

Date:	9/16/2023	DriveRight:	59	Driver ID:	805	Latitude: -----
Time:	6:30 PM	Vehicle:	10L00805	Driver:	10L00805	Longitude: -----

Status: Accident log recorded completely — Previou | Next | E-mail

Time	T-19	T-18	T-17	T-16	T-15	T-14	T-13	T-12	T-11	T-10
Speed	41	43	43	44	45	45	46	46	47	47
Braking	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off
Acceleration		0.09	0.00	0.05	0.05	0.00	0.05	0.00	0.05	0.00
Time	T-9	T-8	T-7	T-6	T-5	T-4	T-3	T-2	T-1	T-0
Speed	47	48	48	49	49	48	48	44	40	17
Braking	Off	Off	Off	Off	Off	Off	On	On	On	On
Acceleration	0.00	0.05	0.00	0.05	0.00	-0.05	0.00	-0.18	-0.18	-1.05
Time	T+1	T+2	T+3	T+4	T+5	T+6	T+7	T+8	T+9	T+10
Speed	19	6	8	11	10	10	10	10	10	9
Braking	On	Off	Off	Off	Off	Off	Off	Off	Off	Off
Acceleration	0.09	-0.59	0.09	0.14	-0.05	0.00	0.00	0.00	0.00	-0.05
Time	T+11	T+12	T+13	T+14	T+15	T+16	T+17	T+18	T+19	T+20
Speed	9	9	9	8	8	8	8	8	8	8
Braking	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off
Acceleration	0.00	0.00	0.00	-0.05	0.00	0.00	0.00	0.00	0.00	0.00

Figure 4-4 (Tab EE-2)
DriveRight Accident Log Report

Figure 4-5 (Tab DD-8)
Photo of Approach to Mishap Site-East to West on CR 112
6 December 2023

MVO was driving in the middle of the road (Tab R-19). He started going downhill a little and then braked more (Tab R-19). The steering wheel locked up and he had difficulty turning the steering wheel back to the middle of the road (Tab R-19). He started to brake more, and the steering wheel locked up more (Tab R-19). As MVO tried to come to a complete stop, he hit a patch of "wash-boarding" on the road and lost traction, which is when the MV began to slide and turn (Tab R-20). The MV's vehicle type is not equipped with antilock braking system (ABS) (Tabs EE-23 and EE-34). The Operator's Manual for MV's UA-HMMWV model states that in hazardous conditions like ice and snow, sudden braking will cause wheels to lock and vehicle to slide out of control, causing damage to vehicle and injury or death to personnel (Tab BB-54).

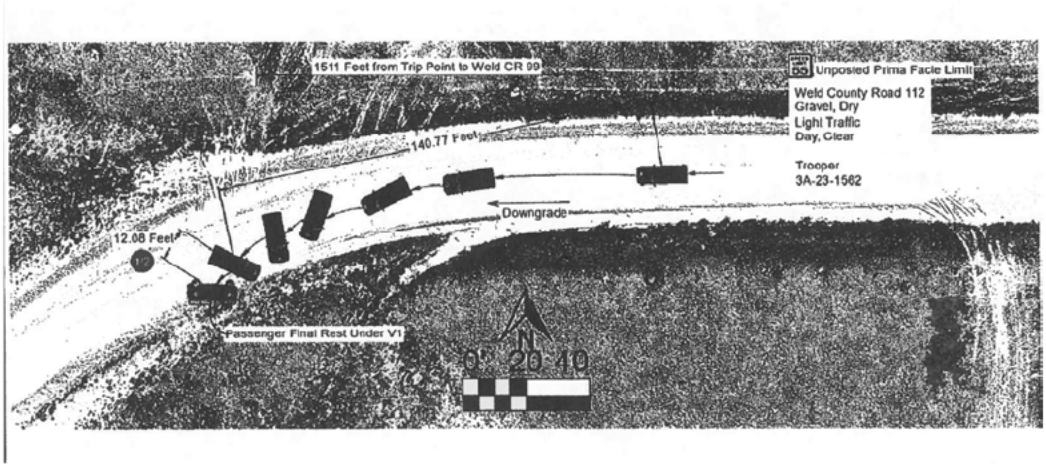


Figure 4-6 (Tab O-3)
Colorado State Police Accident Recreation

During the mishap, both of the MV's front doors opened (Tab EE-16). MVO attempted to grab MPAX at some point during the rollover but was unable to grab her (Tab V-21.8). MPAX was ejected from the MV and became trapped under it (Tab X-3). The MV was traveling east to west on CR 112 prior to the mishap but came to rest with the nose of the MV facing east and laying on its right side, see Figure 4-7 (Tabs S-5 and EE-146).

Figure 4-7 (Tab S-5)
Post Mishap Photo of Rear and Under MV

b. Search and Rescue (SAR)

MVO exited the MV after it came to rest (Tab EE-16). When MVO noticed that MPAX had been pinned underneath the MV, he tried to free her but did not have the means to lift the MV (Tabs R-20, U-772 to U-774, and X-3). The MV weighed 11,850 pounds after the mishap (Tab EE-286). At 1830L, a civilian motorist notified emergency services that an accident had

occurred (Tabs R-20 and R-76). PAX1 called MVO because he no longer saw him behind his vehicle and was told MVO had been in an accident, but thought it was a joke (Tab R-76). MVO notified WIT5 at 1833L regarding the accident, who then ordered OP1 and PAX1 to return to MS (Tabs K-35, R-48, and R-76). OP1 assisted MVO while PAX1 sent their location via cell phone to WIT5 and checked MPAX's pulse (Tabs R-77, V-12.4, and V-23.25 to V-23.26). PAX1 could not confirm there was a pulse (Tab V-23.25 to V-23.26). Leadership at the missile complex was briefed by personnel at the Oscar-1 MAF at approximately 1837L that the MC was involved in an accident and suffered one casualty (Tabs K-35 and EE-17). WIT13, the MST Battle Captain, was notified at 1845L (Tab V-2.8). WIT12, the MC's Section Chief, made a group chat via phone application with leadership at 1857L for further coordination and action (Tabs V-20.13 and DD-32).

The Weld County Sheriff was the first law enforcement to arrive on scene, followed by Pawnee Fire and Banner Ambulance (emergency services [EMS]) at 1902L (Tabs O-2 and V-14.5). The initial military response team, called a 12 team, arrived on scene at 1916L with some of MC's leadership arriving between approximately 1920L and 2000L (Tabs V-12.17, V-21.4 to V-21.5, and EE-17). Colorado State Patrol arrived at 1943L (Tab O-2). The deputy coroner from the Weld County Coroner's Office, WIT15, arrived at 2025L (Tab V-14.2).

MVO suffered minor injuries to his hands from trying to break the glass within the MV but was not transported by EMS to the hospital (Tabs R-20, X-4, and EE-150). On 22 September 2023, he received treatment at FEW (Tabs R-20, X-4, and EE-150). WIT5 and another SSgt transported MVO to FEW with OP1 and PAX1 and arrived at FEW near 0000L on 17 September 2023 (Tabs V-12.19, V-20.15, and DD-18).

Superior Towing transported the MV to their lot in Greeley, CO prior to 0219L on 17 September 2023 (Tabs EE-152, EE-180, and EE-182).

c. Recovery of Remains

Emergency services personnel pronounced MPAX deceased at 1918L (Tabs O-4 and X-3). Two crane-mounted recovery trucks from Superior Towing were utilized to hoist the MV off MPAX and recover her remains (Tabs S-92 and V-14.5 to V-14.6). MPAX's remains were transported to the Weld County Coroner's office in Grover, CO at 0030L on 17 September 2023 (Tabs K-35 and X-3).

5. MAINTENANCE

The vehicle maintenance section (VMS) of the 90th Logistics Readiness Squadron's (90 LRS's) is located on FEW (Tab V-19.2 to V-19.3). It is responsible for providing maintenance to government vehicles assigned to 90 MSOS (Tabs V-10.8 and V-10.10 to V-10.11).

a. Maintenance Documents

The On-Line Vehicle Interactive Management System (OLVIMS) is the Fleet Management Information System (FMIS) the AF used to account for all things related to fleet maintenance prior

to the adoption of the Defense Property Accountability System (DPAS) (Tab DD-83). DPAS is the online database in which the MV's maintenance records have been stored since 9 June 2016 when the AF completed its transition from OLVIMS to the current records database system (Tab DD-83). A combination of OLVIMS and DPAS historical records show that all required scheduled and unscheduled maintenance documents from 4 January 2011 through 17 May 2023 were completed for the MV (Tab DD-83).

b. Maintenance Forms

A review of all relevant maintenance forms and logs from 4 January 2011 through 17 May 2023, showed no discrepancies (Tab DD-83). The VMS completed a combined total of seven time compliance technical orders (TCTO), service bulletins (SB), and one-time inspections (OTI) (Tab DD-83).

c. Scheduled Inspections

All scheduled inspections from 4 January 2011 through 17 May 2023 were satisfactorily completed (Tab DD-84). No discrepancies were noted (Tab DD-84).

d. Maintenance Procedures

Not Applicable.

e. Unscheduled Maintenance

The last scheduled maintenance work order was completed on 17 May 2023 (Tab DD-84). It included extensive preventive maintenance services covering multiple vehicle systems and replacing the MV's door's weather strip, wheel lug nuts, ballistic window glass, and air vents (Tab DD-84). The VMS conducted no unscheduled maintenance since the last scheduled maintenance work order was completed on 17 May 2023 (Tab DD-84). Before the work order on 17 May 2023, the last unscheduled maintenance completed was on 18 April 2023 (Tab DD-84). The unscheduled maintenance work order included replacing the wiper washer nozzle, driver side door window glass, brake/torque converter clutch switch, weather seal, turret seal, servicing a power steering leak, transfer case leak, brake system bleed, adjusting the driver front and rear door, and rotating the spare tire with the front left tire (Tab DD-84).

f. Maintenance Personnel and Supervision

All VMS technicians who performed scheduled and unscheduled maintenance on the MV from 16 September 2022 to 16 September 2023 were fully qualified or performed maintenance under the supervision of a fully qualified technician (Tab DD-84). Training records showed no deficiencies or de-certifications for any maintenance personnel who handled the MV for these procedures (Tab DD-84).

6. EQUIPMENT, VEHICLES, FACILITIES, AND SYSTEMS

a. Functional Status

An AF Form 1800, *Operator's Inspection Guide and Trouble Report*, is a checklist for vehicle operators to document discrepancies on their vehicle during their pre-shift inspection (Tabs DD-85 and EE-18to EE-19). Drivers of the MV failed to conduct the required pre-shift spot inspections for the MV and no AF Form 1800 entries were made from 1-16 September 2023 (Tabs U-779, BB-41 to BB-43, and BB-45). The blank AF Form 1800 that accompanied the MV was recovered from the MS in a green bag (Tabs S-44 and U-779).

VMS conducts courtesy checks on all armored vehicles at two-week intervals to identify any discrepancies requiring attention (Tabs U-781 to U-782 and V-11.2). On 14 September 2023, 90 LRS VMS conducted a courtesy check on the MV to identify any discrepancies requiring attention and no issues were identified (Tabs U-781 to U-782 and V-11.2).

b. Equipment Condition Post-Mishap

The wreckage of the MV was in possession of the Colorado State Police during the investigation (Tab DD-85).

(1) Service Brake System

(a) Description. The service brake system is an inboard-mounted, four-wheel, disc brake, hydraulically assisted system (Tab BB-59). The major components of the braking system are the brake linkage, hydro-booster, master cylinder/reservoir, proportioning valve, accumulator, brake pedal, brake pressure limiter, brake lines, brake caliper, brake rotor, and brake pads (Tabs BB-59 to BB-60). The brake linkage directs brake pedal pressure to the hydro booster and the hydro booster converts hydraulic power from the steering pump to mechanical power to the master cylinder, providing power assist during braking (Tab BB-59). The master cylinder/reservoir stores brake fluid, and coverts mechanical pedal pressure to hydraulic pressure (Tab BB-59). A proportioning valve provides balanced front-to-rear braking and activates the brake warning lamp in case of brake system malfunction (Tab BB-59). The accumulator stores hydraulic pressure for additional power-assisted braking in case of loss of pressure in the steering system (Tab BB-59). The brake pedal provides operator control for stopping the vehicle and a brake pressure limiter limits front brake line pressure to prevent brake lockup (Tab BB-59). Hydraulic brake lines direct brake fluid under pressure to all four brake calipers from the master cylinder (Tab BB-60). The brake calipers convert hydraulic pressure to mechanical force to compress brake pads against the brake rotors (Tab BB-60). The brake rotors are attached to output flanges on the front and rear differentials; the rotor prevents the output flange from turning when brakes are applied (Tab BB-60). Brake pads apply friction to the brake rotors when the brake pedal is depressed, slowing the vehicle down and allowing it to stop (Tab BB-60). The MV's type is not equipped with an antilock braking system (Tab EE-23 and EE-24).

(b) Analysis. A visual inspection of the MV's brake rotors and service pads revealed that each component exceeded the minimum tolerances (Tabs DD-37 to DD-46 and DD-85). There is no indication that any brake system component was leaking or malfunctioning (Tab DD-37 to DD-38 and DD-85).

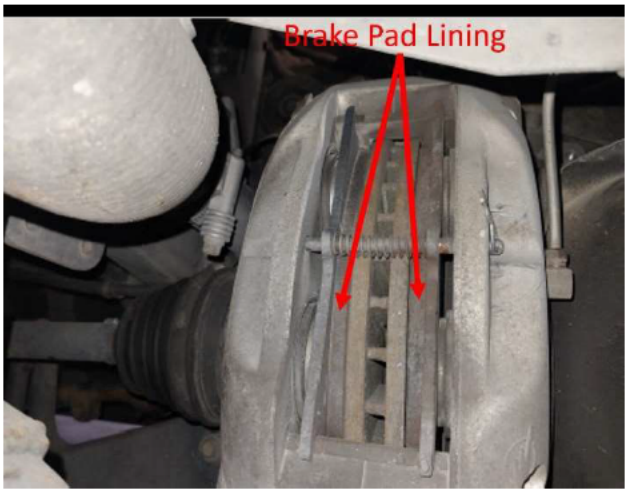


Figure 6-1 (Tab DD-41)
1 Brake Pad and Brake Pad Lining Kit in MV

(2) Door/Combat Locks

(a) Description. Operators must check the door latch and combat lock for proper operation before driving (Tab BB-51). Crew doors must be locked during vehicle operation; otherwise, ballistic integrity cannot be maintained (Tab BB-56). Combat locks are engaged by pressing down on each door's inner crew door release handle (Tab EE-62). Combat locks are utilized to prevent access to the vehicle's interior, and along with seatbelts, to reduce the severity of an injury in the event of an accident (Tabs BB-53, BB-56, and EE-31). Members traveling in UA-HMMWVs should combat lock the doors to the UA-HMMWV while the vehicle is in motion to keep the doors from opening during travel (Tab V-11.4). Combat locking (1) confirms the door is latched all the way and (2) supports the extra weight from an up-armored door (Tab V-11.3 to V-11.4). UA-HMMWV doors may open while in motion if the door is not combat locked (Tab V-11.4).

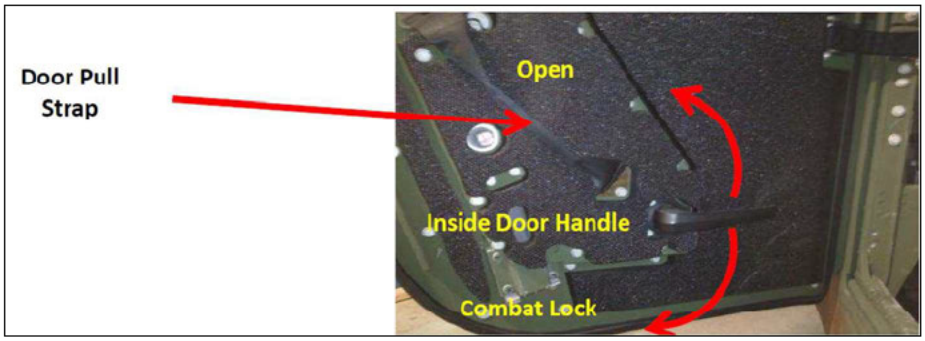


Figure 6-2 (Tab EE-62)
Operation of a Combat Lock

(b) Analysis. The combat locks engage and disengage on all MV doors (Tab DD-47 to DD-55 and DD-85). The front right door was damaged during the mishap and the combat lock was unable to be function tested with the door fully closed (Tabs S-20, DD-50, and DD-85). The door strap retention bolts were ripped out of the MV's body when the door was overextended (Tabs S-63, DD-50, and DD-85).

(3) Power Steering System

(a) Description. The major components of the steering system include the oil reservoir, hydro booster, steering gear, power steering cooler, serpentine belt, steering pump, steering wheel, steering column, intermediate steering shaft, pitman arm, tie rod assembly, geared hub, center link, and idler arm (Tab BB-61 to BB-62).

(b) Analysis. The power steering reservoir, oil cooler, and hydro boost were inspected for leaks and no leaks were detected (Tab DD-85). As the power steering fluid reservoir maintained an adequate fluid level, the likelihood that the system is leaking is low (Tab DD-85). An inspection of steering system components did not reveal any signs of abnormal wear or damage (Tab DD-85). There is no evidence to indicate any malfunction of the steering system.

(4) Seatbelts

(a) Description. The improved personal restraint system (seatbelt) includes a shoulder and lap strap (Tab BB-55). The lap strap and shoulder strap must be worn together to prevent injury or death to personnel (Tab BB-55). The seatbelts retract and lock only when sudden stops or impact occurs (Tab BB-53). Seatbelts must be checked for security, damage, and operation of buckles and clasp ends before operating the vehicle (Tab BB-51).

Figure 6-3 (Tab S-71)
MV Seatbelt Extension

(b) Analysis. The MV's front right passenger improved personal restraint system was fully functional; the shoulder and lap straps were undamaged, the retractors worked properly, and they latched into their respective buckles securely (Tabs S-69 to S-72, DD-56, and DD-85).

Figure 6-4 (Tab DD-79)
Tire Tread at 1/16 in.

(5) Tires

(a) Description. The UA-HMMWV is equipped with four 37 in. x 12.5 in. x 16.5 in. radial tires (Tabs BB-58 and BB-64). The tires are bidirectional so that the tread may be positioned in either direction (Tab BB-50). Tires must be replaced when cuts, gouges, or cracks extend to the cord body or if there are any bulges (Tab BB-52). Additionally, tires warrant replacement if the tread is worn below the wear bars or 1/16 in. (Tab BB-64).

(b) Analysis. The MV is equipped with four load range E Goodyear Wrangler MT tires (Tabs DD-66 to DD-78 and DD-85). The front right and rear left tire tread was exceptionally worn in comparison to the rest of the tires, but each met the minimum tread requirement of 1/16 in. (Tabs DD-79 to DD-82 and DD-85). During the mishap, the bead on the front right tire broke and a section between the wheel and bead filled with rocks (Tab S-186 and DD-85). No damage was noted prior to the mishap during the VMS courtesy check on 14 September 2024 (Tabs U-781 to U-782 and V-11.2).

Figure 6-5 (Tab S-186)
Broken Bead, Front Right Tire

7. ENVIRONMENTAL CONDITIONS

a. Forecast Weather

The road conditions reported prior to the MC departing FEW showed the Oscar Flight area roads were "green" (Tabs K-4 and V-20.9).

Conditions	Green	Yellow(2)	Red(2)
Winds	<35 Knots(1)	35-45 Knots Sustained(1)	>45 Knots Sustained(1)
Visibility	>1/2 Mile	1/10 to 1/2 Mile	<1/10 mile
Snow	None	1/2" to 6"	>6"
Drifting Snow	None	Patchy	Mostly Covered
Standing Water/Rain	Dry	<1/2"	>1/2"
Hail/Freezing Rain/Sleet	None	Scattered/Early Accumulation	Road Glazed/Covered
Mud	None	Passable	Impassable/Significant Traction Loss

Figure 7-1 (Tab EE-12)
90 MSFS Route Book – Green Conditions

b. Observed Weather

The observed weather at the time of the mishap was dry and sunny with calm to normal winds (Tabs F-6 and V-23.21). There was no precipitation on 16 September 2023 (Tabs F-6 and EE-144). The road conditions in the Oscar missile complex were reported as green at 1800L (Tab K-32).

c. Post-Mishap Weather

The post-mishap weather was similar to the observed weather (Tab EE-180).

d. Other Environmental Conditions

CR 112 consists of dirt, gravel roads, located at approximately 5200 ft above sea level (Tabs V-22.6 and DD-8 to DD-10). The edges of the road were described as soft, and the surface described as a loose gravel dirt road at the time of the accident and consistent with typical road conditions in the area (Tabs V-18.7 to V-18.8 and V-22.6 to V-22.8). There was some washboarding in the area, see Figures 7-5 and 7-6 (Tab V-22.6). The paramedic who responded to the scene on 16 September 2023 described how her ambulance, weighing approximately 10,000 lbs, became caught on the shoulder of CR 112 as she navigated west on CR 112 past the mishap site while going less than 10 MPH (Tabs V-18.2 and V-18.8).

Figure 7-2 (Tab DD-4)
200 lbs Indents in Shoulder of CR 112
6 December 2023

Figure 7-2 shows indents created by an approximately 200 lbs individual on the shoulder of CR 112 at the mishap site on 6 December 2023 (Tab DD-3 to DD-4).

The road on which the mishap occurred was level with flanking ditches approximate nine inches in depth and three ft wide (Tab DD-3 and DD-6 to DD-7). There was a leftward bend in the road with a downslope that decreases 10 ft in elevation extending west (Tabs DD-3 and DD-6 to DD-10). The United States Department of Transportation's Federal Highway Administration (US DOT FHA) states that high shoulders and secondary ditches can create serious safety hazard (Tab BB-21).

Figure 7-3 (Tab DD-7)
Leftward Bend with Ditches
CR 112 East to West Prior Approaching Mishap Site
6 December 2023

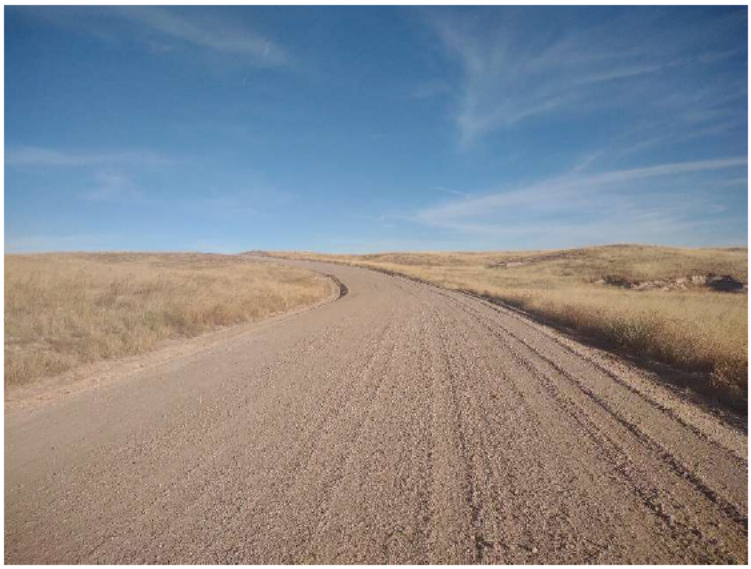
Figure 7-4 (Tab DD-6)
Ditches – Standard 8.5" x 11" Copy Paper
6 December 2023

The term for "washboarding" from the US DOT FHA is "corrugation," and it is common on gravel roads and caused by lack of moisture, hard acceleration, aggressive braking, and poor-quality gravel (Tab BB-22). Severe washboarding can lead to the loss of vehicle control (Tab BB-22).

Figure 7-5 (Tab BB-22)
Example of Washboarding from US DOT FHA

Figure 7-6 (Tab Z-2)
Mishap Site at 1459, 18 September 2023

On 16 September 2023, the roads were dry with calm winds and no precipitation. (Tabs F-6 and V-22.6). There was a minimal amount of precipitation (0.15 inches) on 15 September 2023 (Tab W-2). From 10 to 15 September 2023, there was light rain and mist observed at MS (Tab W-7 to W-12).



. Figure 7-5 (Tab DD-9)
CR 112 West to East - Uphill View
6 December 2023

There is no indication MVO was maneuvering to avoid a hazard, such as wildlife or debris, at the time of the mishap (Tab EE-190).

e. Restrictions, Warnings, and Procedures

A safety briefing conducted on the day of the mishap conveyed road conditions were green with clear weather (Tabs F-6 and V-23.11). The AFGSC speed limit for gravel roads is 25 MPH, regardless of vehicle type, with slower speeds as indicated for weather and obscurations to visibility (Tabs BB-26 to BB-28 and EE-12). While in motion in a UA-HMMWV, individuals must wear securely fastened helmets and seatbelts (Tab BB-14). When approaching the mishap site from the east, there is a 40 MPH recommended speed limit posted (Tab DD-11).

8. PERSONNEL QUALIFICATIONS

IAW the Qualification Training Package (QTP) for HMMWVs, the recommended instructional and hands on training time is 11 hours broken down into the following training:

Training Activity	Training Time
Trainee's Preparation	2 Hours
Instructor's Lecture and Demonstration	2 Hours
Trainee's Personal Experience (to build confidence and proficiency) • Perform Operator Maintenance • Operate the Vehicle	5 Hours
Trainee's Performance Evaluation	2 Hours

(Tab BB-34).

The QTP notes that the times referenced are recommended times and training may be more or less depending on how quickly a trainee learns new tasks (Tab BB-34). There is no local guidance for 90 SFG outlining a Security Forces member will complete a specific number of hours in a UA-HMMWV prior to being issued an AF Form 2293, *U.S. Air Force Motor Vehicle Operator Identification Card*, government license (GOV license) (Tab V-3.8 to V-3.10).

a. Relevant Training

(1) MVO.

At the time of the mishap, MVO possessed a valid state driver's license (Tab G-2 and EE-182). After being assigned to FEW, MVO received Phase-I training, which included on the fifth day, 21 October 2022, a single day of training that included briefings on Driver's Safety, Vehicle Dynamics and Accident Avoidance, High Mobility Multipurpose Wheeled Vehicle (HMMWV), Gravel Training, and Skid Car Training (Tab G-3). On 21 October 2022, MVO signed AF Form 171, *Request for Driver Training and Addition to U.S. Government Driver's License*, and was issued his GOV license (Tab G-2 to G-3 and G-7). MVO was authorized to operate three HMMWV models, but not the MV, which was an UA-HMMWV (Tab G-8). The models he was authorized to operate were: (1) L532 – TRK, UTIL HMMWV XM1116, (2) L540 – HMMWV, M1151A1, and (3) L542 – HMMWV, M1165A1 (Tab G-8). On 21 October 2022, MVO signed an acknowledgement of "Driver and Co-driver Responsibilities" (Tab G-4).

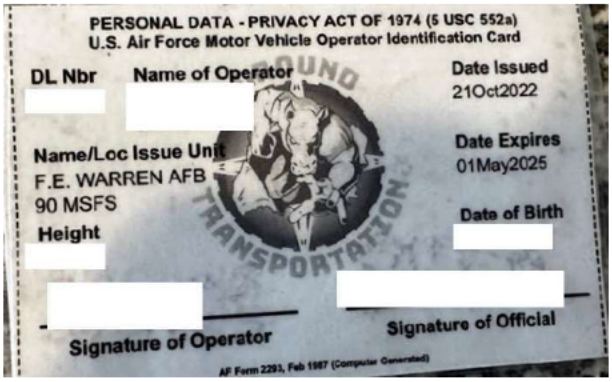


Figure 8-1 (Tab G-7)
MVO GOV License

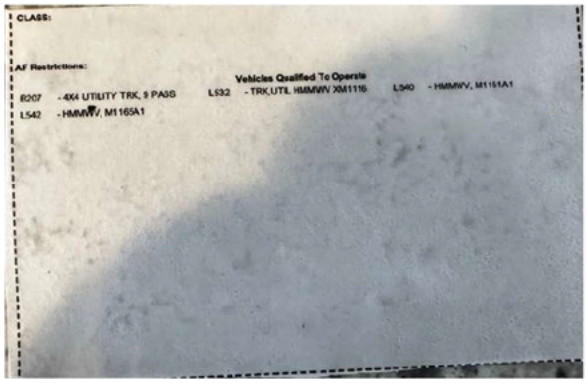


Figure 8-2 (Tab G-8)
MVO GOV License

None of the formal training completed by MVO prior to him being issued his GOV license included time driving UA-HMMWV (Tab V-3.8 and V-3.24). Per AFGSCI 91-210, paragraph 3.1.1.1, all personnel operating UA-HMMWVs must receive hands-on training by a certified instructor (Tab BB-5).

MVO was confident in the HMMWV training he was provided and had driven a UA-HMMWV thirty-three (33) times prior to the mishap (Tabs R-22 and EE-5). On gravel roads, MVO was taught not to operate a government vehicle faster than 25 MPH (Tabs R-22, V-3.7, and EE-131).

MVO was not trained using a UA-HMMWV during Skid Car training or gravel road training (Tabs V-3.9 and V-3.16 to V-3.17).

(2) MPAX.

After being assigned to FEW, MPAX did not complete any HMMWV or UA-HMMWV training during her Phase I training (Tab G-30). On 28 August 2023, after being assigned to the MST, MPAX completed the following training: Vehicle Crew Concept, HMMWV (which includes training on how to wear seatbelts and helmets and secure doors), Route Familiarization, and Driver's Safety Briefing (Tab T-26 to T-27). She did not complete Vehicle Dynamics and Accident Avoidance, Fatigue training, H.E.A.T. training, Gravel training, nor Skid Car training for the HMMWV's use and operations (Tab G-30). Due to incomplete training, MPAX did not possess a GOV license for any HMMWV (Tabs T-25 and Tab BB-6).

A right seat front passenger in a UA-HMMWV is also known as a "co-driver" or "safety observer" (Tabs V-5.4 and BB-4). Drivers and co-drivers are responsible for handling communications, assisting the driver in planning routes prior to departure, navigating and following the route, observing driver actions, providing a second set of eyes for potential hazards, and continuously scanning the route folder (Tabs G-4 and V-5.4). The evidence does not contain a signed Driver and Co-driver Responsibilities checklist from MPAX (Tab DD-86).

IAW AFGSCI 91-210, the front right passenger seat is reserved for the safety observer only (Tab BB-4). To be a safety observer, a member must complete Driver's Safety, Vehicle Orientation and Operation, Vehicle Crew Concepts (VCC), Skid Vehicle, Gravel Road, and Route Familiarization training (Tab BB-5 to BB-6). IAW AFGSCI 91-210, MPAX was not qualified to be the front right seat passenger in the missile field complex, because she had not completed her vehicle training (Tabs G-30, T-25, and BB-5 to BB-6). The evidence contains no documented waiver for MPAX to be the co-driver in a HMMWV in the missile field complex (Tabs BB-6 and DD-86).

b. Training Currency

(1) MVO.

MVO's GOV license was valid through 1 May 2025 (Tab G-7). His annual recurring training was not due until 21 October 2023 (Tabs G-7 and BB-5). MVO received a vehicle and ground safety briefing prior to arming up and assuming shift (Tabs V-12.3 to V-12.4, AA-4 to AA-6, and BB-8 to BB-9). The vehicle briefing identified the maximum rate of travel for HMMWVs on gravel roads was 25 MPH and 55 MPH on paved roads (Tab AA-6). WIT5 conducted the briefing with MVO, MPAX, OP1, and PAX1 in attendance the morning of the mishap (Tab V-12.4).

(2) MPAX.

MPAX did not possess a valid GOV license (Tab T-25). MPAX was present at the vehicle and ground safety briefing on the morning of the mishap (Tab V-12.4).

9. MEDICAL FACTORS

a. Qualifications

MVO and MPAX were medically qualified for duty (Tab X-3).

b. Health

MVO and MPAX had no indications of active illness, injury, or other abnormal medical symptoms at the time of the mishap (Tab X-3).

c. Injuries and Pathology

MVO received minor injuries from the mishap and was transported back to FEW by WIT16 (Tabs V-12.19 and X-4). He received follow-up treatment at the medical treatment facility on FEW for minor hand injuries (Tabs R-20 and X-4).

MPAX suffered fatal injuries during the accident and was pronounced deceased at the MS at 1918 hours (Tab X-3).

d. Toxicology

Toxicology for MVO was drawn in the Flight Medicine Clinic at FEW on 21 September 2023 and at the time of autopsy for MPAX (Tab X-4). Both were negative (Tab X-4).

e. Lifestyle

There is no evidence that lifestyle factors were a factor in the accident (Tab X-3).

f. Crew Rest and Crew Duty Time

MVO and MPAX did not exceed the 12-hour duty day on the day before the mishap, 15 September 2023 (Tabs G-37 and X-3). Crew rest appeared to be normal, and therefore, was not a factor (Tab X-3). On 16 September 2023, an extension to the 12-hour duty day was being processed, but had not been granted, at the time of the mishap (Tab V-4.6 to V-4.8). While the MC had not violated their 12-hour duty day restriction at the time of the mishap, they would need to either get a waiver, stop before they could get back to FEW and remain overnight in the missile fields, or be picked up by relief drivers, to comply (Tab V-2.9 and V-4.6). The MC was unaware whether there would be relief drivers available to bring them back from the missile fields (Tabs V-12.6 and Tab V-2.21). The travel time from Oscar-7 to FEW was longer than the time they had remaining in their duty day (Tab V-4.6).

10. OPERATIONS AND SUPERVISION

a. Operations

MVO and MPAX were both assigned to 90 MSFS, specifically the MST flight (Tabs V-6.24, V-12.3 to V-12.4, and T-23). The 90 MSFS is the largest Security Forces squadron in 20 AF

with a high operations tempo (Tab V-17.15 and Tab V-2.18). 90 MSFS guard utilization rates are monitored and recorded for tracking purposes (Tabs V-17.11 and EE-20). For example, standby teams are tracked on how many times they are activated, among other things (Tab V-17.8 and V-17.11). The operations tempo has been negatively impacted by personnel on leave, Temporary Duty (TDY), illness, duty limiting conditions limits, and Airmen labeled as Do Not Arm (DNA, also known as Temporarily Arming Withdrawal) (Tabs V-6.21 and V-17.9 to V-17.10).

b. Supervision

Assigned to the 90 MSOS, WIT8 provided oversight for unit GOVs through mission support and maintenance (Tab V-10.2 and V-10.5 to V-10.7).

WIT18, 90 MSFS/CC, is ultimately responsible for all 90 MSFS personnel, to include maintenance and security and to oversee fielded support (Tab V-17.2). At the time of the mishap, the following personnel were responsible for oversight of missions and immediate supervision of MC:

(1) WIT10, the Operations Officer, and WIT16, the Operations Superintendent, have oversight of operations and maintain training and development of their forces to be prepared for deployment to the missile complex (Tabs V-4.1 to V-4.3 and V-21.2).

(2) WIT6, the MST Flight Commander at the time of the mishap, and WIT12, the Section Chief, were responsible for leading and managing the MST flight of 120 personnel that provide 24-hour security for maintenance operations in the missile complex, which covers 9,600 square miles (Tabs V-6.3 and V-20.3).

(3) WIT5, the Flight Sergeant, and WIT13, the MST Battle Captain at the time of the mishap, were also responsible for monitoring the MC's 12-hr duty day to ensure it was not exceeded (Tabs V-12.2 to V-12.3 and V-2.9).

(4) WIT5's responsibilities, included but were not limited to, briefing the MC prior to the mission and ensuring they were all properly equipped with proper armament, PPE, vehicles and adequate knowledge to execute their mission (Tab V-12.4 to V-12.6).

(5) WIT3 and WIT4 are Security Forces Trainers assigned to 90 SFG (Tabs V-3.2 and V-5.3).

(a) WIT3, the Vehicle Training Officer, was responsible for every person remaining current on annual training requirements (Tab V-5.3). An example of the training includes Nuclear Surety and Driver Safety as outlined in the Master Training Plan (Tab V-5.3). Primary training and initial certification for HMMWV operators is not one of WIT3's responsibility (Tab V-5.3).

(b) WIT4, the Phase I Training Program Manager, was responsible for training all new incoming Security Forces personnel assigned to 90 SFG (Tab V-3.3). WIT4 follows AFGSCI 91-210, which outlines specific vehicle training in order to operate a vehicle (Tab V-3.4). Vehicle training obtained in Phase I has seven Power Point lessons, followed by completing a risk assessment worksheet and concluding training with skid and gravel training (Tab V-3.4). In the

hands-on skid and gravel training, a security forces member spends roughly 10 to 15 minutes in each (Tab V-3.6).

c. 12-Hour Duty Day – Day of Mishap

IAW 20 AF Instruction (20 AFI) 31-133, a 12-hour duty day standard applies to all personnel working with nuclear weapons, the Minuteman III weapon system, or critical nuclear weapons support infrastructure (Tab BB-32). Personnel are required to have a minimum of 12 non-duty hours providing an opportunity for 8 hours of uninterrupted rest prior to the beginning of a duty period (Tab BB-32). The maximum duty period, the 12-hour duty day, may be waived by the responsible group commander, but must be done on a case-by-case basis (Tab BB-32).

WIT13 determined at 1806L that MC would violate their 12-hour duty day by 27 minutes if they proceeded to drive back to FEW from Oscar-7, because the approved route drive time was 112 minutes (Tabs V-2.9 to V-2.10 and EE-10). At 1806L, WIT13 sent a message by WhatsApp to WIT12 requesting a 1-hour extension to MC's duty day and referencing the 112-minute drive time (Tabs V-2.9-10 and DD-29). WIT12 called WIT10 approximately 5 minutes before the mishap to request an extension to the 12-hour duty day for MC (Tab V-4.4 to V-4.5). At 1812L, WIT12 sent a WhatsApp message to WIT13 telling him the MC was "Good to go" in response to his request for an extension (Tabs V-2.9 to V-2.10 and DD-29). WIT10 was in the process of sending the request to the 90 MSFS/CC, WIT18, when he was notified of the mishap, and 90 MSFS/CC did not receive the extension request on 16 September 2023 (Tabs V-4.4 to V-4.5 and V-17.4).

11. GOVERNING DIRECTIVES AND PUBLICATIONS

a. Publicly Available Directives and Publications Relevant to the Mishap

(1) AFI 51-307, *Aerospace and Ground Accident Investigations*, 18 March 2019, incorporating administrative changes as of 3 February 2023.
(2) Department of Air Force Instruction (DAFI) 91-204, *Safety Investigation and Reports*, 10 March 2021.
(3) DAFI 36-2903, *Dress and Personal Appearance of United States Air Force and United States Space Force Personnel,* 7 February 2020, Incorporating Change 4, 12 April 2022, Certified Current 12 April 2022,
(4) DAFI 91-207, *The Traffic Safety Program*, 26 July 2019, Incorporating Change 1, 22 May 2023.
(5) AFI 24-302, *Vehicle Management*, 21 February 2020,
(6) Air For Manual (AFMAN) 24-306, *Operation of Air Force Government Motor Vehicles,* 30 July 2020
(7) AFGSCI 91-210, *Vehicle Safety for Missile Field Operations*, 2 March 2018, Incorporating Change 1, 1 May 2022.
(8) 90 Mission Wing Instruction (MWI) 24-302, *Vehicle Control Program*, 25 August 2023.

NOTICE: All directives and publications listed above are available digitally on the Air Force Departmental Publishing Office website at: https://www.e-publishing.af.mil/.

b. Other Directives and Publications

(1) 90 SFG Instruction (SFGI) 31-11-IC-1, *Operations and Training*, 18 April 2023
(2) US DOT FHA, *Gravel Roads Construction & Maintenance Guide*, August 2015
(3) 20 AFI 31-133, *Intercontinental Ballistic Missile (ICBM) Systems Security*, 13 May 2021
(4) Department of the Air Force, QTP 24-3-L350, High Mobility Multipurpose Wheeled Vehicle (HMMWV), Vehicle Management Codes: L530-L535, L537, L540-L545, Qualification Training Package, 14 January 2019.
(5) National Highway Traffic Safety Administration, *Speed-Measuring Device Operator Training -Participant Manual*, undated.
(6) Department of the Air Force, Career Field Education and Training Plan 3P0X1/A/B, Parts I and II, Air Force Specialty Codes 3P0X/ A/B, Base Defense, *Security Forces Specialty, Military Working Dog Handler Specialty, Combat Arms Specialty*, 17 March 2023.
(7) Air Force Technical Order (TO) 36A12-1A-3052-1, *Technical Manual – Unit, Direct Support, and General Maintenance Support*, December 1997
(8) Air Force TO 36A12-1A-3061-1, Operator's Manual, October 1997

c. Known or Suspected Deviations from Directives or Publications

All known or suspected deviations previously discussed.

WEBER.MARK.ALAN Digitally signed by WEBER.MARK.ALAN Date: 2025.06.04

4 June 2025

MARK A. WEBER, Major General, USAF
Ground Accident Investigation Board
President

INDEX OF TABS