DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

ACTION OF THE CONVENING AUTHORITY

SEP 1 5 2025

The report of the ground accident investigation board, conducted under the provisions of AFI 51-307, that investigated the 21 October 2023 mishap at mile marker 59 on US Highway 89, involving a HMMWV with registration number 12L00750, assigned to the 341st Missile Security Forces Squadron, Malmstrom Air Force Base, Montana, substantially complies with the applicable regulatory and statutory guidance and on that basis is approved.

[redacted]

THOMAS A. BUSSIERE
General, USAF
Commander

UNITED STATES AIR FORCE
GROUND ACCIDENT INVESTIGATION BOARD REPORT

UA-HMMWV, L/P 12L00750

341st Missile Security Forces Squadron
341st Missile Wing
Malmstrom Air Force Base, Montana

TYPE OF ACCIDENT: Motor Vehicle

LOCATION: US Highway 89, Mile Marker 59

DATE OF ACCIDENT: 21 October 2023

BOARD PRESIDENT: Brigadier General Buel J. Dickson, ANG

Conducted IAW Air Force Instruction 51-307

EXECUTIVE SUMMARY
UNITED STATES AIR FORCE
GROUND ACCIDENT INVESTIGATION

UA-HMMWV, L/P 12L00750
US HIGHWAY 89, MILE MARKER 59
21 OCTOBER 2023

On 21 October 2023, at 1828 hours local time (L), the Mishap Vehicle Operator (MVO) of an Up-Armored High Mobility Multipurpose Wheeled Vehicle (UA-HMMWV), license plate (L/P) 12L00750, traveling north near mile marker 59 on US Highway 89 (Hwy 89) from the Alpha-06 Launch Facility (Alpha-06) to Malmstrom Air Force Base (MAFB), Montana (MT) fell asleep while driving the Mishap Vehicle (MV) resulting in a rollover in which MVO sustained fatal injuries and the front seat Mishap Passenger (MPAX) sustained serious injuries. MVO and MPAX were performing Maintenance Support Flight (MSF) duties and assigned to the 341st Missile Security Forces Squadron (341 MSFS), 341st Security Forces Group (341 SFG), at MAFB.

On 21 October 2023, MVO and MPAX were scheduled to provide security at Alpha-06 for maintenance personnel on site as the Venom 33 external site security team. Venom 33, along with Operator One (OP1) and Passenger Two (PAX2), the Venom 32 internal site escort team, departed MAFB at approximately 1215L hours and arrived at Alpha-06 at 1308L. Upon arrival at Alpha-06, Venom 33 took control of the MV from the previous external site security team. At approximately 1753L, both teams were cleared to leave Alpha-06. After storing their gear, Venom 32 left Alpha-06 as the lead vehicle and Venom 33 followed.

At approximately 1828L, while traveling north-bound on Hwy 89, MPAX noticed MVO asleep at the wheel when the right side of the MV went off the right side of the paved roadway. MPAX got MVO's attention and MVO jerked the steering wheel to the left and swerved into the left lane. MVO then turned the steering wheel back to the right. Due to the MV being oversteered to the right, the MV started skidding forward and turning in a clockwise direction. The MV departed the left-hand side of the roadway before tripping and overturning multiple times along the roadway's edge. The MV came to rest at the Mishap Site on the left-hand side of the roadway on its wheels with the front end of the MV facing Hwy 89.

On 27 October 2023, MVO passed away from injuries sustained during the mishap without regaining consciousness. As a result of injuries sustained in the mishap, MPAX's lower left leg was amputated below the knee.

SUMMARY OF FACTS

UA-HMMWV Mishap, L/P 12L00750
US Highway 89, Mile Marker 59
21 OCTOBER 2023

TABLE OF CONTENTS

ACRONYMS AND ABBREVIATIONS

/CC	Commander
2d Lt	Second Lieutenant
20 AF	20th Air Force
341 LRS	341st Logistics Readiness Squadron
341 MSFS	341st Missile Security Forces Squadron
341 MSOS	341 Missile Security Operations Squadron
341 MW	341st Missile Wing
341 SFG	341st Security Forces Group
341 SFS	341st Security Forces Squadron
741 MSFS	741st Missile Security Forces Squadron
841 MSFS	841st Missile Security Forces Squadron
AF	Air Force
AFB	Air Force Base
AFGSC	Air Force Global Strike Command
AFGSCI	Air Force Global Strike Command Instruction
AFI	Air Force Instruction
Alpha-06	Alpha-06 Launch Facility
BAMC	Brooke Army Medical Center
BG	Background Witness
BPRA	Baseline Personal Risk Assessment
CC	Commander
DO	Director of Operations
DPAS	Defense Property Accountability System
DRAW	Driving Risk Assessment Worksheet
Flt/CC	Flight Commander
FR	First Responder
GPK	Gunner protection kit
GSU	Geographically Separated Unit
Hwy 89	US Highway 89
IAW	In Accordance With
ICBM	Intercontinental Ballistic Missile
L	Local time
lbs	Pounds
L/P	License Plate
LF	Launch Facility
LRS	Logistic Readiness Squadron
Lt Col	Lieutenant Colonel
MAF	Missile Alert Facility
MAFB	Malmstrom Air Force Base
Maj	Major
MAJCOM	Major Command
MEEDs	Missile Electronic Encryption Device
MPAX	Mishap Passenger
MPH	Miles Per Hour
MS	Mishap Site
MSC	Missile Security Control
MSF	Maintenance Support Flight
MSgt	Master Sergeant
MSO	Missile Security Operator
MT	Montana
MV	Mishap Vehicle
MVO	Mishap Vehicle Operator
MWI	Missile Wing Instruction
NAF	Numbered Air Force
NC3	Nuclear Command, Control and Communications
NCO	Non-commissioned officer
NCOIC	Non-Commissioned In Charge
OP1	Operator One
OTI	one time inspection
PAX2	Passenger Two
PCM	Primary care manager
PHA	Physical Health Assessment
SAR	Search and Rescue
SM	Samaritan

TCTO	Time Compliance Technical Orders
UA-HMMWV	Up-Armored High Mobility Multipurpose Wheeled Vehicle
UOT	Unit Orientation Training
VCC	Vehicle Crew Concept
VMS	Vehicle Maintenance Shop
VRC	Vehicle Readiness Center

SUMMARY OF FACTS

1. AUTHORITY AND PURPOSE

a. Authority

On 5 December 2023, General Thomas A. Bussiere, Commander (CC) Air Force Global Strike (AFGSC), appointed Brigadier General Buel J. Dickson to conduct a ground accident investigation of the 21 October 2023 mishap of an Up-Armored High Mobility Multipurpose Wheeled Vehicle (UA-HMMWV), L/P 12L00750, that occurred outside of Malmstrom Air Force Base (MAFB), Montana (MT) (Tab Y-4 to Y-6). The board members conducted the ground accident investigation at MAFB, MT from 11 January 2024 through 9 February 2024 in accordance with (IAW) Air Force Instruction (AFI) 51-307, *Aerospace and Ground Accident Investigations*, dated 18 March 2019 (Tabs Y-2 to Y-3 and DD-75). General Bussiere also appointed the following members: Lieutenant Colonel (Lt Col) Medical Member, Major (Maj) Legal Advisor, Staff Sergeant (SSgt) Recorder, Master Sergeant (MSgt) Security Forces Member, MSgt Maintenance Member (Tab Y-2 to Y-4).

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 21 October 2023, at approximately 1828L, while traveling north-bound on Hwy 89, Mishap Passenger (MPAX) noticed Mishap Vehicle Operator (MVO) asleep at the wheel when the right side of the Mishap Vehicle (MV) went off the right side of the paved roadway (Tabs V-1.2, V-1.6, EE-156 to EE-159, EE-181, and FF-5 to FF-6). MPAX got MVO's attention and MVO jerked steering the wheel to the left and swerved into the left lane (Tab EE-157). MVO then swerved the vehicle back to the right (Tab EE-157). Due to the MV being oversteered to the right, the MV started skidding forward and turning in a clockwise direction (Tabs EE-157 and FF-6). The MV departed the left-hand side of the roadway before tripping and overturning multiple times along the roadway's edge (Tab FF-6). The MV came to rest at the MS on the left-hand side of the roadway on its wheels with the front end of the MV facing Hwy 89 (Tab FF-6 to FF-8).

On 27 October 2023, MVO passed away from injuries sustained during the mishap without regaining consciousness (Tab X-3). As a result of injuries sustained in the mishap, MPAX's lower left leg was amputated (Tab X-4).

3. BACKGROUND

MVO and MPAX were assigned to the 341 MSFS (Tab V-5.2 to V-5.3 and V-11.2).

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-2). 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-2).

b. 20th Air Force (20 AF)

20 AF is a Numbered Air Force (NAF) with headquarters at F.E. Warren AFB, Wyoming, in the Cheyenne community (Tab CC-4). 20 AF is responsible for the Nation's three ICBM wings, one nuclear operations support wing and one geographically separated unit (GSU) (Tab CC-4). As the missile NAF for AFGSC, 20 AF is responsible for operating, maintaining, securing and supporting the Air Force's (AF's) ICBM force (Tab CC-4). 20 AF provides on-alert, combat ready ICBMs to the President (Tab CC-4).

c. 341st Missile Wing (341 MW)

341 MW is at MAFB and activated 15 September 1942, with the original designation as the 341st Bombardment Group (Tab CC-6 to CC-7). The wing's first Minuteman I missiles became alert-ready on 27 October 1962 during the Cuban Missile Crisis (Tab CC-7). Today, the wing operates, maintains, and secures Minuteman III missiles, providing strategic deterrence for the nation as America's "Ace in the Hole" (Tab CC-8).

d. 341 SFG

341 SFG is the largest security forces group in the Air Force and responsible for securing and defending 341 MW's combat capability (Tab CC-7). It ensures the most stringent security forces' support to the larget ICBM complex in the world through effective management of all war-fighting and peacetime security taskings assigned to 341 MW (Tab CC-7). It is composed of five squadrons: 341st Security Forces Squadron (341 SFS), 341st Missile Security Forces Squadron (341 MSFS), 741st Missile Security Forces Squadron (741 MSFS), 841st Missile Security Forces Squadron (841 MSFS), and 341st Missile Security Operations Squadron (341 MSOS) (Tab CC-7).

e. 341 MSFS

Along with two other squadrons, 341 MSFS organizes, trains, and equips combat-ready personnel to secure the base's ICBMs, missile alert facilities (MAFs), and launch facilities (LFs) deployed throughout the 13,800-square mile missile complex on a twenty-four hour, seven days a week, year-round basis (Tab CC-9). The squadron is also responsible for ensuring the safety and security of maintenance teams deployed to the missile complex, ensuring the ground-based prong of the nuclear triad is always ready to launch (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 FF-3 to FF-4). 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 FF-3). 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 FF-3). The M1165A1B3 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 FF-3 to FF-4). 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 FF-3 to FF-4). The UA-HMMWV's armor configuration allows for a maximum payload of 2,230 pounds (lbs) (Tab FF-4).

4. SEQUENCE OF EVENTS

a. Summary of Accident

On 21 October 2023, MVO, MPAX, OP1, and PAX2 reported a few minutes early to 341 MSFS in building 500 on MAFB with a show time of 1115L (Tabs AA-6 and EE-141). MVO and MPAX were assigned to operate as the Venom 33 team providing offsite security at Alpha-06 (Tabs AA-6 and EE-156). OP1 and PAX2 were assigned to operate as the Venom 32 team providing on-site security at Alpha-06 (Tabs AA-6 and EE-74). Both teams armed for the day and obtained their equipment once they arrived for duty (Tab EE-141). The teams then met at the MAFB Base Exchange at approximately 1200L and left the Base Exchange just after 1215L (Tab EE-141). As the teams were departing the Base Exchange, PAX2 assisted MVO in releasing the parking brake on the truck he was driving to Alpha-06 (Tab EE-82).

The teams traveled to Alpha-06 in two soft-top (normal government owned trucks) to relieve teams already at Alpha-06 providing security for maintenance operations (Tabs V-4.3 to V-4.4 and Tab AA-17). The scheduled arrival time at Alpha-06 for Venom 32 and 33 was 1315L and they arrived at approximately 1308L (Tabs AA-6 and EE-141). Venom 32 processed onto Alpha-06 at 1317L and relieved the previous team (Tab AA-16). Venom 33, which consisted of MVO and MPAX

relieved Venom 31, which consisted of Background Witness (BG) 1 and BG2, who had been providing external site security at Alpha-06 since approximately 0915L (Tab AA-6 and AA-15 to AA-16). MVO and MPAX spoke briefly with Venom 31 members and assisted in swapping equipment from the soft-top truck to the MV (Tab EE-92 and EE-156). Venom 33 took control of the MV from BG1 and BG2 at changeover (Tab EE-92 to EE-93).

From approximately 1315L until approximately 1730L, Venom 32 and Venom 33 performed site security duties at Alpha-06 without incident (Tab AA-16 to AA-17 and EE-141). At 1734L, all teams were off-site at Alpha-06 awaiting site resets before departing (Tab AA-18). At 1753L, site resets were received, the teams received a safety brief, and the teams were advised to accomplish the pre-departure checklist (Tab AA-18).

After site resets were received, the teams took down the heavy guns, one M249 and one M240B, mounted in the turrets on top of the UA-HMMWVs (Tab V-8.6 and V-16. 2). MVO had a difficult time removing the M240B from the MV's turret due to a stuck pin (Tab EE-81). PAX2 strapped the ammunition can for Venom 33's M240B in the back seat of the MV using the seat belt, which is contrary to the 341 SFG Missile Security Operator (MSO) Vehicle Load Plan (Load Plan) for a UA-HMMWV in a posting or recovery mission (Tabs BB-70 to BB-72 and EE-82). The Load Plan states ammunition is loaded in the rear cargo area, closest to the cab, with tie-down straps (ratchet straps) inserted through the handles and secured to eyelets (Tab BB-71 to BB-83). The M240B was placed in the backseat of the MV, which is contrary to the Load Plan, and no one could confirm whether it was strapped down (Tabs V-1.3, BB-70 to BB-72, and EE-158). The Load Plan states the M240B should be stored in the rear cargo area, closest to the cab, with tie down straps inserted through the handles and secured to the eyelets (Tab BB-71). MPAX put bags in the back cargo area of the MV where the spare tire was stored consistent with the Load Plan (Tabs V-1.3 and BB-70 to BB-72). MPAX's plate carrier was in the back seat, which is contrary to the Load Plan that states it should be in the in the rear cargo area (Tabs V-1.2 and BB-70 to BB-72). OP1 did not see any tie-down straps after the mishap, but BG2 stated there were four straps and a bed net with the MV at change over (Tab EE-95 and EE-147).

MVO drove the MV as it departed Alpha-06 to return to MAFB (Tab EE-158 to EE-159). MPAX was assigned as the front right passenger, which is known as the 'safety observer' (Tabs AA-10, BB-57, BB-80, and EE-159). MVO had the required training IAW AFGSC Instruction (AFGSCI) 91-210 to be the operator of a UA-HMMWV in the missile fields (Tabs G-3 and BB-58 to BB-60). The front right passenger seat is reserved for the safety observer only (Tab BB-57). For mission related dispatches, no operator will operate or be a front seat passenger in the missile field complex until they complete Driver's Safety, Vehicle Orientation and Operation, Vehicle Crew Concept (VCC), Skid Vehicle, Gravel Road, and Route Familiarization training (Tab BB-59 to BB-60). MPAX had not completed Skid Vehicle training and was not qualified IAW AFGSCI 91-210 to be a front right seat passenger in the missile field (Tabs G-4 and BB-59 to BB-60).

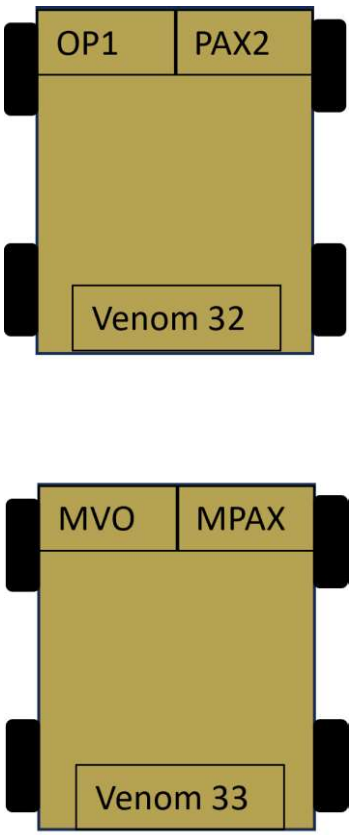

Figure 4-1 (Tabs AA-17, EE-74, Tab EE-142, and Tab EE-159)
Diagram of Team Positions

Venom 32 left Alpha-06 as Venom 33 shut the cattle gate leading to Alpha-06 (Tabs AA-17 and EE-142). OP1 relayed that Venom 32 pulled off Hwy 89 while on the route from Alpha-06 to MAFB to wait for Venom 33 to catch up (Tabs AA-17, EE-142, and FF-8 to FF-9). As MVO drove, MV was followed by another vehicle containing two passengers, Samaritan (SM) 1 and SM2 (Tab EE-177 to EE-181). SM2 relayed he was following the MV closely up through a canyon, northbound on Hwy 89, matching MV's speed, traveling approximately 35 miles per hour (MPH), and the MV met up with an UA-HMMWV that pulled out in front as the MV approached (Tabs EE-181 and FF-8 to FF-9). SM1 and SM2 relayed that the first UA-HMMWV was positioned on the right, north of the turn-off to Highway 427 (Tab EE-181 to EE-182). Soon after, SM1 and SM2 stopped their vehicle for approximately two minutes to work on something then continued on the same route the UA-HMMWVs had taken and came upon the wrecked MV at 1828L (Tab EE-180 to EE-184).

Venom 32 lost sight of the MV on the route to MAFB (Tab EE-142). Venom 32 reached the top of a hill near Belt, MT before stopping to wait for Venom 33 (Tab V-4.9). To reach their stopping point, Venom 32 traveled approximately 15.4 miles further than the MS (Tabs V-4.9 and FF-9). Traveling at 55 MPH, the top allowed speed for a UA-HMMWV, it would have taken Venom 32 approximately 17 minutes to reach their stopping point from the MS (Tabs BB-103, BB-93, and FF-9). The MS occurred near mile marker 59 at approximately latitude 47° 11' 31.5162" and longitude -110° 55' 12.7884" on Hwy 89 (Tab FF-5 and FF-9).

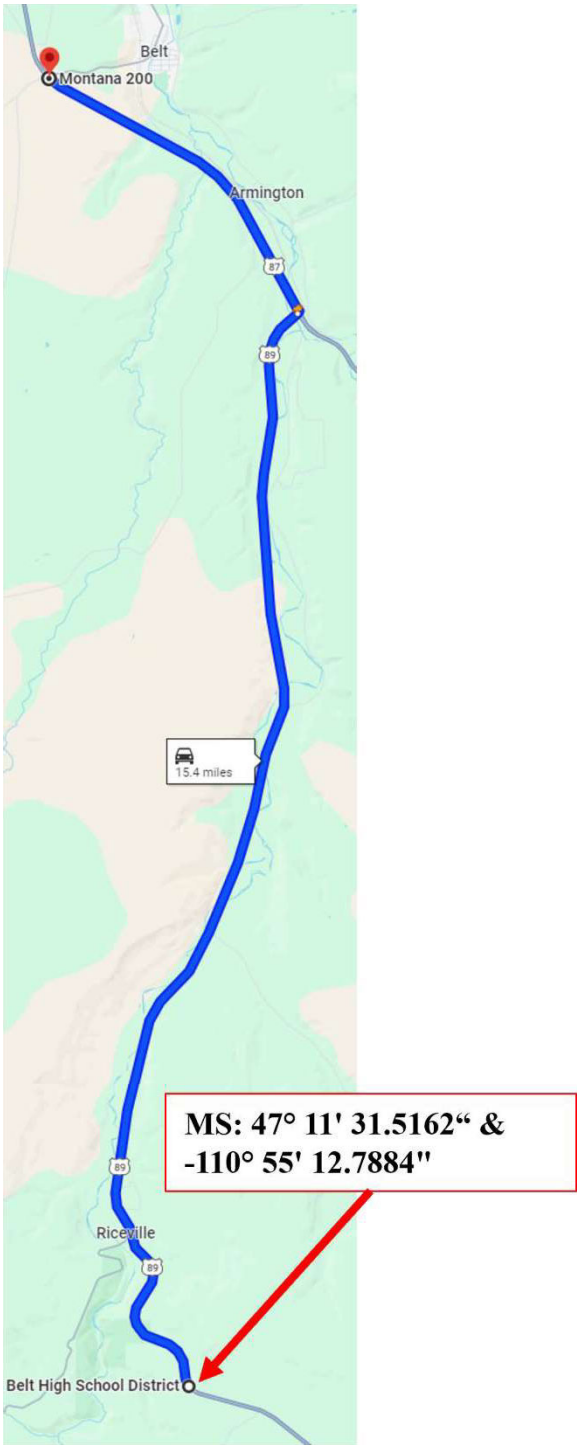

Figure 4-2 (Tab FF-9)
Mishap Site to Venom 32 Location

Approaching the MS, MPAX was looking out the window of the MV when he noticed that the dust cover on his M4 rifle looked open (Tab EE-156 to EE-158). As MPAX was looking down at his weapon to fix it, the MV started to shake as if they were on a gravel road (Tab EE-157 to EE-158). MPAX realized the MV had veered off the highway and the right side of the vehicle was off the right side of Hwy 89 (Tab EE-156 to EE-158). MPAX looked over at MVO and noticed that

his head was down and told him that they were no longer on the road (Tab EE-157). MPAX was initially unsure whether MVO was asleep or looking at the fuel gauge; however, he clarified that he believes MVO was asleep because of the way he jerked his body when MPAX called out to him (Tabs V-1.2, V-1.6, and EE-157). After MPAX called out, MVO jerked the steering wheel and the MV swerved into the left lane (Tab EE-157). MVO then swerved the vehicle back to the right (Tab EE-157). Due to being oversteered to the right, the MV started sliding forward in a clockwise direction, which left three separate yaw marks as it left the roadway (Tab EE-157 and FF-6). It departed the left-hand side of the roadway before tripping and overturning multiple times along the roadway's edge (Tab FF-6). The MV came to rest on the left side of the roadway on its wheels with the front end of the MV facing the roadway (Tab FF-8).

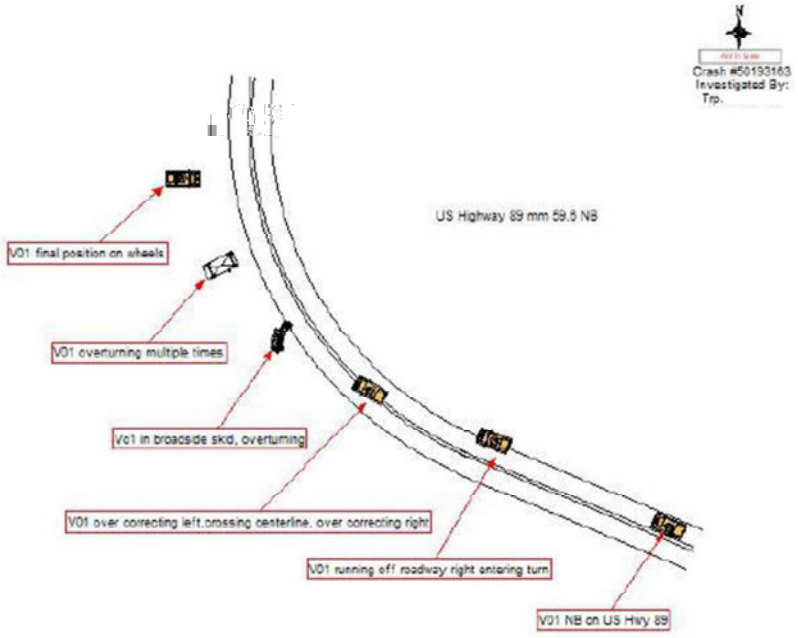

Figure 4-3 (Tab FF-8)
Diagram of Crash

Both the rear left and right passenger doors were not combat locked, a security measure that locks the doors more securely, and opened during the rollover (Tabs V-1.8 and Z-3 to Z-5). The force of their opening and the rollover broke the B-Pillar welds and ejected the doors from the MV's assembly (Tabs Z-3 to Z-4, DD-19 to DD-20, and DD-73). Both front shoulder and lap seatbelts that were attached to the B-Pillars ripped out of the MV during the rollover sequence (Tab DD-73). The front lap belts were still clasped in the center of the vehicle after the rollover, but the outer sides of the lap belts were attached to the B-Pillars in the MV that had sheared off (Tabs Z-3 to Z-4, and DD-73).

At the time of the rollover, MPAX was not wearing his helmet but tucked his chin and closed his eyes (Tabs Z-4, EE-157, and EE-220). When the MV came to rest, MPAX exited the vehicle and

collapsed due to his injuries (Tab EE-157). MPAX remembers trying to crawl to the road but does not have any recollection of other motorists stopping or emergency services at the scene (Tab EE-157).

Figure 4-4 (Tab Z-4)
Driver Side Lapbelt – unattached, center unclasped to remove MVO

Figure 4-5 (Tab Z-3)
Passenger Side Lapbelt - unattached

b. Search and Rescue (SAR)

At 1828L, SM1 and SM2 caught up to the MV immediately after the accident and SM2 dialed 911 (Tab EE-180 to EE-181). At 1829L, an Apple iPhone crash detection notification was sent to Cascade County Sheriff's Office dispatch (Tab FF-10). At 1831L, medical services were dispatched to the MS (Tab FF-7). At 1851L, the first medical services arrived on the scene (Tab FF-7).

SM1 was the first person to reach the MV, while SM2 dialed 911, after the accident, and stated MVO was in the driver seat and MPAX was on his hands and knees 5-10 feet outside the MV waving his arm (Tab EE-180). One of the SMs unclasped MVO's lapbelt and released him from the vehicle (Tab EE-178).

SM3 and SM4 arrived at the scene while SM2 was on the phone with 911 (Tab EE-37). MVO was still in his seat in the MV when SM3 and SM4 arrived and MPAX was on the ground approximately 15 feet from the MV (Tab EE-7 and EE-37). SM3 and SM4 checked on MPAX and SM3 stayed with MPAX until the ambulance arrived while SM4 went to MVO (Tab EE-37). When SM3 and SM4 arrived, the MV was still running, MPAX did not have his helmet on, MVO did have his helmet on, and MPAX's phone was ringing (Tab EE-39, EE-45, and EE-57).

Figure 4-5 (Tab Z-6)
MPAX Helmet

MVO's M4 rifle was near him in the vehicle, while MPAX's M4 rifle and the M240B were outside of the vehicle (Tabs Z-6, EE-38 to EE39, and EE-185).

Figure 4-6 (Tab Z-5)
FR10 Photo - Debris Field

First Responder (FR) 10, Assistant Fire Chief for the Monarch Volunteer Fire Department, came upon the accident on his way home from work at approximately 1837L (Tab EE-209 and EE-214). FR10 contacted dispatch and informed them that they needed Mercy Flight and the Belt, MT Ambulance (Tab EE-209). SM5 and SM6 arrived at the at the MS at approximately 1845L and put on their orange hunting vests and started directing traffic (Tab EE-279).

At 1838L, the ambulances from Belt, MT were enroute to the MS (Tab FF-73 to FF-74). The first of the ambulances that arrived went to MVO and the second, which arrived prior to 1851L, went to MPAX (Tab EE-6 and EE-52). FR3, emergency medical technician with Belt, MT Ambulance, provided aid to MVO (Tab EE-5 to EE-6). At 1844L, Mercy Flight was dispatched and arrived at 1852L to take MVO to the hospital (Tab FF-10). MVO arrived at the hospital at 1925L (Tab FF-7).

At 1927L, MPAX's ambulance departed the MS (Tab FF-73 to FF-75). FR4 rode in the ambulance with MPAX and requested an advanced life support unit over the radio, which was dispatched at 1928L (Tabs EE-9, FF-10 to FF-11, and FF-73 to FF-74). At 1941L, the advanced life support unit met the ambulance halfway and the paramedic got in the ambulance with MPAX (Tab EE-9 to EE-10, and FF-11). At 2001L, MPAX's ambulance arrived at Benefis East Emergency Room (Tab FF-74).

At 1903L, Cascade County Sheriff's Department arrived at the MS (Tab AA-10). At 2011L, FR11, a trooper with the Montana Highway Patrol, was notified and responded to what dispatch advised was a single military vehicle rollover on Hwy 89 at mile marker 59 (Tab FF-10).

Venom 32 relayed that they were stopped past the roundabout at a point approximately 15.4 miles from the MS when they saw ambulances and a police vehicle going past them in the opposite direction (Tabs EE-142 and FF-9). OP1 and PAX2 tried calling MPAX and MVO, but neither answered (Tab EE-142). There was no cell service at Alpha-06, but there was cell service between Monarch, MT and Belt, MT (Tab EE-67, EE-92, and EE-141 to EE-142). Venom 32 turned around when they could not reach Venom 33 and called the posting non-commissioned officer (NCO) to inform them that Venom 32 had lost contact with Venom 33 (Tab EE-142 to EE-143). When Venom 32 reached the MS at the time the ambulance was leaving, their supervision instructed them to grab Venom 33's Missile Electronic Encryption Device (MEED) and weapons (Tab EE-143 to EE-144). At 1920L, Missile Security Control (MSC) received a call stating Venom 33 had been in a rollover and that local police and medical were on the scene to treat injuries and control traffic (Tab AA-18). At 2012L, two other military teams arrived at the MS to retrieve Venom 33's gear and obtain any information about MVO and MPAX (Tab AA-18).

On 27 October 2023, MVO passed away from injuries sustained during the mishap without regaining consciousness (Tab X-3). As a result of injuries sustained in the mishap, MPAX's lower left leg was amputated below the knee (Tab X-5).

5. MAINTENANCE

The vehicle maintenance shop (VMS) of the 341st Logistics Readiness Squadron (341 LRS) is located on MAFB (Tabs FF-57 and FF-59). The VMS is responsible for providing maintenance to government vehicles assigned to 341 MSFS (Tab FF-57 and FF-59).

a. Maintenance Documents

The Defense Property Accountability System (DPAS) is the online database in which the MV's maintenance records have been stored since 19 January 2017 (Tab DD-71). The MV's maintenance records show that scheduled and unscheduled maintenance spanning from 19 January 2017 to 19 July 2023 was completed as required (Tab DD-71). Work orders filed before 19 January 2017 are unavailable as the Vehicle Management career field transitioned from an offline standalone Fleet Management Information System, On-Line Vehicle Interactive Management System, to DPAS (Tab DD-71).

b. Maintenance Forms

A review of all relevant maintenance forms and logs from 19 January 2017 through 19 July 2023, showed no discrepancies (Tab DD-71). The VMS completed two time compliance technical orders (TCTOs) on the MV consisting of a service bulletin and a one-time inspection (OTI) (Tab DD-71).

c. Scheduled Inspections

All scheduled inspections from 19 January 2017 through 19 July 2023 were satisfactorily completed (Tab DD-72). No discrepancies were noted (Tab DD-72).

d. Maintenance Procedures

Not Applicable.

e. Unscheduled Maintenance

As of 19 July 2023, all maintenance performed on the last scheduled work order had been completed, which included tightening lug nuts, inspecting the condition of the windshield and windows, and replacing the transmission filter, transfer case seal, starter, flex plate, and the left front blackout light assembly and bulb (Tab DD-72). VMS did not conduct any unscheduled maintenance after the scheduled maintenance work order was completed on 19 July 2023 (Tab DD-72). On 15 June 2023, the last unscheduled maintenance work order for vehicle abuse was completed, which entailed replacing the rear left wheel inner and outer rim assembly and lug nuts due to extensive damage caused by improper wheel installation (Tab DD-72). No discrepancies were noted (Tab DD-72).

f. Maintenance Personnel

All VMS technicians who performed scheduled and unscheduled maintenance on the MV from 21 October 2022 to 21 October 2023 were fully qualified or performed maintenance under the supervision of a fully qualified technician (Tab DD-72). Training records showed no deficiencies or de-certifications of any personnel who handled the MV for these maintenance procedures (Tab DD-72).

6. EQUIPMENT, VEHICLES, FACILITIES, AND SYSTEMS

a. Functional Status

An AF Form 1800 is used as a checklist for vehicle operators to document discrepancies on their vehicle during their pre-shift inspection (Tab DD-72). BG2 completed the MV's pre-shift inspection on the morning of 21 October 2023 and did not note any issues with the vehicle on the AF Form 1800 (Tab DD-72).

The Vehicle Readiness Center (VRC) issues operators with locally generated, vehicle-specific check sheets to identify discrepancies and document the vehicle's condition, in addition to ensuring equipment accountability before the operator departs for their mission (Tab DD-72). OP1 completed the MV's check sheet at 1521L on 17 October 2023 and did not annotate any discrepancies with the vehicle or equipment (Tab DD-72).

It was not on the AF Form 1800, but the M4 barrel mount on the front passenger side of the vehicle was missing prior to the mishap (Tab DD-72). BG2 also stated that the fuel gauge would start to bounce up and down when the fuel level reached a quarter of a tank (Tab DD-72).

b. Equipment Condition Post-Mishap.

(1) Body/Cab/Turret.

(a) Description. The MV suffered extensive damage to its body and the roof mounted turret assembly/gunner protection kit (GPK) (Tabs DD-72 and FF-63 to FF-67).

(b) Analysis. The rollover ejected the rear doors along with the B-Pillars and shifted the vehicle's cab to the left, causing significant damage to the MV's body mounts, but left the underlying frame intact (Tab DD-72). The hood was cracked and missing large chunks of material, and the front right lighting mount was broken off (Tab DD-72). Body components housing the rear lights were shifted and crushed, and the rear right lighting mount was destroyed (Tab DD-72 to DD-73). The MV's rear cargo topper sustained damage to its body, access panel, pillar mounts, and mounting hardware, and the topper was thrown from the vehicle during the mishap (Tab DD-73). Mounting points on the turret assembly and the GPK were broken or missing bolts allowing components to separate from the assembly (Tab DD-73). Ballistic glass on the GPK's front and side armor was cracked in three places (Tab DD-73).

(2) Door/Combat Locks.

(a) Description. Operators must check the door latch and combat lock for proper operation before driving, and no discrepancies were noted prior to the mishap on the AF Form 1800 (Tabs BB-15 and DD-72). Crew doors must be locked during vehicle operation; otherwise, ballistic integrity cannot be maintained (Tab BB-180). Combat locks are engaged by pressing down on each door's inner crew door release handle (Tab BB-129). Combat locks are utilized to prevent access to the vehicle's interior and reduce the severity of an injury in the event of an accident (Tab BB-18 and BB-97).

(b) Analysis. The combat locks engaged and disengaged on all MV doors except for the rear right door, as the lock's linkage was broken due to the accident, limiting the combat lock to partial engagement (Tab DD-73). All the MV's doors were heavily damaged during the mishap and are unable to be function tested with the doors in the closed position (Tab DD-73). The two front doors remained attached to the vehicle, but the hardware holding the door straps was broken, allowing the doors to overextend and damage the hinge assemblies (Tab DD-73). During the mishap, the rear doors came open, and their force broke the B-Pillar welds on both sides, ejecting the B-Pillars and doors together from the MV as an assembly (Tab DD-73). The ballistic glass mounts and window glass on the front and rear right doors were broken, and the windows were thrown from the MV during the rollover (Tab DD-73).

(3) 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-30 to BB-31).

(b) Analysis. The steering system's oil cooler, reservoir, steering gear, pump, and geared hubs were inspected for leaks, and the steering gear and geared hubs were found to be leaking post-mishap (Tab DD-73). The power steering fluid reservoir's sight gauge confirmed that there was not an adequate fluid level left in the system (Tab DD-73). An inspection of steering system components revealed that the steering column disconnected from the intermediating steering shaft during the rollover, and that there was damage to the sway bar links and front right tie rod assembly (Tab DD-73). Since no discrepancies were noted on the AF Form 1800 prior to the mishap indicating damage to the steering system, the damage noted was due to the mishap (Tab DD-73).

(4) Seatbelts.

(a) Description. The improved personal restraint system (seatbelt) includes a shoulder and lap strap (Tab BB-17 to BB-18). The lap strap and shoulder strap must be worn together to prevent injury or death to personnel (Tab BB-18). The seatbelts retract and lock only when sudden

stops or impact occurs (Tab BB-17). Seatbelts must be checked for security, damage, and operation of buckles and clasp ends before operating the vehicle (Tab BB-16).

(b) Analysis. The MV's rear right passenger improved personal restraint system was the only seatbelt that was fully functional when inspected following the accident; the shoulder and lap straps were undamaged, the retractors worked properly, and the tongues latched into their respective buckles securely (Tab DD-73). The front left shoulder seatbelt strap was torn when the seatbelt retractor was ripped out of the vehicle along with the rear left door and B-pillar assembly (Tab DD-73). The front left lap seatbelt's pretensioner was outside of the vehicle as it had been secured to the ejected B-pillar; the seatbelt tongue remained latched in the buckle assembly but had no holding power (Tab DD-73). The front right shoulder seatbelt strap was torn at the tongue webbing when the seatbelt retractor was ripped out of the vehicle along with the rear right door and B-pillar assembly (Tabs Z-3, DD-31, and DD-73). The front right lap seatbelt's pretensioner was also outside of the vehicle as it had been secured to the ejected B-pillar (Tab DD-73). The seatbelt tongue remained latched in the buckle assembly but had no holding power (Tab DD-73). The rear left shoulder seatbelt was fully functional, but the lap belt's pretensioner spring was damaged and the strap was seized (Tab DD-73). Since no discrepancies were noted on the AF Form 1800 prior to the mishap indicating damage to seatbelts, the damage noted was due to the mishap (Tab DD-73).

(5) Service Brake System.

(a) Description. The service brake system is an inboard-mounted, four-wheel, disc brake, hydraulically assisted system (Tab BB-27). 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 (Tab BB-27 to BB-28). 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-27). 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-28). The MV was not equipped with an antilock braking system (Tab BB-100).

(b) Analysis. A visual inspection of the MV's brake rotors and service pads revealed that each component exceeded the minimum tolerances (Tab DD-73). The brake fluid reservoir was full, and there was no indication on the AF Form 1800 that any brake system component was leaking or malfunctioning prior to the mishap (Tab DD-73).

(6) Suspension.

(a) Description. The UA-HMMWV's suspension system is an independent coil spring-type system and includes the following components: ball joints, upper and lower control arms, stabilizer bar, geared hubs, shock absorbers, coil springs, and radius rods (Tab BB-13 to BB-

14). Shock absorbers work in tandem with the coil spring to dampen suspension movement and limit the amount of suspension travel (Tab BB-13).

(b) Analysis. An inspection of the MV's suspension system identified damage to the front left lower control arm, rear left lower control arm, front right upper and lower control arm, and front right ball joint assembly (Tab DD-73 to DD-74). No discrepancies were noted on the AF Form 1800 prior to the mishap (Tab DD-74).

(7) Tires/Wheels.

(a) Description. The UA-HMMWV is equipped with four wheels with 37 inch x 12.5 inch x 16.5 inch radial tires (Tab FF-64). The tires are bidirectional so that the tread may be positioned in either direction (Tab BB-203). Tires should be replaced when cuts, gouges, or cracks extend to the cord body or if there are any bulges (Tab BB-201). Additionally, tires warrant replacement if the tread is worn below the wear bars or 1/16 of an inch (Tab BB-55).

(b) Analysis. The MV has two Goodyear Wrangler Enforcer MT and two BF Goodrich Baja T/A tires installed and all tires on the MV are rated load range E and are interchangeable as they fall within the same group classification (Tab DD-74). The tread depth of all tires on the vehicle except for the rear right exceeded 12/32 inches, and the rear right tire measured 6/32 inches at its lowest point, far exceeding the minimum tread requirement of 1/16 inches (Tab DD-74). During the mishap, the tire beads on the front left, front right, and rear left broke, causing the tires to go flat and allowing the sections between the rim and tire to fill with dirt and rocks (Tab DD-74). The interior of the front left, front right, and rear left wheels were bent as a result of the mishap (Tab DD-74). A halfshaft joint connecting the differential to the geared hub on the front right wheel assembly came apart (Tab DD-74).

(8) M240B and M4 Rifle. During the mishap, the M240B was stored in the backseat of the MV and no one can confirm that it was strapped down IAW the Load Plan (Tabs V-1.3, BB-71, EE-82, and EE-158). The M240B was ejected from the vehicle during the mishap (Tabs Z-4 and EE-38 to EE-39.). Two broken heat shields and the buttstock had to be replaced on the M240B (Tab FF-80 to FF-81). During the mishap, MPAX was holding his M4 rifle because the M4 barrel mount was broken and he was checking the dust cover (Tab EE-156 and EE-158). MPAX's M4 rifle was ejected from the vehicle during the mishap (Tabs Z-4, EE-38 to EE-39, and EE-185). The buttstock of MPAX's M4 rifle had to be replaced after the mishap (Tab FF-71 and FF-78 to FF-79). No maintenance was conducted on MVO's M4 rifle due to the mishap (Tab FF-71 and FF-76 to FF-77).

7. ENVIRONMENTAL CONDITIONS

a. Forecast Weather

The weather was clear when the teams departed MAFB for Alpha-06 (Tab V-16.4)

b. Observed Weather

Observed weather conditions at the time of the mishap were consistent with weather recorded at Raynesford Weather Station on 21 October 2023 at 1755L, approximately 10 miles northeast of the MS with a temperature of 61°F, winds at 10 mph East/Southeast, no precipitation, and 10-mile visibility (Tab FF-10). On the route from Alpha-06 to MAFB, it was clear and approaching sunset, but the sun was still out at the time of the mishap (Tabs V-4.7 and EE-39). The sun was to the left of the roadway (Tab EE-39).

c. Other Environmental Conditions

The road at the MS was dry and bare, consisting of chip sealed black top pavement (Tab FF-10). The shoulders of the road are a dirt and gravel mixture (Tab S-5). The overall road width is 28 feet from road edge to road edge and 24.5 feet from fog line to fog line (Tab FF-10).

The mishap occurred on Hwy 89 on a right-hand curve with a slight downhill grade (Tab FF-10).

Figure 7-2 (Tab S-3)
Approach to MS

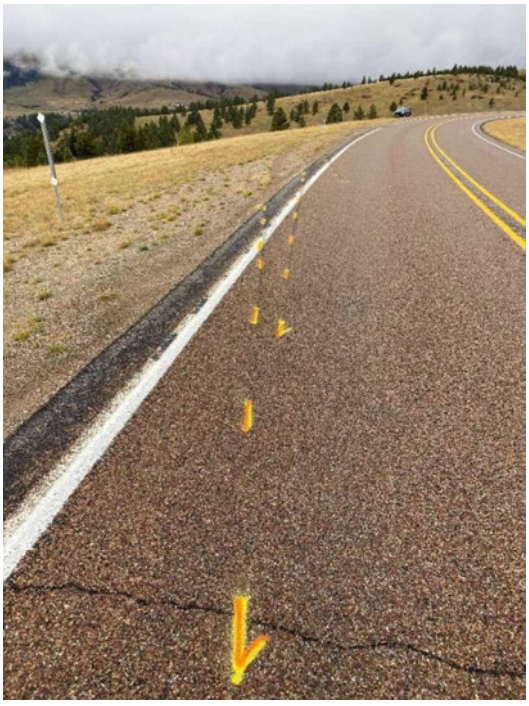

Figure 7-3 (Tab S-5)
Leaving Roadway

Figure 7-4 (Tab S-9)
MS from Reverse Approach

There is no indication that the driver was maneuvering to avoid a hazard, such as wildlife or debris in the road, that caused them to depart the roadway (Tab EE-157).

d. Restrictions, Warnings, and Procedures

Approaching the turn where the mishap occurred, a yellow caution sign recommends limiting speed to 60 MPH (Tab S-3).

8. PERSONNEL QUALIFICATIONS

IAW AFGSCI 91-210, for mission related dispatches, no operator will operate a vehicle or be a front seat passenger in the missile field complex until they complete Driver's Safety, Vehicle Orientation and Operation, VCC, Skid Vehicle, Gravel Road, and Route Familiarization Training (Tab BB-60). Group Commander (/CC), or if delegated to Squadron/CC, has the authority to waive drivers training requirements for a period of up to 90 days due to unavailability of training vehicles or equipment (Tab BB-59).

IAW AFGSCI 91-210, all personnel operating vehicles such as a UA-HMMWV must receive hands-on training by a certified instructor (Tab BB-58).

a. Relevant Training

(1) MVO.

On 21 October 2023, MVO had a valid state driver's license and was authorized to operate HMMWV model: L532 – TRK, UTIL HMMWV XM1116 (Tab G-5 to G-6). On 3 April 2023, MVO was assigned to Unit Orientation Training (UOT) (Tab G-3). On 10 April 2023, MVO

completed H.E.A.T., Gravel, and Skid training (Tab G-3). On 11 April 2023, MVO's vehicle trainer signed MVO's AF Form 171, indicating MVO had been fully trained on a UA-HMMWV (Tab T-58). On 13 April 2023, MVO signed his AF Form 171, indicating he completed the required trained and considered himself qualified to operate a UA-HMMWV (Tab T-58). His AF Form 171 was finalized on 25 April 2023 (Tab T-58).

MVO received all formal vehicle training in the appropriate vehicle prior to 21 October 2023 (Tab G-3 and G-5).

(2) MPAX.

MPAX was not qualified to be the front seat passenger in a vehicle in the missile field, because he had not completed Skid training and there was no waiver in place to allow him to operate in the missile field (Tabs T-33, BB-59 to BB-60, and FF-16). On 2 October 2023, MPAX began UOT (Tab G-4). As of 13 October 2023, MPAX had completed all other training to operate a UA-HMMWV and completed UOT but did not complete Skid training because he received a "NO GO" (Tab G-4). When a member receives a "NO GO", it means that member took but did not pass that portion of training (Tab V-15.7).

b. Training Currency

(1) MVO

MVO's Master Driver Record shows he had an active government license issued on 10 July 2023 that did not expire until 11 September 2025 (Tab G-6).

(2) MPAX.

MPAX was not qualified to be a safety observer in the MV (Tabs T-33, BB-57, BB-59 to BB-60, and FF-16). The mishap occurred on MPAX's third day ever being posted to the field (Tabs V-5.3 and EE-15 to EE-16).

On 21 October 2023, both MPAX and PAX2 (failed to complete Skid training 17 July 2023) were assigned by Alpha Flight to be front seat passengers in the missile field without completing the required training (Tabs T-57, AA-6, and BB-57).

BG12 stated when MPAX completed UOT, BG12 verbally told MPAX's unit training personnel that he did not compete Skid training (Tab V-12.11 to V-12.12). BG12 stated MPAX's UOT report card annotates that he had not completed Skid training (Tabs T-51 and V-12.12). The report card is a document internal to the 341 MSOS training section and is not an official Air Force training record (Tabs T-51 to T-53 and V-15.10).

The Unit Training Manager, BG14, stated she was not told that MPAX failed to complete Skid training (Tab V-14.6). BG14 also relies only on official Air Force training records hosted in MyTraining to verify training records not the report card (Tab V-14.6). BG13, MPAX's Flight Chief, was not made aware that MPAX failed to complete Skid training as of 21 October 2023 (Tab V-13.16). At the time of the mishap, MPAX was temporarily re-assigned to Alpha Flight

from Bravo Flight by BG13 for MSF duties (Tab V-13.16). BG13 conveyed to Alpha Flight that MPAX had completed the proper training to be a front seat passenger (Tab V-13.16 to V-13.17).

Typically, UOT trainers input members training status into their official Air Force training records the week after they complete UOT (V-15.10). BG15 deleted MPAX's official Air Force training records from prior to the mishap and input a new entry on 24 October 2023, because it was not previously annotated on the official record that MPAX did not complete Skid training (Tab V-15.6).

9. MEDICAL FACTORS

a. Qualifications

MVO was medically qualified for duty (Tab X-2). MVO did have an active AF Form 469 profile for a fitness restriction at the time of the mishap (Tab X-4). MVO needed to wear corrective lenses while driving (Tab G-5). MPAX was medically qualified for duty with no restrictions (Tab X-4).

b. Health

(1) MVO. MVO had no indications of acute illness at the time of the mishap (Tab X-2). MVO did have indications of a chronic medical condition, hypersomnia, and was exhibiting symptoms of excessive sleepiness the day of the mishap (Tabs V-1.6, V-1.7, X-2 to X-3, and EE-323 to EE-324).

(a) Medical Care. On 9 March 2023, MVO sought medical care at the MAFB medical clinic and was diagnosed with hypersomnia by his primary care manager (PCM) (Tab X-2). Hypersomnia is a medical term used to describe a person with excessive daytime sleepiness (Tab X-4). His PCM recommended duty restrictions for MVO on an AF Form 469 that recommended he be placed in do not arm status and he not operate heavy machinery (Tab X-2). MVO also met with a behavioral health provider later the same day who stated a sleep disorder was likely and further evaluation was recommended (Tab X-2).

MVO reported to the Arming and Use of Force Monitor, BG8, who monitors members with recommendations not to arm, that he felt reliable to perform armed duty (Tab EE-316).

On 5 April 2023, MVO signed a memorandum from BG16 acknowledging that his ability to bear firearms had been reinstated (Tab T-5). BG8 had MVO report to the medical clinic to inform them, which he did on 7 April 2023 (Tab V-9.8 to V-9.9). On 7 April 2023, MVO followed up with his PCM stating he no longer had difficulty with sleepiness, and the PCM recommended he return to arming status (Tab X-2). On 7 April 2023, Medical provided BG8 the recommendation that MVO was okay to return to duty, and BG8 sent that message to 341 MSFS/CC, BG16 (Tab V-9.7 to V-9.8). Based on MVO's report to his PCM on 7 April 2023, his PCM determined there was no indication for a sleep study at that time (Tab X-2).

On 4 May 2023, MVO indicated on his online Physical Health Assessment (PHA) questionnaire that in the past month he had sleep concerns (Tab X-2). On 9 June 2023, when the medical provider

called him to discuss his online PHA, MVO reported that his sleep had improved since he answered the questionnaire (Tab X-2). No duty restrictions were recommended (Tab X-2). No further evaluations or follow ups were done (Tab X-2).

(b) Indications of Excessive Sleepiness. MPAX stated that he believes MVO was asleep approaching the mishap, because MVO did not notice the MV running off the road and jerked when MPAX called out to him (Tab V-1.2 and V-1.6). Throughout the day prior to the mishap, MPAX noticed MVO would nod off and struggle to stay awake (Tab V-1.6). In the days prior to the mishap, MPAX had to grab the wheel of the soft-top MVO was driving because MVO had fallen asleep and the soft-top had started to go off the road (Tab V-1.5).

OP1 stated that MVO would sometimes doze off while on duty and had heard of instances when he nodded off while driving but had no firsthand knowledge of MVO falling asleep while driving (Tab EE-322 to EE-323). OP1 did not recall MVO being tired on 21 October 2023 (Tab EE-323).

BG2 stated he has seen MVO asleep on the couch while on duty previously and that MVO gets tired when he drives (Tab EE-325 to EE-326) BG2 was aware that MVO was a new driver (Tab EE-326).

(2) MPAX. MPAX had no indications of other illnesses or other abnormal medical symptoms at the time of the mishap (Tab X-3).

c. Injuries and Pathology

MVO was wearing a helmet and seat belt (Tab EE-178 to EE-179). MPAX was not wearing his helmet but was wearing his seat belt (Tabs Z-3, Z-6, EE-77, EE-200 to EE-201, and EE-220). Neither MVO nor MPAX were ejected from the MV (Tabs EE-157 and EE-178).

MVO was not responsive at the MS (Tab X-3). As a result of the accident, MVO sustained severe traumatic brain injury, with multiple locations of hemorrhage and finding suggestive of shear injury caused by acceleration and deceleration forces (Tab X-3). He was transported by air ambulance to Benefis Hospital, Great Falls, MT for emergent care (Tab X-3). MVO did not improve despite medical interventions and was declared deceased on 27 October 2023 at 1120 hours (Tab X-3).

MPAX sustained multiple significant injuries in the mishap (Tab X-3). MPAX reports he removed himself from the MV (Tabs EE-157). He was responsive at the scene (Tab EE-38). He was transported by ground ambulance to Benefis Hospital, Great Falls, MT, for emergent care (Tab X-3). On 3 November 2023, MPAX was transferred to the Brooke Army Medical Center (BAMC) for continuing care (Tab X-4). On 8 November 2023, MPAX underwent surgery to amputate a portion of his left leg below the knee (Tab X-3).

d. Lifestyle

There is no evidence that lifestyle factors were a factor in the mishap (Tab X-4).

e. Toxicology

Toxicology results were normal and there is no evidence to suggest it was a factor in this mishap (Tab X-4).

f. Crew Rest and Crew Duty Time

Crew rest and crew duty time do not apply to this accident investigation.

10. OPERATIONS AND SUPERVISION

a. Operations

Within 341 MSFS, MVO was assigned to Alpha Flight and MPAX to Bravo Flight (Tab V-5.3). 341 MSFS consists of Air Force Specialty Code, 3POX1 - Security Forces (Tab V-7.1).

341 MSFS has a steady state operations tempo that gets a lot busier at certain times (Tab V-11.3). There are conversations going on at all levels to make sure there is the manning necessary to accomplish tasks (Tab V-11.3). In a steady state, there is a weekly meeting held between missile maintainers, missileers, and security forces personnel that know the unit's manpower to discuss the maintenance missions that need to be accomplished and how 341 MSFS members are tasked to the missions (Tab V-11.4). The operations tempo fluctuates with busier times during the week than the weekends, as well as with emergency maintenance that requires immediate attention, or weather created issues. (Tab V-11.3).

Once each MSFS flight has met their posting requirements per day, any extra individuals that a flight has, such as MPAX on the day of the mishap, get posted over on the MSF roster (Tab V-5.10). MVO's flight, Alpha flight, was on MSF duties and MPAX, Bravo Flight, was assigned as an additional person (Tab V-5.10).

b. Supervision

341 MSFS/CC's responsibilities include training, equipping, and leading airmen assigned to 341 MSFS in the defense of nuclear security (Tab V-11.2). The 341 MSFS/CC in command at the time of the mishap took command in July 2023 (Tab V-11.2). 341 MSFS/CC is also responsible for the Arming Use of Force program (Tab V-11.6). The prior commander of 341 MSFS signed MVO's return to duty paperwork in April 2023, following MVO's diagnosis of hypersomnia and subsequent medical clearance (Tab T-5).

341 MSFS/CC interacts directly with the squadrons Operations Officer, also known as Director of Operations (DO), who is the second in command of the squadron (Tab V-11.5). Under the DO, each flight has a Flt/CC, who is a Second Lieutenant (2d Lt) (Tab V-11.5). A normal communication from 341 MSFS/CC would go to the DO and then from the DO to Operations Superintendent (Tab V-11.5). The DO would likely then reach out to the Flt/CC (Tab V-11.5). The Operations Superintendent would then likely reach out to the Flight Chief (Tab V-11.5). The Operations Superintendent has oversight over the posting rosters, scheduling, the MSCs, and the unit's training section and is the go-to for the Flight Chiefs on issues (Tab V-5.2).

Since MVO and MPAX were in a maintenance support role on the day of the mishap their daily oversight would be the Flight Chief and Flt/CC running the MSF (Tab V-11.5).

The MSF Flight Chief works together with the Battle Captain posted in MSC to build the posting roster for each following duty day (Tab V-13.4 and V-13.13). MSC receives the daily maintenance schedule and notifies the MSF Flight Chief of requested personnel to complete the next day's maintenance missions (Tab V-13.4). The Battle Captain will fill all the maintenance security positions in the posting roster based on the certifications of the members (Tab V-13.4).

The Non-Commissioned Officer in Charge (NCOIC) of the VRC for 341 MSOS is the liaison between the Missile Security Forces Squadrons and 341 LRS to ensure mission requirements are met with vehicles (Tab V-6.1). The NCOIC of Equipment for 341 MSOS works at the VRC and is responsible for managing Airmen assigned to the section, issuing any equipment that is needed to be utilized in the missile field, issuing vehicles, and receiving vehicles when being turned in (Tab V-2.2).

On the day of the mishap Venom 32 and Venom 33 were briefed by the Posting NCO, before departing MAFB for the missile field (Tab V-16.2) Prior to departing Alpha-06 to return to MAFB, both teams received a safety brief and were advised to accomplish the pre-departure checklist (Tab AA-17).

Airmen do not complete any risk assessment prior to traveling to the missile fields, which is contrary to 341 MW Instruction (MWI) 91-213 (Tabs V-13.8 to V-13.9, BB-64, BB-79, and BB-86). IAW 341 MWI 91-213, all teams traveling to the missile complex will conduct Risk Management using the 341 MW Driving Risk Assessment Worksheet (DRAW) and AFGSC Form 908, Baseline Personal Risk Assessment (BPRA) (Tab BB-79 and BB-86 to BB-87).

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)	DAFI 91-204, *Safety Investigation and Reports*, 10 March 2021.
(3)	DAFI 91-207, *The Traffic Safety Program*, 26 July 2019, Incorporating Change 1, 22 May 2023.
(4)	AFI 24-302, *Vehicle Management*, 21 February 2020
(5)	AFGSCI 91-210, *Vehicle Safety for Missile Field Operations*, 2 March 2018, Incorporating Change 1, 1 May 2022.
(6)	341 MWI 91-213, *Vehicle Safety for Missile Complex Operations*, 12 April 2022

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)	AFI 24-302, *Vehicle Management*, 26 June 2012, Incorporating Change 1, 26 July 2012, Certified Current 15 August 2017, superseded by AFI 24-302, dated 29 October 2007
(2)	341 SFG Instruction (SFGI) 31-101, *Security Forces Operations,* 1 July 2022
(3)	341 SFG Checklist, Missile Security Operator, Vehicle Load Plan
(4)	UA-HMMWV Familiarization Lesson Plan Slides
(4)	National Highway Transportation Safety Administration, *Speed-Measuring Device Operator Training -Participant Manual*, undated.
(5)	Air Force Technical Order 36A12-1A-3052-1, *Technical Manual – Unit, Direct Support, and General Maintenance Support*, December 1997
(6)	Air Force Technical Order 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.

DICKSON.BUEL.JAY. Digitally signed by DICKSON.BUEL.JAY.

3 September 2025

BUEL J. DICKSON
Brigadier General, USAF
President, Ground Accident Investigation Board

INDEX OF TABS