UNITED STATES AIR FORCE GROUND ACCIDENT INVESTIGATION BOARD REPORT



PRECISION MEASUREMENT EQUIPMENT LABORATORY ACQUISITION MANAGEMENT INTEGRATION CENTER 71ST FLYING TRAINING WING VANCE AIR FORCE BASE, OKLAHOMA



TYPE OF ACCIDENT: FIRE

LOCATION: BLDG 128, VANCE AFB, Oklahoma

DATE OF ACCIDENT: 27 APRIL 2023

BOARD PRESIDENT: LIEUTENANT COLONEL PATRICK B. MCLAUGHLIN, USAF

Abbreviated Ground Accident Investigation Board, conducted IAW Air Force Instruction 51-307

EXECUTIVE SUMMARY UNITED STATES AIR FORCE ABBREVIATED GROUND ACCIDENT INVESTIGATION

FIRE

Precision Measurement Equipment Laboratory, Building 128 Vance AFB, Oklahoma 27 April 2023

On 16 June 2023, the Commander, Air Education and Training Command (AETC/CC) convened an Abbreviated Ground Accident Investigation Board (A/GAIB) to investigate a building fire that occurred on 27 April 2023 in the Precision Measurement Equipment Laboratory (PMEL) located in Building 128 at Vance Air Force Base, OK (VAFB) (Tab Y-2 - Y-3). All four contractor employees working at the PMEL had already departed for the day with the last member leaving at approximately 1600 local time (L) (Tab V-71, V-87, V-118, V-160). At some point between 1600L and 1720L, the fire broke out in the northwest corner of Room 14A in Building 128 (Tab O-2). At 1720L, the VAFB Fire Department responded to a fire indication in Building 128, and extinguished the fire at 2124L, 27 April 2023 (Tabs O-2 and V-177). The fire resulted in the damage or destruction of a computer tower, a laptop, a monitor, four label printers, a personal router and three wooden boxes storing PMEL measurement equipment (Tab Z). The firefighters identified the origin of the fire being near the northwest corner of the PMEL (Tab Z-2). Burn patterns indicate that the fire's ignition source was one or more of four identical label printers with significant fire damage—all of which were subject to an active product safety recall by their manufacturer due to a defect which made them a possible fire hazard (Tab Z-15, Z-26). Most of the damage remained centralized at the northwest workstation, but there was smoke residue, soot, and water damage throughout the PMEL workspace and equipment, which has yet to be fully assessed for damage or functionality (Tab O-3, O-10).

Based on the serial numbers, all four printers destroyed by the fire were subject to a 20 December 2016 safety recall initiated by the manufacturer, Zebra Technologies Corp (Zebra Tech) (Tabs D-56, Z-4, DD –9 to DD-5). The Consumer Product Safety Commission noted that the printer's, "...power supply units can degrade and corrode over time when exposed to moisture and overheat, posing a fire hazard." As of 2017, Zebra Tech had received a total of 30 reports of the power supply units overheating or catching fire, including a fire that spread from the connector to the printer, damaging the printer and surrounding workspace (Tab DD–16 to DD-27). The PMEL endured elevated levels of humidity in the weeks leading up to the incident (Tab V-36, V-142).

No government or contractor personnel at VAFB were aware of any formal guidance or policy directing anyone to track manufacturer recalls or safety notices (Tab V-38 to V-39, V-165 to V-167). It is instead assumed by VAFB equipment custodial personnel that it is at the end-user's discretion to voluntarily register new IT equipment and set up a method of direct receipt from the manufacturer if they wish to receive any associated recall notices or hazard reports (Tab V-166 to V-168). Furthermore, key equipment managers at VAFB received no formal or informal notices from external agencies notifying them of the Zebra Tech safety recall notice during the 7-year active period between issuance of the recall and the 27 April 2023 fire at VAFB (Tab V-38 to V-39, V-165 to V-167).

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ACRONYMS AND ABBREVIATIONS

19 AF	19th Air Force	IT	Information Technology
71 FTW	71st Flying Training Wing	ITAM	8,
ACC	Air Combat Command		nation Technology Asset Management
	Education and Training Command	L	Local Time
AFB	Air Force Base	Lt Col	Lieutenant Colonel
AF	Air Force	MAJCOM	Major Command
AFEC	Air Force Enterprise Contracted	NIST	J
AFI	Air Force Instruction	National	Institute of Standards and Technology
AFMAN	Air Force Manual	OK	Oklahoma
AFMETCAL		OPR	Office of Primary Responsibility
Air Force	Metrology and Calibration Program	PM	Program Manager
	Force Primary Standards Laboratory	PMEL	
AMIC	·	Precision	Measurement Equipment Laboratory
Acquisition	Management and Integration Center	PMEL1	PMEL Technician #1
A/GAIB		PMEL2	PMEL Technician #2
Abbrevi	ated Ground Accident Investigation	PMEL3	PMEL Technician #3
Board	_	PMEL4	PMEL Technician #4
BECO	Base Equipment Custody Officer	PO	Property Custodian
Capt	Captain	PWC	Performing Work Center
CO	Contracting Officer	PWS	Performance Work Statement
COR C	Contracting Officer's Representative	SAR	Search and Rescue
DAF	Department of the Air Force	SERE	Search Evasion Rescue Escape
DAFMAN I	Department of the Air Force Manual	TMDE	
DPAS Defer	nse Priorities and Allocations System	Test, Me	easurement and Diagnostic Equipment
FSM	Functional Services Manager	TIC	Thermal Imaging Camera
FF1	Firefighter #1	TO	Technical Order
FF2	Firefighter #2	VAFB	Vance Air Force Base
	and Accident Investigation Board	W1	Witness #1
HVAC Hea	ting Ventilation Air Conditioning	W2	Witness #2
IAW	In Accordance With	UAPO	Unit Accountability Property Officer

SUMMARY OF FACTS

1. AUTHORITY AND PURPOSE

a. Authority

On 16 June 2023, Lieutenant General Brian S. Robinson, Commander, AETC/CC, appointed Lieutenant Colonel Patrick B. McLaughlin as Board President of this A/GAIB to investigate a Fire at the PMEL at Vance Air Force Base (VAFB), OK, on 27 April 2023. The A/GAIB convened at VAFB, from 22 June 2023 to 01 July 2023 and was conducted pursuant to Chapter 12 of Air Force Instruction (AFI) 51-307, *Aerospace and Ground Accident Investigations*, dated 18 March 2019. Additional members of the A/GAIB included Fire Investigator (Board Member), Legal Advisor (Captain) and Recorder (Staff Sergeant) (Tab Y-2 to Y-3).

b. Purpose

In accordance with AFI 51-307, Aerospace and Ground Accident Investigations, 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 27 April 2023, at 1720L the VAFB fire department responded to a fire alarm activation in Building 128, 338 Elam Road, VAFB, OK. Upon arrival, the fire department established incident command, safety, and accountability. All occupants evacuated the facility to a safe location. The fire department entered the building and identified smoke and fire in the PMEL section of the building. Fire department personnel performed primary and secondary searches of the facility, identified the seat of the fire, and extinguished it. After extinguishing the fire, they identified fire and smoke damage in multiple rooms. The fire department worked to reduce the temperature of hotspot areas and ventilate the facility. Once all firefighting activities were concluded, PMEL personnel were allowed back in the building to collect their personal items as well as specific PMEL certified equipment that were in "return to service" status and located away from the fire at the time of incident. The removed equipment was deemed critical to the execution of VAFB's mission. The area was taped off with fire scene tape and secured. Security Forces personnel performed random checks to ensure the facility remained secured. No injuries or fatalities are associated with this incident.

3. BACKGROUND

a. Air Education and Training Command (AETC)

AETC is headquartered at Joint Base San Antonio-Randolph, Texas and was established in January 1942, making it the oldest major command in the AF (Tab CC-2). AETC's primary mission is to find, recruit, train, and educate the Airmen the nation needs (Tab CC-2). AETC includes Air Forces Recruiting Service, two Numbered Air Forces, and the Air University. The command operates 12 major installations and supports tenant units on numerous bases across the globe. Over the years, more than 25 million students have graduated from AETC training and education programs (Tab CC-2).



b. 19th Air Force (19 AF)

19 AF is responsible for the training of more than 30,000 U.S. and allied students annually in numerous specialties ranging from aircrews, remortely piloted aircraft crews, air battle managers, weapon directors, Air Force Academy Airmanship programs, survival, evasion, resistance and escape (SERE) training (Tab CC-5). The 19 AF's primary mission is to train and educate the world's finest Airmen to deliver Airpower for America (Tab CC-5).



c. 71st Flying Training Wing (71 FTW)

71 FTW, located at Enid, OK at VAFB, was established in 1941, is the northernmost Undergraduated Pilot Training base in the AETC (Tab CC-6). VAFB is responsible for training AF student pilots for worldwide deployment and Aerospace Expeditionary Force support. The 71 FTW's primary mission is to deliver world-class pilots, develop resilient Airmen and families, deploy ready Airmen and demonstrate their "Vance Proud" culture (Tab CC-6).



d. Air Combat Command (ACC) Acquisition Management and Integration Center (AMIC)

AMIC is a team of highly skilled aircraft maintenance professionals who ensure responsive, proactive, cradle-to-grave program management of Operations & Maintenance service contracts and are also responsible for the functional management of ACC T-38 aircraft, and Air Force Aerial Targets (AT) logistics (Tab CC-9). AMIC's mission is to deliver responsive, cost effective, mission-focused, acquisition solutions to maximize joint warfighter capabilities (Tab CC-9).



d. Precision Measurement Equipment Laboratory (PMEL)

The PMEL is a base-level Air Force Metrology/Calibration (AFMETCAL) Program focal point. They are the base-level link for measurement transfer and maintenance self-sufficiency for all systems in the Department of the Air Force (DAF) (Tab BB-10). There are five types of PMELs. The type of PMEL located at VAFB, is a Type-IIB, a base-level PMEL established to support

aircraft, missiles, ground systems, and/or other equipment on base or in the local area (Tab BB-16). Currently, there are 65 Type-IIB PMELs AF wide, 32 of which are contractor operated (Tab BB-27 to BB-28).

4. SEQUENCE OF EVENTS

a. Summary of Accident

On 27 April 2023 at 1720L, the VAFB Fire Department responded to a fire alarm activation at Building 128. Upon arrival, VAFB firefighters discovered dense black smoke, filling room 14A from floor to ceiling, and a room temperature reading of 200 degrees Fahrenheit on the thermal imaging camera (TIC) (Tabs V-177, V-192). Room 14A houses the majority of the PMEL and its technical equipment. Firefighters discharged water in short bursts to cool the room and allow the TIC to distinguish the fire location from other heat sources (Tab V-177 to V-178). The fire was located on a workstation along the northwest wall of room 14A (Tab Z-2). Firefighters extinguished the fire within 20 minutes of locating the burning material with approximately 200 gallons water (Tab V-180 to V-181).

b. Impact [if applicable]

Not applicable.

c. Search and Rescue (SAR)

Not applicable.

d. Recovery of Remains

Not applicable.

5. MAINTENANCE

a. Maintenance Documents

Not applicable.

b. Maintenance Forms

Not applicable.

c. Scheduled Inspections

Not applicable.

d. Maintenance Procedures

Not applicable.

e. Unscheduled Maintenance

Not applicable.

f. Maintenance Personnel and Supervision

Not applicable.

6. EQUIPMENT, VEHICLES, FACILITIES, AND SYSTEMS

The fire originated on a workstation along the north wall of Room 14A occupied by the PMEL. There were two defined burn patterns on the workstation. The first burn pattern is centered on the single shelf above the work surface. The items on this shelf, from left to right, while facing the workstation, were a router, a modem, four melted Zebra Tech GK420t Thermal Transfer Printers and the remnants of a melted gold-colored substance on burned cardboard (Tab Z-3, Z-5 to Z-8, Z-12). The items on the shelf were positioned side-by-side within approximately one to two inches of each other on the shelf to include the last gold-colored melted substance. There was a V-shaped burn pattern on the metal edge of the shelf when viewed from the front and back (Tab Z-15, Z-26). The base of the "V" starts under the second printer from the left when viewed from the front. The fire appears to have spread horizontally to the left and to the right via radiant heat to the neighboring printers and the unidentified item that left the gold-colored substance (Tab Z-3, Z-12, Z-15). As each printer burned, pieces of melted, ignited plastic fell forward onto the workstation surface and backwards to the floor, wall, and wall outlets behind the workstation. The second printer also sustained the most fire damage in this area.

a. Structures and Systems

Not applicable.

b. Evaluation and Analysis

The workstation was only used for printing calibration labels for the past year and a half due to a technician vacancy (Tab V-113, V-115, V-126 to V-127). There were no reports of electrical issues with outlets in the PMEL area, Room 14A (Tab V-30, V-79, V-129). IAW TO 00-20-14 and AFMAN 21-113 the PMEL work area has set limits for temperature and humidity to ensure proper calibration readings (Tab BB-18). The Heating Ventilation Air Conditioning (HVAC) system is defective and programmed for replacement by the 71 FTW (Tabs D-38 to D-53, V-142). Room 14A has also experienced high humidity warnings over the past few months (Tab V-36, V-142). The four Zebra Tech GK420t Thermal Transfer Printers have been in service since they were purchased in 2011 (Tab V-75, V-108 to V-109). The printer manufacturer, Zebra Tech., issued a Power Supply Unit Voluntary Recall for the Zebra Tech GK420t printers in December 2016, then updated it in June 2018 to expand the recall to additional makes and models of Power Supply units (Tab DD-9). The connector on the power supply unit can overheat and create a fire hazard when exposed to moisture and humidity over time (Tab DD-9).

7. ENVIRONMENTAL CONDITIONS

a. Forecast Weather

Not applicable.

b. Observed Weather

Weather at ~1510L: 57°F, Mostly Cloudy, 77% Relative Humidity, Winds 300° @ 7 kts (Tab F-2 to F-4).

c. Other Environmental Conditions

VAFB experienced sustained humidity levels greater than 90% starting at 0455L on 25 April 2023 until 1400L on 27 April 2023—a period of approximately 34 hours leading up to the fire at 1520L (Tab W-2-to W-3).

d. Restrictions, Warnings, and Procedures

Not applicable.

8. PERSONNEL QUALIFICATIONS

Not applicable.

9. MEDICAL FACTORS

a. Qualifications

Not applicable.

b. Health

Not applicable.

c. Injuries and Pathology

Not applicable.

d. Lifestyle

Not applicable.

10. OPERATIONS AND SUPERVISION

a. Operations

The AFMETCAL Program is a Department of the Air Force (DAF) program that provides measurement standards and equipment, professional and technical metrologists, Performing Work Centers (PWCs), a system of worldwide PMEL facilities, measurement equipment users, calibration data and integrated planning. This program ensures the reliability and accuracy of systems, subsystems, and equipment. The program provides for the calibration and repair of Test, Measurement and Diagnostic Equipment (TMDE). It also ensures measurement traceability of the TMDE through the Air Force Primary Standards Laboratory (AFPSL) to National Institute of Standards and Technology (NIST) or other AFLCMC/WNM (AFMETCAL) approved sources. To accomplish this traceability, the AFMETCAL program requires that DAF users and PMELs obtain calibration service from DAF PMELs or the AFPSL. AFMETCAL must approve calibration service from other sources. The responsibilities of organizations in the AFMETCAL Program are identified in AFMAN 21-113 (Tab BB-15).

Goldbelt C6 is a private company on contract through the Air Force Enterprise Contracted (AFEC) PMEL Services Contract (Tab V-2 to V-3). The AFEC PMEL Services contract is administered by Air Combat Command's (ACC) Acquisition Management and Integration Center (AMIC). AFEC PMEL is a multi-command, single contract providing an enterprise approach to contracted PMEL services. AMIC maintains the roles of Functional Services Manager (FSM), Program Manager (PM), Contracting Officer (CO), and contract oversight via Contracting Officer's Representatives (COR) IAW AFI 63-138, *Acquisition of Services*. MAJCOM Functional Managers and PMEL Host Wings maintain responsibility for maintenance of facilities, HVAC, and the PMEL's equipment inventory (Tab BB-29). These PMELs are part of the Calibration Repair Network and follow their PWS, TO 00-20-14 and AFMAN 21-113 (Tab BB-16).

A PMEL is a laboratory authorized to own and use base measurement standards to maintain working standards. The working standards are used along with PMEL-owned TMDE to maintain (troubleshoot, align, repair, and calibrate) TMDE designated as PMEL responsibility. Authorizations for PMEL equipment and facility requirements are tailored to meet specific requirements for supported missions. PMELs are the base level link for measurement transfer and maintenance self-sufficiency for all systems in the DAF. The VAFB has a Type-IIB PMEL which is a base-level PMEL established to support aircraft, missiles, ground systems and/or other equipment on base or in the local area (Tab BB-17).

The VAFB PMEL is operated from 0700 to 1600 every day with three technicians and one Site Manager—all of whom are Goldbelt C6 employees (Tab V-22, V-67). On an as-needed basis, the technicians work calibration and measurement tests IAW TO 00-20-14, DAFMAN 21-113 and the Goldbelt C6 PWS (Tab BB-15). Due to the precise nature of the PMEL mission, strict environmental controls are maintained (Tab V-35). All four members of the PMEL team had long-tenures with the VAFB PMEL with the newest member onboarding the team approximately seven years ago (Tab V-2, V-84 to V-85, V-101). IAW TO 00-20-14, the VAFB PMEL achieved a "certified" rating from AMIC and AFMETCAL and had passed its most recent Quality Review on-site visit by AMIC in January 2023 (Tabs BB-22, EE-2 to EE-3). The PMEL passed its most recent Safety and Fire inspections conducted by the 71st Flying Training Wing Safety Office and

Fire Department with zero discrepancies (Tab EE-4 to EE-11). The PMEL facilities located in Building 128 were within months of receiving a new HVAC system due to the building's recent struggle with sustaining the strict temperature and humidity parameters mandated by TO 00-20-14, which are critical to the PMEL's ability to certify precision instruments (Tab BB-18). Once customer equipment has been tested and calibrated, technicians must issue certification status IAW TO 00-20-14 with specific data that enables the user of the equipment to verify the validity of any measurements that equipment designates in the field. The certification documentation is either handwritten or printed digitally via sticker labels which are then attached to each piece of certified equipment (Tab V-122, V-141, V-145).

The sticker labels coming from the VAFB PMEL were printed via four Zebra Tech label printers located at the northwest workstation of Room 14A in Building 128 on an as-needed basis. (Tab V-119, V-145 to V-146). The printers were connected to a desktop computer tower located on the bench surface below the shelf where the printers sat and ran the digital applications associated with each certificate template (Tab V-103, V-111, V-158). The primary use of this workstation at the time of the fire was to facilitate the printing of labels (Tab V-127). The workstation had been previously assigned to a PMEL technician who left the PMEL approximately two years before the fire (Tab V-126 to V-127). At the time of the fire, the workstation was also used to host a router and modem that were connected to a commercial internet service used by PMEL personnel to access Wi-Fi for their personal use at their workstations and break room (Tab V-26, V-139, V-146). The router and modem had been originally purchased and installed years prior to the fire by Goldbelt C6 to help facilitate the installation of proprietary digital PMEL drivers and software that were not accessible through government firewalls. As a secondary benefit of having Wi-Fi in the PMEL, the workers in the lab enjoyed access to on-line entertainment services such as radio, television, and movies both in their designated break room as well as assigned workstations. However, once Goldbelt C6 stopped paying the subscription for the Wi-Fi service, the employees of the VAFB PMEL collectively took over the Wi-Fi subscription payment costs to preserve their access to entertainment services. (Tab V-26 to V-29, V-61, V-79 to V-83, V-87, V-138 to V-139, V-146 to V-147)

The Zebra Tech printers had been purchased in 2011 via a bulk purchase by the previous PMEL contractor (Tab V-74). All four printers had been placed on the top shelf of the northwest workstation of Room 14A in Building 128 in 2011, where they have been continuously powered on and used every day until the fire consumed them on 27 April 2023 (Tab V-74, V-96, V-119). The Information Technology Asset Management (ITAM) equipment (computers, printers, etc.) throughout the PMEL—including those at the scene of the fire—were annually inventoried and accounted for by the primary ITAM manager, PMEL2, and the VAFB BECO, ECO1, IAW DAFMAN 17-1203 (Tab V-124, V-164, V-167). The BECO drove a computer refresh as recently as mid-2022 for the PMEL, but this did not include the PMEL Zebra Tech printers (Tab V-149). Although the DAFMAN 17-1203 does recommend the purchase of new printers every 3 years, the guidance has a caveat that states, "[...] or when the asset no longer meets operational requirements." (Tab BB-5). The BECO testified that so long as the asset continues to serve the end-user (e.g., PMEL) to an acceptable level, there was no need to purchase new printers, which is why the Zebra Tech printers were in the PMEL for over 12 years of service (Tab V-164 to V-165).

The PMEL ITAM property custodian, PMEL2, does not have access to the Defense Priorities and Allocations System Program (DPAS) to track PMEL ITAM equipment (Tab V-76). Only the BECO

has access to DPAS, which is used to prioritize national defense-related contracts/orders throughout the United States supply chain in order to support military requirements (Tab V-76). When asked who was responsible for registering ITAM equipment or the adherence to manufacturer-directed recall notices, the BECO stated the end-user assumes that responsibility upon receipt of the purchased item (Tab V-166). Neither the primary or alternate ITAM custodian in the PMEL registered their ITAM equipment with associated manufacturers nor did they have access, directives or an expectation to seek out or receive manufacturer recall notices (Tab V-165 to V-167). The A/GAIB could not locate any agency or entity on VAFB or within AETC assigned the responsibility of identifying and disseminating product safety recall notices for any ITAM equipment on the installation. Further research into DAFMAN 17-1203 does not designate a specific Office of Primary Responsibility (OPR) or expectation for AF agencies to fulfill that responsibility.

b. Supervision

PMEL1, the PMEL Site Manager, is the senior on-site manager responsible for the overall PMEL, management system, quality program and production control functions. (Tab V-3). PMEL1 is also the on-site contract manager who is responsible for the overall management and coordination of the Goldbelt C6 PWS and acts as the central point of contact with the Government. The on-site manager has full authority to act on behalf of Goldbelt C6 on all contract matters relating to daily operation of the PWS (Tab BB-19). PMEL1 is the primary manager for all Air Force-directed training and safety standards outlined in the PWS (Tab V-6, V-85 to V-86). PMEL1 is also the PMEL's Unit Accountable Property Officer (UAPO) which fulfills the roles outlined in DAFMAN 17-1203 para 2.3.6. (Tab V-37 to V-38, V-124).

PMEL2 is dual hatted as a PMEL Technician as well as the primary ITAM Property Custodian (PC) (Tab V-72). As the PC, PMEL2 manages the inventory and accountability of all PMEL and ITAM equipment IAW DAFMAN 17-1203 para 2.3.7. He conducts an annual inspection of the ITAM program with periodic samplings of 10% of overall inventory. PMEL2 reports ITAM inventories through the BECO.

PMEL3 is dual hatted as a PMEL Technician and as the PMEL Quality Manager evaluator for the VAFB PMEL (Tab V-126). As the Quality Manager, PMEL2 fulfills the roles outlined in DAFMAN 21-113, para 2.11 and executes the PMEL Quality Program outlined in TO 00-20-14. PMEL2 is also the last person to work at the northwest workstation in Room 14A in Building 128.

ECO1 is the Base Equipment Control Officer (BECO) and is the primary manager of the ITAM program and the accountability of all ITAM equipment on VAFB (Tab V-162). ECO1's program responsibilities are IAW DAFMAN 17-1203 para 2.3.5.

11. GOVERNING DIRECTIVES AND PUBLICATIONS

a. Publicly Available Directives and Publications Relevant to the Mishap

AFMAN 21-113, Air Force Metrology and Calibration Program Management, 29 April 2020

AFI 21-101 AETCSUP, Aircraft and Equipment Maintenance Management, 20 June 2023

Technical Order 00-20-14, Air Force Metrology and Calibration Program, 28 February 2023

DAFMAN 17-1203, Information Technology Asset Management (ITAM) and Accountability, 13 September 2022

AFI 51-307, Aerospace and Ground Accident Investigations, 18 March 2019

DAFMAN 91-203, Air Force Occupational Safety, Fire, and Health Standards, 25 March 2022

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

b. Other Directives and Publications Relevant to the Mishap

BOS-R-PWS, Section 2: All Services Performance Work Statement (PWS), 20 October 2020

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Date: 2024.01.08 16:28:20 -06'00'

8 JANUARY 2024

PATRICK B. McLAUGHLIN, Lt Col, USAF

President, Abbreviated Ground Accident Investigation Board

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