UNITED STATES AIR FORCE
AIRCRAFT ACCIDENT INVESTIGATION
BOARD REPORT

F-15D, T/N 84-0046

114TH FIGHTER SQUADRON
173D FIGHTER WING
OREGON AIR NATIONAL GUARD

LOCATION: KINGSLEY FIELD, AIR NATIONAL GUARD BASE, KLAMATH FALLS, OREGON

DATE OF ACCIDENT: 15 MAY 2023

BOARD PRESIDENT: COLONEL TAYLOR T. FERRELL

Conducted IAW Air Force Instruction 51-307

APR 2 9 2024

ACTION OF THE CONVENING AUTHORITY

The report of the accident investigation board, conducted under the provisions of AFI 51-307, *Aerospace and Ground Accident Investigations,* that investigated the 15 May 2023 mishap, at Kingsley Field Air National Guard Base, Oregon, involving an F-15D aircraft, *TIN* 84-0046, assigned to the 173rd Fighter Wing, substantially complies with applicable regulatory and statutory guidance and on that basis is approved.

BRIAN S. ROBINSON
Lieutenant General, USAF
Commander, Air Education & Training Command

JUL 3 0 2024

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The report of accident investigation board, previously approved by action dated, 29 April 2024, has been amended by a non-material change, in accordance with Paragraph 8.9.3, AFI 51-307, *Aerospace and Ground Accident Investigations*, to substitute an official Department of Defense photograph of an F-15D in the Summary of the Facts portion of the report vice a photograph of contested copyright ownership.

FOR THE COMMANDER

SHERWIN.SHANNON.L.[redacted] Digitally signed by SHERWIN.SHANNON.L.[redacted] Date: 2024.07.30 08:25:17 -05'00'

SHANNON L. SHERWIN, Colonel, USAF
Staff Judge Advocate

EXECUTIVE SUMMARY
UNITED STATES AIR FORCE
AIRCRAFT ACCIDENT INVESTIGATION

F-15D, T/N 84-0046
KINGSLEY FIELD AIR NATIONAL GUARD BASE, KLAMATH FALLS, OREGON
15 MAY 2023

On 15 May 2023, at 1500 local time (L), an F-15D, tail number (T/N) 84-0046, assigned to the 173d Fighter Wing (FW), Kingsley Field, Air National Guard Base (ANGB), Klamath Falls, Oregon, crashed after landing on Runway 14 (RWY) at Kingsley Field. The mishap aircraft (MA) failed to stop on the runway and impacted an irrigation canal. There were no fatalities, but the mishap pilot (MP), assigned to the 173d Fighter Wing (FW), sustained non-life-threatening injuries. The MA, valued at $35,536,444, was destroyed.

The purpose of the mishap flight (MF) was to execute a local training mission with F-35As in a Military Operating Area (MOA) located approximately 100 nautical miles (NM) northwest of Kingsley Field, then return to base via a low-level route. The MP flew the number one aircraft in the formation during the take-off, transition to the MOA, return to base, and landing. While on the low-level route, the MA experienced a hydraulic malfunction. The MP terminated the mission and declared an in-flight emergency. After landing, the MA experienced loss of normal braking and the MP lowered the MA arresting hook to engage the RWY departure-end arrestment cable. The Local Tower Controller (ATC1) misinterpreted the MP intent and lowered the departure-end arrestment cable. The MA failed to make a successful barrier engagement, departed the runway surface, and impacted an irrigation canal. The MP safely egressed the aircraft.

The Accident Investigation Board President found, by preponderance of the evidence, that the mishap was caused by the MP decision not to engage the MA Emergency Brake/Steer System in accordance with (IAW) checklist guidance. Additionally, the Accident Investigation Board President found, by preponderance of the evidence, that the following substantially contributed to the mishap; MP and ATC1 failed to effectively communicate resulting in ATC1 lowering the departure end arrestment cable during an aircraft emergency, and maintenance personnel failing to perform required maintenance procedures and documentation.

SUMMARY OF FACTS AND STATEMENT OF OPINION
F-15D, T/N 84-0046
KINGSLEY FIELD, AIR NATIONAL GUARD BASE, KLAMATH FALLS, OREGON
15 MAY 2023

TABLE OF CONTENTS

ACRONYMS AND ABBREVIATIONS

173d WG	173d Wing
AETC	Air Education & Training Command
AFB	Air Force Base
AFE	Aircrew Flight Equipment
AFI	Air Force Instruction
AFMAN	Air Force Manual
AFPET	Air Force Petroleum Office
AFTO	Air Force Technical Order
AIB	Accident Investigation Board
AIBLA	Accident Investigation Board Legal Advisor
AIBMD	Aircraft Investigation Board Medical
AIBMX	Aircraft Investigation Board Maintenance
AIBPM	Aircraft Investigation Board Pilot Member
AIBR	Aircraft Investigation Board Recorder
AIBR2	Aircraft Investigation Board Assistant Recorder
AMXS	Aircraft Maintenance Squadron
ANG	Air National Guard
ANGB	Air National Guard Base
ATC	Air Traffic Control
ATC1	Local Tower Controller
ATC2	Ground Controller
BAK	Barrier Arresting Kit
BCE	Base Civil Engineer
BD	Battle Damage
BFM	Basic Fighter Maneuvers
BIT	Built-in-test
BPO	Basic Post-Flight Inspection
CC	Commander
CUI	Controlled Unclassified Information
DAFI	Department Air Force Instruction DD Defense Department
DoD	Department of Defense
EOR	End of Runway
ER	Exceptional Release
FAA	Federal Aviation Administration
FL	Flight Lead
FLE1	Flight Line Expeditor
FLE2	Flight Line Expeditor two
FOHE	Fuel Oil Heat Exchanger
FS	Fighter Squadron
ft	Feet
FTD	Field Training Device
FW	Fighter Wing
FWCC	Fighter Wing Commander
GAB	Ground Abort
GC	Ground Controller
HPO	Hourly Post-Flight
HUD	Heads-Up Display
IAW	In Accordance With
IFE	In-Flight Emergency
IMDS	Integrated Maintenance Data System
IP	Instructor Pilot
ISBIO	Interim Safety Board Investigating Officer
ISBMD	Interim Safety Board Medical
ISBMX	Interim Safety Board Maintenance
ISBP	Interim Safety Board President
ISBPM	Interim Safety Board Pilot Member
ISBA	Interim Safety Board Safety Advisor
ISBSO1	Interim Safety Board Safety Officer
JFS	Jet Fuel Starter
KCAS	Knots Calibrated Airspeed
L	Local Time
LTC	Local Tower Controller
MA	Mishap Aircraft
MADCC	Mishap Aircraft Dedicated Crew Chief
MAACC	Mishap Aircraft Assistant Crew Chief
MAJCOM	Major Command
MF	Mishap Flight
MFCS	Mishap Flight Call Sign
MFWCS	Mishap Flight Wingman Call Sign
MFT	Mishap Flight Team
MOA	Military Operating Area
MP	Mishap Pilot
MPCS	Mishap Pilot Call Sign
MW	Mishap Wingman
MWCS	Mishap Wingman Call Sign
NM	Nautical Miles
NMC	Non-Mission Capable

NOTAMs	Notices to Airmen
OFT	Other Flight Team
OFT1	Other Flight Team One
OFT2	Other Flight Team Two
OG	Operations Group
ORM	Operational Risk Management
O&M	Operations and Maintenance
OSS	Operations Support Squadron
PA	Public Affairs
PE	Periodic Inspection
PHA	Periodic Health Assessment
PMP	Packaged Maintenance Plan
PR	Pre-Flight Inspection
PSI	Pounds Per Square Inch
QA	Quality Assurance
RAP	Ready Aircrew Program
RCR	Runway Condition Report
RLS	Reservoir Level Sensing
RTB	Return-To-Base
RWY	Runway
SAR	Search and Rescue
SCATC	Seattle Center Air Traffic Control
SIBIO	Safety Investigation Board Investigating Officer
SIBMX	Safety Investigation Board Maintenance
SIBP	Safety Investigation Board President
SII	Special Interest Item
SOF	Supervisor of Flying
TH	Thru-Flight Inspection
T/N	Tail Number
TO	Technical Order
TOD	Technical Order Data
TTPs	Tactics Techniques Procedures
UIP	Upgrade Instructor Pilot
USAF	United States Air Force
VR	Victor Route
VFR	Visual Flight Rules

The above list was compiled from the Summary of Facts, the Statement of Opinion, the Index of Tabs, and witness testimony.

SUMMARY OF FACTS

1. AUTHORITY AND PURPOSE

a. Authority

On 1 September 2023, Lieutenant General Brian S. Robinson, Commander, Air Education Training Command (AETC), appointed Colonel Taylor T. Ferrell, to conduct an Accident Investigation Board for a mishap that occurred on 15 May 2023 involving an F-15D aircraft, tail number (T/N) 84-0046, at Kingsley Field ANGB, Klamath Falls, Oregon (Tab T-2 to T-3). The aircraft accident investigation was conducted IAW Air Force Instruction (AFI) 51- 307, *Aerospace and Ground Accident Investigations*, at Kingsley Field ANGB, convened on 1 September 2023 (Tab T-2 to T-3). The board members included a Medical Member (Captain), a Legal Advisor (Captain), a Pilot Member (Captain), an Assistant Recorder (Master Sergeant), a Recorder (Technical Sergeant), and a Maintenance Member (Technical Sergeant) (Tab T-2 to T-7).

b. Purpose

In accordance with AFI 51-307, *Aerospace and Ground Accident Investigations*, dated 17 March 2019, this Accident Investigation Board conducted a legal investigation to inquire into all the facts and circumstances surrounding this Air Force aerospace 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 15 May 2023, at 1500L, the mishap aircraft (MA), an F-15D, T/N 84-0046, assigned to the 173d Fighter Wing (FW), Kingsley Field ANGB, Klamath Falls, Oregon, operated by a pilot from the 173d FW, failed to stop after landing on (RWY) 14 at Kingsley Field ANGB and crashed into an irrigation canal (Tab A-4, V-1.1 to V-1.2 and V-1.6 to V-1.9). The MF was returning from a local training mission as a two-aircraft formation (Tab V-1.2). Only the mishap pilot (MP) was on board the MA at the time of the incident (Tab AA-3). The MP successfully egressed the MA following the crash (Tab V-1.9 to V-1.10). There were no military or civilian casualties resulting from the mishap (Tab A-4, and V-1.9 to V-1.10). The MA, valued at $35,536,444, was destroyed (Tab E).

3. BACKGROUND

The following provides information regarding the various commands and units relevant to the MA, MP, and the MF:

a. Air Education and Training Command (AETC)

Air Education and Training Command (AETC), with headquarters at Joint Base San Antonio-Randolph, Texas, was established and activated in January 1942, making it the oldest major command (MAJCOM) in the Air Force (Tab U-2 to U-3). AETC's mission is to recruit, train, and educate Airmen to deliver 21st Century Airpower (Tab U-2 to U-3). The command operates 12 major installations and supports tenant units on numerous bases across the globe (Tab U-2 to U-3). There are also 16 active-duty and seven Reserve wings (Tab U-2 to U-4). More than 29,000 Active-Duty members, 6,000 Air National Guard and Air Force Reserve personnel, as well as 15,000 civilian personnel make up AETC (Tab U-3). The command also has more than 11,000 contractors assigned (Tab U-3). AETC flies approximately 1,300 aircraft (Tab U-3).

b. Air National Guard (ANG)

The ANG is administered by the National Guard Bureau, a joint bureau of the departments of the Army and Air Force, located in the Pentagon, Washington, District of Columbia (Tab U-5). It is one of the seven Reserve components of the United States armed forces that augments the active components in the performance of their missions (Tab U-3).

The ANG's federal mission is to maintain well-trained, well-equipped units available for prompt mobilization during war and provide assistance during national emergencies, such as natural disasters or civil disturbances (Tab U-5). During peacetime, the combat-ready units and support units are assigned to most United States Air Force (USAF) MAJCOMs to carry out missions compatible with training mobilization readiness, humanitarian, and contingency operations (Tab U-5 to U-8, and U-11).

c. 173d Fighter Wing

The 173d Fighter Wing (FW) is part of the Oregon ANG (Tab U-9). The 173 FW hosts the sole F-15C Formal Training Unit in the USAF and is responsible for training the best air-to-air combat pilots in the world for the Air National Guard and Active-Duty Air Force (Tab U-10). The 173 FW is comprised of 1,050 personnel, a 110-member active association from Luke Air Force Base, Arizona, and 32 Total Assigned, 26 Primary Assigned

Aircraft (Tab U-10). The 173 FW F-15 training mission is aligned under Air Education and Training Command (Tab U-10).

d. 114th Fighter Squadron

The 114th Fighter Squadron (FS) is attached to the 173 FW of the Oregon ANG (Tab U-10). The mission of the 114 FS is to train the world's best fighter pilots (Tab U-10).

e. F-15C/D Eagle

The F-15C/D Eagle is an all-weather, extremely maneuverable, tactical fighter aircraft designed to gain and maintain air supremacy over the battlefield (Tab U-12 to U-15). The Eagle's air superiority is achieved through a mixture of unprecedented maneuverability and acceleration, range, weapons, and avionics (Tab U-12 to U-15). The F-15 has electronic systems and weaponry to detect, acquire, track and attack enemy aircraft while operating in friendly or enemy-controlled airspace (Tab U-12 to U-15).

f. BAK-12 Aircraft Arresting System

The BAK-12 is the standard USAF operational aircraft arresting system. Aircraft arresting systems consist of engaging devices and energy absorbers (Tab U-17). This bidirectional system employs two energy absorbers, consisting of two multi-disc rotary friction brakes mounted on opposite side of the runway (Tab U-17). Dual BAK-12 systems are special-purpose installations configured to accommodate high-energy engagements of aircraft ranging from 60,000 to 140,000 pounds (27,200 to 63,500 kilograms) (Tab U-18). These configurations consist of four BAK-12 energy absorbers arranged in pairs on either side of the runway (Tab U-18). A BAK-12 can be located anywhere on or near the runway depending upon the military mission requirements (Tab U-18).

4. SEQUENCE OF EVENTS

a. Mission

On 15 May 2023, the MP departed Kingsley Field ANGB as part of a four aircraft (4-ship) dissimilar formation of one F-15D, one F-15C, and two F-35As on a local training mission (Tabs A-4 to A-5, K-2, R-2.5, and V-1.2 to V-1.5). The MP flew as the flight lead, or number one, in the formation (Tabs K-2, R-2.5, and V-1.2). The MP was the 173d FW Chief of Wing Safety and had a total of 3,362.5 flight hours (Tabs V-1.2 and W-2). The mishap flight (MF) flew to a MOA and executed dissimilar Basic Flight Maneuvers (BFM) followed by a low-level route before returning to Kingsley Field ANGB (Tab R-2.2, and R-2.5 to R-2.7). The 114th Fighter Squadron Commander authorized the training mission, and it was scheduled IAW the Ready Aircrew Program (RAP) tasking memo (Tab W-25 to W-30).

b. Planning

The MP and MW completed their mission preparation the morning of 15 May 2023 and began the flight brief at 1230L, IAW 173d Fighter Wing General Briefing Guide and AFMAN 11- 2F15-V3, *F-15 Operations Procedures,* 25 November 2020 (Tab O-2, O-5, and R-2.5). Preparation included reviewing the mission profile for the flight, completing an Operational Risk Management (ORM) sheet, and ensuring all required Go/No-Go's were complete (Tabs W- 14 to W-17, V-1.3, BB-2 and BB-19). The MF was a low-risk category mission requiring no additional supervisor approval (Tabs V-1.3 and BB-2). The MF checked the current and forecasted weather for Kingsley Field ANGB and the MOA, which did not negatively impact mission planning (Tab F-2 to F-5, and V-1.3). Review of the Notices to Airmen (NOTAMS) was accomplished for Kingsley Field ANGB and all potential divert locations (Tab F-7 and F-12).

c. Preflight

The MA underwent significant hydraulic system maintenance on 3 May 2023 and did not fly until the morning of 15 May 2023 (Tab D-8 to D-17). After the first flight, the MA landed with no maintenance discrepancies identified (Tab D-2 and D-5). During the Thru-Flight inspection, maintenance personnel serviced the utility hydraulic system (Tab V-5.7 to V-5.8). The MA was configured for a standard training mission (Tabs V-6.12 to V-6.13). The MP reviewed the aircraft forms and conducted the pre-flight walkaround without any discrepancies noted (Tab V-1.4). Engine start and taxi out of chocks were uneventful (Tab V-1.4 and V-6.13).

d. Summary of Accident

The MP departed Kingsley Field ANGB at approximately 1400L and followed a standard instrument departure to the MOA (Tab V-1.4 and V-1.5). In the MOA, the MP and MW split their formation to execute dissimilar BFM with the F-35As, then rejoined as a dissimilar 4-ship visual formation to execute low-level training (Tab R-2.5 to R-2.6). Training in the MOA and on the low-level route was uneventful and executed IAW the mission brief (Tab R-2.5 to R-2.6).

Approximately 30 NM west of Kingsley Field ANGB, the MP received indications of a hydraulic malfunction (Tabs R-2.5 to R-2.6, and AA-2 to AA-3). The MP noted the illumination of a hydraulic light on the master caution panel, a Utility B light on the hydraulic built-in-test (BIT) light panel, and a right engine inlet light (Tabs R-2.6, R-2.12, and AA-2). The MP aborted the low-level route, initiated a return towards Kingsley Field ANGB, and directed the MW to rejoin for a battle damage (BD) check (Tabs R-2.6, and AA-2 to AA-3). During the BD check, the MW noted hydraulic fluid leaking from the MA behind the right main landing gear door (Tabs R-2.6 and AA-3). The MP confirmed normal utility hydraulic pressure just below 3,000 pounds per square inch (psi) on the MA utility hydraulic gauge. (Tabs R-5.2, R-5.6, and AA-4). The MP referenced the aircraft checklist and complied with all initial checklist items for a Utility B hydraulic failure (Tab R-2.2 and R-2.6 to R-2.7). The MP declared an in-flight emergency with Seattle Center Air Traffic Control (SCATC) and requested to proceed direct to Kingsley Field ANGB for a visual straight-in approach to RWY 14 (Tabs R-2.6 and AA-3 to AA-5).

Kingsley Field ANGB RWY 14 is 10,302 ft in length, 150 ft wide, with 1000 ft extended overruns at each end of the RWY (Tab Y-51). Two BAK-12B aircraft arresting cables are located approximately 1,500 ft from either end of the RWY (Tab Y-51). The daily record of facility

operations indicated that checks on both aircraft arresting systems were completed on the morning of the mishap and were fully operational (Tab BB-3 to BB-4).

At approximately 10 NM from Kingsley Field ANGB, the MP successfully configured the aircraft for landing (Tab AA-4 to AA-5). The MP and MW confirmed that the MA landing gear was down, locked, and the forward main landing gear doors were closed (Tab AA-5). The MW communicated to the MP that hydraulic fluid was leaking from behind the right main landing gear and now trailing the MA between the exhaust nozzles (Tabs R-2.7 and AA-3). The MP recalled noting normal utility hydraulic pressure and relayed the safe landing configuration to the Supervisor of Flying (SOF) (Tabs R- 5.6 and AA-4 to AA-5). The MP communicated the intent to land on RWY 14, and if abnormal braking was encountered, would execute a go-around to attempt an approach end arrestment (Tab AA-5).

On final approach, the local tower controller (ATC1) cleared the MP to land and communicated to the MP that the departure end arrestment cable indicated up, meaning the cable was configured to catch the MA via the arresting hook. (Tab AA-5 to AA-6). The MA touched down on speed at 138 knots calibrated airspeed (KCAS) approximately 850 feet (ft) down the RWY (Tab Z-3). The MP extended the speed brake and performed an aerobrake to 100 KCAS (Tab Z-3). The MP lowered the nose wheel of the MA approximately 2,500 ft down the RWY (Tab Z-3). After landing, the SOF communicated to the MP that the speed brake did not fully extend (Tab AA-6). The MP applied brake pressure but subsequently recognized that braking was insufficient to slow the MA. (Tabs V-1.7 and Z-3). During the aircraft investigation board (AIB) interview, the MP was uncertain whether sufficient runway remained to safely execute a go-around and elected to continue the landing to attempt a departure-end cable arrestment (Tab V-1.6 to V-1.8). The MP lowered the arresting hook at approximately 5,000 ft down the RWY and transmitted “cable” on tower frequency (Tabs Z-3 to Z-4, and AA-6). ATC1 understood the radio transmission to mean the MP wanted the cable down, activated the switch to lower the arrestment cable and approximately three seconds later transmitted “cable coming down” on tower frequency (Tab R-4.6 and AA-6). During the MP interview, the AIB did confirm that the MP intended to convey the need to engage the departure end arrestment with the term “cable” (Tab V-1.8). Approximately seven seconds later, at 78 KCAS with approximately 3,500 ft RWY remaining, the MP transmitted “no, no, I need cable, cable up, cable up, cable up, cable up” (Tabs Z-4 and AA-6). Approximately four seconds later, ATC1 activated the switch to raise the cable and responded, “cable up” (Tabs Z-6 and AA-6).

The MA crossed the departure end cable arrestment point at 72 KCAS with approximately 1,500 ft RWY remaining (Tab Z-4). Shortly thereafter, the MP transmitted “no cable” on tower frequency, indicating an unsuccessful departure-end cable arrestment (Tab AA-6). During the AIB interview, the MP was cognizant of the loss of brakes emergency checklist but expressed concerns of blowing the tires and losing directional control by utilizing the emergency brake system (Tab V-1.9 and V-1.11). To minimize the probability of blown tires, the TO 1F-15A- 1CL-1 cautions against engaging the emergency brake system above 70 knots and recommends initial light brake pressure (Tab Y-11).

The MA exited the runway onto the extended overrun at 62 KCAS (Z-4). The MP intentionally veered right to avoid the instrument approach lighting system located in the extended overrun centerline and departed the prepared surface at 57 KCAS (Tab Z-4). Approximately four seconds later, the MA struck a raised retention berm on the northside, momentarily became airborne, and impacted the southside berm of the irrigation canal (Tabs S-2 to S-3 and Z-4). The MA was 15

degrees nose low, in 20 degrees right bank, travelling at approximately 49 KCAS on impact (Tab Z-4).

e. Impact

The MA impacted the irrigation canal approximately 0.2 NM south of the departure end centerline of RWY 14 at 15:00:02L (Tabs S-2 and Z-4). The impact parameters prevented major aircraft breakup but destroyed the nose section and forward fuselage of the MA (Tab S-2 to S-7). The MA came to rest partially submerged in the canal (Tab S-2 to S-6).

Figure 1. Mishap Aircraft Wreckage in Canal (Tab S-2)

f. Egress and Aircrew Flight Equipment (AFE)

The MP successfully egressed the MA with no deficiencies or malfunctions of AFE (Tabs V-1.10 and BB-25). The MP was current in all AFE training requirements and all flight gear inspections at the time of the mishap (Tab BB-25). There was no notable damage to AFE from the MA impact (Tab BB-25).

g. Search and Rescue (SAR)

At 14:53:15L, Kinglsey ANGB fire department was notified via the Primary Crash Phone of an F-15D in-flight emergency with a hydraulic malfunction (Tab BB-26). Emergency vehicles, in coordination with the control tower, responded at 14:54:00L and were in position at mid-field and south EOR at 14:58:15L (Tab BB-26). Following MA impact, emergency vehicles re-routed via the diversion canal access road (Tab BB-26 to BB-27). When emergency response personnel arrived on scene, the MP had successfully egressed the MA on the southside of the canal (Tab BB-26). Post mishap, the MP was evaluated at Sky Lakes Medical Center Emergency Department, Klamath Falls, Oregon, and diagnosed with a non-life threatening injury (Tab H-2). The Fire Department terminated SAR at 19:53:00L (Tab BB-26). The U.S. Bureau of Reclamation placed a boom around the MA to prevent water contamination (Tab BB-27).

h. Recovery of Remains

Not applicable.

5. MAINTENANCE

a. Forms Documentation

The Air Force Technical Order (AFTO) 781 series collectively documents maintenance actions, inspections, servicing, configuration status, and flight activities (Tab D-2 to D-63). The AFTO 781 series, provide a comprehensive database to track and record maintenance actions and inspection histories for each Air Force aircraft (Tabs D-2 and D-6 to D-63).

The AIB reviewed all applicable maintenance records for the 30 days preceding the mishap and identified no recurring issues (Tab D-2 to D-21, and D-56 to D-63). However, proper maintenance documentation in the AFTO 781 series and IMDS was not accomplished on the day of the mishap IAW Technical Order (TO) 00-20-1, *Aerospace Equipment Maintenance Inspection, Documentation, Policies, and Procedures,* 25 September 2022 and Department of the Air Force (DAFI) 21-101, *Aircraft and Equipment Maintenance Management,* 6 September 2019 (Tabs D-5 and D-52, Y-3 to Y-7, and Y-47 to Y-48).

b. Inspections

The Pre-Flight (PR) and Basic Post-Flight (BPO) Inspections include visually examining the aerospace vehicle and operationally checking systems and components to ensure no significant defects or malfunctions exist (Tab Y-3 to Y-4). Phase Hourly Post-Flight (HPO) and Periodic (PE) Inspections are thorough inspections of the entire aerospace vehicle (Tab Y-4). Thru-Flight Inspections are abbreviated PR inspections required prior to launch (Tab Y-3 to Y-4).

The MA PR Inspection was satisfactorily completed on 15 May 2023, at 0800L with no discrepancies noted (Tab D-2). Following the first flight of the day, the MA TH Inspection was completed on at 1100L with no discrepancies noted (Tab D-2). Total operating time of the MA was 6,931.8 hours (Tab D-2). The MA had flown 308.8 hours since the last PE inspection which was accomplished on 19 May 2021 (Tabs D-2, D-58, and CC-4). Prior to the mishap, the MA had no reported maintenance issues, and all inspections were satisfactorily completed (Tab D-2).

c. Maintenance Procedures

On 3 May 2023, the MA Ground Aborted (GAB) for a Right-Hand Utility Pump failure (Tab D-13) The 173d Aircraft Maintenance Squadron (AMXS) at Kingsley Field ANGB overhauled the MA Utility Hydraulic system, conducted on-site operational testing, and returned the MA to service (Tab D-6 to D-19). The overhaul replaced the Right-Hand Utility Pump, two Utility Accessories Manifold Return Filters, and one Utility Accessories Manifold Supply Filter (Tab D-10, D-13, and D-17). The 173 AMXS personnel conducted an entire Utility Hydraulic System flush and on-site leak and operational test to determine the integrity and serviceability of the replaced parts (Tab D- 15 to D-17).

d. Maintenance Personnel and Supervision

Maintenance personnel from the 173 AMXS and 550 AMXS were responsible for all inspections,

documentation, and servicing on the MA prior to the MF (Tab D-2 to D-5). Although maintenance training records revealed that all personnel were qualified to perform their respective duties on the MA, a review of maintenance activities and documentation revealed several deviations from maintenance directives (Tab D-2 to D-5). Maintenance supervision failed to review the MA forms for proper maintenance documentation IAW DAFI 21-101, *Aircraft and Equipment Maintenance Management*, 8 November 2022 and DAFI 21-103, *Equipment, Inventory, Status, and Utilization Reporting,* 31 October 2022 (Tab Y-47 to Y-50).

e. Fuel, Hydraulic Fluid, Oil and Oxygen Inspection Analyses

Onboard hydraulic fluid analysis was inconclusive due to water contamination (Tab X-2). Onboard oxygen was depleted during the MA recovery process and not available for testing (Tab X-2). The Air Force Petroleum Office (AFPET) analyzed onboard fuel and oil samples (Tab J-21 and CC-2 to CC-3). Testing results were within normal technical standards (Tab CC-2 and CC-3).

f. Unscheduled Maintenance

Following the unscheduled hydraulic system maintenance on 3 May 2023, the MA did not fly until the morning of 15 May 2023, the day of the mishap (Tab D-2). After the first flight, maintenance personnel reported a possible Utility System hydraulic leak during the Thru-Flight inspection (Tab V-6.17 to 6.18). To identify the source of the leak, maintenance removed door 88 right (R) to access the utility hydraulic reservoir and serviced the system (Tab V-7.1). Maintenance did not fully exhaust all measures to confirm the existence of a leak and performed an Exceptional Release (ER), deeming the aircraft flight worthy (Tab D-2). Review of the AFTO 781A on the day of the mishap determined maintenance personnel did not document utility hydraulic servicing procedures or the removal of door 88R, IAW TO 00-20-1, *Aerospace Equipment Maintenance Inspection, Documentation, Policies, and Procedures* and DAFI 21-101, *Aircraft and Equipment Maintenance Management* (Tabs D-2, Y-2 to Y-4 and Y-47 to Y-48).

6. AIRFRAME, MISSILE, OR SPACE VEHICLE SYSTEMS

a. Structures and Systems

Due to speed of the MA and the location of the canal, major aircraft breakup was prevented (Tab S-2 to S-4). The MA sustained significant damage to the radome and forward fuselage structure (Tab S-7). The nose landing gear and the right main landing gear separated from the MA during the mishap sequence, most likely during impact of the raised irrigation berm (Tab S-2 to S-4 and S-7). The wings, horizontal stabilators, and vertical tails remained intact with no major damage assessed to primary flight control surfaces (Tab S-2 to S-4 and S-7).

b. Utility Hydraulic System: Overview

The Utility Hydraulic System provides hydraulic power to major aircraft systems and operates at 3000 psi (Tab Y-17). The system is comprised of circuits A and B (Tab Y-17 to Y-19). For the purposes of this mishap, Circuit A operates the speed-brake, left variable inlet ramp, nose-wheel steering, landing gear extension and retraction, wheel brakes, and the arresting hook (Tab Y-17 to Y-19). Circuit B operates the right variable inlet ramp and replenishes two Jet Fuel Starter (JFS) accumulators, which in the event of circuit A failure, provide emergency function for aircraft

braking, steering, and landing gear extension (Tab Y-17 to Y-19). The JFS accumulators are pressurized to the 3,000 psi (Tab Y-17 to Y-19).

(1) Fuel Oil Heat Exchanger (FOHE)

Post-mishap ground testing determined that the FOHE catastrophically failed due to a crack near a weld on the forward outboard housing, near the Utility outlet port (Tab X-3). Utility Hydraulic servicing and system pressurization confirmed the FOHE as the primary source of the MA hydraulic leak (Tab X-3). No additional leaks were found during system pressurization (Tab X-3). The FOHE was shipped to the F-15 Systems Engineer for analysis and returned to the supply system (CC-5). As a result, the FOHE was not available to the AIB for physical examination (Tab CC-5).

Figure 2 Left and Right FOHE (Tab S-5)

c. Evaluation and Analysis

A thermal control valve routes hydraulic fluid to the FOHE through the Non-Reservoir Level Sensing (RLS) hydraulic circuit (Tab Y-17 to Y-20). A leak in the Non-RLS circuit cannot be isolated and will result in Total Utility Hydraulic System failure (Tab Y-17 to Y-20). The rate of hydraulic fluid loss will be significantly higher if the thermal control valve is open (Tab Y-17 to Y-20). When utility hydraulic fluid exceeds 225 degrees Fahrenheit, all fluid will be routed to the FOHE for maximum cooling (Tab Y-20). The structural crack in the FOHE led to a catastrophic leak from the Utility Non RLS System and a total utility system failure (Tabs Y-17 and X-3).

Post mishap inspection confirmed all MA braking components were functional and both JFS Accumulators were fully charged to 3,000 psi (Tab X-3). Additionally, both JFS Accumulator piston position indicators were within limits (Tab X-3). As a result, the AIB assesses the emergency brake system would have functioned properly if it had been engaged (Tab X-3).

7. WEATHER

a. Forecast Weather

The forecast weather on the day of the mishap, provided by the 173d Operations Support Squadron (173 OSS), was winds from 180 south at 10 knots, gusting to 18 knots, 6 statute miles visibility, with rain showers in the vicinity of the airfield (Tab F-6). Forecast cloud layers were scattered at 6,000 ft, broken at 10,000 ft (Tab F-6).

b. Observed Weather

The observed weather was winds from 190 south at 10 knots, gusting to 17 knots, 10 statute miles visibility (Tab BB-3). Cloud layers were scattered at 8,000 and the local altimeter was 30.12 (Tab BB-3). At 14:57:29L, while the MA was on final approach, ATC1 updated the winds to 160 south at 12 knots, gusting to 20 knots (Tab AA-5).

c. Space Environment

Not applicable.

d. Operations

There was no evidence located that indicated the MF was operating outside of its prescribed weather limits (Tab BB-7 to BB-14).

8. CREW QUALIFICATIONS

a. Mishap Pilot

At the time of the mishap, the MP was current and qualified as an Instructor Pilot (IP) and Upgrade IP (UIP), with 3,362.5 total flying hours (Tab W-2). The MP's last instrument check ride was completed on 08 February 2022 (Tab G-18). The MP's last mission check ride was completed on 07 January 2023 (Tab G-17). The MP received no downgrades on either check ride (Tabs G-17 to G-18).

Table 1: MP 30-60-90 day Flying History as of the da of the mishap (Tab W-11)

MP	Hours	Sorties
Last 30 Days	9.2	6
Last 60 Days	22.5	14
Last 90 Days	29.9	20

9. MEDICAL

a. Qualifications

b. The MP was medically qualified for flying duties at the time of the mishap, with one limitation: the wearing of visual correction devices during flight (Tab H-2). The Aeromedical Services Information Management System was reviewed, verifying the MP had a current DD Form 2992, *Medical Recommendation for Flying or Special Operation Duty*, with no duty limiting conditions (Tab H-2). The MP has one aeromedical waiver, which was approved on 15 Dec 2022 (Tab H-2). The medical review revealed no factors relevant to the mishap (Tab H-2) health.

The MP completed a Periodic Health Assessment (PHA) on 02 November 2022 and was in good health at the time of the mishap (Tab H-2). The MP complained of lower back pain following the mishap and was confirmed to have suffered non-life-threatening injuries. (Tabs H-2 and V-1.10).

c. Pathology

Toxicology testing was conducted on the MP following the mishap (Tab H-2). These tests are used to identify carbon monoxide and alcohol in the blood, amphetamines, barbiturates, benzodiazepines, cannabinoids, cocaine, opioids, phencyclidine, and sympathomimetic amines in the urine (Tab H-2). The test results for the MP were negative (Tab H-2). No toxicology samples were obtained for the maintenance members involved with the MA (Tab H-2).

d. Lifestyle

There was no evidence to indicate lifestyle factors were relevant to the mishap (Tab H-2).

e. Crew Rest and Crew Duty Time

AFMAN (Air Force Manual) 11-202 Volume 3, *Flight Operations,* dated 10 January 2022, prescribes mandatory crew rest and maximum Flight Duty Periods for all personnel who operate USAF aircraft (Tab H-2 and Y-34 to Y-36). There was no evidence to indicate crew rest violations occurred prior to the mishap or that the mishap pilot exceeded the maximum flight duty period (Tab H-2).

10. OPERATIONS AND SUPERVISION

a. Operations

The MF was conducting continuation training (CT) IAW the RAP (Tab W-25 to W-30). Normal operations tempo for each pilot is generally two to three training sorties per week (Tab W-32 to W-33). Pilots assigned to the 114 FS accomplish an average of seven sorties a month, which is two sorties above the monthly average to maintain mission ready training status per the RAP tasking message (Tab W-26, W-32 to W- 33).

b. Supervision

Supervision of the 173 FW, 114 FS, operations on the day of the mishap was IAW AFI 11-418, *Operations Supervision*, dated 22 December 2021 (Tab Y-21 to Y-33). The MF had all required authorizations, supervision, and documentation for the planned sortie (Tab W-22). A SOF and operations supervisor were on duty the day of the mishap (Tab W-23).

11. HUMAN FACTORS ANALYSIS

a. Introduction

The Department of Defense (DoD) Human Factors Analysis and Classification System Version 7.0 lists potential human factors that can play a role in aircraft mishaps (Tab Y-1). Policy and process issues are factors of a process which negatively influence performance and result in an unsafe situation (Tab Y-20). Three human factors were identified as relevant to the mishap: 1) Wrong choice of action during an operation; 2) Performs work-around violation; 3) Failed to effectively communicate (Tab Y-6 to Y-7, and Y-14).

1. AE206 (Wrong Choice of Action During an Operation)

A wrong choice of action during an operation is a factor when the individual, through faulty logic or erroneous expectations, selects the wrong course of action (Tab Y-6). Wrong choice of action is applicable to the cause of the mishap (Y-6).

2. AV001 (Performs Work-Around Violation)

Performing work-around violations is a factor when the consequences/risk of violating published procedures was recognized, consciously assessed, and honestly determined by the individual, crew or team to be the best course of action (Tab Y-7). Routine "work-arounds" and unofficial procedures that are accepted by the community as necessary for operations are also captured under this code (Tab Y-7). A work-around violation is applicable to the cause of the mishap (Y-7).

3. PP108 (Failed to Effectively Communicate)

Failure to effectively communicate is a factor when communication is not understood or is misinterpreted as the result of behavior of either sender or receiver (Tab Y-14). Communication failed to include backing up, supportive feedback or acknowledgement to ensure that personnel correctly understood announcements or directives (Tab Y-14). Failure to effectively communicate is applicable to a substantially contributing factor in the mishap (Tab Y-14).

12. GOVERNING DIRECTIVES AND PUBLICATIONS

a. Publicly Available Directives and Publications Relevant to the Mishap

(1) AFI 51-307, *Aerospace and Ground Accident Investigations*, 17 March 2019
(2) AFMAN 11-2F15-V3, *F-15 Operations Procedures,* 25 November 2020
(3) AFI 11-418, *Operations Supervision*, 22 December 2021
(4) AFI 11-202VS, *Crew Rest*, 16 Feb 2016
(5) DAFI 21-101, *Aircraft and Equipment Maintenance Management,* 8 November 2022
(6) DAFI 21-103, *Equipment, Inventory, Status, and Utilization Reporting,* 31 October 2022
(7) Department of Defense Human Factors Analysis and Classification System, Version 7.
(8) AFMAN 11-202 Volume 3, *Flight Operations,* dated 10 January 2022

NOTICE: All directives and publications listed above are available digitally on the Air Force Departmental Publishing Office website at: https://www.epublishing.af.mil or the Air Force Safety Center website at: https://www.safety.af.mil.

b. Other Directives and Publications Relevant to the Mishap

(1) TO 00-20-1, *Aerospace Equipment Maintenance Inspection, Documentation, Policies, and Procedures,* 26 September 2022

(2) TO 1F-15C-2-29GS-00-1, *Hydraulic Power System General System*, 15 June 2020

(3) TO 1F-15C-2-29FI-00-1, *Hydraulic Power System Fault Isolation*, 15 September 2022

(4) TO 1F-15A-1CL-1, *Flight Crew Checklist*, 15 August 2023

c. Known or Suspected Deviations from Directives or Publications

(1) DAFI 21-101, *Aircraft and Equipment Maintenance Management,* 8 November 2022, pg. 14, para 1.5, 1.5.1, 1.6. Maintenance personnel deviated from written guidance to ensure required repairs, inspections, and documentation are completed in a compliant, safe, timely, and effective manner. (Tab D-5 and D-52).
(2) DAFI 21-101, *Aircraft and Equipment Maintenance Management*, 8 November 2022, pg. 47, para 3.5.1, 3.5.7. Maintenance Supervision failed to determine proper status of the MA after review of aircraft forms. (Tab D-5 and D-52).
(3) DAFI 21-103, *Equipment, Inventory, Status, and Utilization Reporting,* 31 October 2022*,* pg. 28*,* para 2.23.7, 2.23.7.1. Maintenance supervision had sufficient knowledge of maintenance procedures being performed and failed to ensure proper tracking and documentation. (Tab Y-50)
(4) TO 00-20-1, *Aerospace Equipment Maintenance Inspection, Documentation, Policies, and Procedures*. Maintenance personnel deviated from written guidance by failing to document non-flyable conditions and maintenance inspections. (Tab Y-2 to Y-4)
(5) TO 1F-15A-1CL-1. MP intentionally deviated from checklist and did not pull emergency brake steer handle for fear of blowing the tires (Tab Y-10).

25 July 2024

TAYLOR T. FERRELL, Col, USAF
President, Accident Investigation Board

STATEMENT OF OPINION

F-15D, T/N 84-0046
KINGSLEY FIELD AIR NATIONAL GUARD BASE, KLAMATH FALLS, OREGON
15 MAY 2023

2. OPINION SUMMARY

On 15 May 2023, at 1500L, the mishap aircraft (MA), an F-15D, tail number (T/N) 84-0046, assigned to the 173d Fighter Wing (FW), Kingsley Field ANGB, Klamath Falls, Oregon, crashed after landing on RWY 14 at Kingsley Field ANGB. The MA departed the RWY surface and impacted an irrigation canal. There were no fatalities, but the MP sustained non-life-threatening injuries. The MA, valued at $35,536,444, was destroyed.

The mishap occurred on return to Kingsley Field ANGB following a routine training mission in a Military Operating Area (MOA). The mission profile included dissimilar Basic Fight Maneuvers (BFM) against F-35As followed by a low-level route. The MA was the number one aircraft in the formation. The MA experienced a hydraulic malfunction while on the low-level route. The MP terminated the mission, declared an inflight-emergency, and returned to base. The severity of the hydraulic leak resulted in a Total Utility System Hydraulic Failure and total loss of normal braking. Despite the MP deploying the arresting hook, ATC1 misinterpreted MP intent to engage the departure-end arrestment cable and lowered the cable. The MA failed to make a successful arrestment, exited the RWY onto the extended overrun, departed the prepared surface, struck the embankment berm, briefly became airborne, and impacted an irrigation canal. The MP safely egressed the MA.

The Kingsley Field ANGB fire department responded to the mishap. The MP received initial care and was transported to Sky Lakes Medical Center via ambulance.

I found, by preponderance of the evidence, that the mishap was caused by the MP decision not to engage the MA Emergency Brake/Steer System in accordance with (IAW) the checklist.

I developed my opinion after interviewing witnesses, including the MP and maintenance personnel from the 173d Maintenance Group. Additionally, I reviewed applicable Air Force directives, information, and reports provided by technical experts and other witness testimony. I analyzed recorded flight data, engineering analysis, and laboratory testing results. I also utilized the F-15C Flight Training Device (FTD) to recreate the mishap parameters and gather conclusive evidence to support my opinion.

2. CAUSE

I find by a preponderance of evidence the cause of the mishap was the following:

a. MP Elected Not to Engage the MA Emergency Brake/Steer System IAW Checklist

While airborne, the MP complied with all hydraulic emergency checklist items and developed a sound plan to safely recover the aircraft. The initial plan to go-around following MA touchdown to attempt an approach end cable arrestment indicates the MP was cognizant of the severity of the hydraulic leak and recognized the probability of total utility hydraulic system failure. Upon initial brake application, the MP assessed the MA slowed normally to 90 KCAS, then assessed braking action was insufficient to stop the MA. Uncertain whether a go-around was safely executable in the remaining runway, the MP elected to continue the landing and stop the MA by engaging the departure end arrestment cable.

The AIB recreated the mishap sequence in the F-15 FTD and concluded the MP could safely execute a go-around in the amount of runway length remaining. Ambient air temperature, local altimeter setting, observed winds, runway condition report (RCR), aircraft configuration and fuel weight were set to the parameters on the day of the mishap. To approximate distance required to return airborne, multiple simulations were conducted traveling at 90 KCAS, approximately 4,000 ft down the RWY, with approximately 6,000 ft RWY remaining. Executing a military power go-around, full power without afterburner, the aircraft returned airborne in approximately 3,000 ft, with 3,000 ft runway distance remaining. Executing a maximum power go-around, full power with full afterburner, the aircraft returned airborne in approximately 1,000ft, with 5,000 ft runway distance remaining. In my opinion, executing a go-around was the most conservative course of action. However, due to the amount of time required for the MP to assess the situation, the decision to remain on the RWY was a valid alternative considering the assumption that the departure-end arrestment cable was in the "up" position.

Committed to the landing, the MP executed the first step in the loss of brakes checklist and lowered the MA arresting hook. However, when ATC1 lowered the departure end arrestment cable, the only remaining option to stop the MA in the RWY distance remaining was to engage the emergency brake system by pulling the Emergency Brake/Steering handle. The MP elected not to perform this checklist item due to the concern of blowing the tires and losing directional control of the MA.

Two factors drove the MP to choose the wrong course of action. First, a TO 1F-15A-1CL-1 caution tied to the loss of brakes checklist states that "pulling the Emergency Brake/Steering handle above 70 knots increases the possibility of blown tires and directional control problems." It also states that "light brake pedal pressure should be applied initially to develop a feel for effective braking." These cautions exist due to the brake system's anti-skid feature not being operational when the emergency brake system is engaged. Second, during the AIB interview the MP described being involved in previous F-15C loss of brakes incidents where use of the Emergency Brake/Steering system resulted in blown tires.

The AIB recreated the mishap sequence in the F-15 FTD and concluded the MP could have safely stopped the MA by engaging Emergency Brake/Steering system. Ambient air temperature, local altimeter setting, observed winds, RCR, aircraft configuration, and fuel weight were set to the parameters on the day of the mishap. Travelling at 72 KCAS with approximately 1,500 ft RWY remaining, light to moderate brake pedal pressure application utilizing the Emergency

Brake/Steering system safely stopped the aircraft within the RWY distance remaining without blowing the tires or losing directional control. In my opinion, engaging the Emergency Brake/Steering system may or may not have resulted in blown tires or damage to the landing gear, but would have ultimately prevented the mishap.

Due to the consciously assessed risk of blowing the tires and consequences of losing directional control, the MP performed a work-around, and determined that departing the prepared surface was the best option to stop the MA without losing directional control.

3. SUBSTANTIALLY CONTRIBUTING FACTORS

I find by a preponderance of the evidence that the following factors substantially contributed to the mishap:

a. Ineffective Communication between MP and ATC1; ATC1 Lowered the Departure End Arrestment Cable During Aircraft Emergency.

According to ATC1 testimony, pilots assigned to the 173 FW commonly request to lower the departure-end arrestment cable after landing to minimize wear on the cable when taxing over it on the RWY. Although this practice was not specified in 173 FW Local Area Operations procedures at the time of the investigation, ATC1 stated that when the MP transmitted "cable" on the radio, ATC1 perceived that the MA had safely landed and interpreted the MP radio transmission to mean the MP did not need the cable and wanted it lowered. ATC1 also testified that once the MA landed, focus shifted to the MW and other aircraft in the traffic pattern. ATC1 did not recognize that the MA arresting hook had been deployed which should have indicated that a departure-end arrestment was imminent. Additionally, the MP did not use the correct terminology to indicate a departure-end arrestment. IAW Air Force Manual 11-2F-15V3, "cable, cable, cable" is the correct verbiage to indicate a departure-end arrestment. Considering the MA was an emergency with a hydraulic malfunction, ATC1 should have queried the MP to ensure "cable" was correctly understood, but had the MP made a clear statement of intent IAW with prescribed procedures, it is likely that the departure-end arrestment cable would have remained in the raised position. It is also likely that the departure-end arrestment cable would have remained in the raised position had the MP said nothing, as ATC1 had already communicated that the cable was raised prior to the MA landing.

The MP would later transmit "no, no, I need cable, cable up, cable up, cable up, cable up," but ATC1 was not able to activate and raise the cable in time to catch the MA. The failure of the MP and ATC1 to effectively communicate during the emergency resulted in the MA no longer having a viable arrestment option and left the MP with the decision to engage the Emergency/Brake Steer system as the last resort to stop the MA on the RWY.

b. Insufficient Maintenance Practices, Failure to Perform Required Maintenance and Failure to Document IAW T.O.

Maintenance personnel failed to perform adequate troubleshooting on MA hydraulic system. During the Thru-Flight inspection, maintenance personnel identified the presence of hydraulic fluid on door 88R, just behind right main landing gear. Maintenance personnel opened door 88R to search for a hydraulic leak but did not fully implement proper procedures by pressurizing the system to isolate a leak.

The AIB concluded that the MA exhibited persistent hydraulic system deficiencies based on three factors. First, maintenance performed a utility hydraulic system overhaul on 3 May 2023, which required a total hydraulic utility system flush. Second, the MA had only flown once in the 12 days following the overhaul. Third, hydraulic fluid was found on door 88R prior to the MF. These factors should have indicated to maintenance personnel that a more thorough evaluation was required and had proper maintenance procedures been followed to isolate the leak, there is a high likelihood that the MA would have been deemed Non-Mission Capable (NMC) on the day of the mishap.

Maintenance personnel also failed to document several critical discrepancies on the day of the mishap. Removing door 88R, conducting leak inspections, and multiple processes involved in servicing the utility hydraulic system require maintenance form documentation, which was not accomplished. Furthermore, maintenance supervision failed to review the MA forms to ensure proper documentation had occurred prior to the MF. Proper documentation would have validated that proper maintenance actions were being taken in the process of finding and isolating the leak, and proper maintenance supervision oversight of the troubleshooting actions that occurred.
The wrong choice of action and performing a work-around led to insufficient maintenance practices that substantially contributed to the mishap.

4. CONCLUSION

I found, by preponderance of the evidence, that the mishap was caused by the MP decision not to engage the MA Emergency Brake/Steer System IAW the checklist. Additionally, the Accident Investigation Board President found, by preponderance of the evidence, that the following substantially contributed to the mishap; MP and ATC1 failed to effectively communicate resulting in ATC1 lowering the departure end arrestment cable during an aircraft emergency, and maintenance personnel failing to perform required maintenance procedures and documentation.

25 July 2024

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TAYLOR T. FERRELL, Colonel, USAF
President, Accident Investigation Board

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