UNITED STATES AIR FORCE
AIRCRAFT ACCIDENT INVESTIGATION
BOARD REPORT

T-6A, T/N 08-3915

89TH FLYING TRAINING SQUADRON
80TH FLYING TRAINING WING
SHEPPARD AIR FORCE BASE, TEXAS

LOCATION: SHEPPARD AIR FORCE BASE, TEXAS

DATE OF ACCIDENT: 13 MAY 2024

BOARD PRESIDENT: BRIGADIER GENERAL JEFFREY W. NELSON

Conducted IAW Air Force Instruction 51-307

MAY 16 2025

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 13 May 2024 mishap, at Sheppard Air Force Base, Texas, involving an T-6A, aircraft, T/N 08-3915, assigned to the 89th Flying Training Squadron, Sheppard Air Force Base, Texas, 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

EXECUTIVE SUMMARY
UNITED STATES AIR FORCE
AIRCRAFT ACCIDENT INVESTIGATION

T-6A, T/N 08-3915
SHEPPARD AIR FORCE BASE, TEXAS
13 MAY 2024

At 1353 local (L) time on 13 May 2024, a Mishap Instructor Pilot (MIP) was killed after ejecting from the rear cockpit of a T-6A Texan II, tail number (T/N) 08-3915, while taxiing to parking on the ramp at Sheppard Air Force Base (AFB), Texas (TX). The MIP was a captain First Assignment Instructor Pilot (FAIP), and the first lieutenant Mishap Student Pilot (MSP) was an international student pilot. Both pilots were assigned to the 80th Flying Training Wing (FTW), Euro-NATO Joint Jet Pilot Training (ENJJPT), and flew with the 89th Flying Training Squadron (FTS) at Sheppard AFB, TX.

The Mishap Sortie (MS) was the second sortie of the day for the MIP, who was previously scheduled to fly only one sortie that day. The MS was the first sortie of the day for the MSP. After arriving at the aircraft, the two-aircraft formation completed pre-flight, engine start, taxi, takeoff (at 1220L), departure, and formation maneuvers in a local Military Operations Area (MOA). As briefed, the formation split up in the MOA, and the Mishap Aircraft (MA) recovered to Sheppard AFB single ship and landed without incident. Upon landing on runway 33R at 1342L, the MSP taxied the MA clear of the runway and initiated the After Landing Checklist, including verbal question-and-answer steps, with the MIP. These items included both pilots installing the seat safety pins into their respective ejection seats, though the MIP failed to fully install the seat safety pin in the MIP's seat. During taxi, the MIP partially disconnected from the rear cockpit (RCP) ejection seat system, including from the parachute. At 1353L, as the MSP was taxiing the MA, the MIP inadvertently actuated the ejection handle, ejecting from the MA. The MIP remained partially connected to, and seated in, the ejection seat until automatic seat/pilot separation. The MIP separated from the seat 100 ft above the ground, fell headfirst through an aircraft sunshade, and landed on the ground 261 ft from the MA. The MIP sustained non-survivable injuries, later succumbing to those injuries the next morning at a local hospital. The MSP did not eject and received no injuries. The MA sustained significant damage.

The Board President found by a preponderance of the evidence, there were two causes of the mishap: (1) the MIP failed to fully install the RCP ejection seat safety pin during the After Landing Checklist; and (2) the MIP partially disconnected from the ejection seat allowing the harness chest strap V-ring to unknowingly get caught on and inadvertently actuate the ejection seat control handle.

SUMMARY OF FACTS AND STATEMENT OF OPINION
T-6A, T/N 08-3915
SHEPPARD AIR FORCE BASE, TEXAS
13 MAY 2024

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ACRONYMS AND ABBREVIATIONS

19 AF	Nineteenth Air Force
80 FTW	80th Flying Training Wing
80 OG	80th Operations Group
80 OSS	80th Operation Support Squadron
82 TRW	82d Training Wing
89 FTS	89th Flying Training Squadron
459 FTS	459th Flying Training Squadron
A/C	Aircraft
ADU	Automatic Deployment Unit
AED	Automated External Defibrillator
AETC	Air Education and Training Command
AFB	Air Force Base
AFE	Aircrew Flight Equipment
AFI	Air Force Instruction
AFLCMC	Air Force Life Cycle Management Center
AFRES	Air Force Reserves
AFRL	Air Force Research Laboratory
AFTO	Air Force Technical Order
AGL	Above Ground Level
AIB	Accident Investigation Board
AIMWTS	Aeromedical Information Management Waiver Tracking System
ANG	Air National Guard
ASI	Air Speed Indicator
BTRU	Barostatic Time Release Unit
BWC	Bird Watch Conditions
CAC	Common Access Card
CAP	Civil Air Patrol
Capt	Captain
CFS	Canopy Fracturing System
CPR	Cardiopulmonary Resuscitation
CST	Central Standard Time
CT	Computerized Tomography Scan
DAFI	Department of the Air Force Instruction
DDU	Drogue Deployment Unit
DO	Director of Operations
DoD	Department of Defense
EMS	Emergency Medical Services
ENJJPT	Euro-NATO Joint Jet Pilot Training Program
EOR	End of Runway
ER	Emergency Room
ETP	Exception to Policy
FAA	Federal Aviation Authority
FCF	Functional Check Flight
FCP	Forward Cockpit
FL	Flight Lead
ft	Feet
FOMWG	Flight and Operational Medicine Working Group
FTS	Flying Training Squadron
FTW	Flying Training Wing
g	Gravitational Force
HBDU	Head Box Deployment Unit
HUD	Heads-Up Display
IAW	In Accordance With
IDMT	Independent Duty Medical Technician
IMDS	Integrated Maintenance System
IFF	Introduction to Fighter Fundamentals
IFG	In-Flight Guide
IO	Intraosseous vascular access
IP	Instructor Pilot
ISS	Inter-seat Sequencing System
JPPT	Joint Primary Pilot Training
K	Thousand
KIAS	Knots Indicated Air Speed
kts	Knots
L	Local Time
Lbs	Pounds
LUCAS	Lund University

	Cardiopulmonary Assist System
MA	Mishap Aircraft
Maj	Major
MAJCOM	Major Command
MC	Mishap Crew
MEF	Mission Execution Forecast
MFL	Mishap Flight Lead
MOA	Military Operating Area
MOR	Manual Override
MIP	Mishap Pilot
MPI	Multi-Purpose Initiators
MS	Mishap Sortie
MSP	Mishap Student Pilot
MX	Maintenance
NOTAMs	Notices to Airmen Generating System
OG	Operations Group
OPA	Oropharyngeal Airway
ORM	Operational Risk Management
OSS	Operations Support Squadron
PA	Public Affairs
PCL	Power Control Lever
PEA	Pulseless Electrical Activity
PF	Pilot Flying
PHA	Physical Health Assessment
PIRD	Power-Inertia Retraction Device
PIT	Pilot Instructor Training
PM	Pilot Member
PNF	Pilot Not Flying
PR	Pre Flight
PSI	Pounds Per Square Inch
QA	Quality Assurance
RCP	Rear Cockpit
r/h	Right Hand
SERE	Survival, Evasion, Resistance and Escape
SIB	Safety Investigation Board
SI	Simultaneous Instruments
SII	Special Interest Item
SMDI	Seat Movement Detector Initiator
SOF	Supervisor of Flying
SSgt	Staff Sergeant
SSK	Seat Survival Kit
T/N	Tail Number
TO	Technical Order
TOD	Tech Order Data
TDU	Time Delay Unit
TRU	Time Release Unit
TXA	Tranexamic Acid
UP	Upgrade Instructor Pilot
UPT	Undergraduate Pilot Training
USRM	Under Seat Rocket Motor
Z	Zulu Time

The above list was compiled from the Summary of Facts, the Statement of Opinion, the Index of Tabs, and Witness Testimony (Tabs R & V).

AIB Pseudonyms

MA	Mishap Aircraft
MC	Mishap Crew
MIP	Mishap Instructor Pilot
MS	Mishap Sortie
MSP	Mishap Student Pilot

SUMMARY OF FACTS

1. AUTHORITY AND PURPOSE

a. Authority

On 31 May 2024, Lieutenant General Brian S. Robinson, Commander, Air Education and Training Command (AETC), appointed Brigadier General Jeffrey W. Nelson to conduct an aircraft Accident Investigation Board (AIB) for the 13 May 2024, Class A mishap, involving a T-6A aircraft, tail number (T/N) 08-3915, which occurred at Sheppard Air Force Base, Texas (Tab Y-1). A Legal Advisor (Major), Medical Member (Major), Pilot Member (Captain), Maintenance Member (Civilian) and Recorder (Staff Sergeant) were detailed to serve as board members (Tab Y-1). On 10 June 2024, the Medical Member was relieved, and a new Medical Member (Major) was appointed, and the Maintenance Member was relieved, and a new Maintenance Member (Civilian) was appointed (Tab Y-4).

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 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

At 1353 local (L) time on 13 May 2024, a Mishap Instructor Pilot (MIP) was killed after ejecting from the rear cockpit (RCP) of a T-6A Texan II, tail number (T/N) 08-3915, while taxiing to parking on the ramp at Sheppard Air Force Base (AFB), Texas (TX) (Tabs A-4 to A-5,V-5.16 & LL-1). The MIP sustained non-survivable injuries and later succumbed to those injuries early the next morning at a local hospital (Tabs V-29.3, X-1 & X-3). The Mishap Student Pilot (MSP) did not eject and received no injuries (Tabs R-10.3, V-5.16 & II-5). The Mishap Aircraft (MA) sustained significant damage (Tab P-1). The MA and Mishap Crew (MC) were assigned to the 80th Flying Training Wing (FTW) at Sheppard AFB, TX (Tabs A-5, G-1 & G-1030). The MIP and MSP flew with the 89th Flying Training Squadron (FTS) (Tabs G-1 & G-1030).

3. BACKGROUND

a. Air Education and Training Command (AETC)

Air Education and Training Command's primary mission is to recruit, train, and educate exceptional Airmen (Tab CC-1). With headquarters at Joint Base San Antonio-Randolph (JBSA), Texas, AETC was established and activated in January 1942, making it the oldest major command in the Air Force (Tab CC-1). AETC includes the Air Force Recruiting Service, two numbered air forces and the Air University (Tab CC-2). The command operates 12 major installations and supports tenant units on numerous bases across the globe (Tab CC-2). There are also 16 active-duty and seven Reserve wings (Tab CC-2).

b. Nineteenth Air Force (19 AF)

Nineteenth Air Force, headquartered at Joint Base San Antonio-Randolph, Texas, is responsible for the training of aircrews, remotely piloted aircraft crews, air battle managers, weapons directors, Air Force Academy Airmanship programs, and survival, escape, resistance, and evasion specialists to sustain the combat capability of the United States Air Force, other services and our nation's allies (Tab CC-8). Nineteenth Air Force includes 19 training locations, with 16 Total Force wings: 10 active duty, one Air Force Reserve, and five Air National Guard units (Tab CC-9). It commands more than 32,000 personnel and operates over 1,350 aircraft of 29 different models, flying more than 490,000 hours annually, which is 44 percent of the Air Force total flying hours (Tab CC-9).

c. 82d Training Wing (82 TRW)

Sheppard Air Force Base's host unit is the 82d Training Wing (Tab CC-11). The 82d provides specialized technical training, medical, and field training for officers, airmen, and civilians of all branches of the military including the Air Force Reserve (AFRES) and Air National Guard (ANG), other Department of Defense (DoD) agencies and foreign nationals (Tab CC-11). Courses (resident and nonresident) exceed 1,100 (Tab CC-11). More than 60,000 people graduate from basic and advanced courses ranging from pharmacy to power production, aircraft maintenance to budget and data systems each year (Tab CC-11). The wing also supports undergraduate pilot training as well as flying training to students from 13 NATO nations through the 80th Flying Training Wing, a Sheppard tenant unit (Tab CC-11).

d. 80th Flying Training Wing (80 FTW)

The 80th Flying Training Wing is a tenant unit on Sheppard Air Force Base (Tabs CC-11 & CC-14 to CC-15). The Euro-NATO Joint Jet Pilot Training (ENJJPT) Program, established in the spirit of the North Atlantic Treaty Organization (NATO), is conducted by the 80 FTW (Tab CC-14). ENJJPT is the world's only multi-nationally manned and managed flying training program chartered to produce combat pilots for NATO (Tab CC-14). The 80 FTW is the official USAF designation of this flying training organization, but it is better known as the ENJJPT Wing by its members (Tab CC-14). In addition to Undergraduate Pilot Training (UPT), ENJJPT also provides for its own Pilot Instructor Training, Introduction to Fighter Fundamentals (IFF), and IFF Upgrade Instructor Pilot (UIP) training (Tab CC-15). Approximately 200 student pilots earn their wings at ENJJPT annually after a 55-week, three-phased training regimen (Tab CC-15). All this training is supported by a staff of more than 1,200 military, civilian and contract personnel employing 201 T-6A and T-38C training aircraft (Tab CC-15).

e. 80th Operations Group (80 OG)

The 80th Operations Group provides operational support, flying training, air traffic control and evaluation of more than 200 student pilots, 80 instructor pilot candidates and 150 Introduction to Fighter Fundamentals trainees annually (Tab CC-16). The group maintains six (6) squadrons: the 80th Operations Support Squadron, 88th Fighter Training Squadron, 89th Flying Training Squadron, 90th Flying Training Squadron, 459th Flying Training Squadron and the 469th Flying Training Squadron (Tab CC-16). These squadrons, with support from the U.S. Air Force Reserve 97th Flying Training Squadron, train undergraduate pilots from NATO countries as part of the Euro-NATO Joint Jet Pilot Training program (Tab CC-16).

f. 89th Flying Training Squadron (89 FTS)

The 89th Flying Training Squadron is comprised of approximately 60 personnel from 13 signatory NATO nations training more than 100 student pilots and 24 instructor pilots annually in support of ENJJPT (Tab CC-17). The squadron employs 38 T-6A Texan II aircraft, flying 12,000 sorties and 16,000 hours annually to transition student pilots to advanced jet flying training (Tab CC-17). The squadron also conducts pilot instructor training and maintains the readiness of more than 40 instructor pilots (Tab CC-17).

g. 459th Flying Training Squadron (459 FTS)

The 459th Flying Training Squadron is an AETC multinational manned/managed flying training squadron, comprised of 60 personnel representing 13 signatory NATO nations, and training more than 100 student pilots for NATO annually (Tab CC-18). The squadron provides pilot instructor training for 24 instructor pilot candidates annually, executing ENJJPT's unique Pilot Instructor Training (PIT) syllabus (Tab CC-18). The 459th FTS employs 39 T-6A Texan II aircraft, flying 12,000 sorties and 16,000 hours annually in support of undergraduate pilot training, pilot instructor training, and instructor development training
(Tab CC-18).

h. 80th Operations Support Squadron (80 OSS)

The 80th Operations Support Squadron is a multinational squadron comprised of more than 140 permanent and 240 student personnel representing 13 signatory NATO nations
(Tab CC-17). The OSS provides essential direct mission support to the 82d Training Wing, 80th Flying Training Wing and Euro-NATO Joint Jet Pilot Training program (Tab CC-17). The squadron is responsible for joint-use airfield management, air traffic control, flying scheduling, aircrew flight equipment, aviation and airspace management, weather, student training, computer, and administrative support to six flying squadrons
(Tab CC-17).

i. M1 Support Services, L.P. (M1)

M1 Support Services provides contracted aviation support services capability (Tab CC-27). M1 Support Services Home Office holds a Certificate of Registration to AS9110C and ISO 9001:2015 used for the Maintenance, Repair, Overhaul and Program Management for Government, Military and Aerospace Equipment (Tab CC-27). M1 operates two FAA Part 145 Repair Stations (MISR852D and QR9R369D) to support commercial derivative aircraft operated by DoD and other U.S. Government agencies (Tab CC-27).

j. United Regional Health Care System

United Regional Health Care System is in Wichita Falls, Texas, and provides comprehensive medical care including inpatient and outpatient services, advanced diagnostics, surgical specialties, and life-saving emergency care to a nine-county service area (Tabs CC-22). It is the area's only Level II Trauma Center (Tabs CC-22 & CC-26). Level II Trauma Centers include 24-hour immediate coverage by general surgeons, as well as coverage by the specialties of orthopedic surgery, neurosurgery, anesthesiology, emergency medicine, radiology and critical care (Tab CC-25). To be designated a Level II Trauma Center the program was verified by the American College of Surgeons (Tab CC-25). United Regional Health Care System is a Joint Commission Accredited program and a certified Primary Stroke Center (Tab CC-24).

k. T-6A Texan II

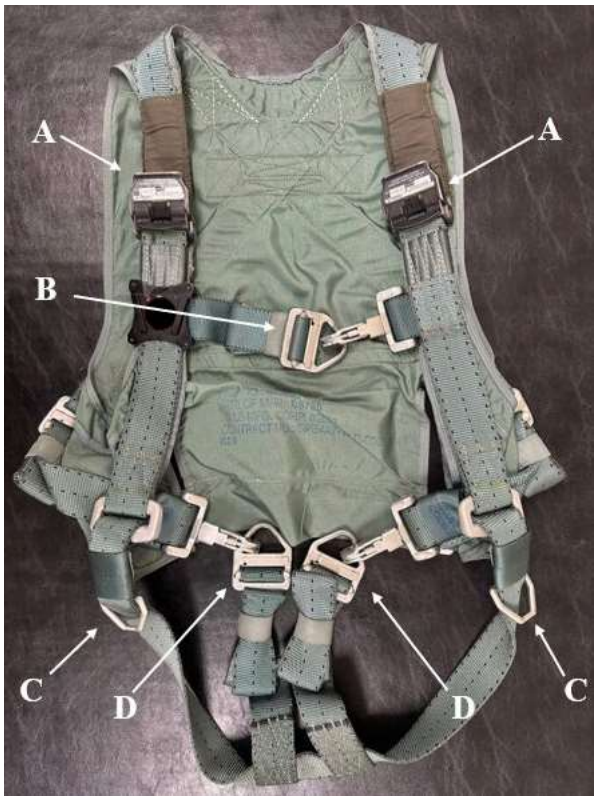
The T-6A Texan II is a single-engine, two-seat primary trainer designed to train Joint Primary Pilot Training (JPPT), students in basic flying skills common to U.S. Air Force and Navy pilots (CC-20). Produced by Raytheon Aircraft, the T-6A Texan II is a military trainer version of Raytheon's Beech/Pilatus PC-9 Mk II (Tab CC-20). Stepped-tandem seating in the single cockpit places one crewmember in front of the other, with the student and instructor positions being interchangeable (CC-20). A pilot may also fly the aircraft alone from the front seat (Tab CC-20).

l. Checklists

The T-6A checklist carried by pilots contains itemized procedures to be used during ground operations and during the flight (Tab DD-19). Some checklist steps are accomplished silently while others are accomplished verbally as question-and-answer steps (also called challenge and response) between the pilots in the aircraft (Tabs R-11.5 & DD-6). The Pilot Flying (PF) the aircraft is responsible for initiating checklist procedures and ensuring verbal challenge and response steps are confirmed by the Pilot Not Flying (PNF) the aircraft (Tabs R-11.4, R-20.4, DD-6, & DD-19). Not all steps in the checklist are verbal challenge and response steps (Tab DD-6). The checklist steps that require verbal challenge and response are standardized within the 80 OG and documented in the T-6A Flying Standards document (Tabs DD-19 to DD-23).

m. PCU-15/P Harness

T-6A pilots wear the PCU-15/P harness (or the PCU-16/P for smaller stature personnel) as part of their flight equipment (Figure 1) (Tab MM-3). The harness connects the wearer to the recovery parachute straps via left and right connection points called Frost fittings (A) (Tabs Z-5, KK-12 & MM-3). The harness also has an adjustable chest strap comprised of an ejector snap and V-ring (B), two D-rings to connect to the Seat Survival Kit (SSK) (C), and two adjustable legs straps each comprised of an ejector snap and V-ring (D) (Figure 1) (Tabs KK-11 to KK-12 & MM-3).



(Figure 1: Typical PCU-15/P Harness) (Tab Z-1)

n. Ejection Seat System Overview

Two Martin-Baker US16LA ejection seats and independently fractured canopies provide emergency escape from the T-6A aircraft (Tab J-1). The T-6A incorporates a three-mode Inter-Seat Sequencing (ISS) selector valve and a Canopy Fracturing System (CFS) (Tab J-1).

(1) Inter-Seat Sequencing (ISS) selector valve

The ISS system provides three individual modes of operation, Command Forward (CMD FWD), BOTH, and SOLO (Tab J-1). When the CMD FWD mode is selected, pulling the forward manual ejection control handle will initiate a sequenced ejection of both ejection seats from the aircraft, however, pulling of the aft manual ejection handle will only cause the aft seat to eject from the aircraft (Tab J-1). When BOTH mode is selected, pulling either of the manual ejection handles will result in a sequenced ejection of both ejection seats from the aircraft (Tab J-1).

When SOLO mode is selected, there is no inter-seat sequencing (ISS), and each crewmember must initiate their own respective ejection (Tab J-1).

(2) Canopy Fracturing System (CFS)

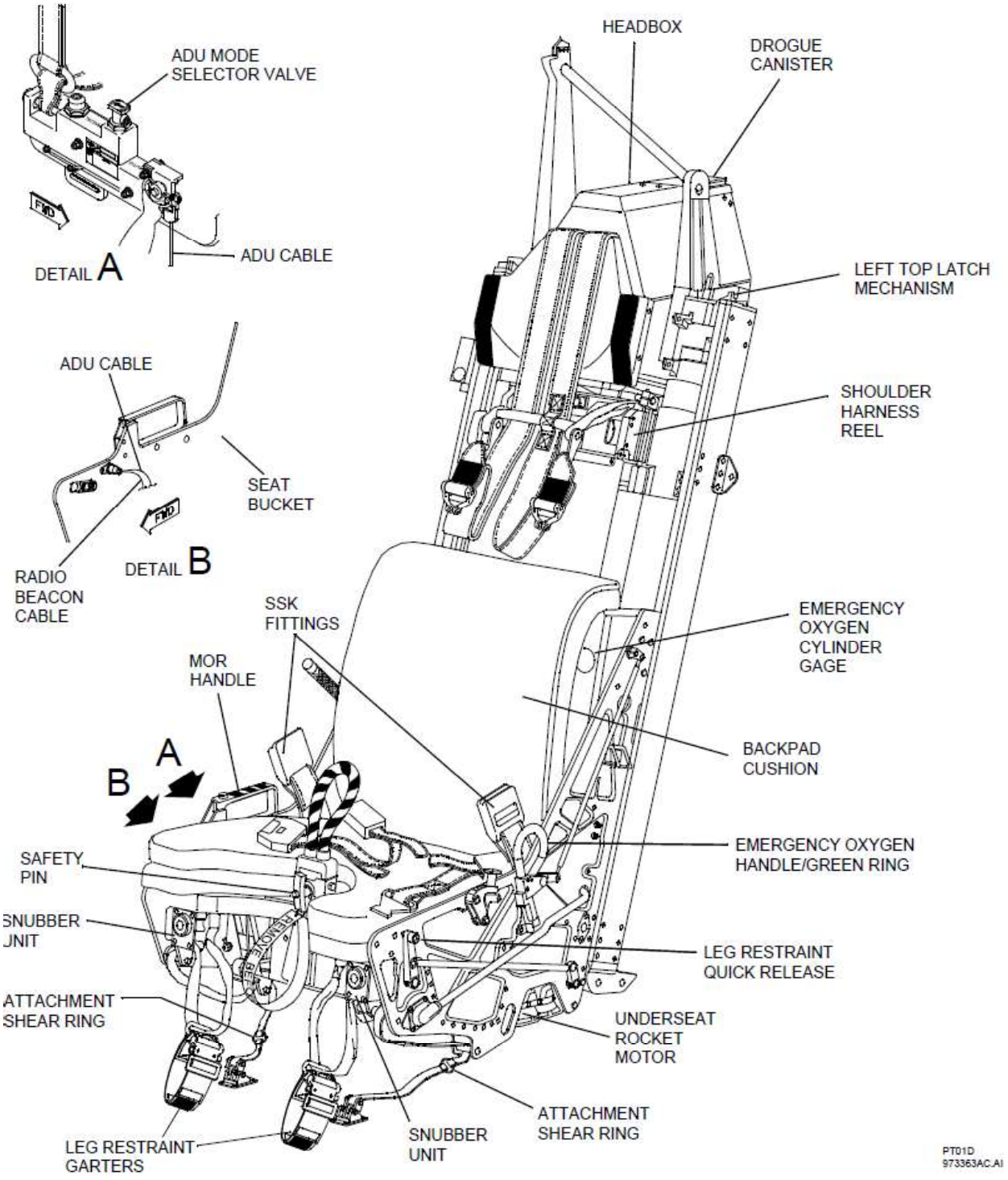
The CFS is a component of the ejection seat system designed to fracture the canopy after actuation of the ejection seat control handle as the seat starts moving up the guide rails to clear a path through the canopy glass for the ejection seat and pilot (Tab J-2).

(3) Martin-Baker US16LA Ejection Seat

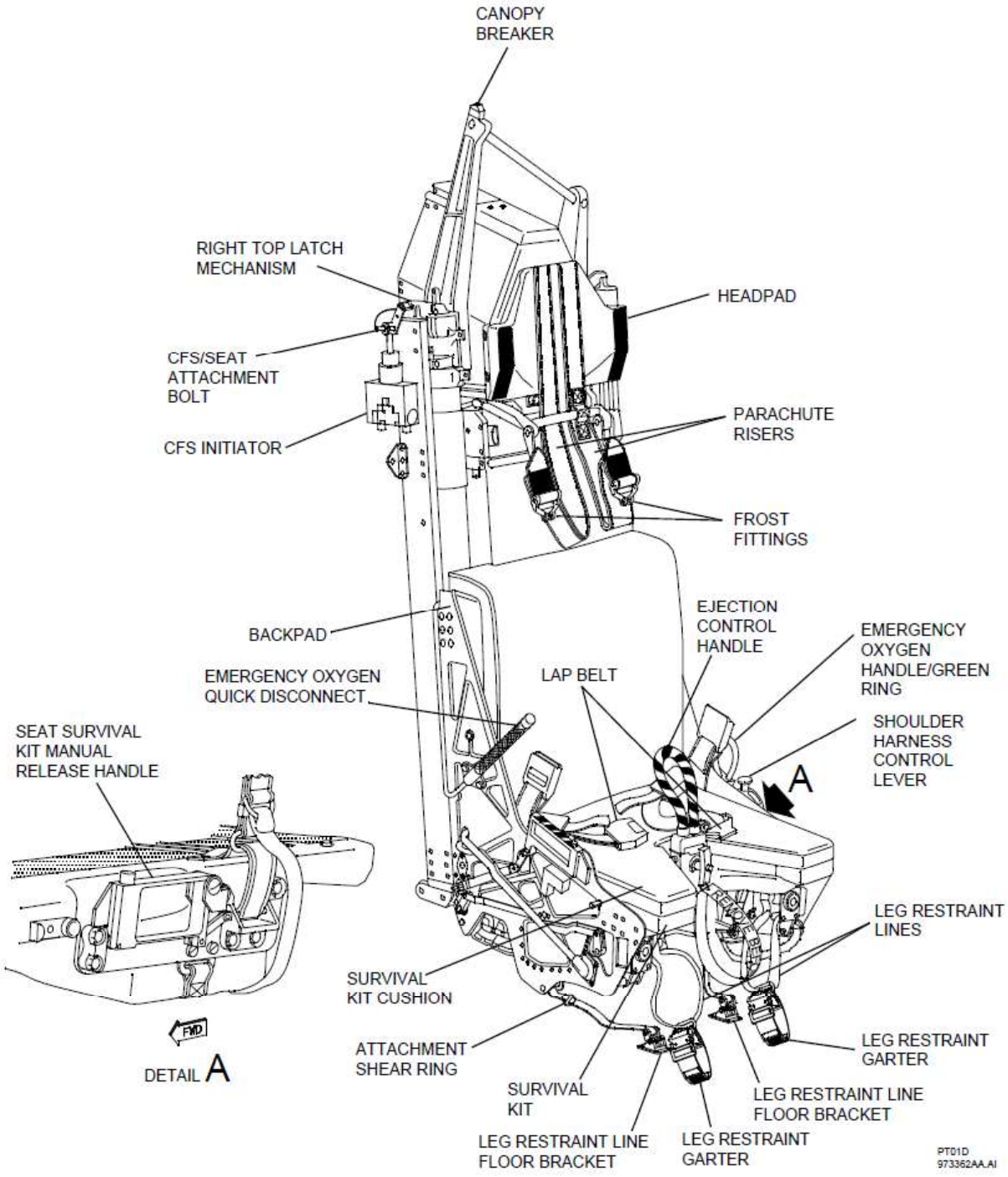
The Martin-Baker US16LA Ejection Seat is a lightweight ejection seat which is qualified for use from zero to 35,000 ft altitude and zero to 370 Knots Indicated Air Speed (KIAS) (Tab J-2). The seat is qualified for an occupant nude body weight from 103 to 245 lbs (Tab J-2). The seat is equipped with a Powered Inertial Retraction Device (PIRD) for upper torso restraint, leg restraints, a mechanical timer for altitude and G protection, a drogue parachute for seat stabilization and deceleration, an emergency oxygen bottle, automatic and manual seat occupant release system, an occupant personnel parachute, and a seat survival kit (SSK) (Tab J-2).

Initiator gas pressure fires the PIRD, retracting the occupant's upper torso and fires time delays (Tab J-2). The time delays fire the main catapult cartridge which moves the seat up the guide rails (Tab J-2). After approximately 3/8" of seat travel, the Seat Movement Detector Initiator (SMDI) fires the CFS (Tab J-2). As the seat travels upward, each leg restraint line is pulled through the D-ring on the leg restraint garter, restraining the occupant's legs (Tab J-2). When the upward movement of the seat has reached the end length of the leg restraints, an attachment break ring is sheared on each line, and the upper portion of each line travels with the seat and is held in place by snubbers (Tab J-2). The leg restraint lines are released during pilot/seat separation (Tab J-2). After nine inches of seat travel, the secondary catapult cartridges fire to continue moving the seat up the guide rails (Tab J-2). After 29 inches of seat travel, the Multi-Purpose Initiators (MPI) cables are completely withdrawn, and the sears actuate each MPI cartridge on the left and right hand MPIs (Tab J-2). The left MPI cartridge initiates the Barostatic Time Release Unit (BTRU) and fires the Drogue Deployment Unit (DDU) deploying the drogue parachute (Tab J-2). The right MPI cartridge fires the Under Seat Rocket Motor (USRM), unlocks the Manual Override (MOR) handle, starts the emergency oxygen flow, and sends a redundant input to the BTRU (Tab J-2). The USRM accelerates the seat away from the aircraft and imparts divergent trajectories of the seats. The aft seat trajectory is right, and the forward seat is left (Tab J-2). The BTRU controls the ejection sequence for the ejection conditions (Tab J-2). If the seat is above 15,000 ft, the main barostat capsule prevents the time release unit (TRU) from firing until the seat is below 15,000 ft (Tab J-2). If ejection takes place below 15,000 ft but above 8,000 ft, the barostat controlled G controller switch prevents the Time Delay Unit (TDU) from firing until the G load has dropped below 3.4 G nominal (Tab J-2). When both these conditions have been met, the TDU fires, supplying gas pressure to operate the Head Box Deployment Unit (HBDU) deploying the personnel parachute (Tab J-2). The BTRU starts the 0.2 second time delay to release the drogue parachute, lap belt, PIRD straps, and leg restraints allowing the main parachute to pull the occupant away from the seat (Tab J-2). If the Automatic Deployment Unit (ADU) is in the automatic mode, the SSK will deploy four seconds

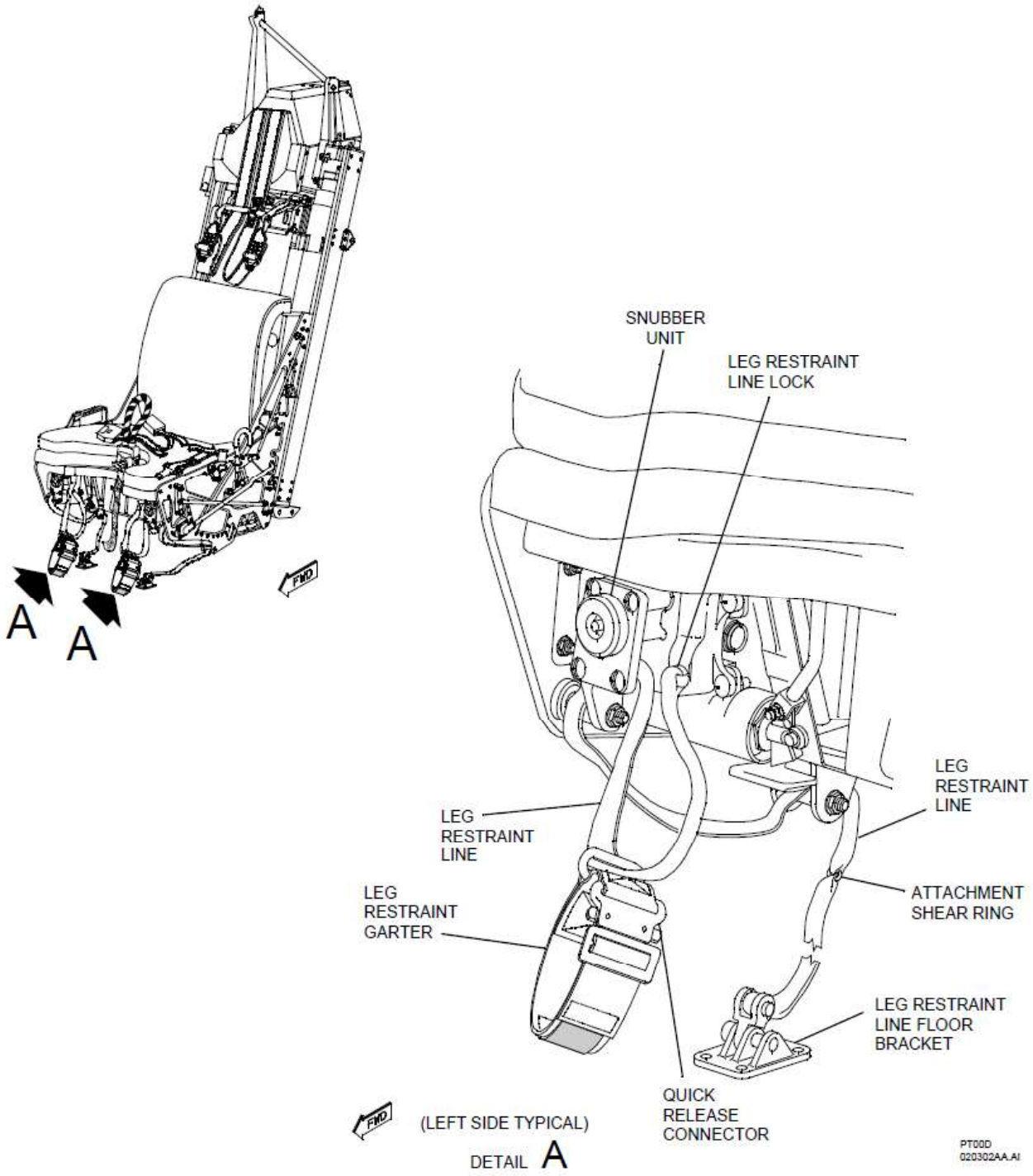
after pilot/seat separation (Tab J-2). If the ADU is in the manual mode, the occupant will have to manually deploy the SSK (Figures 2, 3 & 4) (Tab J-2).



(Figure 2: Ejection Seat Left View) (Tab Z-2)

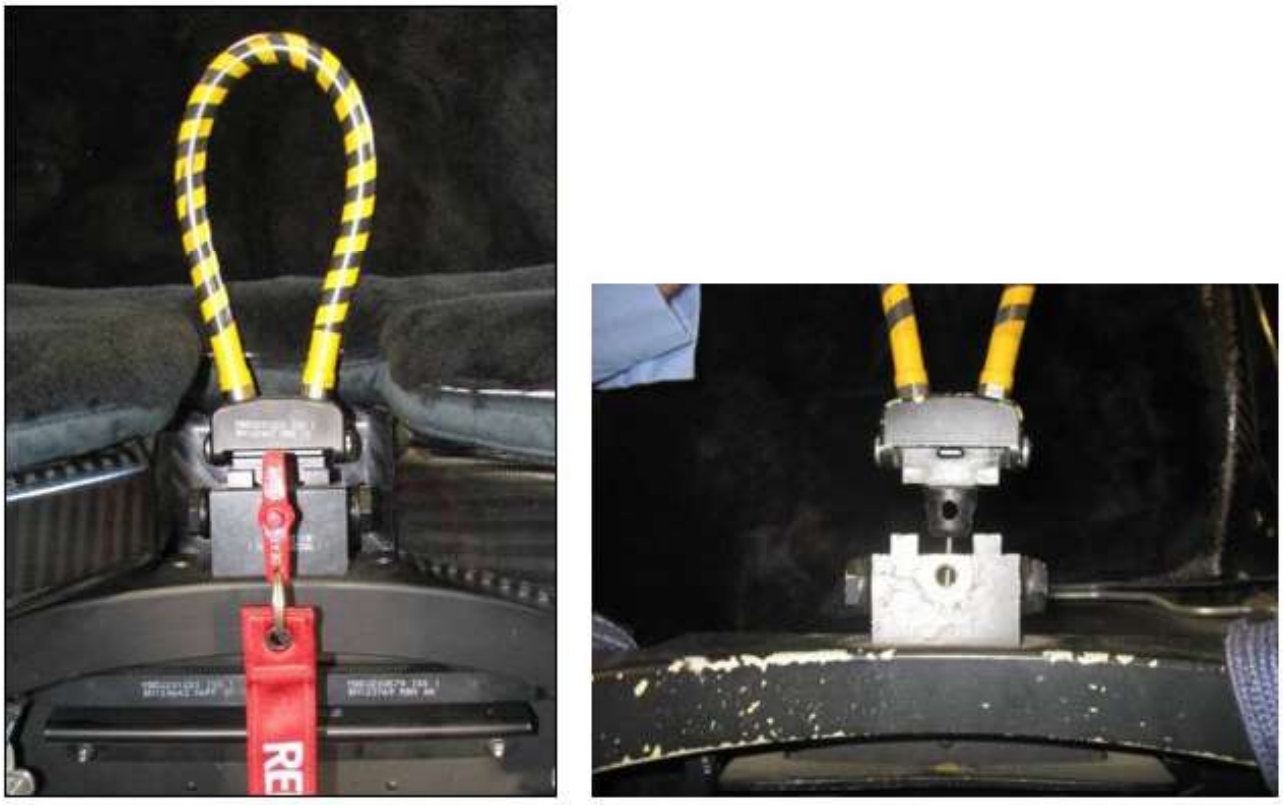


(Figure 3: Ejection Seat Right View) (Tab Z-3)



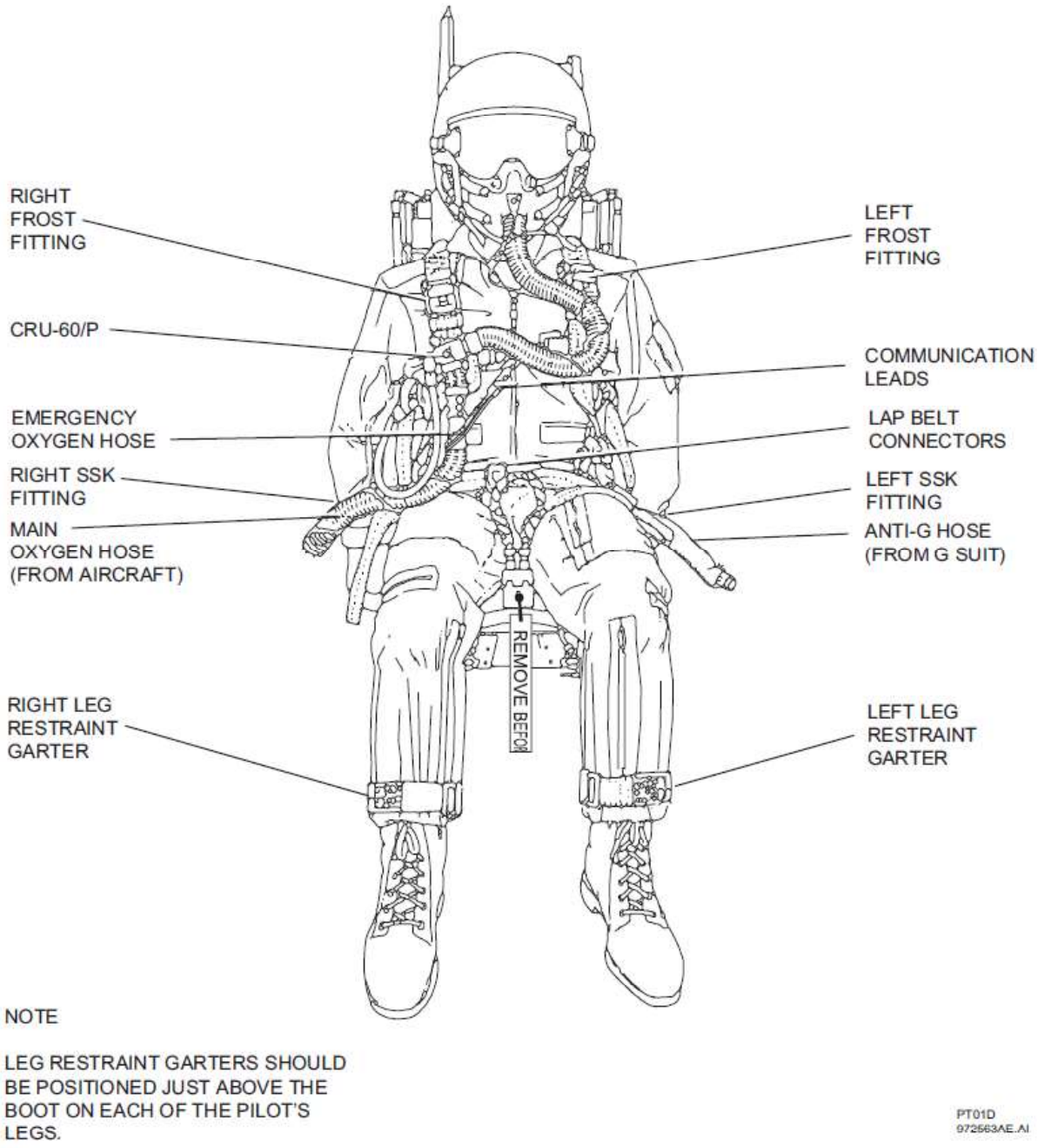
(Figure 4: Leg Restraints) (Tab Z-4)

After landing, the pilots install the seat safety pin in the ejection seat during the After Landing Checklist (Tab KK-15). When fully installed, the pin prevents actuation of the ejection control handle (Figure 5) (Tabs KK-4 & KK-15). The seat safety pin locks in place with two spring loaded detent balls that engage the handle to keep it secure, requiring the pilot to depress a push button on the stem to release the pin (Tabs J-56 & R-11.10). If not fully installed, the pin may be dislodged from the seat, enabling actuation of the ejection control handle (Tab KK-15).



(Figure 5: Typical T-6A Ejection Control Handle: Handle fully stowed and safety pin inserted (left), safety pin removed, and handle pulled (right)) (Tab MM-2)

The pilot connects to the ejection seat system at 11 points: left and right Frost fittings (parachute connection), communication line, emergency oxygen hose, lap belt, left and right SSK fittings, main oxygen hose, anti-G hose connection, and left and right leg restraint garters (Figure 6) (Tabs KK-11 to KK-13).



(Figure 6: Pilot Hookup) (Tab Z-5)

(4) Seat Survival Kit (SSK)

The SSK is fitted in the seat pan (Tab KK-12). The SSK is secured in position by a fiberglass upper lid assembly which forms part of the pilot's sitting platform (Tab KK-12). The SSK incorporates a pilot selectable automatic deployment unit which allows the pack to be deployed onto a lowering line either automatically or manually during parachute descent (Tab KK-12). The automatic deployment unit (ADU) and radio beacon are attached to the seat by two cables (Tab KK-12). They are attached to the seat forward of the ADU mode selector valve (Tab KK-12). Prior to strapping in, the pilot selects either manual (MANUAL) or automatic (AUTO) with the selector valve on the right side of the seat, under the seat cushion (Tab KK-12). When the selector valve is set to automatic, the SSK is lowered automatically 4 seconds after seat/pilot separation, suspended on the lowering line (Tab KK-12). If the selector valve is set to manual, the pilot must pull the manual release handle located opposite the automatic deployment unit to lower the SSK (Tab KK-12). One end of the lowering line is formed into a loop which is attached to the fabric container (Tab KK-12). The other end is connected to the left SSK attachment strap on the pilot's harness (Tabs V-28.7& KK-12) (Figure 7).

Figure 7: Typical T-6A SSK (left), Typical T-6A SSK Attached to Pilot (center), Typical T-6A SSK Buckled to Pilot Harness (right)
(Tabs MM-1 to MM-2)

4. SEQUENCE OF EVENTS

a. Mission

The Mishap Sortie (MS) was the MSP's sixth sortie in the advanced formation block of training (Tabs G-1041 to G-1043, K-1, R-10.3 & DD-44). The MS was a two-ship formation consisting of four individuals and two aircraft (Tabs K-1 & R-14.3). The MSP occupied the front cockpit (FCP), and the MIP occupied the rear cockpit (RCP) of the scheduled wingman aircraft, callsign FLAME 22, pronounced "FLAME two-two" (Tabs K-1, R-10.3 & R-14.3). The 459th Flying Training Squadron (459 FTS) Operations Supervisor authorized the MS to be conducted (Tabs R-21.2 to R-21.3).

b. Planning

The formation crew members completed the required flight planning prior to the MS, in accordance with applicable training regulations and standard operational procedures (Tab V-24.4). The formation flight was originally planned and scheduled as a solo sortie for the MSP (Tab V-24.3 to V-24.4). Due to low altitude clouds and poor visibility on the morning of the flight, the status of flying operations was simultaneous instruments (SI) for T-6A operations, which indicates clouds are between 1,500 ft to 3,000 ft above the ground level and/or visibility is between two to three statute miles (Tabs W-1, FF-1 & DD-102). This status precluded a solo sortie for the MSP (Tabs V-24.4 & DD-102). For planned student solo sorties, an instructor pilot is identified and scheduled to fly with the student as a contingency in case poor weather precludes a solo sortie (Tabs V-24.3 to V24.4). The original instructor pilot scheduled to fly with the MSP as a contingency was no longer available, so the MSP's Flight Commander asked the MIP to fly with the MSP (Tabs V-24.3 to V24.4). The MIP accepted the request to fly with the MSP without hesitation (Tab R-14.18). This formation flight was the second sortie of the day for both the flight lead instructor pilot and the MIP (Tabs FF-7 to FF-8 & FF-10**)**. The MSP's Flight Commander asked the MIP to fly the second sortie after the MIP debriefed the first sortie of the day (Tab V-24.3). All pilots in the formation had an appropriate time interval between sorties in accordance with T-6A syllabus (Tabs R-14.3, DD-33, FF-7 to FF-8 & FF-10**)**. The minimum time between scheduled takeoff times for student pilots is three hours and 30 minutes (Tab DD-33). While there is no established minimum time between scheduled takeoff times for instructor pilots, the MIP had four hours and 15 minutes between scheduled takeoff times (Tabs DD-33, FF-7 & FF-10).

The scheduled briefing time was 1100L, one hour and 15 minutes prior to takeoff, and the flight lead instructor pilot accomplished the required briefing items in accordance with the 80 OG T-6 Flying Standards and T-6A In-Flight Guide (IFG) (Tabs R-14.3, DD-4, DD-7 to DD-8, DD-55 to DD-58 & FF-6). These actions included discussion of the mission profile and applicable training records, review of notices to airmen (NOTAMs), bird watch conditions (BWC), and discussion of forecast and current weather conditions (Tab DD-55**)**. Each aircraft in the formation completed an individual Operational Risk Management (ORM) worksheet, a standardized checklist identifying and providing a number score for common risk factors for each sortie (Tabs V-21.4, DD-62 & EE-1). According to the 80 OG T-6 Flying Standards, formations will use the highest aircraft's cumulative total ORM score as the governing score for the entire formation (Tab DD-5). In this case, the highest cumulative total ORM score of 23 entered in the risk management tracker belonged to the crew of the flight lead aircraft (FLAME 21), not the MA (FLAME 22) (Tab EE-1**)**. The ORM was calculated to be a low level of risk category for both aircraft in the formation since the highest ORM score of 23 was below 29 points cumulative points which is the high limit for a score to be considered low (Tabs DD-62 & EE-1). The risk factors given greater than one point by the lead aircraft (FLAME 21) included: mission type (formation), crew composition (international student pilot), airfield weather (instrument conditions), show time (before 0630L), duty day (second event of the day), and sleep (7-8 hours) (Tabs DD-62 & EE-1).

The students in the formation, including the MSP, were primarily responsible for the planning of the MS based on the requirements of the tactical formation block of training in the T-6A ENJJPT syllabus (Tabs V-24.4 & DD-29). The MSP planned to fly in the lead position for the first portion of the profile, perform an administrative lead change in the Military Operating Area (MOA), and fly in the wing position for the second portion of the profile (Tab K-1). In the MOA, the formation

planned to accomplish the G-awareness exercise, tactical formation maneuvering and rejoins, fluid maneuvering, wing work, and extended trail (Tab K-1). The sortie also included a formation flight split, in which the flight lead aircraft planned to remain in the MOA for additional single ship maneuvers, and the MA planned to recover to Sheppard AFB single ship (Tabs K-1 & R-14.3**)**.

c. Preflight

The formation received a briefing from the T-6 Operations Supervisor, reviewed their ground and flying currency items (also called go/no-go items), obtained their aircraft assignment, and donned their flight equipment (Tabs R-14.3 & V-21.2 to V-21.4). The go/no-go report for the MIP showed eight grounding items which normally preclude a pilot from flying (Tabs T-12 to T-16). A review of these grounding items during the go/no-go process identified the eight grounding items as being mistakenly assigned as requirements for the MIP (Tabs V-30.2 to V-30.6). The items were squadron read files for instructor pilots in the 459 FTS (Tab V-30.4). Since the MIP was assigned to fly with the 89 FTS, these read files did not apply to the MIP (Tab V-30.4). After stepping to the aircraft, the formation completed pre-flight, engine start, and taxi as briefed and without incident (Tabs R-10.3 & R-14.3).

d. Summary of Accident

At 1220L, the formation took off from runway 33R and departed to the SHEPPARD 2 MOA (Tabs K-1, R-10.3, AA-2 & DD-104). Around the takeoff time, the T-6 flying status improved to "Unrestricted," which indicates weather and facilities permit full use of all training areas (Tabs DD-102 & FF-1). As briefed, the MSP led the first portion of the profile, performed a lead change in the MOA, and accomplished the remaining maneuvers from the wing position (Tabs R-10.3 & R-14.9). Following the formation maneuvering, a flight split was accomplished, and the MA, FLAME 22, recovered to Sheppard AFB single ship (Tabs R-10.3 & R-14.3).

Upon return to Sheppard AFB, the MSP flew the MA into the traffic pattern via a normal overhead pattern, performed a touch and go landing, and then performed a closed pattern for a full-stop landing (Tab R-10.3). The MSP landed the MA on runway 33R at 1342L, taxied clear of the runway, and accomplished the After Landing Checklist (Tabs R-10.3, W-1 & AA-1). The MSP initiated the required verbal question-and-answer checklist items (also called challenge and response items) to the MIP in accordance with the After Landing Checklist, which included verifying the ISS mode selector, located in the RCP, was moved to SOLO and both seat safety pins were installed into their respective ejection seats (Tab R-10.3). Despite the MIP and MSP completing the challenge and response checklist items, the MIP did not fully install the seat safety pin in the RCP ejection seat (Tabs J-57 to J-61, J-69, R-10.3, V-1.5, KK-4 & KK-15). An experienced T-6A instructor pilot indicated he observed student pilots improperly install the safety pin halfway on several occasions (Tabs R-11.9 to R-11.10).

The MSP completed the remaining After Landing Checklist items and taxied the MA to the ENJJPT ramp (Tab R-10.3). Based on expert testimony and analysis of the MIP's flight equipment after the mishap, the AIB determined that the MIP began disconnecting from the seat during the taxi to the parking ramp, including disconnecting the left and right Frost fittings (parachute connections), the harness chest strap, the left SSK buckle, and the left leg restraint garter (Tabs R-25.8, V-5.6, V-11.3 to V-11.4, V-11.6, V-16.4 & V-28.6). Disconnecting from the ejection seat

connections during the taxi back to parking was a common practice for the MIP (which testimony revealed the MIP did on the MIP's first flight that morning) as well as other instructor pilots in the T-6A (Tabs R-11.7, R-14.11 & R-25.8 to R-25.10). The After Landing Checklist, Engine Shutdown Checklist, and Before Leaving Aircraft Checklist in the T-6A Flight Manual do not include information on when to disconnect from the ejection seat (Tabs R-11.7, R-20.6 & KK-15 to KK-16). Disconnecting from the various seat connection points produces audible clicking sounds that may be heard by the other pilot as occurred on the MIP's first flight that morning (Tab R-25.8). The MIP remained connected to all other connection points (Figures 1 & 6) (Tabs V-3.3, V-5.5 to V-5.9, V-16.8 & V-28.6).

At 1353L, as the MSP was taxiing the MA at approximately 15 knots adjacent to the Juliet parking row and preparing to turn into the taxi lane between the Juliet and Kilo parking rows, the MIP inadvertently actuated the ejection handle and ejected from the MA (Figure 10) (Tabs J-47, R-10.3 & LL-1).

The AIB analyzed multiple scenarios exploring the inadvertent actuation of the ejection seat control handle including using the T-6A simulator to recreate chest strap positioning scenarios in the T-6A cockpit (Tab LL-2). Upon review of the MIP's medical records, the AIB Medical Member determined the MIP and the AIB Pilot Member's measurements for seated position, seated height and buttocks to knee length were of similar measurements (Tab II-4). As part of the recreation, the AIB Pilot Member donned a PCU-15/P harness and strapped into the simulator by fully connecting the PCU-15/P harness, the lap belt, both seat survival kit connections, and both leg restraint garters (Tab LL-2). The Pilot Member did not, however, wear a G-suit, which is worn during flight (Tab LL-2). While the MIP did wear a G-suit during the MS, the AIB determined that the G-suit had no impact on the mishap, so the Pilot Member did not wear G-suit during the recreation (Tab LL-2).

The AIB recreation showed that disconnecting the harness chest strap allowed both the ejector snap and the V-ring to hang from the pilot's harness in the cockpit (Figure 8) (Tab LL-2). If the pilot reaches down to disconnect the left leg restraint garter, the V-ring from the pilot's harness chest strap can unknowingly become caught in the ejection seat control handle (Figure 9) (Tab LL-2). When the pilot sits back upright after bending over to disconnect the left leg restraint garter, the pilot can inadvertently actuate the ejection seat control handle if the V-ring from the pilot's harness chest strap is caught in the ejection seat control handle and the seat safety pin is not fully installed into the seat (Tab LL-2).

Figure 8: Harness Chest Strap V-Ring Disconnected and Hanging with Pilot Leaning Forward (AIB re-creation) NOTE: the yellow and black handle is the ejection seat control handle. (Tabs LL-2 & MM-2)

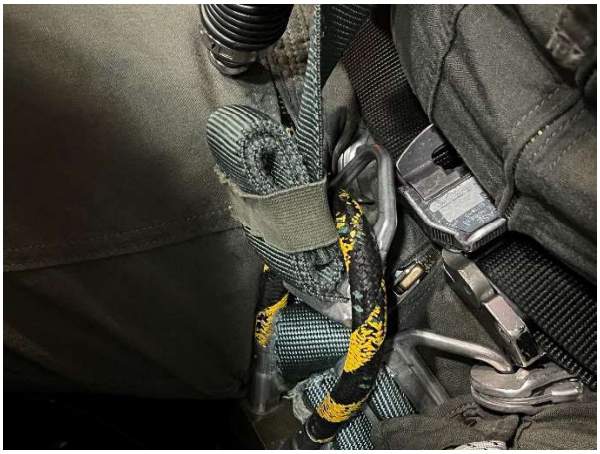


Figure 9: Harness Chest Strap V-Ring in Ejection Seat Control Handle with Pilot Leaning Forward (AIB re-creation) NOTE: the yellow and black handle is the ejection seat control handle. (Tabs LL-2 & MM-2)

e. Impact

The MIP remained partially connected to and seated in the ejection seat until automatic seat/pilot separation, which occurred approximately 3 seconds after ejection (Tab LL-1). The MIP separated from the seat at approximately 100 ft above the ground, fell headfirst through the aircraft sunshade over row Lima spot 9, and landed on the ground chest and face down in the empty aircraft parking spot approximately 261 ft from the MA (Figure 10) (Tabs J-47, R-18.3, R-19.7, V-5.16 & LL-1). The MIP was not attached to the parachute, which landed in the grass next to the parking ramp (Figure 10) (Tabs J-47, R-18.4 & V-27.4 to V-27.5). The peak G-forces that would be experienced during an ejection are 9-15 Gs, depending on the weight of the occupant (Tab KK-42). The MIP sustained non-survivable injuries from the accident and later succumbed to those injuries early the next morning at a local hospital (Tabs X-1 & X-3).

f. Egress and Aircrew Flight Equipment (AFE)

(1) MSP Egress

The MSP did not eject from the aircraft (Tab R-10.3). The MSP stopped the aircraft approximately 60 ft from location of ejection with a slight turn into the taxi lane between the Juliet and Kilo parking rows, shut the engine off, and set the parking brake (Tabs J-47 & R-10.3). The MSP egressed normally from the MA, where the MSP was attended to by nearby maintenance personnel (Tab R-10.3). The MSP sustained no injuries (Tab II-5).

(2) **MIP Ejection Seat System**

The RCP ejection seat system was initiated within the performance envelope of the system, which is from zero to 35,000 ft altitude and zero to 370 KIAS (Tabs R-10.3 & J-2). The RCP ejection seat impacted the ground 225 ft from the MA and slid an additional 21 ft before stopping underneath the aircraft sunshade row Lima between spots 9 and 10 (Figure 10) (Tab J-47). The seat ejection handle was unseated, and both sears were fully removed from the firing mechanism,

confirming that an upward force of 30-50 lbs. was applied and moved the handle upward a minimum of 0.850 inches (Tabs J-3 to J-4 & KK-44). Post-mishap engineering analysis determined that the right firing mechanism did not strike the primer with sufficient force to initiate the right initiator cartridge (Tab J-3). The left initiator cartridge fired normally initiating the RCP ejection sequence (Tab J-3). The RCP ejection seat operated as designed except for the right initiator cartridge (Tabs J-3 to J-8).

The RCP ejection seat safety pin was found on the ground between the MA and the RCP ejection seat along the general direction of travel of the RCP ejection seat (Figure 10) (Tab J-47).

The MIP's left leg restraint garter was found on the parking ramp (Tabs S-3 & Z-11). The MIP disconnected the left leg restraint garter during the taxi back to the parking ramp (Tabs V-16.4 & Z-10 to Z-11). The left leg restraint garter remained attached to the ejection seat system until the automatic seat/pilot separation at which time the leg restraint garter connection to the ejection seat released normally (Tabs V-16.6 & Z-10).

(3) Aircrew Flight Equipment (AFE)

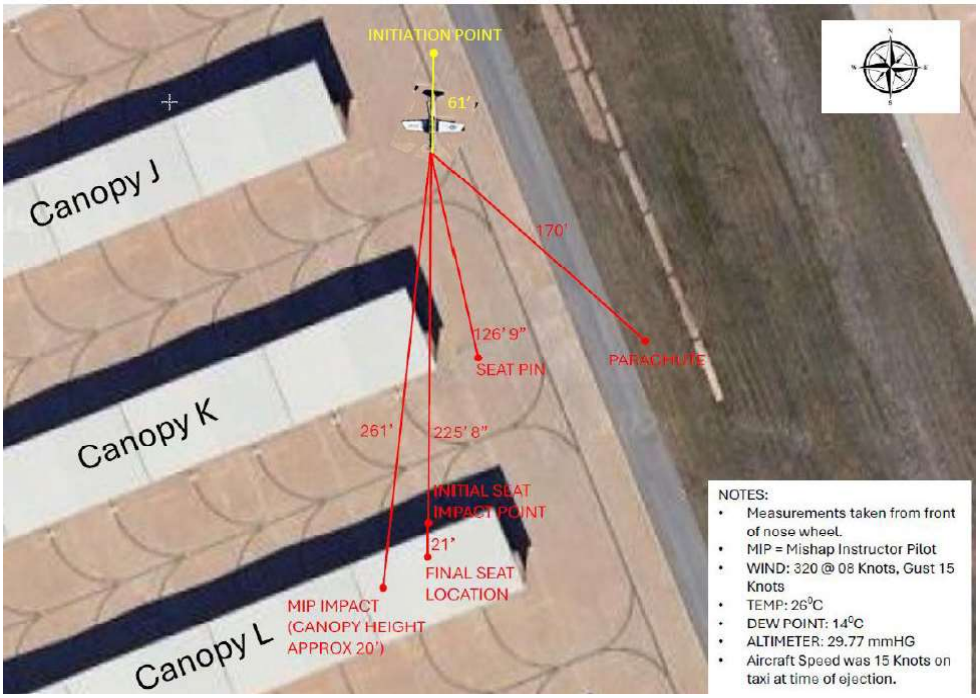
All AFE was serviceable and current on inspections (Tabs J-32 to J-33 & J-36).

(a) RCP Parachute

The MIP's parachute landed in the grass next to the parking ramp approximately 170 ft from the MA in a direction approximately 45 degrees offset from the direction of travel of the ejection seat and the MIP (Figure 10) (Tab J-47). With the MIP not attached to the parachute risers, the parachute did not fully open or remain with the MIP (Tabs J-47 & V-27.4 to V-27.5). The parachute observed by at least one witness as attached to the MIP or the ejection seat was the drogue chute that stabilizes and decelerates the ejection seat prior to the parachute inflating (Tabs V-27.5 & KK-20 to KK-21).

(b) RCP Seat Survival Kit (SSK)

The RCP SSK was located on the ground near the MIP and the ejection seat (Tabs V-27.3 & Z-12). The SSK did not deploy as intended during the ejection sequence, instead staying attached to the seat casing (Tabs J-39, V-28.8 to V-28.9 & Z-12). The left SSK buckle was found with the SSK, while the right SSK buckle was found attached to the MIP's harness (Tabs V-28.12**,** Z-1, Z-12 & Z-13).



(Figure 10: Mishap Site Diagram) (Tab J-47)

g. Search and Rescue (SAR)

The below timeline regarding the emergency response to the mishap is reported in local central daylight time (CDT). Timestamps were obtained from multiple source records. Due to multiple sources, there is minor variability in the times (Tabs HH-1 to HH-17 & X-1).

Table 1: Emergency Response Timeline

Time (L)	Action (see notes 1 & 2)
1353	MIP ejected from taxiing aircraft (Tab R-10.3). The MIP appeared to be unconscious while in the air (Tab R-23.8). Immediately on seeing the ejection and landing, multiple flight line personnel rushed to the MIP's aid and began life saving measures (Tabs R-8.2, R-16.7, V-10.3 & V-27.2 to V-27.3). The MIP was quickly found to be unresponsive and without pulse (Tabs R-8.2 to R-8.3 & V-5.16 to V-5.17). Chest compressions were initiated by flightline personnel (Tab R-8.2).
1357	911 caller requests EMS to aircraft parking spot L9 for pilot ejection on the ground (Tab HH-7).
1358	Notification of the incident on the crash net radio (Tab R-18.3). Med 1 (on-call flight medicine team) enroute (Tab R-18.3).
1359	Fire response vehicles enroute – Engine 12, Chief 2, and Crash 80 (Tabs V-5.16 & HH-7).
1401	Ambulance notified (Tabs HH-4 & X-1).
1401	All Fire response units are on scene with additional medical capabilities: Oropharyngeal Airway, Bag Valve Mask, supplemental oxygen, Automated External Defibrillator (AED), and Lund University Cardiopulmonary Assist System (LUCAS) (Tabs R-18.3 & V-5.16).

1402	Ambulance is enroute to Sheppard AFB (Tab X-1).
1402	Fire Dispatch notifies Security Forces to meet ambulance at Missile Road Gate (Tab HH-4).
1403	Security Forces dispatches escort to Main Gate (Tab HH-15).
1404	Crash 80 clears MA as safe, joins medical treatment of MIP with Engine 12 (Tab V-5.16).
1405	Security Forces escort arrives at Main Gate (Tabs HH-8 & HH-15).
1410	Command Post makes notifications to base leadership (Tab HH-4).
1414	Ambulance arrives at Missile Road Gate and is held awaiting Security Forces escort (Tabs HH-8 & HH-12).
1415	Aeromedical Evacuation landing coordinates requested by Fire Control (Tabs HH-10).
1416	Aeromedical Evacuation canceled due to cardiopulmonary resuscitation (CPR) in progress (Tabs V-5.17 & V-29.8).
1416	Ambulance given permission to depart Missile Road Gate to meet up with Security Forces escort enroute (Tab HH-15). Ambulance and Security Forces escort meet up at Missile Road and Bridwell Road (Tab HH-8).
1420	Security Forces escort drives past ENJJPT ramp access road and is redirected by bystander (Tabs HH-8 & HH-10).
1422	Ambulance on scene at Lima 9 (Tab V-5.17). Treatment of MIP included: monitor placed, and MIP found to be in Pulseless Electrical Activity (PEA), Intraosseous vascular access (IO) placed, and epinephrine administered (Tabs V-5.17 & V-29.8).
1429	MIP loaded on ambulance (Tab HH-5). Fire Medic and a Flight Surgeon travel with MIP (Tabs R-4.3 & V-5.18).
1433	Ambulance departs scene (Tabs X-1 & HH-8). Advanced care rendered enroute including tranexamic acid (TXA), bilateral needle decompressions with significant return of air/blood, and successful intubation (Tabs R-4.3, V-5.18 & V-29.8 to V-29.9).
1436	Ambulance departs Sheppard AFB through Missile Road Gate (Tabs HH-8 & HH-17).
1443	Ambulance arrives at ER and completes handoff to the trauma team (Tabs X-1 & V-5.18).
1523	Accident scene released by Fire to the 80 FTW Flight Safety office (Tab HH-5).

**Note 1:* Total time from ejection to arrival at the trauma bay was approximately 50 minutes (Tab HH-7).
**Note 2:* While there was an approximate 4 minute 35 second delay in the ambulance arriving on scene due to gate escort coordination and missed turn, this delay did not contribute to any change in outcome in this case (Tabs X-1 & HH-7 to HH-8).

There were no environmental conditions noted that complicated efforts, incident occurred in daylight without inclement weather (Tab W-1).

h. Recovery of Remains

The MIP was later transferred from United Regional Health Care System, Wichita Falls, Texas to Brooke Army Medical Center, Fort Sam Houston, Texas for autopsy which was accomplished on 16 May 2024 (Tab X-3). The MIP was laid to rest at the Air Force Academy Cemetery on 24 May 2024 (Tab X-5).

5. MAINTENANCE

a. Forms Documentation

A review of the aircraft Air Force Technical Order (AFTO) Form 781 maintenance forms and Integrated Maintenance System (IMDS) determined there were no overdue inspections or open Time Compliance Technical Orders that would have prohibited the MA from flight operations (Tabs D-1 to D-12 & U-1 to U-21). The MA's 90-day maintenance records and IMDS data indicated no relevant record deficiencies (Tabs U-3 to U-11). The MA had no concerning repeat/recur maintenance issues, and all maintenance actions were completed (Tabs D-1 to D-12 & U-1 to U-21).

The MA forms binder includes a memo from the Air Force Life Cycle Management Center (AFLCMC) approving a Temporary Shelf/Service Life Extension for Cartridge, Impulse, CCU-153/A, for the Drogue Deployment Unit (DDU) for the MA to allow for consolidation of maintenance actions (Tab D-7). There is no evidence to indicate the temporary extension of the DDU cartridge played a role in the mishap.

The AFTO Form 781H shows a dash in box 1 and an X in box 2 of the STATUS TODAY portion of the form (Tab D-1). The dash indicates there is an inspection or check due as annotated in the AFTO Form 781A portion of the maintenance forms (Tabs D-3 to D-4). The signature in the EXCEPTIONAL RELEASE column next to a penciled in number 1 in the BOX NO column identifies the aircraft condition indicated by the dash status is released for flight (Tab D-1). An X (normally red in color) identifies a maintenance condition that needs to be resolved before the next flight and is signed off or downgraded by a competent maintenance authority once the issue leading to the Red X condition is resolved (Tabs BB-31 & DD-95). Due to there being no maintenance condition in the AFTO Form 781A corresponding an X status, the X shown on the AFTO Form 781H for the MA was added after the mishap to account for the status of the MA at that time (Tabs D-1 & D-4).

b. Inspections

All required inspections for the MA, RCP and FCP ejection seats were completed and properly documented (Tabs D-1 to D-12 & U-1 to U-21). A combined Basic Post Flight and Pre-Flight inspection was accomplished on the MA at 1800L on 10 May 2024 (Tab D-1). The MA flew a sortie on the morning of the mishap (Tab D-1). A Thru Flight inspection was accomplished on the MA at 1000L on 13 May 2024 after the first sortie the morning of the mishap (Tabs D-1 & V-22.2). A 30-Day Egress Final Inspection was performed on 28 April 2024 with no defects in the emergency escape system noted (Tab U-17). The last ejection seat 120-month inspection was performed on the RCP and FCP seats 28-30 May 2019) with no defects noted (Tabs U-1 to U-2).

The last ejection seat 36-month inspection was performed on the RCP and FCP seats on 3 November 2021 with no defects noted (Tabs U-3 to U-5). An ejection control handle pull check is performed on both the RCP and FCP seats when completing the 120-month and 36-month inspections (Tabs U-1 to U-5). The last pull checks recorded were performed during the 36-month inspection completed on 3 November 2021 and were within limits at 50 lbs. of pull force required to actuate the FCP seat ejection control handle, and 48 lbs. of force required to actuate the RCP seat ejection control handle (Tabs U-3 to U-5).

c. Maintenance Procedures

A review of the MA forms, RCP and FCP seat jacket files, and IMDS maintenance histories determined that local operating procedures relevant to the MA were in accordance with Department of the Air Force Instruction (DAFI) 21-101, Aircraft and Equipment Maintenance Management, and did not contribute to the mishap (Tabs D-1 to D-12, U-1 to U-21 & BB-31).

d. Maintenance Personnel and Supervision

M1 Support Services contractors perform aircraft maintenance at Sheppard AFB (Tabs CC-15 & CC-27). Training and maintenance records are kept within IMDS, and the contractors training records system, respectively (Tabs U-36 to U-154). A review of the contractor training records for the individuals who last worked on the MA and the RCP seat showed they were fully qualified with no anomalies or concerns (Tabs U-36 to U-154).

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

There was no evidence to indicate that the fuel, hydraulic fluid, or oil played a part in this mishap (Tabs D-13 to D-17).

f. Unscheduled Maintenance

There was no evidence to indicate that unscheduled maintenance played a role in this mishap (Tabs D-1 to D-12, U-1 to U-21).

6. AIRFRAME SYSTEMS

a. Structures, Systems, Evaluation, and Analysis

(1) Canopy

In an ejection, the CFS automatically initiates to shatter the canopy above the seat that is ejecting (Tabs KK-2 to KK-3). The system is designed to jettison the canopy parts away from the canopy frame to ensure a clear ejection path for the pilot (Tabs KK-2 to KK-3). The rear canopy was fractured as designed as part of the ejection sequence (Figure 11) (Tabs V-5.16 & Z-6). Large shards of the canopy glass littered the taxiway near the MA (Tabs V-5.16 & S-1). The windscreen and front canopy remained fully intact, and the canopy hinges were still functional, enabling the MSP to egress normally (Tabs R-10.3, V-5.16 & Z-6). The CFS functioned properly in the RCP of the MA (Tabs KK-2 to KK-3).

(Figure 11: Mishap Aircraft Fractured Canopy) (Tab Z-6)

(2) MIP Ejection Seat System

Post-mishap engineering analysis by the AFLCMC determined that the right firing mechanism did not strike the primer with sufficient force to initiate the right MPI cartridge (Figure 12) (Tab J-3). The left initiator cartridge fired normally, initiating the RCP ejection sequence (Figure 12) (Tab J-3). Previous manufacturer testing of the ejection control handle being pulled at various angles shows that pulling the ejection handle off center results in a lower force on the initiator cartridge on the opposite side (Tabs KK-26 to KK-27 & KK-41). Analysis indicates that the RCP ejection control handle was pulled by the MIP to the left instead of straight up as part of the ejection sequence (Tabs KK-26 to KK-27 & KK-41).

(Figure 12: Mishap Aircraft RCP Seat Initiator Cartridges, Left and Right) (Tab J-3)

(3) Seat Safety Pin

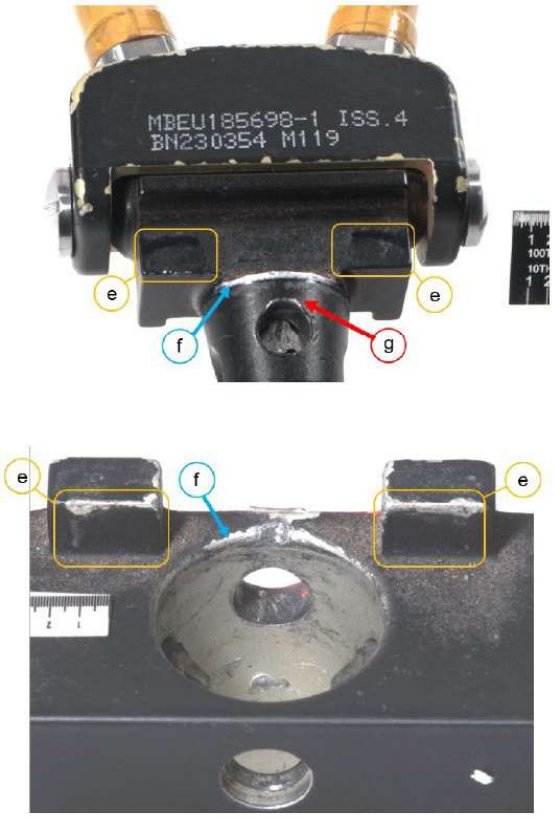
The RCP ejection seat safety pin was found on the parking ramp along the direction of travel of the RCP ejection seat from the MA to the impact location (Figures 10, 13 & 14) (Tabs Z-8 to Z-9).

(Figure 13: Mishap Aircraft RCP Seat Safety Pin Location) (Tab Z-8)

(Figure 14: Mishap Aircraft RCP Seat Safety Pin) (Tab Z-9)

(4) Ejection Control Handle

The Air Force Research Laboratory (AFRL) provided the AIB images of the ejection handle and ejection handle housing after disassembly of the system in their laboratory (Tab J-69). The images show elongation of the seat safety pin hole on both the leading surface of the housing and front edge of the ejection handle (Figure 15 location (g)) (Tab J-69). Post-mishap engineering analysis by AFRL of the pin holes from both the ejection handle and ejection handle housing determined that the elongation is only possible if the pin was installed (Tabs J-60 & J-69). The elongation of the seat safety pin hole at the front of the housing is consistent with a partially installed seat safety pin (Tab J-58).

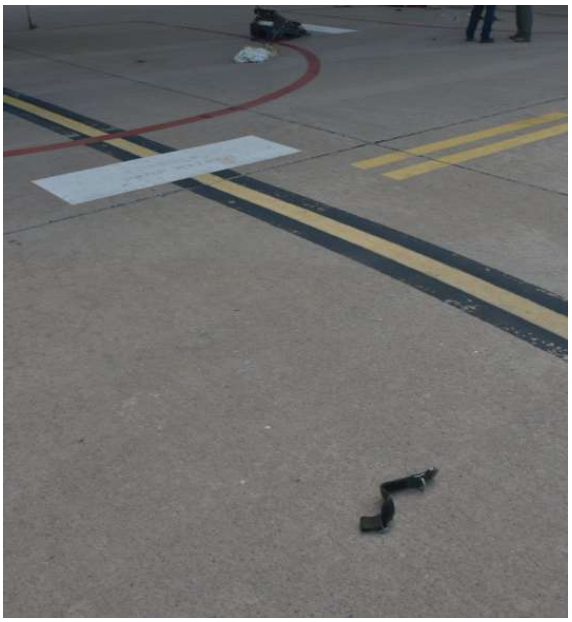


(Figure 15: Mishap Aircraft RCP Ejection Handle Housing) (Tab J-69)

(5) Left Leg Restraint Garter

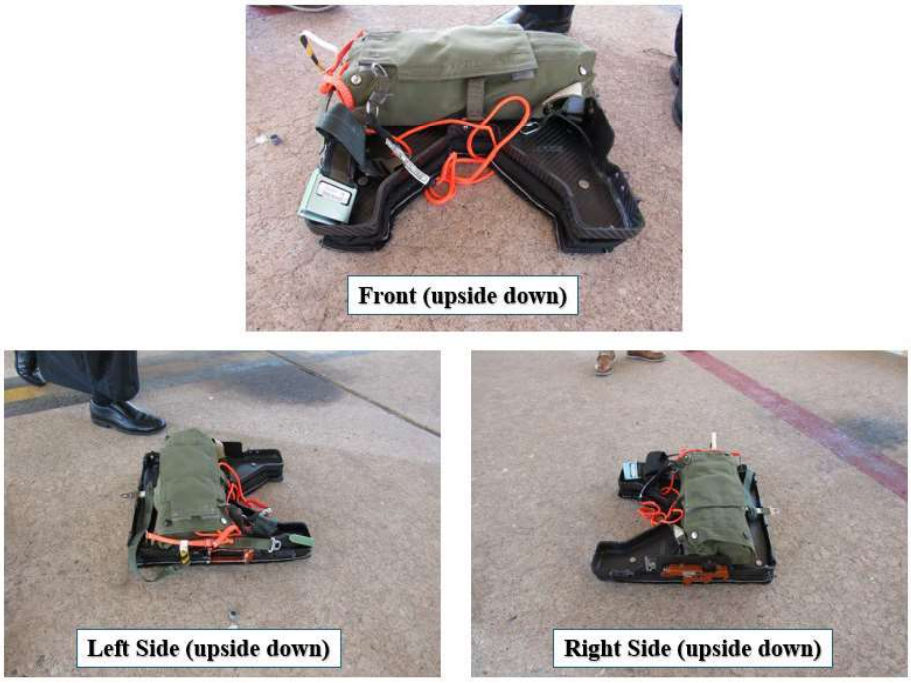
As the ejection seat travels upward, each leg restraint line is pulled through the D-ring on the leg restraint garter, restraining the occupant's legs (Tab J-2). Post-mishap pictures of the MIP's ejection seat show a difference in the amount the left and right leg restraint lines retracted during the ejection sequence (Figure 16) (Tab Z-10). In Figure 16, the left leg restraint line is annotated by (A), and the right leg restraint line is annotated by (B) (Tab Z-10). The left restraint line was able to retract more than expected during the ejection sequence due to the left leg restraint garter not being connected to the MIP's leg (Tab V-16.4). When the leg restraint lines were released during pilot/seat separation, the left leg restraint garter was able to fall to the ground independent of the MIP (Tabs J-2 & V16.7 to V-16.8). The MIP's left leg restraint garter was found on the parking ramp between the MA and the MIP (Figure 17) (Tabs S-3 & Z-11).

(Figure 16: Mishap Aircraft RCP Bottom of Ejection Seat) (Tab Z-10)


(Figure 17: MIP's Left Leg Restraint Garter) (Tab Z-11)

(6) Seat Survival Kit (SSK)

Post-mishap, the SSK was found near the MIP (Tabs V-27.3 to V-23.4 & Z-12). The MIP's SSK did not fully deploy during the ejection sequence (Tabs J-39, V-28.8 to V-28.9, KK-21 & KK-23). Figure 18 shows the condition of the SSK at the scene (Tab Z-12). The black plastic housing shown is the seat for the RCP (Tab KK-12). The green buckle is the left SSK buckle (Tab V-28.8). Figure 19 shows the MIP's PCU-15/P Harness post-mishap where both the right and left SSK buckles should have been connected (Tabs V-28.8 to V-28.10 & Z-13). The green buckle in the middle left of the picture is the right SSK buckle (Tabs V-28.8 to V-28.10 & KK-12).

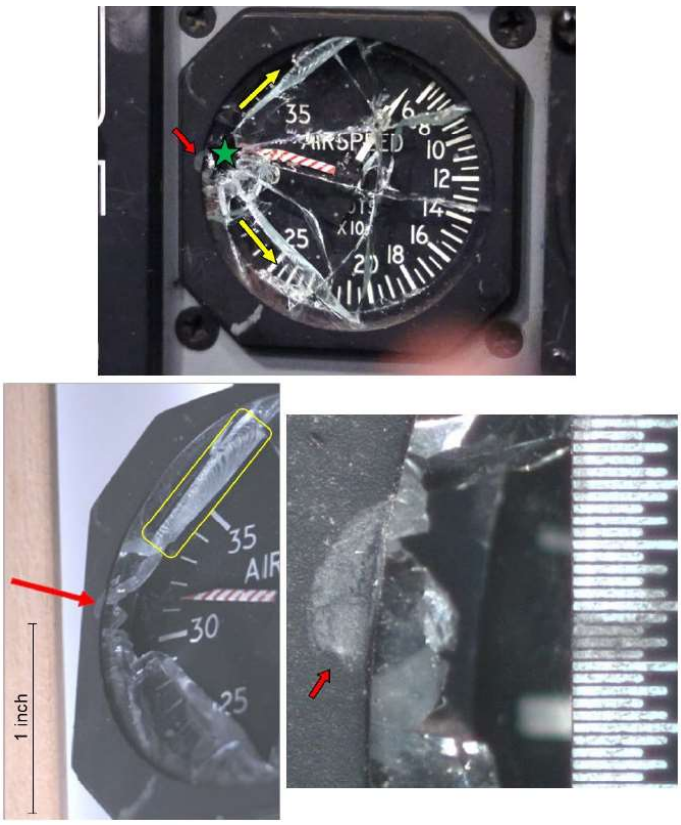


(Figure 18: Mishap Aircraft RCP SSK, various positions) (Tab Z-12)

(Figure 19: MIP's PCU-15/P Harness) (Tab Z-13)

(7) Standby Airspeed Indicator (ASI)

The outer layer of glass on the RCP ASI was cracked during the ejection sequence (Tab J-59). There was an elliptical witness (strike) mark in the black bezel near the initiation site (Tab J-59). Small pieces of glass from the cracked screen were found inside the cockpit (Tab J-65). In Figure 20, the top image shows the standby airspeed indicator prior to removal from the aircraft (Tab J-73). The red arrows indicate the witness (strike) mark on the bezel (Tab J-73). The yellow arrows and rectangle identify Wallner lines indicating direction of crack propagation (Tab J-73). The green star indicates crack origin location (Tab J-73). Post-mishap engineering analysis by AFRL of the RCP ASI identified potential matches to the elliptical witness (strike) mark on the black bezel as the RCP seat safety pin shank, a carabiner attached to the MIP's helmet bag, or the open buckle of the leg restraint garter (Tabs J-59 & KK-39).



(Figure 20: Mishap Aircraft RCP Cracked Air Speed Indicator) (Tab J-73)

7. WEATHER

a. Forecast Weather

The local Mission Execution Forecast (MEF) was issued on 13 May 2024 at 0900L (Tabs F-1 to F-4). The forecast weather conditions at Sheppard AFB at 1200L predicted a scattered layer of clouds at 2,500 ft above ground level (AGL), 7 statute miles of visibility, a temperature of 23 degrees Celsius (C), and winds from the northwest (320 degrees) at 9 knots (Tab F-1). The MEF

called for the scattered layer of clouds to gradually lift and diminish throughout the afternoon (Tab F-1). There was no adverse weather conditions forecast for the MOA (Tab F-2).

b. Observed Weather

At 1219L, shortly before the MS, the weather improved as forecast, permitting the Sheppard AFB Supervisor of Flying (SOF) to change the T-6 flying status from "Simultaneous Instruments" to "Unrestricted" (Tabs W-1, DD-102 & FF-1). The weather at 1252L, prior to the MA's recovery and landing, showed a scattered layer of clouds at 3,900 ft AGL, winds out of the northwest (310 degrees) at 13 knots, and 10 statute miles of visibility (Tab W-1). There were no significant changes to the weather post-mishap (Tab W-1).

c. Space Environment

There was no evidence to indicate that the space environment and associated weather played a role in this mishap (Tab F-1).

d. Operations

The MS was conducted within prescribed weather requirements and in accordance with published restrictions (Tabs F-1 to F-4, W-1 & DD-102).

8. CREW QUALIFICATIONS

a. MIP

The MIP was an active-duty captain assigned to the 80 OSS who flew with the 89 FTS, both located at Sheppard AFB, TX (Tabs G-1 & R-11.12). The MIP was a First Assignment Instructor Pilot (FAIP) with one year and nine months of instructor experience (Tab T-37). The MIP was a current, qualified, and experienced T-6A instructor pilot who held a Pilot Aeronautical Rating (Tabs G-1 to G-4 & T-1).

The MIP was respected by leadership, fellow instructors, and students (Tabs R-5.7 to R-5.8, R-11.13, & V-18.11). The MIP had a reputation as a softspoken, humble, and caring person who was very organized and meticulous (Tabs R-5.8, R-7.9, R-9.5 to R-9.6, R-14.14 R-24.5 & R-25.11 to R-25.12). The MIP was a very caring instructor who would proactively reach out to students to strike up a conversation and would spend extra time explaining a concept to a student who did not understand the topic (Tabs R-14.14 & R-25.11). The MIP was recognized as the Instructor Pilot of the Year for 2023 (Tab R-25.12). The MIP was an active member of the Civil Air Patrol (CAP) (Tabs R-11.15 & T-39 to T-42). The MIP held Federal Aviation Authority (FAA) certificates for Private Pilot Glider, Instrument Rated, Commercial Single Engine, Commercial Multi-Engine, Flight Instructor, and Instrument Flight Instructor (Tabs T-39 to T-42).

A review of the MIP's training records revealed slightly above average progression throughout ENJJPT, Introduction to Fighter Fundamentals (IFF), and Pilot Instructor Training (PIT) (Tabs G-30 to G-1026 & T-36 to T-38).

The MIP obtained an initial T-6A instructor qualification on 18 August 2022 (Tab T-8). The MIP had flown 719.7 total hours in the T-6A, including 567.0 instructor hours (Tab G-5). The MIP's most recent instructor evaluation was on 19 October 2023 (Tab T-10). On that evaluation, the MIP failed one of the requisite written exams and was placed on a "Supervised Status" (Tab T-10 to T-11). The MIP retook the exam, received a passing score, and was subsequently removed from "Supervised Status" (Tabs T-10, V-18.6 to V-18.10 & V-15-3 to V-15.6). There was nothing significant to report about the emergency procedures evaluation or flight, and the MIP was evaluated to be a qualified instructor pilot in the T-6A (Tabs T-10 & V-18.8).

The MIP's most recent flight prior to the MS was the same morning as the MS on 13 May 2024 (Tabs R-14.3, V-26.2, EE-2 & FF-7). The MIP's previous sortie prior to the first sortie on 13 May 2024 was on 10 May 2024 (Tab G-18). The MIP flew with the CAP during off-duty time (Tabs R-11.15, R-24.2, V-18.3 to V-18.4 & V-27.8). The AIB was unable to determine the MIP's total civilian flight time. The MIP's recent military T-6A flight time prior to 13 May 2024 is shown below in Table 2 (Tabs G-15 to G-18):

Table 2: MIP Flight Time

	Hours	Sorties
30 Days	38.5	25
60 Days	80.4	52
90 Days	130.5	86

b. MSP

The lieutenant MSP was an international student pilot assigned to the 80 OSS who flew with the 89 FTS (Tabs G-1030, R-10.2 & V-15.6 to V-15.7). The MSP demonstrated the desired performance and progression throughout the T-6A phase of training (Tabs G-1039 to G-1045). The MSP's most recent flight prior to the MS was on 9 May 2024 (Tab G-1036). The MSP's recent military T-6A flight time prior to 13 May 2024 is shown below (Tabs G-1035 to G-1036):

Table 3: MSP Flight Time

	Hours	Sorties
30 Days	17.7	11
60 Days	47.8	30
90 Days	75.3	50

9. MEDICAL

a. Qualifications

(1) MIP

The MIP was medically qualified at the time of the mishap (Tab II-2). The MIP held a current Department of Defense (DD) Form 2992, *Medical Recommendation for Flying or Special Operational Duty*, at the time of the mishap (Tab II-2).

The MIP completed a Periodic Health Assessment and Annual Flight Physical Examination on 26 January 2024 (Tab II-2). A review of the Aeromedical Information Management Waiver Tracking System (AIMWTS) indicated that the MIP held a current aeromedical waiver to fly for a medication adverse effect that occurred in 2019 (Tab II-2). The current aeromedical waiver was granted in October 2022 and was due for renewal October 2024 (Tab II-2). A waiver for the same condition was previously disapproved in 2019, and a subsequent Exception to Policy (ETP) was granted in 2019 (Tab II-2). A reason for the initial waiver request denial was lack of time between the medication adverse effect occurrence and time of waiver submission (Tab II-2). After the adverse effect in 2019, the medication was listed as an allergy for the MIP and the MIP did not take the medication again (Tab II-2). The MIP was medically cleared for flying duties without restrictions at the time of the mishap (Tab II-2).

(2) MSP

The MSP was medically qualified at the time of the mishap (Tab II-5). The MSP held a current DD Form 2992 at the time of the mishap (Tab II-5).

The MSP completed a DD Form 2807, *Report of Medical History*, and DD Form 2808, *Report of Medical Examination*, for initial flying clearance in the MSP's home country on 12 October 2023 (Tab II-5). The MSP completed the first Annual Flight Physical Examination on 3 November 2023 (Tab II-5). The MSP did not require any aeromedical waivers and was medically cleared for flying duties without restrictions at the time of the mishap (Tab II-5).

(3) Medical Personnel

In addition to bystander chest compressions by flightline personnel, the MIP received medical attention from four groups: Fire Crash EMTs and Paramedics, Flight Medicine personnel, the off-base ambulance service, and the local hospital staff (Tabs R-4.2 to R-4.3 & X-1). All Sheppard AFB medical personnel involved through the mishap were appropriately licensed, certified, and trained to perform their duties (Tab II-6).

b. Health

A review of the outpatient medical and dental records (paper and electronic) for the MIP and the MSP showed no evidence to suggest that the MIP or the MSP had any prior physical or mental health conditions that had any bearing on the mishap (Tabs II-2 & II-5).

(1) MIP

The MIP was transported to the local hospital where complete assessment and stabilization of injuries was performed (Tab X-1). The evidence of significant blunt force multisystem trauma (deceleration and direct impact) was found not to be survivable (Tab X-1). The neurosurgeon declared brain death with the first exam and CT scans completed within two hours of injury (Tab X-1). An aorta injury on CT scan would have required transport to another facility for definitive care, but the MIP was not stable for transport nor predicted to be a candidate for repair (Tab X-1).

The MIP was continued on life support, including ventilation and maximum pressor support, in the Intensive Care Unit awaiting family arrival (Tab X-1). Multiple organ system failure was evident (Tab X-1). Overnight with family at bedside, the MIP lost vital signs and was pronounced dead (Tab X-1).

From the initial ejection and throughout care, the MIP remained unresponsive with no indication of awareness or pain (Tab X-1).

(2) MSP

The MSP was evaluated after the mishap and no injuries or factors related to the mishap were found (Tab II-5).

c. Pathology

An autopsy of the MIP was performed in accordance with Title 10 United States Code, Section 1471, at Brooke Army Medical Center, Fort Sam Houston, TX, at 0800 hours, 16 May 2024 (Tab X-3). The cause of death was multiple injuries due to aircraft ejection (Tab X-3). The manner of death was accident (Tab X-3). The toxicology screen for cyanide, elevated carboxyhemoglobin, ethanol, and tested medications/drugs of abuse were negative (Tab X-3).

d. Lifestyle

(1) MIP

The MIP had been under increased life stressors in the 4-6 weeks prior to the mishap (Tabs R-5.4 to R-5.11 & R-6.4 to R-6.11).

While some personnel interviewed stated the MIP appeared tired, the MIP did not identify sleep as an issue on the ORM sheet for either of the sorties that day (Tabs R-14.3, V-26.3 to V-26.4, DD-62 & EE-1 to EE-2). The MIP routinely flew two sorties in one day (Tabs G-8 to G-18). The MIP flew two sorties in one day on four different days in the two weeks prior to the MS (Tab G-18). The MIP was honest in assessing personal ability to fly a given sortie and would not fly if not fully ready (Tab R-14.6).

A review of available information did not provide details on eating and hydration patterns for the MIP at breakfast or in-between sorties the day of the mishap (Tabs R-14.5, R-22.3, R-24.3 & R-25.12). Water is readily available in the squadron building and the MIP routinely packed a lunch (Tabs V-19.4 & V-24.5).

The lifestyle of the MIP, including sleep, eating, hydration, and increased life stressors were not significant factors in the mishap (Tabs R-5.4, R-6.4 to R-6.5, R-14.18 to R-14.20 & R-24.2 to R-24.4).

(2) MSP

There is no evidence to indicate that lifestyle factors of the MSP were a factor in the mishap (Tabs EE-1 & II-5).

e. Crew Rest and Crew Duty Time

Crew rest is compulsory for aircrew members and is a minimum of 12 non-duty hours before the flight duty period starts (Tab BB-2). During this time, aircrew may participate in meals, transportation, or rest, which allows for the opportunity for at least eight (8) hours of continuous sleep (Tab BB-2). The two days prior to the mishap sortie was a weekend (Tab R-11.18). The evidence indicates that both the MIP and MSP followed adequate crew rest guidelines (Tabs BB-2 & EE-1 to EE-2).

In AETC, the maximum flying time limitations are 8 hours during one flight duty period, 30 hours in 7 consecutive days, and 75 hours in 30 consecutive days (Tab BB-16). Neither the MIP nor MSP had flight time totals that approached the maximums (Tabs G-17 to G-18 & G-1035 to G-1036). The following summary includes the first sortie of the day but does not include the mishap sortie (Tabs G-17 to G-18 & G-1035 to G-1036). A review of available information indicates the MC's flying hours were within limitations (Tabs G-17 to G-18, G-1035 to G-1036 & BB-16).

Table 4: Maximum Flying Time Limitations

	Flying Hours in current Flight Duty Period	Flying Hours per 7 Consecutive Days	Flying Hours per 30 Consecutive Days
Limitation	8 total hours; 5.5 hours instructional or Functional Check Flight (FCF)	30	75
MIP	1.3	10.9	38.5
MSP	0	4.6	17.7

While the MIP was requested to fly the second sortie shortly after the debrief of the first, there was still greater than 3 hours and 30 minutes between take off time to take off time (Tabs R-14.3, R-22.2, DD-33, FF-5 to FF-7 & FF-10).

10. OPERATIONS AND SUPERVISION

a. Operations

The 89 FTS conducts Phase II of ENJJPT in the T-6A Texan II (Tabs CC-17 & DD-30). Phase II is 131 days long and contains four types of training: 199.8 hours of academic training; 26.5 hours of ground training; 51.9 hours of simulator training; and 101.8 hours of aircraft flying training

(Tabs DD-30 to DD-32). The flying training portion of the syllabus is split into four categories: contact, instrument, formation, and low level (Tabs DD-34 to DD-49). The contact category focuses on single-ship MOA operations and basic visual flight rules (VFR) procedures (Tabs DD-34 to DD-37). The instrument category focuses on basic instrument procedures, advanced instrument procedures, and navigation procedures (Tabs DD-38 to DD-43). The formation category focuses on basic formation procedures, advanced tactical formation procedures, and 4-ship formation procedures (Tabs DD-42 to DD-46). The low-level category focuses on single-ship low level visual navigation and two-ship low level visual navigation procedures (Tabs DD-46 to DD-49).

The planned schedule of flying for the morning of 13 May 2024 was complicated by some of the aircraft that were off station for cross country flights not returning as planned on 12 May 2024 due to poor weather (Tabs R-14.2 & FF-7 to FF-9). The flying schedule for 13 May 2024 was adjusted to account for fewer aircraft, student pilots, and instructor pilots available (Tabs R-14.2 to R-14.3 & FF-7 to FF-9). The students in the MSP and MIP's flight in the 89 FTS were given priority for sorties since they were one of the senior classes in the T-6 portion of the ENJJPT course (Tabs R-14.2 & FF-7 to FF-9). Outside of the adjustments to the morning flying schedule the day of the mishap, the operations tempo for the 89 FTS was not accelerated or unusual (Tabs R-14.4, V-18.3, V-19.3 & V-20.3 to V-20.4).

(1) MIP

The MIP's operations tempo was normal to below normal leading up to the MS (Tabs V-18.3 & V-19.3). The MIP's previous sortie prior to the first sortie on 13 May 2024 was on 10 May 2024 (Tab G-18). The MIP flew two sorties in one day on four different days in the two weeks prior to the MS (Tab G-18).

The MIP showed for the day at approximately 0630L (Tabs R-22.2 & V-24.4). The MIP was originally scheduled to fly a single morning sortie the day of the mishap (Tabs R-14.3 & FF-7 to FF-13). Due to the schedule adjustments that morning, the MIP's morning student sortie takeoff time was moved from 0915L to 0800L (Tabs R-22.2, V-26.3 & FF-7 to FF-8). The brief for the morning sortie was abbreviated but covered all the required items **(**Tabs R-25.2, V-26.3 & V-31.3). The sortie itself was unremarkable, although the debrief was more abbreviated than previous debriefs the MIP conducted with the same student **(**Tabs R-25.10 & V-31.3). After the MIP completed the debrief of the morning sortie, the MSP's flight commander asked the MIP to fly a second sortie that afternoon because the original instructor pilot scheduled to fly with the MSP was no longer available and the weather did not support the MSP flying solo (Tabs V-24.3 to V-24.4, DD-102 & FF-1). The MIP accepted the request to fly with the MSP without hesitation (Tab R-14.18).

The T-6 syllabus specifies that the minimum scheduled time for students between the start of one flight and the start of a second flight is 3 hours and 30 minutes (Tab DD-33). The MIP's second sortie takeoff time was 1215L (Tabs FF-6 & FF-10). Even though this minimum turn time only limits students and not instructor pilots, the scheduled turn time for the MIP was 4 hours and 15 minutes (Tabs FF-7 & FF-10).

(2) MSP

The MSP's operations tempo was normal with one to two flights per day (Tabs G-1035 to G-1036). The MSP's last flight was on 9 May 2024 (Tab G-1036).

There was no evidence that operations tempo was a factor in the mishap (Tabs G-1035 to G-1036).

b. Supervision

The 459 FTS Operations Supervisor (Ops Sup) authorized the MS to fly, and the 89 FTS scheduled the MS in accordance with the T-6A syllabus (Tabs V-21.2, FF-4, FF-6 & FF-10).

According to the Ops Sup, when the formation flight members came to the desk for their briefing the Ops Sup asked about their profile, block altitude, risk management, and callsign (Tab R-21.3). The formation provided all the information (Tab R-21.3). The Ops Sup then confirmed from the deputy that the risk management points total was in the applicable computer system (Tab V-21.4). The Squadron Aviation Resource Management member confirmed that the four pilots were green for ground and flying currency (go/no-go check), and then the Ops Sup asked the crew to fill out the step form and sign it (Tabs V-21.4 & V-30.5 to V-30.6). The Ops Sup checked the form and then stepped the formation (Tabs R-21.3 & V-30.5 to V-30.6).

There was no evidence that supervision was a factor in the mishap.

11. HUMAN FACTORS ANALYSIS

a. Introduction

The AIB considered all human factors as prescribed in the Department of Defense Human Factors Analysis and Classification System 8.0 (DoD HFACS 8.0), which lists potential human factors that can play a role in an aircraft mishap and identifies potential areas of assessment during an accident investigation (Tabs BB-33 to BB-64).

DoD HFACS 8.0 are divided into four parts: acts, preconditions, supervision, and organizational influences (Tabs BB-61 to BB-64). Five human factors were relevant to this mishap: (1) Unintended Activation or Deactivation; (2) Procedure of Checklist Not Followed Correctly; (3) Inattention; (4) Failed to Identify or Correct Hazardous Practices, Conditions or Guidance; and (5) Provided Unclear, Impractical, or Inadequate Policy, Procedural Guidance or Publications (Tabs BB-37, BB-40, BB-53 & BB-57).

b. Acts

(1) AE101 Unintended Activation or Deactivation

Unintended Activation or Deactivation is when an individual's movements inadvertently activated or deactivated equipment, controls, switches, weapons systems, etc., when there is no intent to do so and resulted in the near-miss or mishap (Tab BB-37). This action may be noticed or unnoticed by the individual at the time of occurrence (Tab BB-37). The error may be the

result of one of more individual physical or mental conditions, crew/team influence, supervisory/leader influence, or a flaw in workspace or materiel design (Tab BB-37).

(2) AE102 Procedure or Checklist Not Followed Correctly

Procedure or Checklist Not Followed Correctly is when the mishap individual did not follow correct procedure which resulted in the near-miss or mishap (Tab BB-37). Examples include failed to execute proper sequence, learned maneuver or proper emergency procedures; failed to follow a published checklist, Technical Manual (TM), or Standard Operating Procedure (SOP) to perform an inspection or maintenance of aircraft/vehicle/vessel/equipment, etc. (Tab BB-37). The error results from one or more preconditions, supervisory influence and/or ineffective training (Tab BB-37).

c. Preconditions

(1) PC101 Inattention

Inattention is when the mishap individual did not maintain a state of readiness or alertness/situational awareness to properly act upon available information, resulting in a hazardous condition or unsafe act (Tab BB-40). This may have been due to boredom, self-confidence, overreliance on automation, high experience levels, executing highly repetitive tasks where the mishap individual was on "auto-pilot", or a false sense of security or a perceived absence of threat from the environment (sheer lack of attention/awareness of risk) (Tab BB-40).

d. Supervision/Leadership

(1) SI007 Failed to Identify or Correct Hazardous Practices, Conditions or Guidance

Failed to Identify or Correct Hazardous Practices, Conditions or Guidance is when any supervisor/leader in the unit failed to identify or correct known hazardous conditions of equipment, facilities, or written procedures/guidance, or correct unsafe work practices of personnel within his/her scope, which resulted in hazardous conditions or unsafe acts (Tab BB-53).

e. Organizational Influences

(1) OP003 Provided Unclear, Impractical, or Inadequate Policy, Procedural Guidance or Publications

Provided Unclear, Impractical, or Inadequate Policy, Procedural Guidance or Publications is when written standards (policies, directives, procedural guidance/standard operating procedures, technical manuals, checklists, or publications) for normal or abnormal/emergency conditions are impractical, too vague/unclear, incorrect or ineffectively disseminated for safe operations throughout the organization or within a subordinate unit, resulting in hazardous conditions or unsafe acts throughout subordinate units or the field/fleet (Tab BB-57).

12. GOVERNING DIRECTIVES AND PUBLICATIONS

a. Publicly Available Directives and Publications Relevant to the Mishap

(1) AETCMAN 11-248, *T-6 Primary Flying*, 17 August 2016 (certified current 4 February 2020).
(2) AETC Supplement to AFMAN 11-202v1, *Aircrew Training*, 7 May 2020 (incorporating Change 1, 29 June 2022).
(3) AETC Supplement to AFMAN 11-202v3, *Flight Operations*, 30 November 2020 (certified current 22 September 2022 incorporating Change 2, 25 April 2023).
(4) AFGM 2024-01 to AFMAN11-2T-6V3, *T-6A Operations Procedures*, 24 May 2024.
(5) AFI 51-307, *Aerospace and Ground Accident Investigations,* 18 March 2019.
(6) AFMAN 11-202V3, *Flight Operations*, 10 January 2022.
(7) DAFMAN 48-123, *Medical Examination and Standards* 20 February 2024.
(8) DAFI 21-101, *Aircraft and Equipment Maintenance Management*, 16 January 2020 (incorporating Change 1, 20 December 2023).
(9) DAFI 91-204, *Safety Investigation and Reports,* 10 March 2021.
(10) Department of Defense, *Human Factors Analysis and Classification System 8.0.*
(11) 80 OG Supplement to AFGM 2024-01 to AFMAN11-2T-6V3, *T-6A Operations Procedures*, 9 September 2022 (Incorporating Change 1, 1 November 2023).

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

b. Other Directives and Publications Relevant to the Mishap

(1) AETC Syllabus P-V4A-N, T-6A Euro-NATO Joint Jet Pilot Training Syllabus, April 2023.
(2) Air Force Technical Order 1T-6A-1, *Flight Manual*, 1 May 2023 (incorporating Change 1, 1 August 2023).
(3) USAF Medical Standards Directory (MSD), 6 March 2024.
(4) USAF Aerospace Medicine Waiver Guide Compendium, 5 April 2024.
(5) 80 FTW, Sheppard AFB, *T-6 In-Flight Guide*, 15 March 2023 (incorporating Change 1).
(6) 80 OG Standards*, T-6 Flying Standards*, 9 September 2022 (incorporating Change 1, 8 January 2024).

c. **Known or Suspected Deviations from Directives or Publications**

No other known or suspected deviations not already listed in the report are noted.

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30 APRIL 2025

JEFFREY W. NELSON
Brigadier General, USAF
President, Accident Investigation Board

STATEMENT OF OPINION

T-6A, T/N 08-3915
SHEPPARD AIR FORCE BASE, TEXAS
13 MAY 2024

Under 10 U.S.C. § 2254(d) the opinion of the accident investigator as to the cause of, or the factors contributing to, the accident set forth in the accident investigation report, if any, may not be considered as evidence in any civil or criminal proceeding arising from the accident, nor may such information be considered an admission of liability of the United States or by any person referred to in those conclusions or statements.

1. OPINION SUMMARY

At 1353 local (L) time on 13 May 2024, a Mishap Instructor Pilot (MIP) was killed after ejecting from the rear cockpit of a T-6A Texan II, tail number (T/N) 08-3915, while taxiing to parking on the ramp at Sheppard Air Force Base (AFB), Texas (TX).

The MIP was a captain First Assignment Instructor Pilot (FAIP) with one year and nine months of instructor experience. The Mishap Student Pilot (MSP) was a first lieutenant international student pilot who was in one of the senior classes of the T-6 portion of the Euro-NATO Joint Jet Pilot Training (ENJJPT) program. The Mishap Aircraft (MA) and Mishap Crew (MC) were assigned to the 80th Flying Training Wing (80 FTW) at Sheppard AFB, TX. The MIP and MSP were assigned to the 80th Operations Support Squadron (80 OSS) and flew with the 89th Flying Training Squadron (89 FTS).

The Mishap Sortie (MS) was the MSP's sixth sortie in the advanced formation block of training. The MS was a two-aircraft formation consisting of four individuals and two aircraft. The MSP occupied the front cockpit (FCP), and the MIP occupied the rear cockpit (RCP) of the scheduled wingman aircraft, callsign FLAME 22, pronounced "FLAME two-two".

This flight was the second sortie of the day for the MIP who was previously scheduled to fly only a morning sortie that day. The MIP's previous sortie prior to the first sortie on 13 May 2024 was on 10 May 2024. The MS was the first sortie of the day for the MSP. The MSP last flew on 9 May 2024.

The MSP planned to fly in the lead position for the first portion of the profile, perform an administrative lead change in the local Military Operating Area (MOA), fly in the wing position for the second portion of the profile in the MOA, then recover to Sheppard AFB single ship. At 1220L, the formation took off from runway 33R. The training mission to and from the MOA was uneventful.

Upon return to Sheppard AFB, the MSP flew the MA into the traffic pattern via a normal overhead pattern, performed a touch and go landing, and then performed a closed pattern for a full-stop

landing. The MSP landed the MA on runway 33R at 1342L, taxied clear of the runway, and accomplished the After Landing Checklist. The MSP initiated the required verbal question-and-answer checklist items (also called challenge and response items) to the MIP in accordance with the After Landing Checklist, which included verifying the Inter-seat Sequencing System (ISS) mode selector, located in the RCP, was moved to SOLO and both seat safety pins were installed into their respective ejection seats. The MIP did not fully install the seat safety pin in the RCP ejection seat.

The MSP completed the remaining After Landing Checklist items and taxied the MA to the ENJJPT ramp. The MIP began disconnecting from the seat during the taxi back to the ramp, including disconnecting the left and right Frost fittings (parachute connections), the harness chest strap, the left seat survival kit (SSK) buckle, and the left leg restraint garter. The MIP remained connected to all other connection points.

At 1353L, as the MSP was taxiing the MA at approximately 15 knots adjacent to the Juliet parking row and preparing to turn into the taxi lane between the Juliet and Kilo parking rows, the MIP inadvertently actuated the ejection handle and ejected from the MA.

The MIP remained partially connected to and seated in the ejection seat until automatic seat/pilot separation, which occurred approximately 3 seconds after ejection. The MIP separated from the seat at approximately 100 ft above the ground, fell headfirst through the aircraft sunshade over row Lima spot 9, and landed on the ground chest and face down in the empty aircraft parking spot approximately 261 ft from the MA. The MIP was not attached to the parachute. The MIP's parachute landed in the grass next to the parking ramp approximately 170 ft from the MA in a direction approximately 45 degrees offset from the direction of travel of the ejection seat and the MIP. The peak G-forces that would be experienced during an ejection are 9-15 Gs, depending on the weight of the occupant. The MIP appeared to be unconscious while in the air. The MIP sustained non-survivable injuries from the accident and later succumbed to those injuries early the next morning at a local hospital. The Mishap Student Pilot (MSP) did not eject from the aircraft and received no injuries. The Mishap Aircraft (MA) sustained significant damage.

I find by a preponderance of the evidence, there are two causes of the mishap: (1) the MIP failed to fully install the RCP ejection seat safety pin during the After Landing Checklist; and (2) the MIP partially disconnected from the ejection seat allowing the harness chest strap V-ring to unknowingly get caught on and inadvertently actuate the ejection seat control handle.

2. CAUSES

The MIP failed to fully install the RCP ejection seat safety pin during the After Landing Checklist.

After landing the MA at Sheppard AFB, the MSP taxied clear of the runway and accomplished the After Landing Checklist. The MSP initiated the required verbal question-and-answer steps (also called challenge and response items) to the MIP in accordance with the After Landing Checklist which include verifying the ISS mode selector, located in the RCP, is moved to SOLO and installing both seat safety pins into their respective ejection seats. Despite completing the

challenge and response actions, the MIP did not fully install the seat safety pin into the ejection seat for the RCP in accordance with the After Landing Checklist in the T-6A Flight Manual.

After reviewing all available information, I find the preponderance of the evidence indicates the MIP partially installed the seat safety pin during the After Landing Checklist. I assess inattention by the MIP when installing the seat safety pin led to an assumption by the MIP that the seat safety pin was fully installed. An experienced T-6A instructor pilot indicated he observed student pilots improperly install the safety pin halfway on several occasions. The partially installed seat safety pin became dislodged when the ejection seat control handle was inadvertently actuated propelling it into the Standby Airspeed Indicator (ASI) and subsequently outside of the aircraft during the ejection sequence. The elongation of the seat safety pin hole on both the leading surface of the housing and the front edge of the ejection handle indicates the seat safety pin was at least partially installed during the ejection sequence. While there were multiple potential matches to the elliptical witness (strike) mark on the black bezel of the ASI near the initiation site of the cracked glass, I find the preponderance of the evidence indicates the likely match is the seat safety pin.

I find by a preponderance of the evidence the MIP failed to fully install the RCP ejection seat safety pin during the After Landing Checklist allowing the ejection seat to function normally when the ejection seat control handle was inadvertently actuated by the MIP.

The MIP partially disconnected from the ejection seat allowing the harness chest strap V-ring to unknowingly get caught on and inadvertently actuate the ejection seat control handle.

The MIP was a current, qualified, and experienced T-6A FAIP who was respected by leadership, fellow instructors, and students. The MIP had a reputation as a softspoken, humble, and caring person who was very organized and meticulous. The MIP was a very caring instructor who would spend extra time explaining a concept to a student who did not understand the topic. The MIP was recognized as the Instructor Pilot of the Year for 2023.

After reviewing all available information, I find the preponderance of the evidence indicates that as the MSP taxied the MA to the parking ramp, the MIP began disconnecting from the seat. The MIP disconnected the left and right Frost fittings (parachute connections), the left seat survival kit (SSK) buckle, and the harness chest strap in an indeterminate order followed by the left leg restraint garter. Disconnecting from the various seat connection points produces audible clicking sounds that may be heard by the other pilot. This action disconnected the MIP from the ejection seat parachute. Disconnecting the left SSK buckle from the MIP's harness meant the SSK was not connected to the MIP after ejection. This action meant the SSK was not able to fully separate from the MIP and the upper lid assembly/seat cover during the ejection sequence. The right SSK buckle remained connected to the MIP's harness as designed.

Disconnecting the harness chest strap allowed both the ejector snap and the V-ring to hang from the MIP's harness in the cockpit. When the MIP reached down to disconnect the left leg restraint garter, the V-ring from the harness chest strap unknowingly became caught in the ejection seat control handle. When the MIP sat back upright after bending over to disconnect the left leg restraint garter, the V-ring that was caught in the ejection seat control handle caused the MIP to

inadvertently actuate the ejection seat control handle. I assess inattention by the MIP as to the location of the harness V-ring when disconnected from the ejector snap led to the inadvertent activation of the ejection seat control handle.

Disconnecting the Frost fittings from the ejection seat parachute connections during the taxi back to parking was a common practice for the MIP as well as other Instructor Pilots in the T-6A. I was unable to ascertain the rationale behind disconnecting from the ejection seat on the taxi back to parking.

I find by a preponderance of the evidence the MIP partially disconnected from the ejection seat during taxi back to parking, allowing the harness chest strap V-ring to get caught in the ejection seat control handle when the MIP leaned down to disconnect the left leg restraint garter and inadvertently actuated the ejection seat control handle when the MIP sat back up.

3. CONCLUSION

I find by a preponderance of the evidence, there are two causes of the mishap: (1) the MIP failed to fully install the RCP ejection seat safety pin during the After Landing Checklist allowing the ejection seat to function normally when the ejection seat control handle was inadvertently actuated by the MIP; and (2) the MIP partially disconnected from the ejection seat allowing the harness chest strap V-ring to unknowingly get caught on and inadvertently actuate the ejection seat control handle when the MIP sat up from disconnecting the left leg restraint garter.

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30 APRIL 2025

JEFFREY W. NELSON
Brigadier General, USAF
President, Accident Investigation Board

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