

EXECUTIVE SUMMARY
AIRCRAFT ACCIDENT INVESTIGATION
T-37B S/N 66-8003 & AT-502B, N8526M
SHEPPARD AFB, TX
18 JANUARY 2005

On 18 January 2005, at sometime between 1128 and 1129 Central Standard Time (CST), (1728/29 Zulu), a T-37B, S/N 66-8003, and an Air Tractor AT-502B Crop Duster (AT-502B), registration number N8526M, collided in midair four miles east of Hollister, Texas in Category E airspace. The mishap T-37B, call sign Cider 21, assigned to the 89th Flying Training Squadron (FTS), 80th Flying Training Wing (FTW), Sheppard, Air Force Base (AFB), Texas, was on a student contact flying training mission. The T-37B instructor pilot (IP) and student pilot (SP) ejected safely sustaining only minor injuries. The AT-502B, registered to Frost Flying Service, had taken off from the Air Tractor Inc. production facility on the Olney, Texas municipal airport bound for Huron, South Dakota. The AT-502B pilot (CP) sustained fatal injuries. Both aircraft were destroyed and impacted the ground within a half mile of each other on unpopulated ranchland causing fire damage to surrounding vegetation, but no damage to any structures. There were no injuries to civilians on the ground.

Shortly before impact, Cider 21 had departed Frederick Airport (9 miles west of the crash site) under Visual Flight Rules (VFR) on a 090 heading at 5,500 feet Mean Sea Level (MSL). Cider 21 contacted Sheppard Air Traffic Control (ATC) and obtained an Instrument Flight Rules (IFR) clearance for recovery into Sheppard AFB. Cider 21 received a vector of 100 degrees and a descent to 5,000 feet MSL from ATC and had been established at that altitude and heading for less than one minute. The Air Tractor was southeast of Cider 21 flying northbound under VFR conditions on a 360 (+/- 10) degree heading at approximately 5,000 feet MSL. These flight paths placed both aircraft on a collision course that neither aircrew recognized in time to avoid the mishap. ATC did not see the AT-502B, as it was not equipped with a transponder and the pilot had not established communications with them. However, by VFR rules in Category E airspace, there was no requirement for either.

The Accident Investigation Board president found there were two causes of this mishap. First, the aircrew of both Cider 21 and the AT-502B failed to "see and avoid" each other in sufficient time to prevent the mishap. Second, the AT-502B was flying at a non-VFR hemispheric altitude for its direction of travel. The AT-502B should have been at an odd or even altitude plus 500 feet depending on exact heading. In light of the AT-502B pilot's extensive experience with VFR flying, it is reasonable to assume that he may have been passing through 5,000 feet MSL while transitioning to a proper VFR altitude. However, there is no way to confirm that hypothesis.

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

**SUMMARY OF FACTS AND STATEMENT OF OPINION
T-37B & AT-502B MIDAIR COLLISION ACCIDENT
18 January 2005**

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COMMONLY USED ACRONYMS & ABBREVIATIONS

Acronym	Meaning
37AA	T-37 Approach Assist (position in RAPCON)
37AR	T-37 Arrival Control (position in RAPCON)
38AR	T-38 Arrival Control (position in RAPCON)
ADI	Attitude Indicator
AETC	Air Education and Training Command
AF	Air Force
AFB	Air Force Base
AFI	Air Force Instruction
AFIP	Armed Forces Institute of Pathology
AFTO	Air Force Technical Order
AGL	Above Ground Level
AIB	Accident Investigation Board
AIM	Airman's Information Manual
AP	Area Planning
AR	Arkansas
ASR	Airport Surveillance Radar
AT-502B	Air Tractor (Crop Duster)
ATC	Air Traffic Control
ATCS	Air Traffic Control Section
ATIS	Automatic Terminal Information Service
AWACS	Airborne Warning and Control System
BIP	Buddy Instructor Pilot
BKN	Broken
BUFF	B-52 Nickname
BR	Mist
CAMS	Core Automated Maintenance System
CI 1	T-37 Coordinator (position in RAPCON)
CI 2	T-38 Coordinator (position in RAPCON)
CP	Civilian Pilot
CR	County Road

DNIF	Does Not Include Flying
E3	Electromagnetic Environmental Effects
ELT	Emergency Locator Transmitter
EMS	Emergency Medical Service
ENJJPT	Euro-NATO Joint Jet Pilot Training
EP	Emergency Procedures
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulation
FMA	Frederick Municipal Airport
FTS	Flying Training Squadron
FTU	Formal Training Unit
FTW	Flying Training Wing
G-EX	G Awareness Exercise
GP	General Planning
GPS	Global Positioning System
Hacker	Frederick Municipal Airport
IAW	In Accordance With
IBF	Introduction to Bomber Fundamentals
ICAO	International Civil Aviation Organization
IFF	Identification Friend or Foe
IFR	Instrument Flight Rules
IFT	Introductory Flight Training
IMC	Instrument Meteorological Conditions
IO	Investigating Officer
IP	Instructor Pilot
JOAP	Joint Oil Analysis Program
KFDR	Frederick Municipal Airport ICAO
KFSI	Henry Post Army Air Field ICAO
KHBR	Hobart Municipal Airport ICAO
KIAS	Knots Indicated Airspeed
KLAW	Lawton Regional Airport ICAO
KLTS	Altus AFB Airport ICAO

KONY	Olney Municipal Airport ICAO
KSPS	Sheppard Air Force Base ICAO
L	Local Time
LPU	Life Preserver Unit
MOA	Military Operations Area
MSL	Mean Sea Level
MTI	Moving Target Indicator
MVA	Minimum Vectoring Altitude
NAVAIDs	Navigational Aids
NATO	North American Treaty Organization
NM	Nautical Mile
NOTAM	Notices to Airman
NTSB	National Transportation Safety Board
OH	Ohio
OI	Operating Instruction
OK	Oklahoma
OVC	Overcast
PEM	Program Element Monitor
PIREP	Pilot Report
PLF	Parachute Landing Fall
PSK	Personal Survival Kit
PT	Physical Training
PWC	Pilot Weather Category
RAPCON	Radar Approach Control
RESCAP	Rescue Coordination Procedures
RF	Radio Frequency
RSU	Runway Supervisory Unit
RTB	Return to Base
S/N	Serial Number
S2AA	Sheppard Two MOA Assist (position in RAPCON)
S2AC	Sheppard Two Approach Control "Blue Two" (position in RAPCON)
SA	Situational Awareness

SCT	Scattered
SD	South Dakota
SIB	Safety Investigation Board
SM	Statute Mile
SOF	Supervisor of Flying
SP	Student Pilot
T.O.	Technical Order
TCI	Time Change Item
TCTO	Time Compliance Technical Order
TFR	Temporary Flight Restrictions
Tweet	T-37B Nickname
TX	Texas
U.S.C.	United States Code
UCMJ	Uniform Code of Military Justice
UFC	Up-Front Controls
UHF	Ultra High Frequency
USAF	United States Air Force
ug	Microgram
VFR	Visual Flight Rules
VHF	Very High Frequency
VMC	Visual Meteorological Conditions
VOR	Very High Frequency Omnidirectional Range/Tactical Air Navigation
VORTAC	Very High Frequency Omnidirectional Range/Tactical Air Navigation
VVI	Vertical Velocity Indicator
WS	Watch Supervisor (position in RAPCON)
Z	Zulu or Greenwich Meridian Time (GMT)

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