



Aviation Investigation Final Report

Location:	Santa Teresa, New Mexico	Accident Number:	CEN09FA010
Date & Time:	October 11, 2008, 17:02 Local	Registration:	N4257C
Aircraft:	Maule MXT-7-180A	Aircraft Damage:	Destroyed
Defining Event:	Windshear or thunderstorm	Injuries:	2 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

Witnesses observed the airplane taxi and perform an intersection takeoff directly towards an isolated thunderstorm located off the departure end of the runway. The airplane appeared to climb to 150 to 200 feet above the ground before disappearing from view as it went into the storm. One witness stated that the airplane's wings were rocking back and forth and that it appeared the pilot was having difficulty controlling the airplane, just before it went out of view. Five to ten minutes later, after the storm moved past, smoke was seen rising approximately one mile west of the airport. The airplane was destroyed by post impact fire. Weather radar data showed the thunderstorm was producing an approximate 60 knot wind shear at the time of the accident. There was a SIGMET active for the accident location and time which warned of the possibility of severe thunderstorms. There was no evidence the pilots obtained a weather briefing prior to taking off.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's decision to takeoff and fly into a thunderstorm.

Findings

Personnel issues	Decision making/judgment - Pilot
Environmental issues	Thunderstorm - Decision related to condition

Factual Information

History of Flight

Prior to flight	Miscellaneous/other
Initial climb	Windshear or thunderstorm (Defining event)
Initial climb	Loss of control in flight
Initial climb	Collision with terr/obj (non-CFIT)

HISTORY OF FLIGHT

On October 11, 2008, at 1702 mountain daylight time, a Maule MXT-7-180A airplane, N4257C, entered a thunderstorm and impacted terrain shortly after takeoff from Dona Ana County Airport (5T6), Santa Teresa, New Mexico. The private pilot and private pilot rated passenger were fatally injured. The airplane was destroyed. The personal flight was being conducted under the provisions of Title 14 Code of Federal Regulations Part 91 without a flight plan. Instrument meteorological conditions prevailed at the time of the accident. The flight was originating at the time of the accident with Springerville Municipal Airport (D68), Springerville, Arizona, as the intended destination.

The two pilots departed Glendale Municipal Airport (GEU), Glendale, Arizona, and arrived at 5T6 the day of the accident to visit the "Land of Enchantment RV Fly-in" being held there. Witnesses saw the airplane taxi and perform an intersection takeoff on Runway 28 directly towards an isolated thunderstorm immediately off the departure end of the runway. The airplane appeared to climb to 150 to 200 feet above the ground before disappearing from view in the storm. One witness stated the airplane wings were rocking back and forth and the pilot appeared to be having difficulty controlling the airplane just before it went out of view. Five to ten minutes later, after the storm moved past, smoke was seen rising approximately one mile west of the airport.

PERSONNEL INFORMATION

The pilot, age 46, held a private pilot certificate with ratings for airplane single-engine land and airplane multiengine land. He was not instrument rated. His last Federal Aviation Administration (FAA) second-class medical certificate was issued on April 19, 2006, with no limitations.

An examination of the pilot's logbook indicated an estimated total flight time of 1,755 hours; of which 1,293 hours were in the accident airplane. He logged 57.8 hours in the last 90 days and 11.1 hours in the last 30 days. His last noted flight review was completed May 4, 2008.

PASSENGER INFORMATION

The passenger, age 43, held a private pilot certificate with a rating for airplane single-engine land. He was not instrument rated. His last Federal Aviation Administration (FAA) third-class medical certificate was issued on November 21, 2001, with no limitations.

No pilot logbooks were found for the passenger. He indicated 140 total hours on his last application for medical certification, dated November 21, 2001.

AIRCRAFT INFORMATION

The 1999-model Maule MXT-7-180A, serial number 21070C, was a high wing, fabric covered airplane, with a fixed tricycle landing gear, and was configured for four occupants. The airplane was powered by a direct drive, horizontally opposed, carbureted, air-cooled, four-cylinder engine. The engine was a Lycoming O-360-C4F, serial number L-36632-36A, rated at 180 horsepower at 2,700 rpm, and was driving a two-bladed, metal, Sensenich propeller.

The last airplane and engine inspections were an annual type, completed on December 15, 2007, at 850.9 total hours.

The airplane was fueled with 29.4 gallons of aviation fuel at 5T6 the day of the accident.

METEOROLOGICAL INFORMATION

A special weather observation was taken from the national weather service station (KEPZ) located at 5T6 at 1709: winds 300 degrees at 14 knots, gusting to 31 knots, 10 miles visibility, broken clouds at 6,000 feet, overcast at 25,000 feet, thunderstorm within 10 miles northwest moving northeast at 35 miles per hour. A review of collected weather data indicate a thunderstorm moved west of the airport within one mile at 1702. At 1702 NEXRAD radial wind velocity images depicted a divergent wind pattern over the accident site with a shear of greater than 60 knots between the inbound and outbound wind components.

Thunderstorm reflectivity is normally displayed in decibels (dBZ), and is a general measure of echo intensity. The Federal Aviation Administration (FAA) Advisory Circular AC 00-24B titled "Thunderstorms" dated January 2, 1983, defines echo intensity levels and potential weather phenomena associated with those levels.

The following table defines Video Integrated Processor (VIP) types and severity of weather phenomena associated with each VIP level. Each VIP level has a corresponding dBZ range.

VIP Level 1	<5 - 14 dBZ
VIP Level 2	15 - 29 dBZ
VIP Level 3	30 - 39 dBZ
VIP Level 4	40 - 44 dBZ
VIP Level 5	45 - 49 dBZ

VIP Level 6 50 and greater dBZ

VIP Level 1 is "weak" and VIP Level 2 is "moderate", indicating light to moderate turbulence is possible with lightning. VIP Level 3 is "strong" and severe turbulence is possible with lightning. VIP Level 4 is "very heavy" and severe turbulence is likely with lightning. VIP Level 5 is "intense" with severe turbulence, lightning, hail likely, and organized surface wind gusts. VIP Level 6 is "extreme" with severe turbulence, lightning, large hail, extensive surface wind gusts and turbulence.

KEPZ WSR-88D base reflectivity images for 0.5 degree elevation scans were completed at 1657, 1702, and 1706. The images depict an area of extreme intensity echoes with reflectivity exceeding 55 dBZ moving to the northeast and passing directly over the accident site at the approximate time of the accident.

The KEPZ composite reflectivity images for 1657, 1702, and 1706 show maximum reported echo intensity between 61 and 63 dBZ within the weather complex. The images depict an organized, intense convective system moving over the accident site with echo intensity between 50 and 55 dBZ between 1647 and 1702.

Convective Significant Meteorological Information (SIGMET) 42C was current and applied to the accident site at the time of the accident. It warned of an area of thunderstorms moving from 220 degrees at 10 knots with maximum tops to 43,000 feet. The advisory implied severe and greater turbulence, low-level wind shear, and local instrument meteorological conditions.

No evidence was found indicating either the pilot or passenger had obtained weather information or a weather briefing prior to departure.

WRECKAGE AND IMPACT INFORMATION

Examination of the airplane revealed the fuselage frame was mostly intact aft of the front cockpit. The fuselage and all interior materials were mostly burned, with fabric remnants remaining only on the empennage. Both wings were attached to the fuselage and had damage from fire near the wing root area. Control cable continuity from the cockpit was verified to all control surfaces. One propeller blade was partially embedded in the ground and both blades showed chord-wise scratching and leading edge impact marks.

MEDICAL AND PATHOLOGICAL INFORMATION

The Office of the Medical Investigator, The University of New Mexico, located in Albuquerque, New Mexico, performed an autopsy on the pilot on October 11, 2008. The cause of death was attributed to multiple blunt force injuries.

The FAA, Toxicology Accident Research Laboratory, located in Oklahoma City, Oklahoma, conducted toxicological testing on the pilot. Testing for carbon monoxide and cyanide were

not conducted. No Volatiles or Drugs were detected.

The Office of the Medical Investigator, The University of New Mexico, located in Albuquerque, New Mexico, performed an autopsy on the passenger on October 11, 2008. The cause of death was attributed to multiple blunt force injuries.

The FAA, Toxicology Accident Research Laboratory, located in Oklahoma City, Oklahoma, conducted toxicological testing on the passenger. Testing for carbon monoxide and cyanide were not conducted. The following Volatiles and Drugs were detected:

- 67.3 (ug/ml, ug/g) acetaminophen detected in urine.

Pilot Information

Certificate:	Private	Age:	46,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Unknown
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	None	Second Pilot Present:	Yes
Instructor Rating(s):	None	Toxicology Performed:	Yes
Medical Certification:	Class 2 Without waivers/limitations	Last FAA Medical Exam:	April 19, 2006
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:	1755 hours (Total, all aircraft), 1293 hours (Total, this make and model), 58 hours (Last 90 days, all aircraft), 11 hours (Last 30 days, all aircraft)		

Pilot Information

Certificate:	Private	Age:	43,Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Unknown
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	None	Second Pilot Present:	Yes
Instructor Rating(s):	None	Toxicology Performed:	Yes
Medical Certification:	Class 3 Without waivers/limitations	Last FAA Medical Exam:	November 21, 2001
Occupational Pilot:	No	Last Flight Review or Equivalent:	July 7, 2000
Flight Time:	(Estimated) 140 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Maule	Registration:	N4257C
Model/Series:	MXT-7-180A	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	21070C
Landing Gear Type:	Tricycle	Seats:	5
Date/Type of Last Inspection:	December 15, 2007 Annual	Certified Max Gross Wt.:	
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	851 Hrs as of last inspection	Engine Manufacturer:	LYCOMING
ELT:	Installed, not activated	Engine Model/Series:	O&VO-360 SER
Registered Owner:	SST INC	Rated Power:	180 Horsepower
Operator:	Michael D. Perry	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument (IMC)	Condition of Light:	Day
Observation Facility, Elevation:	kep2	Distance from Accident Site:	1 Nautical Miles
Observation Time:	17:09 Local	Direction from Accident Site:	110°
Lowest Cloud Condition:		Visibility	10 miles
Lowest Ceiling:	Broken / 6000 ft AGL	Visibility (RVR):	
Wind Speed/Gusts:	14 knots / 31 knots	Turbulence Type Forecast/Actual:	/
Wind Direction:	300°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30 inches Hg	Temperature/Dew Point:	20°C / 16°C
Precipitation and Obscuration:			
Departure Point:	Santa Teresa, NM (5t6)	Type of Flight Plan Filed:	None
Destination:	Springerville, AZ (D68)	Type of Clearance:	None
Departure Time:	17:02 Local	Type of Airspace:	

Airport Information

Airport:	Santa Teresa, NM 5t6	Runway Surface Type:	
Airport Elevation:		Runway Surface Condition:	
Runway Used:		IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:	1 Fatal	Aircraft Fire:	Unknown
Ground Injuries:	N/A	Aircraft Explosion:	Unknown
Total Injuries:	2 Fatal	Latitude, Longitude:	31.891944,-106.723609

Administrative Information

Investigator In Charge (IIC):	Baker, Daniel
Additional Participating Persons:	Ken Hand; FAA; Albuquerque, NM John Butler; Lycoming; Fort Worth , TX
Original Publish Date:	September 30, 2009
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=69268

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).