



Aviation Investigation Final Report

Location:	Reserve, New Mexico	Accident Number:	WPR22FA011
Date & Time:	October 15, 2021, 09:59 Local	Registration:	N7584M
Aircraft:	Cessna 175	Aircraft Damage:	Substantial
Defining Event:	Collision with terr/obj (non-CFIT)	Injuries:	1 Fatal, 2 Serious
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot was conducting a personal flight with two passengers over mountainous terrain, with the intention of scouting areas to hunt. The passengers reported that they were directing the pilot where they wanted to look, and while maneuvering, the airplane entered a “sharp” turn and started to descend. They stated it “felt/sounded” like the engine lost power and that the pilot was not able to get full power back. The pilot was able to level the airplane, but it continued to descend into the trees. The passengers also stated it was difficult to see out of the windshield during the flight because the airplane was “tilted up” the entire flight.

Downloaded GPS flight track data showed that in the final 2 minutes of the flight, the airplane turned to the southeast toward rising terrain, and entered a positive rate of climb, which continued until the last recorded GPS data point, which was located about 95 ft south of the accident site.

Postaccident examination of the airframe and engine revealed no evidence of any preimpact mechanical malfunctions or failures that would have precluded normal operation.

Review of sun and moon data for the time and location of the accident revealed that the sun was just above the relative horizon and in the southeast quadrant of the sky. It is likely that when the pilot initiated a climb while on a southeasterly heading, the sun reduced the pilot’s forward visibility and her awareness of rising terrain in the immediate flight path, which led to a collision with the terrain.

Although toxicology testing indicated the pilot used Diphenhydramine at some point before the accident flight, the detected blood levels could not be used to infer the level of impairment. Based on the circumstances of the accident, the effect of Diphenhydramine use was determined not to be a likely factor in the accident.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

The pilot's failure to maintain clearance from terrain while maneuvering at a low altitude. Contributing to the accident was the pilot's reduced forward visibility due to the sun.

Findings

Personnel issues	Delayed action - Pilot
Environmental issues	Bright light - Effect on personnel
Aircraft	Altitude - Not attained/maintained

Factual Information

History of Flight

Maneuvering-low-alt flying

Collision with terr/obj (non-CFIT) (Defining event)

On October 15, 2021, about 0959 mountain daylight time, a Cessna 175, N7584M, was substantially damaged when it was involved in an accident near Reserve, New Mexico. The pilot was fatally injured, and the two passengers were seriously injured. The aircraft was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

A summary of combined statements obtained from the two passengers, was provided by their attorney. In that summary, the passengers stated that they recall that the weather was cold and clear on the day of the accident flight, and that the purpose of the flight was to scout areas to hunt. When they reached a planned hunting area, they pointed out to the pilot where they wanted to look, and the pilot turned toward that area. They recall a turn to the northeast that was “a sharp turn and then the airplane started to go down quickly.” They thought it sounded like the engine had lost power and the pilot “was having a hard time.” The airplane leveled off and the pilot did not make a distress call, but the mountains kept getting closer. They recall that it was difficult to see out of the windshield, the airplane was “tilted up”, and they impacted trees.

Data downloaded from a handheld GPS showed that the airplane departed Grant County Airport, near Silver City, New Mexico about 0907. The airplane flew north-northwest for 21 minutes, then west-northwest for another 17 minutes. In the final 9 minutes of the flight, the data showed that the airplane turned to a northerly heading, before it turned to the southeast. During the last 2 minutes of the flight, the airplane remained on a southeasterly heading and ascended from 6,732 ft mean sea level (msl) to 7,530 ft msl. The last recorded GPS data point was located about 95 ft south of the accident site, at an altitude of 7,523 ft msl.

Pilot Information

Certificate:	Commercial; Flight instructor	Age:	74,Female
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Lap only
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	Airplane single-engine	Toxicology Performed:	
Medical Certification:	Class 3 With waivers/limitations	Last FAA Medical Exam:	October 30, 2020
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	
Flight Time:	(Estimated) 2636 hours (Total, all aircraft)		

Passenger Information

Certificate:		Age:	
Airplane Rating(s):		Seat Occupied:	Right
Other Aircraft Rating(s):		Restraint Used:	Lap only
Instrument Rating(s):		Second Pilot Present:	No
Instructor Rating(s):		Toxicology Performed:	
Medical Certification:		Last FAA Medical Exam:	
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:			

Passenger Information

Certificate:		Age:	
Airplane Rating(s):		Seat Occupied:	Rear
Other Aircraft Rating(s):		Restraint Used:	Lap only
Instrument Rating(s):		Second Pilot Present:	No
Instructor Rating(s):		Toxicology Performed:	
Medical Certification:		Last FAA Medical Exam:	
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:			

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	Registration:	N7584M
Model/Series:	175	Aircraft Category:	Airplane
Year of Manufacture:	1959	Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	55884
Landing Gear Type:	Tricycle	Seats:	4
Date/Type of Last Inspection:	March 20, 2021 Annual	Certified Max Gross Wt.:	2450 lbs
Time Since Last Inspection:	71.6 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	3866.7 Hrs as of last inspection	Engine Manufacturer:	Lycoming
ELT:	C91 installed, not activated	Engine Model/Series:	O-360-A1A
Registered Owner:	On file	Rated Power:	180 Horsepower
Operator:	On file	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	KSVC, 5446 ft msl	Distance from Accident Site:	64 Nautical Miles
Observation Time:	09:15 Local	Direction from Accident Site:	154°
Lowest Cloud Condition:	Clear	Visibility:	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	4 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	200°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.29 inches Hg	Temperature/Dew Point:	12°C / -5°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Silver City, NM (KSVC)	Type of Flight Plan Filed:	None
Destination:	Silver City, NM (KSVC)	Type of Clearance:	None
Departure Time:	09:08 Local	Type of Airspace:	Class G

A review of astronomical data from the National Oceanic and Atmospheric Administration revealed that, at the time and location of the accident, the sun was located at an azimuth of 126.2° true (117.2° magnetic), and an elevation of 29.29° above the horizon.

The calculated density altitude at the accident site around the time of the accident was 8,564 ft and the calculated pressure altitude was 7,151 ft.

Airport Information

Airport:	N/A N/A	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:	Substantial
Passenger Injuries:	2 Serious	Aircraft Fire:	None
Ground Injuries:		Aircraft Explosion:	None
Total Injuries:	1 Fatal, 2 Serious	Latitude, Longitude:	33.596478,-108.72155

Examination of the accident site revealed the airplane impacted mountainous terrain at an elevation of 7,521 ft msl. The first identifiable point of contact was the top of a pine tree located about 100 ft downhill from the wreckage. Branches from damaged trees were found on the ground and displayed signatures consistent with propeller strikes.

The airplane came to rest on its left side. The left wing was folded upward and remained attached by the control cables. Both wings exhibited impact damage along their leading edges. The horizontal and vertical stabilizers remained attached to the empennage, and the elevator and rudder remained attached at their respective attachment points. Flight control continuity was established for all flight control surfaces.

Examination of the recovered engine revealed that when the crankshaft was rotated by hand using the propeller, rotational continuity was established throughout the engine and valvetrain, and thumb compression was obtained on all cylinders.

The engine was started and ran at various power settings with no anomalies noted.

The propeller remained attached to the crankshaft flange and the propeller blades remained attached to the hub. The propeller blades displayed leading edge gouging, torsional twisting, chordwise striations across the cambered surface, and trailing edge "S" bending.

No evidence of preexisting mechanical malfunction was observed with the airframe or engine that would have precluded normal operation.

Medical and Pathological Information

Toxicology testing performed at the Federal Aviation Administration Forensic Sciences Laboratory found Losartan, Rosuvastatin, and Diphenhydramine in the pilot's blood and urine. Losartan is a prescription medication used to treat high blood pressure, and Rosuvastatin is a prescription cholesterol medication. Neither of these medications are known to adversely affect performance. Diphenhydramine is an over-the-counter antihistamine and can impair performance, depending on the circumstances of use. Carboxyhemoglobin, Ethanol, Glucose, and drugs of abuse were not detected.

Administrative Information

Investigator In Charge (IIC):	Smith, Maja
Additional Participating Persons:	Peter Basile; Textron Aviation; Wichita, KS Vernon Rocket III; Federal Aviation Administration; Albuquerque Mark Platt; Lycoming
Original Publish Date:	November 7, 2023
Last Revision Date:	
Investigation Class:	Class 3
Note:	
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=104107

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](#).