



Aviation Investigation Final Report

Location:	Telluride, Colorado	Accident Number:	CEN21FA007
Date & Time:	October 5, 2020, 13:04 Local	Registration:	N4444K
Aircraft:	Beech S35	Aircraft Damage:	Substantial
Defining Event:	Loss of control in flight	Injuries:	2 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The airplane departed on a visual flight rules cross-country flight from a high-elevation (9,078 ft mean sea level) airport. Automated dependent surveillance-broadcast (ADS-B) data showed that the airplane proceeded east into a box canyon with rising terrain. The data showed that, before entering the box canyon, the airplane did not climb toward the west, where there was lower terrain. The data also showed that the airplane was in a gradual climb for about 8 miles into the canyon and that the airplane then made a right turn to the south just before impacting terrain. No known radio distress calls were received from the pilot. The airplane wreckage showed evidence of a nearly vertical impact.

Postaccident examination found no preimpact anomalies with the airframe, engine, flight controls, and propeller. Flight control continuity was confirmed from the cockpit to all flight control surfaces.

The elevation of the accident site was 11,823 ft mean sea level. The surrounding terrain to the north, east, and south was higher than the accident site elevation, with peaks ranging from about 12,000 to 14,000 ft. In addition, the calculated density altitude in the area of the accident site was about 13,604 ft, which would have diminished the airplane's climb performance. There was no significant turbulence in the area. Thus, the pilot likely turned the airplane toward higher terrain and into the box canyon before the airplane could gain enough altitude to traverse the high terrain, resulting in a loss of control.

Probable Cause and Findings

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

The pilot's loss of control during the climb to cruise flight resulting in the airplane's impact with terrain. Contributing to the accident was the pilot's decision to not climb to a higher altitude before proceeding over high terrain.

Findings

Personnel issues	(general) - Pilot
Personnel issues	Performance calculations - Pilot
Environmental issues	Mountainous/hilly terrain - Contributed to outcome
Environmental issues	High density altitude - Contributed to outcome

Factual Information

History of Flight

Enroute-climb to cruise Loss of control in flight (Defining event)

On October 5, 2020, about 1304 mountain daylight time, a Beech S35 airplane, N4444K, was substantially damaged when it was involved in an accident near Telluride Regional Airport (TEX), Telluride, Colorado. The pilot and passenger sustained fatal injuries. The airplane was operated as a Title 14 Code of Federal Regulations Part 91 personal flight.

The airplane departed on a planned visual flight rules cross-country flight from runway 27 at TEX. Automated dependent surveillance-broadcast (ADS-B) data showed that the airplane had a normal takeoff and made a subsequent left turn toward the east. The airplane proceeded east into a box canyon and an area of rising terrain. The data showed that, before entering the box canyon, the airplane did not maneuver toward the west, where the terrain was lower than the surrounding terrain. The data also showed that the airplane was in a gradual climb for about 8 miles into the canyon and that the airplane then made a right turn to the south, which was immediately followed by the airplane’s impact with terrain. See figures 1 and 2. No known radio distress calls were received from the pilot after takeoff.



Figure 1. ADS-B flight track from TEX to the accident location.



Figure 2. ADS-B final portion of flight track.

Pilot Information

Certificate:	Airline transport; Flight instructor	Age:	31, Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	4-point
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	Airplane multi-engine; Airplane single-engine; Instrument airplane	Toxicology Performed:	Yes
Medical Certification:	Class 1 With waivers/limitations	Last FAA Medical Exam:	May 18, 2020
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	
Flight Time:	(Estimated) 5750 hours (Total, all aircraft), 130 hours (Total, this make and model), 1 hours (Last 24 hours, all aircraft)		

The pilot was a professional commercial air carrier pilot. The available evidence did not show the amount of high-altitude mountain flying experience that the pilot had accumulated in single-engine airplanes.

Aircraft and Owner/Operator Information

Aircraft Make:	Beech	Registration:	N4444K
Model/Series:	S35	Aircraft Category:	Airplane
Year of Manufacture:	1964	Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	D-7422
Landing Gear Type:	Retractable - Tricycle	Seats:	4
Date/Type of Last Inspection:	December 1, 2019 Annual	Certified Max Gross Wt.:	3300 lbs
Time Since Last Inspection:	140 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	5516 Hrs at time of accident	Engine Manufacturer:	Continental
ELT:	Installed, not activated	Engine Model/Series:	IO-520-BA
Registered Owner:		Rated Power:	285 Horsepower
Operator:	On file	Operating Certificate(s) Held:	None

Weight and balance calculations showed that the airplane, including the full fuel tanks, the two occupants, and all baggage, was about 300 pounds under maximum gross takeoff weight.

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	TEX,9078 ft msl	Distance from Accident Site:	8 Nautical Miles
Observation Time:	12:55 Local	Direction from Accident Site:	270°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	10 knots / 17 knots	Turbulence Type Forecast/Actual:	Unknown / Unknown
Wind Direction:	260°	Turbulence Severity Forecast/Actual:	/ Unknown
Altimeter Setting:	30.49 inches Hg	Temperature/Dew Point:	18°C / -13°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Telluride, CO	Type of Flight Plan Filed:	
Destination:	Oklahoma City, OK (PWA)	Type of Clearance:	None
Departure Time:		Type of Airspace:	Class E

The calculated density altitude was about 13,747 ft at the accident site. The freezing level was just above 17,000 ft with no structural icing conditions. Light-to-moderate turbulence was generally indicated near the accident site.

Airport Information

Airport:	Telluride Municipal TEX	Runway Surface Type:	
Airport Elevation:	9078 ft msl	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:	1 Fatal	Aircraft Fire:	None
Ground Injuries:		Aircraft Explosion:	None
Total Injuries:	2 Fatal	Latitude, Longitude:	37.914608,-107.75278

The accident site was located in rugged mountainous terrain about 8 miles east of TEX. The elevation of the accident site was 11,823 feet msl. The surrounding terrain to the north, east, and south was higher than the accident site elevation, with peaks ranging from about 12,000 to 14,000 ft. The airplane wreckage showed evidence of a nearly vertical impact. Most of the forward section of the fuselage was crushed, and both wings showed impact damage across the leading edges of their spans.

Flight control continuity was confirmed from the cockpit to all flight control surfaces. All structural damage to the airplane was consistent with ground impact. The airplane structures and flight controls showed no evidence of preimpact anomalies.

Engine continuity was confirmed. Torsional break of the propeller flange was consistent with rotation at impact. All physical damage to the engine was consistent with ground impact; no preimpact anomalies were found. Two of the three propeller blades were recovered. All physical damage to the two recovered propeller blades was consistent rotation at ground impact. The third blade's hub attachment showed impact damage, and the hub showed no evidence of a preimpact failure.

Medical and Pathological Information

An autopsy on the pilot was performed by the Division of Forensic Pathology, Montrose Memorial Hospital, Montrose, Colorado. His cause of death was multiple traumatic injuries.

Toxicology tests performed by the Federal Aviation Administration (FAA) Forensic Sciences Laboratory were negative for drugs and alcohol. An unmeasured amount of fexofenadine (Allegra) and its metabolite, azacyclonol, were detected in the pilot's specimens. Fexofenadine (which is also known as Allegra) is a nonsedating antihistamine used to treat allergies and is acceptable for pilots to use.

Preventing Similar Accidents

Mastering Mountain Flying

Pilots with limited or no training in mountain flying can be surprised about their aircraft's different performance at high density altitude, often leading to serious or fatal accidents. Wind and other weather

phenomena interacting with mountainous terrain often lead unsuspecting pilots into situations that are beyond their capabilities.

Should a crash occur, a pilot who survives the crash but does not have emergency or survival gear immediately accessible may not survive the harsh environment until rescuers are able to reach the location.

Through training, pilots can develop skills and techniques that will allow them to safely fly in mountainous terrain. Flight instructors should encourage their students to attend a quality mountain flying course before attempting flight in mountainous terrain or at high density altitudes. Pilots should consult with local flight instructors before planning a flight into mountainous terrain. Even experienced mountain pilots may not be familiar with local conditions and procedures for safe operations. Fixed-base operator staff should be alert for customers who appear to be planning flight into mountainous terrain who could benefit from mountain flying instruction.

Pilots should be aware that weather interacting with mountainous terrain can cause dangerous wind, severe turbulence, and other conditions that may be unsafe for aircraft, especially light GA aircraft.

Pilots should consider specialized emergency and survival equipment (such as personal locator beacons in addition to a 406 emergency locator transmitter) before flying in mountainous terrain, and develop a plan for immediate access to the equipment in the event of a postaccident fire.

See http://www.nts.gov/safety/safety-alerts/documents/SA_039.pdf for additional resources.

The NTSB presents this information to prevent recurrence of similar accidents. Note that this should not be considered guidance from the regulator, nor does this supersede existing FAA Regulations (FARs).

Administrative Information

Investigator In Charge (IIC):	Lemishko, Alexander		
Additional Participating Persons:	Destin Hinton; FAA FSDO; Salt Lake City, UT Jennifer Barclay; Textron; Wichita, KS		
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Note:			
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=102094		

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