Aviation Investigation Final Report

Location:	Minersville, Utah	**Accident Number:**	SEA08FA045
Date & Time:	December 11, 2007, 09:30 Local	**Registration:**	N364KW
Aircraft:	Beech A36TC	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	3 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The non-instrument rated private pilot seated in the left seat and the airline transport pilot seated in the right seat, were approximately 30 minutes from the intended destination when the single-engine airplane collided with mountainous terrain at the approximate 7,000 foot level. The visual flight rules (VFR) cross-country flight originated in day VFR conditions approximately 2 hours and 10 minutes prior to the accident. Marginal weather conditions, to include snow showers and reduced visibilities, were reported in the area during the time frame of the accident. Search and rescue personnel reported the visibility in the area was poor and the hillside where the wreckage came to rest was not visible from the valley due to clouds. The wreckage was located on up-sloping, snow-covered terrain near the crest of a ridge line. The debris field encompassed an area approximately 570 feet in length along a magnetic heading consistent with the reported route of flight. Ground scars and wreckage signatures were also consistent with controlled flight into terrain. Post accident examination of the airplane wreckage revealed that the landing gear and wing flaps were in the up position (cruise configuration). Additional examination of the wreckage did not disclose evidence of a mechanical malfunction prior to impact. It could not be determined which of the two front seat pilots was manipulating the flight controls when the accident occurred.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The flying pilot's continued flight into instrument meteorological conditions and failure to maintain adequate terrain clearance during cruise. Contributing to the accident were low clouds, reduced visibility and mountainous terrain.

Findings

Occurrence #1: IN FLIGHT ENCOUNTER WITH WEATHER
Phase of Operation: CRUISE

Findings
1. (F) WEATHER CONDITION - CLOUDS
2. (F) WEATHER CONDITION - OBSCURATION
3. (F) WEATHER CONDITION - SNOW
4. (C) VFR FLIGHT INTO IMC - CONTINUED - FLIGHTCREW

Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: CRUISE

Findings
5. (F) TERRAIN CONDITION - MOUNTAINOUS/HILLY
6. (C) CLEARANCE - NOT MAINTAINED - PILOT IN COMMAND

Factual Information

HISTORY OF FLIGHT

On December 11, 2007, at 0930 mountain standard time (MST), a Beech A36TC airplane, N364KW, collided with mountainous terrain approximately 8 nautical miles south-southwest of Minersville, Utah. The airplane was operated by the pilot as a visual flight rules (VFR) cross-country flight under the provisions of Title 14 Code of Federal Regulations Part 91. The airplane was destroyed and the three occupants, a private pilot seated in the front left seat, an airline transport pilot seated in the right front seat, and a student pilot seated in a rear passenger seat, were killed. The flight departed Idaho Falls Regional Airport (KIDA) Idaho Falls, Idaho, at 0720 with an intended destination of St. George Municipal Airport (KSGU), St George, Utah (approximately 391 nautical miles from the departure airport). Visual meteorological conditions prevailed at the departure airport and no flight plan was filed.

The pilot's estimated time of arrival at St George was 0950. When the flight did not arrive, family members of the pilot notified the Federal Aviation Administration (FAA). Subsequent to the report, an ALNOT (alert notice) for a missing airplane was issued and a search was initiated. Later that evening, personnel from Iron County Search and Rescue located the airplane in steep, snow covered, mountainous terrain at an elevation of 6,968 feet.

No radio transmissions were received from the pilots during the time frame of the accident nor were there any witnesses to the accident sequence.

PERSONNEL INFORMATION

It could not be determined which of the two front seat pilots was manipulating the flight controls when the accident occurred. Therefore, for the purposes of this report, the pilot/registered owner seated in the left front seat is referred to as the first pilot and the pilot seated in the right front seat is referred to as the second pilot.

First Pilot/Registered Aircraft Owner

The pilot, age 57, held a private pilot certificate that was issued on May 2, 2007. The certificate carried an airplane single engine land rating. His most recent third-class medical certificate was issued on May 24, 2007. The medical certificate stipulated a limitation requiring the pilot to "wear corrective lenses." A second limitation on the medical certificate stipulated that it was "Not valid for any class after November 30, 2007."

The first pilot’s logbook records indicated a total flight time of 140 hours, which included 65 hours as pilot-in-command (PIC) and 18 hours PIC in the accident airplane. The records

indicated the first pilot received 4.8 hours of dual instruction in the accident airplane prior to the accident. The logbook entries associated with the flights (four total) indicated the first 1.2-hour instructional flight was completed on November 6, 2007. Three consecutive entries followed documenting instructional flights on November 7, 8, and 10. The handwritten remarks associated with the entries indicated, in part, that the dual flights included steep turns, slow flight, stalls, slips, emergency procedures and complex airplane operations.

The logbook records showed that the first pilot received a high performance airplane endorsement (FAR 61.31 [f]) on March 5, 2007, and a complex airplane endorsement (FAR 61.31[e]) on November 10, 2007.

Second Pilot

The pilot, age 78, held an airline transport pilot (ATP) certificate that was issued on July 15, 1976. The certificate carried an airplane multi-engine land rating. In addition to the ATP certificate, the pilot held a commercial pilot certificate with airplane single engine land, airplane single engine sea and glider ratings. Federal Aviation Administration (FAA) records indicated that the second pilot was issued a certified flight instructor (CFI) certificate on July 31, 1979. The certificate expired on July 31, 1981. His most recent second-class medical certificate was issued on June 6, 2007. The medical certificate stipulated restrictions requiring the pilot to "wear" corrective lenses.

The second pilot's logbook records indicated a total flight time of 9,121 hours, which included 8,702 hours as pilot-in-command. His most recent flight review (FAR 61.56[a]) was completed on October 1, 2007.

AIRCRAFT INFORMATION

The low-wing, retractable gear Bonanza, serial number (S/N) EA-215, was manufactured in 1981. It was powered by a Continental TSIO-520 engine and equipped with a variable-pitch propeller. The 6-seat airplane was equipped with dual flight controls.

Review of maintenance records (copies) revealed that an annual inspection was completed on July 16, 2007, at a recorded tachometer time of 417.8 hours. The airframe total time at inspection was 2,175.6 hours.

METEOROLOGICAL INFORMATION

The closest aviation weather observation facility to the accident was located at the Milford/Briscoe Municipal Airport (KMLF), Milford, Utah, approximately 20 nautical miles (nm) north of the accident location at an elevation of 5,039 feet mean sea level (msl). The airport is equipped with an Automated Observation System (ASOS). The following weather observation surrounding the time period of the accident were:

At 0923, the recorded observation was, in part, wind from 010 degrees at 11 knots, visibility 1-3/4 miles in light snow, scattered clouds at 2,500 feet, overcast skies at 3,000 feet, temperature minus 6 degrees C, dew point minus 7 degrees C, altimeter 30.10 inches of Hg.

At 0932, the recorded observation was, in part, wind from 360 degrees at 14 knots, visibility 2-1/2 miles in light snow and mist, scattered clouds at 2,200 feet, overcast skies at 3,000 feet, temperature minus 6 degrees C, dew point minus 7 degrees C, altimeter 30.10 inches of Hg.

The weather observation at Cedar City, Utah, located approximately 24 nm south of the accident location, at an elevation of 5,622 feet msl, recorded the following weather data:

At 0853, the observation was, in part, wind from 030 degrees at 5 knots, visibility 10 miles, overcast skies at 1,700 feet, temperature minus 6 degrees C, dew point minus 8 degrees C, altimeter 30.04 inches of Hg.

Search and rescue (SAR) personnel reported that they arrived in the area where the wreckage was located at 1530. A member of the SAR team reported that the visibility in the area was poor and the hillside where the wreckage came to rest was not visible from the valley due to clouds.

WRECKAGE AND IMPACT INFORMATION

The wreckage was located on up-sloping, snow-covered terrain near the crest of a ridgeline. The top of the ridge was approximately 7,593 feet mean sea level.

The wreckage debris path encompassed an area approximately 570 feet in length along a magnetic heading of 167-degrees. The measured (GPS) elevation at the main wreckage was 6,968 feet mean sea level. The first identified point of contact with terrain was a series of broken tree limbs and paint chips located at the northern end of the debris field. The main wreckage came to rest at the southern most point of the debris field.

The main wreckage consisted of the fuselage, cockpit area, empennage and main wing assembly. Extensive impact related damage and fragmentation was noted to the cockpit and instrument panel. The landing gear and associated landing gear doors were in place and in the retracted position. The wing assembly was partially separated from the fuselage and leading edge rearward crushing and impact related fragmentation was noted along the entire assembly. The flaps remained attached and were in the up position. Impact related damage and fragmentation was noted along the outboard sections (left and right) of the wing assembly and ailerons. The empennage remained attached to the fuselage assembly. The right side elevator remained attached. The left side elevator was separated from the assembly and was located along the wreckage debris path. Rearward crushing and impact related damage was noted to the vertical stabilizer and associated rudder assembly.

The engine and associated exhaust/turbocharger assembly was located along the wreckage

debris path about 120 feet north of the main wreckage. Impact related damage was noted to the entire engine assembly. All six cylinders were in place and the engine case was intact.

The following observations were noted during the onsite engine examination:

Rocker arm, valve train and accessory gear continuity was established by rotating the engine's crankshaft by hand. All six cylinders developed pressure when the crankshaft was manually rotated. Internal examination of the cylinder bores, utilizing a lighted bore scope, revealed no evidence of a foreign debris or mechanical malfunction. The fuel pump was in place and the drive coupling was intact. The vacuum pump and associated drive coupling was intact. The left-hand magneto was in place and intact. The right-hand magneto was separated from the assembly. Both ignition harnesses were in place. Impact related damage was noted to the harness associated with the right-hand magneto.

The three-bladed propeller assembly was separated from the crankshaft flange and located near the engine assembly. All three propeller blades were in place and remained attached to the hub assembly. Aft bending, leading edge gouges and chordwise striations were noted along blade "A". Leading edge gouges, chordwise striations and aft bending was noted to blade "B". A section of the blade tip was separated from the blade assembly. Forward bending, chordwise striations and deep leading edge gouging was noted.

Onsite examination of the engine and airframe components revealed no evidence of preimpact mechanical malfunction.

MEDICAL AND PATHOLOGICAL INFORMATION

An autopsy was performed on the first pilot on December 13, 2007, under the direction of the State of Utah, Department of Health. According to the autopsy report, the first pilot's cause of death was attributed to "Blunt force injuries..."

The FAA's Toxicology and Accident Research Laboratory, Oklahoma City, Oklahoma, conducted toxicological testing on the first pilot. The toxicology report listed, in part, positive test results for the following substances: Sertraline, desmethylsertraline, omeprazole, chlorpheniramine, dextrorphan, and dextromethorphan.

Sertraline (commonly known by the trade name Zoloft) is a prescription antidepressant

An autopsy was performed on the second pilot on December 13, 2007, under the direction of the State of Utah, Department of Health. According to the autopsy report, the second pilot's cause of death was attributed to "Blunt force injuries..."

ADDITIONAL INFORMATION

To date, the airplane wreckage had not been recovered. No parts or components were retained

by the Safety Board.

Pilot Information

Certificate:	Private	**Age:**	57,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
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 With waivers/limitations	**Last FAA Medical Exam:**	May 24, 2007
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	May 1, 2007
Flight Time:	140 hours (Total, all aircraft), 23 hours (Total, this make and model), 65 hours (Pilot In Command, all aircraft), 23 hours (Last 90 days, all aircraft), 17 hours (Last 30 days, all aircraft)		

Co-pilot Information

Certificate:	Airline transport; Commercial	**Age:**	57,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Right
Other Aircraft Rating(s):	Glider	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 2 With waivers/limitations	**Last FAA Medical Exam:**	June 1, 2007
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	June 1, 2007
Flight Time:	9121 hours (Total, all aircraft), 8702 hours (Pilot In Command, all aircraft), 43 hours (Last 90 days, all aircraft), 10 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Beech	**Registration:**	N364KW
Model/Series:	A36TC	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal; Utility	**Serial Number:**	EA-215
Landing Gear Type:	Retractable - Tricycle	**Seats:**	6
Date/Type of Last Inspection:	July 1, 2007 Annual	**Certified Max Gross Wt.:**	3650 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	2175 Hrs as of last inspection	**Engine Manufacturer:**	Continental
ELT:	Installed, activated, aided in locating accident	**Engine Model/Series:**	TSIO-520
Registered Owner:	On file	**Rated Power:**	300 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:	MLF,5093 ft msl	**Distance from Accident Site:**	20 Nautical Miles
Observation Time:	09:23 Local	**Direction from Accident Site:**	348°
Lowest Cloud Condition:	Scattered / 2500 ft AGL	**Visibility**	1.75 miles
Lowest Ceiling:	Overcast / 3000 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	11 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	10°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.1 inches Hg	**Temperature/Dew Point:**	-6°C / -7°C
Precipitation and Obscuration:	N/A - None - Fog		
Departure Point:	IDAHO FALLS, ID (IDA)	**Type of Flight Plan Filed:**	None
Destination:	ST GEORGE, UT (SGU)	**Type of Clearance:**	None
Departure Time:	07:20 Local	**Type of Airspace:**	

Wreckage and Impact Information

Crew Injuries:	2 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	1 Fatal	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	3 Fatal	**Latitude, Longitude:**	38.112499,-113.001113

Administrative Information

Investigator In Charge (IIC):	Hogenson, Dennis
Additional Participating Persons:	Lewis D Olsen; FAA FSDO; Salt Lake City, UT Neil Sandvik; Hawker Beachcraft; Wichita, KS Jason Lukasik; Teledyne Continental Motors; Mobile, AL
Original Publish Date:	November 10, 2008
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=67245

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.