Aviation Investigation Final Report

Location:	Augusta, Montana	**Accident Number:**	SEA01FA106
Date & Time:	May 28, 2001, 12:51 Local	**Registration:**	N2564M
Aircraft:	Piper PA-12	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	1 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

Witnesses reported that following takeoff from the paved runway, the pilot initiated a left climbing turn. Witnesses reported that during the climbing turn (at an estimated altitude of approximately 200 feet above ground level [AGL]), the airplane "...appeared slow and then stalled." The airplane impacted terrain in a nose low attitude approximately 340 feet east of the departure end of runway 30. Post crash fire and impact forces destroyed the airplane. Investigators did not find any evidence of pre-impact aircraft or engine malfunctions during postaccident examination of the wreckage. The pilot was participating in a fly-in/work session organized by the Montana Pilot's Association. Participants in the fly-in spent the weekend doing maintenance on the airport and its facilities. The pilot of the accident airplane arrived at Benchmark two days before the accident. At the conclusion of the fly-in activities, the pilot departed Benchmark with a planned destination of Helena, Montana.

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 adequate airspeed after takeoff resulting in an inadvertent stall at low a altitude.

Findings

Occurrence #1: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: TAKEOFF - INITIAL CLIMB

Findings
1. (C) STALL - INADVERTENT - PILOT IN COMMAND
2. (F) AIRSPEED - NOT MAINTAINED - PILOT IN COMMAND

Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - UNCONTROLLED

Factual Information

HISTORY OF FLIGHT

On May 28, 2001, about 1251 mountain daylight time, a Piper PA-12, N2564M, was destroyed after colliding with terrain shortly after takeoff from Benchmark Airport (3U7), which is located approximately 20 nautical miles west of Augusta, Montana. The private pilot, who was the sole occupant of the airplane, was fatally injured. The airplane was owned by the pilot and was being operated as a visual flight rules (VFR) personal/pleasure flight under Title 14, CFR Part 91, when the accident occurred. Visual meteorological conditions prevailed, and no flight plan was filed for the cross-country flight.

A pilot rated witness to the accident reported that the accident airplane departed runway 30. Shortly after departure, the pilot made a climbing left turn over the camping area. The Witness reported that during the climbing turn (at an estimated altitude of approximately 200 feet above ground level [AGL]), the airplane "…appeared slow and then stalled." The airplane impacted terrain in a nose low attitude approximately 340 feet east of the departure end of runway 30. Post crash fire and impact forces destroyed the airplane.

The pilot was participating in a fly-in/work session organized by the Montana Pilot's Association. Participants in the fly-in spent the weekend doing maintenance on the airport and its facilities. The pilot of the accident airplane arrived at Benchmark two days prior to the accident. At the conclusion of the fly-in activities, the pilot departed Benchmark with a planned destination of Helena, Montana.

PERSONNEL INFORMATION

The pilot held a private pilot certificate with airplane single-engine land, multi-engine land and instrument airplane ratings. His most recent third class medical certificate was issued on September 15, 2000. The medical certificate carried limitations requiring the pilot to possess glasses for vision correction. On the medical application, the pilot indicated that he had accumulated 2,600 hours total time, of which 75 hours had been accrued in the six months preceding the medical application.

AIRCRAFT INFORMATION

The airplane, a 1946 Piper PA-12, was powered by a Lycoming O-320 series engine rated at 150 HP. Maintenance records indicate that the airplane had accumulated a total time in service of approximately 3,574 hours. The records also indicated that an annual inspection of the airframe, engine and propeller was completed on May 1, 2000.

METEOROLOGICAL INFORMATION

The 1256 Aviation Routine Weather Observation at Great Falls, Montana, located approximately 60 miles east of the accident location, reported winds from 170 degrees at 14 knots; visibility 10 statute miles; scattered towering cumulus clouds at 10,000 feet above ground level (AGL); broken clouds at 20,000 feet AGL; temperature 27 degrees C; dew point 7 degrees C; and altimeter setting 29.70 inches Hg.

WRECKAGE AND IMPACT INFORMATION

Personnel from the National Transportation Safety Board, US Forest Service and parties to the investigation accessed the airplane wreckage on May 29, 2001. The wreckage was located on forested Federal land at 47 degrees, 28 minutes north latitude, 112 degrees, 51 minutes west longitude, adjacent to a forest service access road approximately 340 feet northeast of the Benchmark airport. The approximate elevation of the wreckage site was 5,470 feet above mean sea level (MSL).

All aircraft components were located in the immediate area of the main wreckage and burn area. The airplane impacted terrain in a nose-low attitude at the base of a hill. The still-attached propeller assembly was partially buried immediately forward of the engine and fuselage remains. Extensive impact and thermal damage was noted to the frontal area of the engine and engine cowling. Fire and impact forces destroyed the airplane's instrument panel, cockpit controls, cabin area and the still attached empennage and tail control surfaces. The tail structure, approximately mid-span, was bent forward and lateral twisting was noted. All fixed and moveable empennage control surfaces were found attached to their respective hinge points. Control continuity was established from the empennage control surfaces forward to the remains of the cockpit. The right wing, which was partially attached to the airframe, sustained extensive thermal and impact damage. The right aileron was intact and control continuity was established from the aileron bell crank to the cockpit. The left wing was located with the main wreckage and sustained extensive thermal and impact damage. A majority of the fabric was burned away, and the primary wing structure was fragmented. The aileron bell crank and portions of the aileron were attached to the wing, and control continuity was established from the damage to the wing to the cockpit.

Extensive thermal and impact damage was noted to the engine and associated engine components. Both crankcase halves, pistons, cylinders and overhead components were intact and showed no evidence of catastrophic type failure. Piston, valve train and accessory gear continuity was established by rotating the engine's crankshaft by hand. Portions of the exhaust and intake tubing were crushed and distorted. Internal examination of the piston cylinders, utilizing a lighted bore scope revealed no evidence of mechanical malfunction. Both magnetos and their respective ignition harnesses sustained extensive thermal damage and could not be functionally tested. Spark plugs were removed and normal operating wear patterns were noted. The carburetor was found attached to its mounting flange. The throttle and mixture control linkages were attached to their respective control arms. The carburetor

floats were intact and showed no signs of hydraulic type crushing. The carburetor's finger inlet screen was intact and free of contaminates.

The propeller assembly was found as a unit attached to the crankshaft flange. Rearward crushing and thermal damage was noted to the propeller spinner. Leading edge gouging, "S" bending and chord wise scratches were noted to propeller blade A. Aft bending, leading edge gouging, and chord wise scratches were noted to propeller blade B.

Postaccident inspection of the engine and propeller assembly revealed no evidence of a pre-impact mechanical malfunction or failure.

MEDICAL AND PATHOLOGICAL INFORMATION

Postmortem examination of the pilot was conducted by St. Peter's Hospital, Helena, Montana. According to the County Coroner, the pilot's cause of death was traumatic internal injuries. The manner of death was reported as accidental.

Toxicology samples were shipped to the Federal Aviation Administration Civil Aeromedical Institute (CAMI), Oklahoma City, Oklahoma, for analysis. According to the postmortem toxicology report, results were negative for carbon monoxide, cyanide, ethanol and controlled substances.

ADDITIONAL INFORMATION

On June 18, 2001, the airframe, engine and associated components were released to the pilot's estate in Helena, Montana.

Pilot Information

Certificate:	Commercial; Private	**Age:**	65,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Front
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	Class 3 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	September 15, 2000
Occupational Pilot:	UNK	**Last Flight Review or Equivalent:**	
Flight Time:	2600 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N2564M
Model/Series:	PA-12	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal; Utility	**Serial Number:**	12937
Landing Gear Type:	Tailwheel	**Seats:**	3
Date/Type of Last Inspection:	May 1, 2000 Annual	**Certified Max Gross Wt.:**	1750 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	3574 Hrs as of last inspection	**Engine Manufacturer:**	Lycoming
ELT:	Installed	**Engine Model/Series:**	O-320
Registered Owner:	James A. Steffeck	**Rated Power:**	150 Horsepower
Operator:		**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	GTF,3677 ft msl	**Distance from Accident Site:**	60 Nautical Miles
Observation Time:	12:56 Local	**Direction from Accident Site:**	74°
Lowest Cloud Condition:	Scattered / 10000 ft AGL	**Visibility**	10 miles
Lowest Ceiling:	Broken / 20000 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	14 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	170°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.7 inches Hg	**Temperature/Dew Point:**	27°C / 7°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	BENCHMARK, MT (3U7)	**Type of Flight Plan Filed:**	None
Destination:	HELENA, MT (HLN)	**Type of Clearance:**	None
Departure Time:	12:50 Local	**Type of Airspace:**	Class G

Airport Information

Airport:	BENCHMARK 3U7	**Runway Surface Type:**	Asphalt
Airport Elevation:	5431 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	30	**IFR Approach:**	None
Runway Length/Width:	6000 ft / 100 ft	**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:		**Aircraft Fire:**	On-ground
Ground Injuries:	N/A	**Aircraft Explosion:**	On-ground
Total Injuries:	1 Fatal	**Latitude, Longitude:**	47.476387,-112.863334

Administrative Information

Investigator In Charge (IIC):	Hogenson, Dennis
Additional Participating Persons:	Kenneth C Conrad; FAA; Helena, MT Mark Platt; Textron Lycoming; Williamsport, PA Charles Little; The New Piper Aircraft, Inc.; Centerville, VA
Original Publish Date:	February 20, 2002
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=52376

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.