



Aviation Investigation Final Report

Location:	North Plains, Oregon	Accident Number:	SEA06FA038
Date & Time:	January 5, 2006, 10:56 Local	Registration:	N27ER
Aircraft:	Mooney M20K	Aircraft Damage:	Destroyed
Defining Event:		Injuries:	1 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot was flying a visual flight rules (VFR) practice ILS approach at approximately 4 nm from the runway, when he reported to air traffic control (ATC) a loss of engine power. In his last transmission, the pilot said he had a turf airstrip underneath him. A witness, who was a certified pilot said the airplane went into a steep right turn with a 30 to 40 degree nose low attitude. He said it looked like a spin entry. Several residents at the private residential airpark heard a loud noise and found the downed aircraft. They reported not smelling any fuel fumes at the accident scene and there was no postimpact fire. The aircraft had been airborne for approximately 45 minutes. Aerial photographs indicated that the private airstrip was bordered on two sides by two 180 acre plots of open crop land, with no obstacles.

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 airspeed while maneuvering for a forced landing, resulting in a stall-spin and uncontrolled descent to ground impact. A contributing factor was the loss of engine power due to fuel exhaustion resulting from the pilot's inadequate preflight planning.

Findings

Occurrence #1: LOSS OF ENGINE POWER(TOTAL) - NONMECHANICAL

Phase of Operation: APPROACH - FAF/OUTER MARKER TO THRESHOLD (IFR)

Findings

1. (F) FLUID,FUEL - EXHAUSTION
2. (F) PREFLIGHT PLANNING/PREPARATION - INADEQUATE - PILOT IN COMMAND

Occurrence #2: FORCED LANDING

Phase of Operation: MANEUVERING

Occurrence #3: LOSS OF CONTROL - IN FLIGHT

Phase of Operation: MANEUVERING - TURN TO LANDING AREA (EMERGENCY)

Findings

3. (C) AIRSPEED - NOT MAINTAINED - PILOT IN COMMAND
4. STALL/SPIN - ENCOUNTERED - PILOT IN COMMAND

Occurrence #4: IN FLIGHT COLLISION WITH TERRAIN/WATER

Phase of Operation: DESCENT - UNCONTROLLED

Findings

5. TERRAIN CONDITION - CROP

Factual Information

HISTORY OF FLIGHT

On January 5, 2006, at 1056 Pacific standard time, a Mooney M20K, N27ER, was destroyed when it impacted terrain following a loss of aircraft control near North Plains, Oregon. The instrument rated private pilot was fatally injured. The pilot/owner was operating the airplane under Title 14 CFR Part 91. Visual meteorological conditions prevailed for the personal, local flight that originated from Portland-Hillsboro Airport, Hillsboro, Oregon, approximately 45 minutes before the accident. The pilot had not filed a flight plan.

A friend of the pilot said that the pilot had purchased a new global positioning system (GPS) receiver and wanted to practice flying with it. According to Federal Aviation Administration (FAA) personnel, radar data indicated that after takeoff, the airplane maneuvered in an area south of Hillsboro Airport. At 1046:30, the pilot contacted Hillsboro Airport (ATC) tower requesting a practice VFR Instrument Landing System (ILS) approach to runway 12. At 1052:25, the pilot reported that he was approaching Dolla final approach fix; three minutes later the pilot told ATC that he was losing power and he needed to "put down." The pilot's last transmission was at 1056:05, and he said "there's a grass strip here." Several residents of Sunset Air Strip, North Plains, Oregon, reported hearing a loud noise; subsequently they found the airplane adjacent to one of their taxiways in a filbert nut orchard. The residents reported that they did not smell any fuel fumes when they arrived at the aircraft.

A witness, who was driving east on US-26, approximately 3/8 statute mile from the accident scene, reported seeing the accident airplane enter a hard right turn at approximately 300 to 400 feet above the ground. He said the nose of the aircraft dropped 30 to 40 degrees, and the aircraft remained steeply banked until it disappeared from his sight. The witness, who was a certificated pilot, said "it looked very much like a spin entry."

PERSONAL INFORMATION

The pilot's most recent Federal Aviation Administration flight medical exam (third class) was taken on August 10, 2004. The pilot's personal flight logbook indicated that on December 26, 2004, he satisfactorily completed a biennial flight review and an instrument competency check. The pilot completed an application for aircraft insurance on April 11, 2005, and on that application he stated that he had 1,068 flight hours, with 672 hours in make and model.

AIRCRAFT INFORMATION

The airplane was a single engine, propeller-driven, retractable landing gear, four seat airplane, which was manufactured by Mooney Aircraft Corporation, in 1984. The airplane had a

maximum takeoff gross weight of 2,900 pounds. It was powered by a Continental TSIO-360-LB, six cylinder, reciprocating, fuel injected, turbocharged engine, which had a maximum takeoff rating of 210 horsepower at sea level. Maintenance records indicate that the last annual inspection was completed on May 24, 2005. The airplane's engine tachometer read 1,427.4 hours at the time of the annual inspection. The owner/pilot purchased the airplane and registered it with the FAA on June 20, 1996.

A search for the last refueling records was not successful.

METOROLOGICAL INFORMATION

At 1053, the weather conditions at Portland-Hillsboro Airport (elevation 204 feet), Portland, Oregon, located 120 degrees magnetic and 4 nautical miles from the accident site, were: wind calm; visibility 10 statute miles; overcast clouds at 7,500 feet; temperature 45 degrees Fahrenheit; dew point 43 degrees Fahrenheit; altimeter setting 30.25 inches.

WRECKAGE AND IMPACT INFORMATION

The airplane was found in a filbert nut orchard (N45 degrees, 35', 33"; W123 degrees, 00', 50"; elevation 210 feet), aligned with runway 12 at Hillsboro Airport, approximately 4 nautical miles from the runway threshold. The filbert orchard was bordered on one side by a residential private turf airstrip called Sunset Air Strip, North Plains, Oregon. Two of the filbert trees (height approximately 12 to 15 feet) had branches separated from them. All of the airplane's major components were accounted for at the accident site. The landing gear was found in the down position. The propeller assembly, with its crankshaft propeller attachment flange, was found buried in the mud, and the airplane's main body was located 36 feet away on a 070 degree magnetic bearing. The fuselage's orientation was 275 degrees magnetic.

Both wings remained attached at their wing roots. The left wing had a 20 inch aft deformation approximately 3 feet inboard from its tip; this deformation was consistent with impact with a tree. The right wing was separated at the half way point, and the outboard half was rotated forward and inverted. The area of the fuselage, aft of the cabin, was circumferentially compressed and crushed. The engine, the flight and engine controls, and the instrument panel were rotated forward approximately 90 degrees.

The engine was extracted from the wreckage with the aid of an engine hoist. An external inspection revealed that the oil sump was breeched and only residual oil remained in the engine. Analysis of the engine could not be completed in the field due to impact damage to the forward end of the crankshaft. Five days later, the engine case was split, and no anomalies were identified. The propeller blades exhibited few leading edge nicks or gouges, nor were chord wise striations evident; one blade was bent approximately 30 degrees aft. The spinner exhibited minimum rotational deformation and aft crushing.

No preimpact engine or airframe anomalies, which might have affected the airplane's

performance, were identified. No fuel was found in the airplane.

MEDICAL AND PATHOLOGICAL INFORMATION

The Oregon State Medical Examiner, Clackamas, Oregon, performed an autopsy on the pilot on January 6, 2006.

The FAA's Civil Aeromedical Institute (CAMI) in Oklahoma City, Oklahoma, performed toxicology tests on the pilot. According to CAMI's report (#200600011001), the pilot's blood was tested for carbon monoxide, cyanide, and volatiles (ethanol) with negative results; the liver was tested for drugs with negative results.

ADDITIONAL INFORMATION

The airplane, including all components and logbooks, was released to a representative of the owner's insurance company, on February 13, 2006.

Aerial photographs indicate that the approach end of runway 06 at Sunset Air Strip (10R3) was bordered by two estimated 180 acre plots of open crop land with no obstacles. The height of the ILS glide slope, above the accident site, was approximately 1,450 feet.

Pilot Information

Certificate:	Private	Age:	51, Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Left
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 With waivers/limitations	Last FAA Medical Exam:	August 1, 2004
Occupational Pilot:	No	Last Flight Review or Equivalent:	December 1, 2004
Flight Time:	1100 hours (Total, all aircraft), 580 hours (Total, this make and model), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Mooney	Registration:	N27ER
Model/Series:	M20K	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	25-0825
Landing Gear Type:	Retractable - Tricycle	Seats:	4
Date/Type of Last Inspection:	May 1, 2005 Annual	Certified Max Gross Wt.:	2900 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	1427 Hrs as of last inspection	Engine Manufacturer:	Continental
ELT:	Installed, not activated	Engine Model/Series:	TSIO-360-LB
Registered Owner:	Jay S. Richards	Rated Power:	210 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:	HIO,204 ft msl	Distance from Accident Site:	4 Nautical Miles
Observation Time:	10:53 Local	Direction from Accident Site:	120°
Lowest Cloud Condition:	Thin Overcast / 7500 ft AGL	Visibility	10 miles
Lowest Ceiling:	Overcast / 7500 ft AGL	Visibility (RVR):	
Wind Speed/Gusts:	/ None	Turbulence Type Forecast/Actual:	/
Wind Direction:		Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.25 inches Hg	Temperature/Dew Point:	7°C / 6°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Hillsboro, OR (HIO)	Type of Flight Plan Filed:	None
Destination:	(HIO)	Type of Clearance:	None
Departure Time:	10:10 Local	Type of Airspace:	

Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Fatal	Latitude, Longitude:	45.592498,-123.013885

Administrative Information

Investigator In Charge (IIC):	Struhsaker, James
Additional Participating Persons:	Jack M Swensen; FAA FSDO; Portland, OR
Original Publish Date:	January 31, 2007
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=63065

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](#).