Aviation Investigation Final Report

Location:	Mammoth Lakes, California	**Accident Number:**	LAX06FA055
Date & Time:	December 12, 2005, 11:29 Local	**Registration:**	N3590R
Aircraft:	Beech A23	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	2 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The airplane collided with flat desert terrain following an in-flight loss of control. A witness about 1 mile south of the accident site heard a rough running engine, and looked up to see what it was. As the airplane traveled overhead, he heard the engine "popping/backfiring," which lasted about 3 seconds, and then the engine quit. He then saw the airplane "dip" to the right, in a "tumbling motion." The witness indicated that it was like a somersault with the nose dropping and the tail coming over the top. He saw about 2 to 3 revolutions of the airplane, which lasted a total time of about 8 seconds, and then the airplane dropped below tree level and collided with the ground. The witness reported that it was somewhat cloudy in the area, but the airplane was below the clouds. When he arrived at the accident site to render aid, he reported there was no frost/ice on the wings, and that it was not cold enough for the formation of frost/ice. Witnesses at the departure airport reported that the engine sounded like the exhaust system was leaking very badly or that either the exhaust or muffler was loose. An engine test run could not be conducted due to displacement of the crankshaft caused by the nose-down impact. An engine teardown revealed no discrepancies in the engine core or in the accessories that would have precluded normal operation.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: a loss of engine power for undetermined reasons, and, the failure of the pilot to maintain an adequate airspeed while maneuvering following the loss of power, which resulted in a stall/spin.

Findings

Occurrence #1: LOSS OF ENGINE POWER
Phase of Operation: CRUISE

Findings
1. (C) REASON FOR OCCURRENCE UNDETERMINED

Occurrence #2: FORCED LANDING
Phase of Operation: EMERGENCY DESCENT/LANDING

Occurrence #3: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: MANEUVERING - TURN TO LANDING AREA (EMERGENCY)

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

Occurrence #4: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - UNCONTROLLED

Findings
4. TERRAIN CONDITION - GROUND

Factual Information

HISTORY OF FLIGHT

On December 12, 2005, about 1129 Pacific standard time, a Beech A23, N3590R, collided with flat desert terrain near Mammoth Lakes, California. The pilot/owner operated the airplane under the provisions of 14 CFR Part 91. The airplane was destroyed. The commercial instrument-rated pilot and one passenger were fatally injured. The personal cross-country flight departed Redlands Municipal Airport (L12), Redlands, California, at 0846, en route to Mammoth Yosemite Airport (MMH), Mammoth Lakes, California. Day visual meteorological conditions prevailed, and a visual flight rules (VFR) flight plan had been filed. The wreckage was at 37 degrees 32.253 minutes north latitude and 118 degrees 36.182 minutes west longitude.

The National Transportation Safety Board investigator-in-charge reviewed the VFR flight plan that had been filed by the pilot. The flight plan indicated an en route altitude of 8,500 feet. The route of flight as filed was from L12 through the Cajon pass, Palmdale, Mojave Airport, Inyo, Bishop, with a planned destination of MMH. Time en route was estimated at 2 hours 45 minutes, with 5 1/2 hours of fuel on board.

According to information obtained from the Federal Aviation Administration (FAA), Southern California Terminal Radar Approach Control (SCT) identified the accident airplane via radar at 0852. SCT handed off the airplane to High Desert Terminal Radar Approach Control (E10) at 0856. Due to radar coverage in the Owens Valley, E10 terminated radar services with the accident airplane at 1057.

A witness, at the departure airport, reported that he listened to the engine as the pilot started and taxied for fuel. He heard a strange popping noise; it sounded to him like either a loose exhaust stack or muffler. He went over and mentioned it to the pilot, who said that he would get it looked at.

Another witness saw the airplane as it took off. It rotated and was about 20-25 feet above ground level. He noticed the airplane due to the "raspy" sounding engine. He indicated that the engine sounded like the exhaust system was leaking very badly. There were no control problems, but the engine sounded abnormal to him.

A witness about 1 mile south of the accident site heard a rough running engine and looked up to see what it was. As the airplane traveled overhead, he heard the engine "popping/backfiring," which lasted about 3 seconds, and then the engine quit. He then saw the airplane "dip" to the right, in a "tumbling motion." The witness indicated that it was like a somersault with the nose dropping and the tail coming over the top. He saw the airplane go

through about 2 to 3 revolutions, which lasted a total time of about 8 seconds, and then heard a "whoosh" sound. The airplane had dropped below tree level at that point, and the witness attributed the sound he heard to something hitting the ground. The witness reported that it was somewhat cloudy in the area, but the airplane was below the clouds. When he arrived at the accident site to render aid he reported there was no frost/ice on the wings, and that it was not cold enough for the formation of frost/ice.

The closest official weather observation station was Eastern Sierra Regional Airport, Bishop, California, (BIH), which was located about 10 nautical miles (nm) south of the accident site. The elevation of the weather observation station was 4,120 feet mean sea level (msl). The routine aviation weather report (METAR) for BIH issued at 1056 reported calm winds; visibility 10 statute miles (sm); few clouds at 10,000 feet above ground level (agl); temperature 46 degrees Fahrenheit; dew point 18 degrees Fahrenheit; altimeter setting 30.09 inches of mercury (inHg).

The METAR recorded at 1156 reported winds from 120 degrees at 3 knots; visibility 10 sm; few clouds at 10,000 feet; temperature 52 degrees Fahrenheit; 18 degrees Fahrenheit; altimeter setting 30.06 inHg.

PERSONNEL INFORMATION

A review of the pilot's FAA airman records revealed that the pilot held a commercial pilot certificate with ratings for airplane single engine land, multiengine land, and instrument airplane. The pilot also held ground instructor-advanced and flight engineer (E/JET) ratings, as well as a mechanic certificate with airframe and powerplant ratings.

The pilot held a first-class medical certificate issued on December 6, 2005. It had the limitations that the pilot must wear corrective lenses.

An examination of the pilot's logbook indicated an estimated total flight time of 1,071.9 hours. He logged 23.3 hours in the last 90 days, and zero in the last 30 days. His logbook recorded four flights in the accident airplane; November 28, 2004, December 13, 15, and 17, 2004. Total flight time recorded for the accident make and model were 6.6 hours.

AIRCRAFT INFORMATION

The airplane was a 1965 Beech A23, serial number M-782. There were no aircraft logbooks located for the accident airplane.

The engine was a Teledyne Continental Motors IO-346-A engine, serial number 100442-5-A. Performance Engines, La Verne, California, completed a field major engine overhaul on September 28, 2005. The maintenance facility recorded the time on the engine as 0.0 hours since major overhaul, with no total engine time carried forward.

WRECKAGE AND IMPACT INFORMATION

Investigators from the Safety Board, the FAA, Raytheon Aircraft Company (RAC), and Teledyne Continental Motors (TCM) examined the wreckage at the accident site. The accident site was about 16 miles south of Mammoth Airport, at an elevation of 6,743 feet msl. The airplane came to rest upright between the Owens Gorge and Highway 395 near Sherwin Summit in flat high desert terrain in the eastern Sierra Nevada Mountain range. The debris path was along a magnetic bearing of 160 degrees.

The right fuel cap was 60 feet beyond the main wreckage.

The flight control columns bent to the right. Both sets of rudder pedals fractured, with the pilot's side separated from its attachment points, and the copilot's were lying on the floor. Investigators established aileron continuity from the control surface to the aileron bell cranks to the wing roots. They moved the rudder and stabilator via their respective cables from aft of the rear seat. The flaps were fully extended.

The elevator trim actuator measured 2.2 inches, which equated to 3 degrees tab up.

The ignition switch was in the BOTH position.

The engine was buried in a 1.5-foot-deep crater. One propeller blade had slight bending at the tip with rotational (chordwise) scoring. The second blade was buried in the ground with significant bending, but no evidence of rotational scoring. The engine separated from the top engine mounts, and the starter adapter separated from the engine.

MEDICAL AND PATHOLOGICAL INFORMATION

The Mono County Coroner conducted an autopsy on the pilot and passenger on December 14, 2005. The TC, FAA, Forensic Toxicology Research Team CAMI, Oklahoma City, Oklahoma, performed a toxicological analysis, from samples obtained from the pilot during the autopsy. The results of the analysis of the specimens for both pilots contained no findings for carbon monoxide, cyanide, volatiles, and tested drugs.

TESTS AND RESEARCH

Investigators examined the wreckage at Aircraft Recovery Service, Littlerock, California, following recovery.

Investigators manually rotated the magnetos via the drive coupling. The airplane had a shower of sparks installed.

The fuel manifold separated from the engine. Investigators disassembled it on scene, and found a trace amount of fluid inside. The screen was clean.

The engine manufacturer manually rotated the engine driven fuel pump, and noted no binding. The drive coupling was intact, and the lines were tight. There was no fluid inside.

The fuel selector valve was selected to the LEFT tank. Investigators connected a tube to the fuel line, and blew through it; the line was free and clear with no restrictions.

The engine was shipped to TCM, Mobile, Alabama, to conduct an engine inspection. On February 13, 2007, the Safety Board IIC, TCM, and RAC investigators assembled at TCM for the engine inspection. There were no discrepancies encountered with the engine teardown. The engine had been recently overhauled, and the components were new or in a new condition.

ADDITIONAL INFORMATION

The IIC released the wreckage to the owner's representative.

Pilot Information

Certificate:	Commercial	**Age:**	41,Male
Airplane Rating(s):	Single-engine land; Multi-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 1	**Last FAA Medical Exam:**	December 1, 2005
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	1071 hours (Total, all aircraft), 6 hours (Total, this make and model), 23 hours (Last 90 days, all aircraft), 0 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Beech	**Registration:**	N3590R
Model/Series:	A23	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	M782
Landing Gear Type:	Tricycle	**Seats:**	4
Date/Type of Last Inspection:		**Certified Max Gross Wt.:**	2300 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:		**Engine Manufacturer:**	Teledyne Continental
ELT:	Installed, not activated	**Engine Model/Series:**	IO-346-A
Registered Owner:	Greg Little	**Rated Power:**	165 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:	BIH	**Distance from Accident Site:**	
Observation Time:	10:56 Local	**Direction from Accident Site:**	
Lowest Cloud Condition:	Few / 10000 ft AGL	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	/	**Turbulence Type Forecast/Actual:**	/
Wind Direction:		**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.09 inches Hg	**Temperature/Dew Point:**	8°C / -8°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	REDLANDS, CA (L12)	**Type of Flight Plan Filed:**	VFR
Destination:	Mammoth Lakes, CA (MMH)	**Type of Clearance:**	None
Departure Time:	08:46 Local	**Type of Airspace:**	

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	1 Fatal	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Fatal	**Latitude, Longitude:**	37.537498,-118.603057

Administrative Information

Investigator In Charge (IIC):	Cornejo, Tealeye
Additional Participating Persons:	Ken Kelley; Federal Aviation Administration; Reno, NV Tim Rainey; Raytheon Aircraft Company; Wichita, KS Andrew Swick; Teledyne Continental Motors; Mobile, AL
Original Publish Date:	August 30, 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=62940