



Aviation Investigation Final Report

Location:	St. George, Utah	Accident Number:	LAX07LA114
Date & Time:	March 17, 2007, 18:00 Local	Registration:	N74503
Aircraft:	Mooney M20B	Aircraft Damage:	Substantial
Defining Event:		Injuries:	2 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

Ten minutes after takeoff the airplane's engine started running rough, and the airplane collided with terrain during a forced landing into an open area. The pilot leveled the airplane at 6,500 feet for cruise and the engine started running rough and backfiring. The engine would run sporadically rough then smooth out. The pilot executed emergency procedures, switched fuel tanks, and switched on the boost pump, but there was no change in the engine's rough-running condition. He decided to return to the airport, and configured the airplane for best glide. He setup for a 2-mile final to runway 34. The pilot determined that he was not going to make the runway, and force landed the airplane in a clear area by a river bed. An examination of the engine determined that the right magneto contained engine oil. The seal between the engine accessory drive and the magneto was hard, loose fitting, and covered with engine oil. Examination of the engine maintenance logbook revealed that the engine had been manufactured new on February 8, 1979, and installed on the airplane April 13, 1979. A 9-year gap where no maintenance was recorded on the engine occurred between October 1992 (engine total time of 1302.9 hours) and July 2002 (engine total time of 1322.39 hours). A 100-hour inspection was recorded as being completed on July 2, 2002. The most recent 100-hour inspection was performed on June 22, 2006, at 1,439.1 hours total time. There is no record of an engine or magneto overhaul. Lycoming Service Instruction No. 1009AS states that engines that do not accumulate the hourly period of time between overhauls specified (2,000 hours for the O-360-A1D) are recommended to be overhauled in the twelfth year. Teledyne Continental Ignition systems Service Bulletin, SB643B, for all TCM and Bendix magnetos states that the magnetos must be overhauled or replaced at the expiration of 5 years since the date of original manufacture or last overhaul, or 4 years since the date the magneto was placed in service, whichever ever occurs first with out regard to accumulated operating hours.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: Oil contamination of the right magneto. Factors were the airplane owner's failure to comply with manufacturer's service bulletins and overhaul porcedures.

Findings

Occurrence #1: LOSS OF ENGINE POWER(PARTIAL) - MECH FAILURE/MALF
Phase of Operation: CRUISE

Findings

1. (C) IGNITION SYSTEM,MAGNETO - CONTAMINATION,OTHER THAN WATER
2. (F) MAINTENANCE,SERVICE BULLETIN/LETTER - NOT COMPLIED WITH - OWNER/PILOT MECHANIC
3. (F) MAINTENANCE,OVERHAUL - NOT PERFORMED - OWNER/PILOT MECHANIC

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

Occurrence #3: ON GROUND/WATER ENCOUNTER WITH TERRAIN/WATER
Phase of Operation: EMERGENCY DESCENT/LANDING

Findings

4. TERRAIN CONDITION - ROUGH/UNEVEN

Factual Information

On March 17, 2007, at 1800 mountain daylight time, a Mooney M20B, N74503, experienced a partial loss of engine power after takeoff and forced landed near St. George Municipal Airport, St. George, Utah. The private pilot operated the airplane under the provisions of 14 CFR Part 91. The pilot and single passenger were not injured, and the airplane sustained substantial damage. Visual meteorological conditions prevailed, and no flight plan had been filed. The flight originated at St. George airport at 1745, and was en route to Blackfoot, Idaho.

The pilot stated to the National Transportation Safety Board investigator that 10 minutes after takeoff he leveled the airplane at 6,500 feet for cruise; the engine started running rough and backfiring. The engine would run sporadically rough then smooth out. The pilot executed emergency procedures, switched fuel tanks, and switched on the boost pump, but there was no change in the engine's rough running condition. He decided to return to St. George airport, and configured the airplane for best glide. He setup for a 2-mile final to runway 34. The pilot determined that he was not going to make the runway, and force landed the airplane in a clear area by a river bed.

The next day a Federal Aviation Administration inspector examined the engine and determined that the right magneto contained engine oil. The seal between the engine accessory drive and the magneto was hard, loose fitting, and covered with engine oil. Examination of the engine maintenance logbook revealed that the engine had been manufactured new on February 8, 1979, and installed on the airplane April 13, 1979. A 9-year gap where no maintenance was recorded on the engine occurred between October 1992 (engine total time of 1302.9 hours) and July 2002 (engine total time of 1322.39 hours). A 100-hour inspection was recorded as being completed on July 2, 2002. The most recent 100-hour inspection was performed on June 22, 2006, at 1,439.1 hours total time. There is no record of an engine or magneto overhaul.

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Pilot Information

Certificate:	Private	Age:	50, Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	
Other Aircraft Rating(s):		Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 3	Last FAA Medical Exam:	December 1, 2006
Occupational Pilot:		Last Flight Review or Equivalent:	
Flight Time:	462 hours (Total, all aircraft), 325 hours (Total, this make and model), 419 hours (Pilot In Command, all aircraft), 68 hours (Last 90 days, all aircraft), 42 hours (Last 30 days, all aircraft), 3 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Mooney	Registration:	N74503
Model/Series:	M20B	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	1814
Landing Gear Type:	Retractable - Tricycle	Seats:	4
Date/Type of Last Inspection:	June 1, 2006 Annual	Certified Max Gross Wt.:	2450 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	3958.5 Hrs at time of accident	Engine Manufacturer:	Lycoming
ELT:	Installed, not activated	Engine Model/Series:	O-360-A1D
Registered Owner:	Steve Laflin	Rated Power:	180 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:	KSGU	Distance from Accident Site:	2 Nautical Miles
Observation Time:	19:35 Local	Direction from Accident Site:	10°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	14 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	260°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.9 inches Hg	Temperature/Dew Point:	28°C / -6°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	St. George, UT (KSGU)	Type of Flight Plan Filed:	None
Destination:	Blackfoot, ID (KU02)	Type of Clearance:	VFR
Departure Time:	17:45 Local	Type of Airspace:	

Airport Information

Airport:	St. George KSGU	Runway Surface Type:	
Airport Elevation:		Runway Surface Condition:	
Runway Used:		IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	Forced landing

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	1 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 None	Latitude, Longitude:	37.040554,-113.60083

Administrative Information

Investigator In Charge (IIC):	McKenny, Van
Additional Participating Persons:	Eric McRae; Federal Aviation Administration; Salt Lake City, UT
Original Publish Date:	July 25, 2007
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=65452

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](#).