Aviation Investigation Final Report

Location:	Rexburg, Idaho	**Accident Number:**	WPR12LA200
Date & Time:	May 11, 2012, 18:10 Local	**Registration:**	N4861E
Aircraft:	Champion 7GC	**Aircraft Damage:**	Substantial
Defining Event:	Powerplant sys/comp malf/fail	**Injuries:**	2 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The owner/pilot had completed two touch-and-go landings in the tailwheel-equipped airplane at his home airport and then left the airport traffic pattern to overfly a property south of the airport. For the overflight, the pilot reduced the engine rpm to about 2,100 and operated at an altitude of several hundred feet above the ground. The pilot then noticed that the oil pressure indication had dropped to the bottom of the green arc. He increased the engine rpm but observed the oil pressure continue to decrease. He considered attempting to return to the airport but then decided against that due to the population density between the airport and his current position; he elected to conduct a precautionary landing in a field. On short final for the field, the pilot failed to see the power lines across the field. The airplane struck the power lines then landed hard in the field. Postaccident examination of the airplane and engine did not reveal any mechanical abnormalities or conditions that would account for the decreased oil pressure indication, and when the engine was rotated with the starter, the oil pump was observed to produce expected pressure on the gauge and to pump oil.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

A decrease in indicated oil pressure while maneuvering at low altitude for reasons that could not be determined because postaccident examination did not reveal any anomalies that would have precluded normal operation. Also causal was the pilot's failure to maintain clearance from power lines during the precautionary landing to a field.

Findings

Not determined	(general) - Unknown/Not determined
Aircraft	Recip eng oil sys - Not specified
Personnel issues	Monitoring environment - Pilot
Environmental issues	Wire - Contributed to outcome

Factual Information

History of Flight

Prior to flight	Aircraft maintenance event
Maneuvering	Powerplant sys/comp malf/fail (Defining event)
Landing	Off-field or emergency landing
Landing	Collision with terr/obj (non-CFIT)
Landing	Hard landing

HISTORY OF FLIGHT

On May 11, 2012, about 1810 mountain daylight time, a Champion 7GC, N4861E, was substantially damaged when it struck power lines during a precautionary landing following a loss of engine oil pressure near Rexburg, Idaho. The pilot/owner and his passenger were uninjured. The personal flight was conducted under the provisions of Title 14 Code of Federal Regulations Part 91. Visual meteorological conditions prevailed, and no flight plan was filed for the flight.

According to the pilot, he departed the traffic pattern of Rexburg-Madison County Airport (RXE), Rexburg, after conducting two touch-and-go landings. He headed south, and reduced the throttle to 2,100 rpm to overfly a property. At that time, when the airplane was only a few hundred feet above ground level, the pilot noticed that the oil pressure indication had dropped to the bottom of the green arc. He increased the engine to 2,500 rpm, and observed that the oil pressure indication decreased into the upper end of the yellow arc. The pilot considered a return to RXE, but then decided against that due to the population density between the airport and his current position, and elected to conduct a precautionary landing in a field. On short final for the field, the airplane struck power lines that were strung to a pump in the field, and then landed hard in the field. The airplane skidded about 150 feet, and came to rest upright. The propeller, landing gear and fuselage were damaged.

PERSONNEL INFORMATION

Federal Aviation Administration (FAA) information indicated that the pilot held a private pilot certificate with an airplane single-engine land rating. The pilot reported a total flight experience of 295 hours, including 149 hours in the accident airplane make and model. His most recent FAA third-class medical certificate was issued in November 2011, and his most recent flight review was completed in November 2011.

AIRCRAFT INFORMATION

The airplane was manufactured in 1959, and was equipped with a Lycoming O-320 series engine. The engine was manufactured in 1965, and had a total time in service of 1,289 hours. Per Lycoming Service Instruction 1009, the recommended overhaul interval for the engine was 2,000 hours in service, or 12 calendar years, whichever comes first. Although the engine had exceeded the manufacturer's

recommended overhaul interval by a factor of more than threefold in calendar year, the engine had never been overhauled.

According to the Lycoming operator's manual, normal engine oil pressure is 25 pounds per square inch (psi) at idle speed. In the normal engine operating speed range, minimum allowable oil pressure was 60 psi, and maximum was 90 psi. That range would be denoted by a green arc on the oil pressure indicator gauge.

METEOROLOGICAL INFORMATION

The pilot reported that the 1753 automated weather observation for RXE included winds from 195 degrees at 4 knots, clear skies, temperature 17 degrees C, dew point -7 degrees C, and an altimeter setting of 30.11 inches of mercury.

WRECKAGE AND IMPACT INFORMATION

The airplane came to rest upright in a field, about 3 miles south-southeast of the airport. Both main landing gear struts were deformed up and aft, so that the fuselage rested on the ground. The cowling and firewall were deformed/crushed up and aft, and both propeller blades of the all-metal propeller were bent aft.

About a month after the accident, the airplane and engine were examined by an NTSB and a Lycoming investigator. There were no indications of any oil leakage from the engine. The spark plugs were pulled and they appeared to be in good condition. A thumb compression check was accomplished, with no abnormalities noted. The engine exhibited continuity throughout its drive train.

Electrical power was supplied to the airplane, and the starter turned the engine over normally. Oil pressure was noted in the cockpit; the gauge indicated 30 psi, which was in the yellow range of gauge, but is a normal value when the engine is turning at below-idle speed. The engine was not started due to the bent propeller blades, and the possibility of unobserved internal damage. The oil line was disconnected and oil was observed to be pumped when the engine was cranked by the starter. No abnormalities with the engine's oil system were noted. The oil quantity was not determined, and no further examination or testing of the engine, oil system, or oil pressure indicating system was accomplished.

Pilot Information

Certificate:	Private	**Age:**	57
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	Lap only
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 With waivers/limitations	**Last FAA Medical Exam:**	November 14, 2011
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	November 16, 2011
Flight Time:	295 hours (Total, all aircraft), 149 hours (Total, this make and model), 236 hours (Pilot In Command, all aircraft), 37 hours (Last 90 days, all aircraft), 13 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Champion	**Registration:**	N4861E
Model/Series:	7GC	**Aircraft Category:**	Airplane
Year of Manufacture:	1965	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	7GC-49
Landing Gear Type:	Tailwheel	**Seats:**	2
Date/Type of Last Inspection:	October 19, 2011 Annual	**Certified Max Gross Wt.:**	1650 lbs
Time Since Last Inspection:	71 Hrs	**Engines:**	Reciprocating
Airframe Total Time:	2166 Hrs at time of accident	**Engine Manufacturer:**	Lycoming
ELT:	Not installed	**Engine Model/Series:**	O-320
Registered Owner:	On file	**Rated Power:**	150 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:	RXE,4860 ft msl	**Distance from Accident Site:**	3 Nautical Miles
Observation Time:	17:53 Local	**Direction from Accident Site:**	330°
Lowest Cloud Condition:	Clear	**Visibility**	70 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	4 knots /	**Turbulence Type Forecast/Actual:**	/ None
Wind Direction:	195°	**Turbulence Severity Forecast/Actual:**	/ N/A
Altimeter Setting:	30.11 inches Hg	**Temperature/Dew Point:**	17°C / -7°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Rexburg, ID (RXE)	**Type of Flight Plan Filed:**	None
Destination:	Rexburg, ID (RXE)	**Type of Clearance:**	None
Departure Time:	18:00 Local	**Type of Airspace:**	

Airport Information

Airport:	Rexburg Madison County RXE	**Runway Surface Type:**	Dirt
Airport Elevation:	4862 ft msl	**Runway Surface Condition:**	Rough;Soft;Vegetation
Runway Used:		**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	Precautionary 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:**	43.833889,-111.802223(est)

Administrative Information

Investigator In Charge (IIC):	Huhn, Michael
Additional Participating Persons:	Kent Gibbons; FAA FSDO; Salt Lake City, UT
Original Publish Date:	October 9, 2014
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=83613

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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.