



National Transportation Safety Board Aviation Accident Data Summary

Location:	Goleta, CA	Accident Number:	LAX07LA236
Date & Time:	08/01/2007, 1942 PDT	Registration:	N458BJ
Aircraft:	Cessna R172K	Injuries:	1 Minor, 1 None
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

The airplane was 15 miles east of the destination airport, at 1,500 feet msl, when the engine gauges started to indicate low oil pressure and high oil temperatures. About 8 miles east of the airport, the engine experienced a loss of power, and produced a puff of white-gray smoke combined with loud clanking sounds. The airplane was at 1,200 feet, and the pilot directed the airplane towards an open field above a stretch of beach. During the landing roll, the airplane came to the end of the field, nosed over the edge of a 50-foot cliff, and came to rest on the beach below. The engine had been factory rebuilt in 2002, and had accumulated 1441.5 hours since the last major overhaul. An examination of the engine revealed a 2.7-inch hole in the top of the engine case, shiny copper fragments from the number 2 main bearing in the oil sump, and one bearing fragment in the oil pickup screen. Additionally, the bearing material of the number 2 main bearing had partially displaced itself and extruded between the crankshaft journal and the crankcase. The bearing fragments were somewhat shiny or polished, indicating they received lubrication and were not exposed to extreme temperature. Numerous fragments from the number 2 main bearing were located in the oil sump. The sizes of the fragments were generally too large to enter the oil sump pickup tube but could obstruct the pickup tube orifice, restricting the oil flow. Engine oil analysis records indicate a sudden increased level of copper from 5.3 parts per million (ppm) to 61.2 ppm occurred sometime within the previous 63.1 hours of operation. Engine journal bearing material is the only material within the engine that has a significant copper component. This increase in copper levels is directly related to the gradual deformation and fragmentation of the number 2 main bearing. The number 1 connecting rod had failed under overload that resulted from extreme temperatures at the connecting rod bearing that were consistent with oil starvation. The number 1 connecting rod bearing receives oil pressure from the oil pump through the number 1 main bearing, and would be one of the first bearings to be effected by reduced oil flow.

Probable Cause

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The oil starvation and failure of the number one piston connecting rod and bearing that was due to the fragmentation of the number 2 main bearing, which then obstructed the engine oil pickup tube and restricted the flow of oil through the engine.

Findings

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

Findings

1. (C) LUBRICATING SYSTEM - RESTRICTED

- 2. (C) ENGINE ASSEMBLY, BEARING - OVERTEMPERATURE
- 3. (C) ENGINE ASSEMBLY, CONNECTING ROD - FRACTURED

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

Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER
 Phase of Operation: EMERGENCY LANDING

Findings

- 4. (F) TERRAIN CONDITION - CLIFF

Pilot Information

Certificate:	Flight Instructor; Commercial	Age:	53
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Instrument Rating(s):	Airplane
Other Aircraft Rating(s):	None	Instructor Rating(s):	Airplane Single-engine
Flight Time:	1750 hours (Total, all aircraft), 370 hours (Total, this make and model), 1660 hours (Pilot In Command, all aircraft), 35 hours (Last 90 days, all aircraft), 15 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	Cessna	Registration:	N458BJ
Model/Series:	R172K	Engines:	1 Reciprocating
Operator:	Santa Barbara Flying Club, Inc.	Engine Manufacturer:	Teledyne Continental
Air Carrier Operating Certificate:	None	Engine Model/Series:	IO-360-KB(8)
Flight Conducted Under:	Part 91: General Aviation - Personal		

Meteorological Information and Flight Plan

Observation Facility, Elevation:	KSBA, 13 ft msl	Weather Information Source:	Weather Observation Facility
Conditions at Accident Site:	Visual Conditions	Lowest Ceiling:	None
Condition of Light:	Day	Wind Speed/Gusts, Direction:	8 knots, 270°
Temperature:	18° C / 14° C	Visibility	10 Miles
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Lompoc, CA (KLPC)	Destination:	Santa Barbara, CA (KSBA)

Wreckage and Impact Information

Crew Injuries:	1 Minor	Aircraft Damage:	Substantial
Passenger Injuries:	1 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None

Administrative Information

Investigator In Charge (IIC):	Van S McKenny	Adopted Date:	03/31/2008
Investigation Docket:	NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at pubinq@ntsb.gov , or at 800-877-6799. Dockets released after this date are available at http://dms.nts.gov/pubdms/ .		

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