



National Transportation Safety Board Aviation Accident Factual Report

Location:	Battle Creek, MI	Accident Number:	CHI07FA016
Date & Time:	11/02/2006, 1354 EST	Registration:	N9408B
Aircraft:	Cessna 175	Aircraft Damage:	Substantial
Defining Event:		Injuries:	1 Fatal
Flight Conducted Under:	Part 91: General Aviation - Personal		

HISTORY OF FLIGHT

On November 2, 2006, about 1354 eastern standard time, a Cessna 175, N9408B, piloted by a commercial pilot, sustained substantial damage on impact with terrain during a forced landing following a reported loss of oil pressure during cruise near Battle Creek, Michigan. The personal flight was operating under 14 Code of Federal Regulations Part 91. Visual meteorological conditions prevailed at the time of the accident. No flight plan was on file. The pilot sustained fatal injuries. The flight originated from the Huron County Memorial Airport (BAX), near Bad Axe, Michigan, about 1130, and was destined for an airport in the Chicago, Illinois, area.

About 1351, Federal Aviation Administration (FAA) air traffic controllers near Kalamazoo, Michigan received an emergency radio call on the emergency frequency from a person representing call sign N9408B. The controllers contacted N9408B and the pilot responded back that oil was on the airplane's windshield and that oil pressure was zero. The airplane was given a heading for the W. K. Kellogg Airport (BTL), near Battle Creek, Michigan. The pilot was asked if he could maintain altitude and he responded "no." The pilot advised that he was going to land in a field. Air traffic controllers alerted crash, fire, and rescue personnel of the airplane's location. About 1354, another airplane overhead reported that they picked up a signal from an emergency locator transmitter (ELT).

PERSONNEL INFORMATION

The pilot held a commercial pilot certificate with a lighter-than-air free balloon rating and he held private pilot airplane single-engine land privileges with an instrument airplane rating. He held a third-class medical certificate, which was issued on April 6, 2006. The medical certificate listed no limitations.

The pilot's logbooks found at the accident site showed that he had accumulated about 1,500 hours total flight time and about 702 hours of single-engine flight time. An endorsement in that logbook showed the pilot completed a flight review on July 22, 2005.

AIRCRAFT INFORMATION

N9408B, a 1957 Cessna 175, Skylark, serial number 55208, was an externally braced high-wing, propeller-driven, fixed landing gear, semi-monocoque design, four-seat airplane. A 175-horsepower, geared, six-cylinder, air cooled, horizontally opposed, carbureted, Continental GO-300-D, serial number 23002-2-D-R, engine, powered the airplane. The propeller was a two-bladed, all-metal, fixed pitch, McCauley model 1B175/MFC8467, with serial number P71274. The airplane had a certified maximum takeoff weight of 2,350 lbs.

The airplane's logbooks showed that an annual inspection was completed on June 13, 2006. The airplane had accumulated 4,297.5 of total time at the date of the inspection.

Records indicated the airplane was refueled with 27.8 gallons of 100 low lead aviation fuel at BAX on October 30, 2006. The person who fueled the airplane reported that this amount of fuel filled up the fuel tanks.

METEOROLOGICAL INFORMATION

At 1353, the recorded weather at BTL was: Wind 260 degrees at 16 knots; visibility 10 statute miles; sky condition scattered 1,600 feet, scattered 3,000 feet, broken 4,700 feet; temperature -1 degree C; dew point -4 degrees C; altimeter 30.16 inches of mercury.

At 1358, the recorded weather at BTL was: Wind 280 degrees at 16 knots; visibility 2 1/2 statute miles with light snow; sky condition scattered 1,600 feet, broken 2,800 feet, broken 4,200 feet; temperature -1 degree C; dew point - 4 degrees C; altimeter 30.16 inches of mercury; remarks snow began 1357.

At 1400, the recorded weather at BTL was: Wind 280 at 13 knots; visibility 3/4 statute mile with light snow; sky condition few clouds 100 feet, broken 2,700 feet, overcast 8,000; temperature -1 degree C; dew point -3 degrees C; altimeter 30.17 inches of mercury; remarks snow began at 1357.

WRECKAGE AND IMPACT INFORMATION

The airplane was found near the top of a crest in rolling pastureland about eight miles northeast of BTL. The airplane wreckage was found without the aid of the ELT and Civil Air Patrol members turned off the activated ELT. The airplane fuselage was inverted and the empennage had separated from it at the joint aft of the rear side windows. The separated empennage was resting upright on the fuselage. A ground scar was found. The scar started about 38 feet south of the wreckage and ended at the front of the engine cowling. The nose landing gear was found about nine feet from the engine cowling. The propeller and reduction gear case separated from the engine case. The propeller and reduction gear case was found about two feet from the engine cowling. The empennage was streaked with a liquid consistent with oil. The windshield was broken and pieces of it were coated with a liquid consistent with oil.

An on-scene examination of the wreckage was conducted. Flight control cables were continuous from each flight control to each flight control surface. Flight control continuity was established. Engine controls were continuous from each control to their respective engine component and engine control continuity was established. The carburetor was separated from the engine case. A liquid consistent with aviation gasoline (avgas) was found in the carburetor bowl. The carburetor fuel filter screen was clean. The liquid from the carburetor was tested for the presence of water and water was not detected in that liquid. An elbow fitting to the gascolator was separated and the gascolator did not contain any liquid. The top structure of the gascolator on the side with the fuel line intact to it did contain a liquid consistent with avgas. About 15 gallons of liquid consistent with avgas were recovered from the wing tanks. The engine driven vacuum pump was removed and it produced suction when rotated by hand. The engine rotated when battery power was applied to the starter. A thumb compression was observed at all cylinders except the number four cylinder. The number four cylinder rocker cover was removed and the exhaust valve was seized in the open position. Both magnetos produced spark. The top right side of the engine, aft facing forward, was coated with a liquid consistent with oil. The oil cooler, mounted on the right front portion of the engine case, was compromised. A liquid consistent with oil was exiting from the breach on the front and aft side of the cooler.

MEDICAL AND PATHOLOGICAL INFORMATION

The Calhoun County Coroner's Office coordinated the pilot's autopsy. The autopsy was conducted on November 3, 2006.

The FAA Civil Aerospace Medical Institute prepared a Final Forensic Toxicology Accident Report. The report was negative for the tests performed.

SURVIVAL ASPECTS

An unrestrained airplane battery was found in the wreckage. The unrestrained battery was in addition to the airplane battery secured in the aft fuselage. The unrestrained battery was found resting next to the pilot.

The 1957 Cessna 175 did not have shoulder harnesses installed and was not required to have them installed at the time it was certified.

TESTS AND RESEARCH

The engine was shipped to its manufacturer, Teledyne Continental Motors, Inc. (TCM), in Mobile, Alabama, for a disassembly examination on March 12, 2006. Examination of the oil cooler revealed that the breaches were in the areas where cross supports had separated. The cooler was filled with liquid to look for other leaks. No other leaks were observed than from the breaches under the supports. The supports were sectioned and microscopic examination revealed the support separations were consistent with overload.

The number four exhaust valve did not exhibit any heat distress and it was not seized when the case and cylinders were examined. The engine case disassembly revealed no heat distress to the bearings. The engine case and cylinders showed no pre-impact anomalies that would have precluded engine operation.

The top of the separated reduction gear case was coated with a liquid consistent with oil. The case was disassembled. The upper right section of the nose seal assembly, which sealed against the case, exhibited an area coated with a liquid consistent with oil. The remainder of the seal was intact and was not coated with liquid.

ADDITIONAL DATA/INFORMATION

Advisory Circular 91-65, Use of Shoulder Harness in Passenger Seats, in part, stated:

The [National Transportation Safety Board] found that 20 percent of the fatally injured occupants in these accidents could have survived with shoulder harnesses (assuming the seat belt fastened) and 88 percent of the seriously injured could have had significantly less severe injuries with the use of shoulder harnesses. Energy absorbing

seats could have benefited 34 percent of the seriously injuries. The safety board concluded that shoulder harness use is the most effective way of reducing fatalities and serious injuries in general aviation accidents.

The parties to the investigation included the FAA, Cessna Aircraft Company, and TCM

The aircraft wreckage was released to a representative of the insurance company.

Pilot Information

Certificate:	Commercial	Age:	48, Male
Airplane Rating(s):	Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	Balloon	Restraint Used:	Seatbelt
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	Yes
Medical Certification:	Class 3 Without Waivers/Limitations	Last FAA Medical Exam:	04/01/2006
Occupational Pilot:		Last Flight Review or Equivalent:	07/01/2005
Flight Time:	1500 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	Registration:	N9408B
Model/Series:	175	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	55208
Landing Gear Type:	Tricycle	Seats:	4
Date/Type of Last Inspection:	06/01/2006, Annual	Certified Max Gross Wt.:	2350 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	4297.5 Hours as of last inspection	Engine Manufacturer:	Continental
ELT:	Installed, activated, did not aid in locating accident	Engine Model/Series:	GO-300-D
Registered Owner:	Peter C. Fay	Rated Power:	175 hp
Operator:	Peter C. Fay	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	BTL, 952 ft msl	Distance from Accident Site:	8 Nautical Miles
Observation Time:	1353 EST	Direction from Accident Site:	45°
Lowest Cloud Condition:	Scattered / 1600 ft agl	Visibility	10 Miles
Lowest Ceiling:	Broken / 4700 ft agl	Visibility (RVR):	
Wind Speed/Gusts:	16 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	260°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.16 inches Hg	Temperature/Dew Point:	-1° C / -4° C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	BAD AXE, MI (BAX)	Type of Flight Plan Filed:	None
Destination:	Chicago, IL	Type of Clearance:	None
Departure Time:	1130 EST	Type of Airspace:	

Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Fatal	Latitude, Longitude:	42.413889, -85.127222

Administrative Information

Investigator In Charge (IIC):	Edward F Malinowski
Additional Participating Persons:	John A Beeby; Federal Aviation Administration; Grand Rapids, MI Jason Lukasik; Teledyne Continental Motors, Inc.; Mobile, AL Tom Moody; Cessna Aircraft Company; Wichita, KS
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/ .