



Aviation Investigation Final Report

Location:	Sebewaing, Michigan	Accident Number:	CEN11FA029
Date & Time:	October 18, 2010, 17:49 Local	Registration:	N105AC
Aircraft:	American Champion Aircraft 8KCAB	Aircraft Damage:	Substantial
Defining Event:	Loss of control in flight	Injuries:	2 Fatal
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

A certified flight instructor was conducting a flight review with a private pilot who was the airplane owner. One witness, who was a pilot, observed the takeoff roll and reported that the engine sounded normal. Another witness, who lived near the accident site, observed the airplane takeoff and climb above power lines that were south of the departure end of the runway. The witness reported that the airplane's engine "sputtered" and the airplane banked to the left. The airplane then turned back toward the airport and the engine lost power completely. The airplane subsequently nose dived into a cornfield and a postcrash fire ensued. A postaccident examination of the airplane revealed one propeller blade with a chordwise abrasion and leading edge nicks. No anomalies were found with the engine or the other airplane systems. Examination of the accident site revealed no damage to the powerlines that surrounded the area. Additionally, there was a suitable forced landing area straight ahead on the departure flight path, south of the power lines that bounded the cornfield.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's failure to maintain airspeed and aircraft control following a loss of engine power after takeoff.

Findings

Aircraft	Pitch control - Not attained/maintained
Personnel issues	Aircraft control - Pilot
Not determined	(general) - Unknown/Not determined
Personnel issues	Aircraft control - Instructor/check pilot
Personnel issues	Decision making/judgment - Pilot

Factual Information

History of Flight

Takeoff	Loss of engine power (partial)
Emergency descent	Off-field or emergency landing
Emergency descent	Loss of control in flight (Defining event)
Uncontrolled descent	Collision with terr/obj (non-CFIT)

HISTORY OF FLIGHT

On October 18, 2010, about 1749 eastern daylight time, an American Champion Aircraft Corp. 8KCAB, N105AC, impacted terrain after taking off from the Sebewaing Airport (98G), near Sebewaing, Michigan. The airplane crashed into an open cornfield about 0.25 nautical miles south of the departure end of runway 18 (2,178 feet by 50 feet, dry asphalt). The airplane sustained substantial damage when it impacted terrain. A post-impact ground fire occurred. The pilot, who held a private pilot certificate, and the certified flight instructor (CFI), who held a commercial pilot certificate, were fatally injured. The CFI was providing a flight review to the pilot. Visual meteorological conditions prevailed at the time of the accident. The instructional flight was performed under the provisions of 14 CFR Part 91. No flight plan was on file for the flight. The flight departed from the Dupont-Lapeer Airport (D95), near Lapeer, Michigan, about 1700, performed a full stop landing at 98G, and was returning to D95 at the time of the accident.

A witness at 98G saw the accident airplane land there on runway 18. The airplane taxied back on runway 18. He observed the airplane holding on the runway for three to four minutes with its engine at "fast idle." The witness saw the takeoff roll and the engine "sounded normal for take-off."

Another witness who lived near the accident site saw the airplane takeoff. She saw the airplane above power lines that were about 0.3 nautical miles south of the departure end of runway 18. The airplane's engine "sputtered" and the airplane banked to the left. According to the witness, the airplane was "completely turned back toward the airport." She said the engine "quit completely." The airplane subsequently "took a nose dive into the field."

PERSONNEL INFORMATION

The 54 year old front seat pilot held a Federal Aviation Administration (FAA) private pilot certificate with an airplane single engine land rating. He held a FAA third-class medical certificate dated January 8, 2010. The pilot recorded in his logbooks that he had accumulated 979.2 hours of total flight time. His last flight review was dated October 24, 2008.

According to FAA records, the 52 year old rear seat CFI was issued a commercial pilot certificate with an airplane multiengine land rating limited to center thrust and an instrument airplane rating on October 13, 1983, based on military competence provisions allowed under 14 CFR Part 61.73 Military Pilots or Former Military Pilots: Special Rules. He also held a FAA commercial pilot certificate with airplane single engine land and instrument ratings. He held a flight instructor certificate. He held a FAA second-class medical certificate issued to him in April 1, 2009, and he reported that he accumulated 2,675 hours of total flight time on the application for that medical certificate. The CFI's logbooks showed that he had recorded 188.4 hours of total flight time. The CFI's last flight review was dated April 9, 2009. The pilot reported that he had accumulated 2,765 hours of total flight time on his CFI application dated April 9, 2007.

AIRCRAFT INFORMATION

N105AC was an American Champion Aircraft Corp. 8KCAB, dual strutted, high-wing, fabric covered fuselage and wing airplane with serial number 647-91. The tailwheel airplane had fixed landing gear and accommodated a pilot and a single passenger in a tandem seat arrangement. The airplane was equipped with dual flight controls. The airplane was powered by a 180-horsepower Lycoming AEIO-360-H1A engine with serial number L-2566-51A. Its propeller was a Hartzell HC-C2YL-4, marked with serial number AU113168. Airworthiness records showed that the airplane's standard airworthiness certificate was issued on June 28, 1991, and that the airplane was certificated for both normal and acrobatic categories. Logbook entries showed that the last annual inspection was completed on March 11, 2010, and the airplane had accumulated 974.6 hours of total time at the time of that inspection. The pilot owned and operated N105AC.

METEOROLOGICAL INFORMATION

At 1755, the recorded weather located 177 degrees and about 16 nautical miles from the accident site at the Tuscola Area Airport, near Caro, Michigan, was: wind 260 degrees at 3 knots; visibility 10 statute miles; sky condition broken 8,000 feet; temperature 11 degrees C; dew point 1 degree C; altimeter 29.96 inches of mercury.

WRECKAGE AND IMPACT INFORMATION

The airplane was found resting upright on about a 320-degree heading in a harvested cornfield about 0.25 nautical miles south of the departure end of runway 18. The power lines around the cornfield were intact. The fabric covering the fuselage and right wing was consumed by fire. A circular patch of ground about the right wing exhibited charred corn stalks and terrain. Fuel was found in the left fuel tank. The right fuel tank sustained fire damage.

An on-scene examination of the wreckage was conducted. Flight control cables were traced from the flight controls to their respective flight control surfaces. Flight control continuity was established. The propeller hub and its crankshaft flange separated from the engine crankshaft. One propeller blade exhibited chord abrasion and polishing. That propeller blade also had leading edge nicks. The engine crankshaft rotated when an accessory drive was rotated. All valves were observed to operate and each cylinder produced a thumb compression. The left magneto sustained heat damage and did not rotate. The right magneto sustained heat damage and it produced spark at its center electrode. Fuel and oil screens were free of debris. The engine driven fuel pump sustained fire damage. Disassembly of that pump revealed no anomalies other than fire damage. The electric fuel pump emitted a liquid consistent with the smell of aviation gasoline when electric power was applied. The electric pump was able to pump a liquid when electric power was applied. The muffler's exhaust tubes exhibited deformation consistent with impact damage. The spark plugs were normal using a spark plug chart. A borescope examination of the pistons and cylinders revealed no anomalies.

MEDICAL AND PATHOLOGICAL INFORMATION

An autopsy was performed on each pilot by the Huron County Coroner's Office. The autopsy listed multiple traumatic injuries and burns due to an airplane crash as each pilot's cause of death.

The FAA Civil Aerospace Medical Institute prepared a Final Forensic Toxicology Accident Report on both pilots. The reports on both pilots were negative for the tests performed.

ADDITIONAL INFORMATION

The terrain south of the accident cornfield was examined. There was a suitable straight ahead forced landing field south of the power lines that bounded the cornfield.

Pilot Information

Certificate:	Private	Age:	54, Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Front
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	None	Second Pilot Present:	Yes
Instructor Rating(s):	None	Toxicology Performed:	Yes
Medical Certification:	Class 3 Without waivers/limitations	Last FAA Medical Exam:	January 8, 2010
Occupational Pilot:	No	Last Flight Review or Equivalent:	October 24, 2008
Flight Time:	979 hours (Total, all aircraft)		

Flight instructor Information

Certificate:	Commercial	Age:	53, Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Rear
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	Airplane single-engine	Toxicology Performed:	Yes
Medical Certification:	Class 2 With waivers/limitations	Last FAA Medical Exam:	April 1, 2009
Occupational Pilot:	UNK	Last Flight Review or Equivalent:	April 9, 2009
Flight Time:	2765 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	American Champion Aircraft	Registration:	N105AC
Model/Series:	8KCAB	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	647-91
Landing Gear Type:	Tailwheel	Seats:	2
Date/Type of Last Inspection:	March 11, 2010 Annual	Certified Max Gross Wt.:	1800 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	975 Hrs as of last inspection	Engine Manufacturer:	LYCOMING
ELT:	Installed	Engine Model/Series:	AEIO-360-H1A
Registered Owner:	ALLAN C LUMLEY	Rated Power:	180 Horsepower
Operator:	ALLAN C LUMLEY	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	CFS,701 ft msl	Distance from Accident Site:	16 Nautical Miles
Observation Time:	17:55 Local	Direction from Accident Site:	177°
Lowest Cloud Condition:		Visibility	10 miles
Lowest Ceiling:	Broken / 8000 ft AGL	Visibility (RVR):	
Wind Speed/Gusts:	3 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	260°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.95 inches Hg	Temperature/Dew Point:	11°C / 1°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Lapeer, MI (D95)	Type of Flight Plan Filed:	None
Destination:	Lapeer, MI (D95)	Type of Clearance:	None
Departure Time:	17:00 Local	Type of Airspace:	

Airport Information

Airport:	Sebewaing Airport 98G	Runway Surface Type:	Asphalt
Airport Elevation:	584 ft msl	Runway Surface Condition:	Dry
Runway Used:	18	IFR Approach:	None
Runway Length/Width:	2178 ft / 50 ft	VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	2 Fatal	Aircraft Damage:	Substantial
Passenger Injuries:		Aircraft Fire:	On-ground
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 Fatal	Latitude, Longitude:	43.729167,-83.462501(est)

Administrative Information

Investigator In Charge (IIC):	Malinowski, Edward
Additional Participating Persons:	Daniel S Unger; Federal Aviation Administration; Detroit, MI Troy Helgeson; Lycoming Engines; Milliken, CO
Original Publish Date:	October 6, 2011
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=77629

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](#).