



Aviation Investigation Factual Report

Location:	Shelbyville, Indiana	Accident Number:	CEN09LA396
Date & Time:	June 28, 2009, 21:25 Local	Registration:	N9085L
Aircraft:	Champion 7GCAA	Aircraft Damage:	Substantial
Defining Event:	Loss of engine power (partial)	Injuries:	2 None
Flight Conducted Under:	Part 91: General aviation - Instructional		

Factual Information

On June 28, 2009, at 2125 eastern daylight time, a Champion 7GCAA single-engine airplane, N9085L, sustained substantial damage during a forced landing to a field near Shelbyville, Indiana. The airline transport pilot was not injured and the student pilot sustained minor injuries. The airplane was registered to Tecumseh Aircraft Partners, LLC, San Diego, California, and operated by the pilot. Visual meteorological conditions prevailed and a flight plan was not filed for the Code of Federal Regulations Part 91 flight. The flight departed Boggstown, Indiana, at 2020, and was destined for Columbus, Indiana.

According to the pilot, who was seated in the rear seat, he and the student pilot had completed several landings at various airports in the area. After departure from Boggstown, at 1,100 feet mean sea level (msl), the pilot pulled the engine power to idle to practice a simulated engine out maneuver. At 150 feet above ground level, the pilot increased the engine power; however, the engine did not respond. The pilot then attempted a forced landing to a field. During the landing flare, "the engine tried to come back..." After touchdown, the airplane ground looped and sustained substantial damage. The pilot reported to the Federal Aviation Administration (FAA) that the flight was a personal flight, and not an instructional flight. The pilot did not have a flight instructor certificate for single-engine airplanes.

The pilot also reported to the FAA that had the airplane not been damaged during the forced landing, he would have restarted the engine in the field and departed to his intended destination.

According to local authorities who were the first responders to the accident site, the pilot reported to them that "he was instructing [the student pilot] in a maneuver for engine failure/shutdown and also touch and go landings."

The pilot reported he had accumulated a total of 4 hours in the accident airplane.

Examination of the airplane by FAA inspectors revealed the left main landing gear separated from the fuselage, the right main wing spar was broken, and one propeller blade was bent aft. The engine controls, flight instruments, fuel selector, and elevator trim were accessible only by the front seat position, the rear seat position had access only to the throttle and carburetor heat controls. The airplane was recovered for further examination.

Examination of the engine at the accident site by FAA inspectors revealed no anomalies that would have precluded normal engine operation.

On July 9, 2009, the NTSB investigator-in-charge received a telephone call from the FAA inspector, who was assigned to the accident investigation, regarding a fractured landing gear

attach thru-bolt. According to the inspector, the mechanic who recovered the airplane from the field contacted him and stated he observed the left main landing gear attach thru-bolt on the accident airplane had a preexisting crack which led to the failure of the left main landing gear during the forced landing. The fractured bolt was retained by the FAA and forwarded to the NTSB materials laboratory for further examination.

NTSB materials laboratory examination of the landing gear attach bolt showed the bolt shank contained a preexisting crack; however, the fracture surface contained corrosion. After cleaning the fracture surface, the bolt fracture surface contained signatures consistent with fatigue and overload.

According to the airframe manufacturer service letter, at every 500 hour interval, the landing gear attach bolt was to be removed and replaced, or inspected with a magnetic particle inspection. Examination of the airframe records showed that this service letter had not been accomplished in the preceding 500 hours. The airframe records also showed the airplane's last annual inspection had been completed in August 2007, and not within the preceding 12 months. The FAA inspector reported that prior to the flight, the pilot had not reviewed the airplane logbooks to determine if the airplane was airworthy.

On August 7, 2009, two additional FAA inspectors examined the engine. Mechanical continuity was noted in the engine and accessories. The carburetor had been previously removed and disassembled by the cargo company director of maintenance. Examination of the carburetor revealed the mixture control cable was broken near the carburetor control arm attach point, and the carburetor attach hardware and remained cable were found secure. The cable fracture surfaces contained oxidation. The director of maintenance stated that he thought the mixture cable was just loose and had not broken the cable when he removed the carburetor. Inspection of the carburetor showed the carburetor inside throat area was covered in black soot.

Pilot Information

Certificate:	Airline transport; Commercial	Age:	40, Male
Airplane Rating(s):	Single-engine land; Single-engine sea; Multi-engine land	Seat Occupied:	Rear
Other Aircraft Rating(s):	Glider	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	Glider	Toxicology Performed:	No
Medical Certification:	Class 1 Without waivers/limitations	Last FAA Medical Exam:	December 5, 2008
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	June 15, 2009
Flight Time:	4700 hours (Total, all aircraft), 4 hours (Total, this make and model), 3790 hours (Pilot In Command, all aircraft), 100 hours (Last 90 days, all aircraft), 20 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Student pilot Information

Certificate:	Student	Age:	21, Male
Airplane Rating(s):	None	Seat Occupied:	Front
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 3	Last FAA Medical Exam:	
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:			

Aircraft and Owner/Operator Information

Aircraft Make:	Champion	Registration:	N9085L
Model/Series:	7GCAA	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	226-70
Landing Gear Type:	Tailwheel	Seats:	2
Date/Type of Last Inspection:	August 1, 2007 Annual	Certified Max Gross Wt.:	1650 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:		Engine Manufacturer:	Lycoming
ELT:	Installed, activated, did not aid in locating accident	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:	GEZ	Distance from Accident Site:	5 Nautical Miles
Observation Time:		Direction from Accident Site:	230°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	/ None	Turbulence Type Forecast/Actual:	/
Wind Direction:		Turbulence Severity Forecast/Actual:	/
Altimeter Setting:		Temperature/Dew Point:	
Precipitation and Obscuration:			
Departure Point:	Boggstown, IN (58II)	Type of Flight Plan Filed:	None
Destination:	Shelbyville, IN	Type of Clearance:	None
Departure Time:	20:20 Local	Type of Airspace:	

Wreckage and Impact Information

Crew Injuries:	2 None	Aircraft Damage:	Substantial
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 None	Latitude, Longitude:	39.76889,-85.833885(est)

Administrative Information

Investigator In Charge (IIC):	Sauer, Aaron
Additional Participating Persons:	Ken Howe; Federal Aviation Administration; Indianapolis, IN
Report Date:	November 3, 2009
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=74166

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](#).