Aviation Investigation Final Report

Location:	Bardwell, Kentucky	**Accident Number:**	ERA14LA222
Date & Time:	May 4, 2014, 16:35 Local	**Registration:**	N9588S
Aircraft:	Champion 7GCAA	**Aircraft Damage:**	Substantial
Defining Event:	Aerodynamic stall/spin	**Injuries:**	2 Minor
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot performed an engine run-up before takeoff, which included checking both magnetos; he noted that each decreased 75 rpm. He applied takeoff power, and, with the engine developing full red-line rpm, the airplane became airborne in about 500 to 600 feet. After becoming airborne, he levelled off the airplane to accelerate then began to climb, turning to a southwesterly direction. The airplane climbed to between 150 and 200 feet, and, after the pilot reduced power, the airplane began to descend. He reported that he then applied full power; the engine responded, but the airplane continued to descend. The airplane impacted a field and then nosed over; both occupants exited the airplane. The passenger reported that a wind from the right occurred before the airplane pitched nose down. The pilot indicated that there was no flight control or engine issue, which was confirmed by the passenger. Although the pilot and passenger both reported an event associated with the wind that caused the airplane to descend, the nose-down pitch attitude described by the passenger was consistent with an aerodynamic stall/mush.

Immediately after the accident, the pilot was taken to a hospital for treatment. Attending medical professionals and a law enforcement officer reported that, while there, he smelled of alcohol; however, the pilot left the hospital before toxicology testing could be performed. Therefore, no determination could be made whether the pilot was impaired by alcohol at the time of the accident.

Probable Cause and Findings

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

The failure of the pilot to maintain airspeed while maneuvering shortly after takeoff, resulting in the airplane exceeding its critical angle of attack and experiencing an aerodynamic stall, uncontrolled descent, and impact with the ground.

Findings

Aircraft	Airspeed - Not attained/maintained
Personnel issues	Aircraft control - Pilot

Factual Information

History of Flight

Initial climb	Aerodynamic stall/spin (Defining event)
Uncontrolled descent	Collision with terr/obj (non-CFIT)

On May 4, 2014, about 1635 central daylight time, a Champion 7GCAA, N9588S, collided with terrain less than 3/10's of a mile from the departure airstrip near Bardwell, Kentucky. The private pilot and one passenger sustained minor injuries and the airplane was substantially damaged. The airplane was registered to and operated by a private individual, under the provisions of 14 Code of Federal Regulations (CFR) Part [91 as a personal, local flight. Visual meteorological conditions prevailed at the time and no flight plan was filed. The flight originated less than 1 minute earlier from a runway located adjacent to the pilot's sister's house.

The pilot stated that earlier that day he had flown the airplane from his house to the runway adjacent to his sister's house and after landing secured the engine. He reported that there were no issues with the airplane during that flight, and he remained on the ground about 30 minutes. He and the passenger (his nephew) then boarded the airplane for a local flight. The pilot further stated that he performed an engine run-up before takeoff which included checking both magnetos noting each decreased equally 75 rpm. He applied takeoff power noting the engine was developing full red line rpm, and became airborne in about 500 to 600 feet. After becoming airborne he levelled off to accelerate then began to climb turning to a southwesterly direction, or into the wind which was from the south at 10 to 15 knots with occasional gusts. The airplane climbed to between 150 and 200 feet, and with the engine operating at 2,400 rpm (reduced by him to that setting), the airplane began descending. He applied full power and reported the engine did respond but the airplane continued to descend. The airplane impacted in a field and then nosed over; both occupants exited the airplane. The pilot was taken to a hospital by relatives for treatment of his injuries.

A trooper from Kentucky State Police (KSP) went to the hospital where the pilot was taken for treatment of his injuries. The trooper reported communicating with the pilot and noting that he smelled of alcohol. A doctor and nurse also reported to the trooper that the pilot smelled of alcohol; however, the pilot left the hospital before toxicology testing was performed. He later indicated he left the hospital because he was feeling OK, and not because he wanted to avoid toxicological testing.

The passenger reported to a KSP trooper that the takeoff was ok, and after climbing above trees in a turn, "…a big 'gulp' of wind came from the right side of the airplane which nose dived." He indicated the airplane hit nose first and then nosed over. The trooper informed the passenger that she smelled alcohol on the pilot's breath, and asked him if the pilot had been drinking. The passenger reported that he never saw a beer, but the way the pilot was slurring his words he didn't know if it was the blood or something else. The passenger also indicated the pilot had just shown up 5 to 10 minutes before they departed.

The Federal Aviation Administration (FAA) inspector-in-charge interviewed the pilot the day after the accident at the accident site. During that interview the inspector asked the pilot if there was a flight

control malfunction to which he replied no. He also asked the pilot if the engine was operating properly at the time of the accident and he indicated it was. The inspector asked the pilot if he was intoxicated at the time of the flight and whether he had been drinking before the accident. The FAA inspector reported the pilot indicated he had not, and then asked him when was the last time he consumed alcohol prior to the accident and he indicated he had a few drinks the night before, but that was only beer and not "hard liquor." During the interview, a trooper from the KSP arrived at the accident site and began interviewing the pilot. The trooper asked questions of the pilot about intoxication, and he replied that was not the case. The pilot was also confronted about the fact that medical professionals and another KSP trooper smelled alcohol on him while he was in the hospital; he denied the accusations and offered an excuse saying his cologne had alcohol in it.

The FAA inspector-in-charge interviewed the passenger and asked him if the pilot was intoxicated at the time of the accident. The passenger indicated he did not see the pilot drinking any alcohol but also indicated the pilot had only arrived there several minutes before the accident flight. The passenger did indicate that had he thought the pilot had been drinking, he would not have flown with him. The passenger was asked if the engine was running normally during the flight and he responded that it sounded normal to him.

Two days after the accident, the FAA inspector-in-charge met with the pilot and reviewed the maintenance records and pilot logbooks. During that review, he noted the airplane was out of annual and the pilot's last flight review was more than 2 years ago.

Postaccident inspection of the wreckage by the FAA inspector-in-charge revealed the left wing had been cut by first responders due to fuel leakage. The tank contained some fuel however a sample was not taken. The right fuel tank was greater than ½ full, and the fuel was blue in color consistent with 100 low lead (100LL); no contaminants were noted. Because of the position of the engine, he was unable to access the fuel strainer or carburetor. He confirmed the fuel selector was in the "on" position.

Further inspection of the wreckage by the FAA inspector-in-charge revealed rudder flight control continuity was confirmed; however, he was unable to confirm continuity for elevator or aileron. All engine controls from the cockpit remained connected at their respective attach points at the carburetor; the throttle and mixture controls were full forward. Because of the position of the airplane, he was unable to rotate the Lycoming O-320-A2B, S/N L-15766-27A, through 360 degrees of rotation; however, there was no evidence of preimpact failure or malfunction. He inspected the No. 1 cylinder top spark plug, and noted it was dry, not wet, and was black in color. Inspection of the propeller revealed 1 blade was bent slightly forward, then bent sharply aft, while the second blade was bent aft, exhibited leading edge twisting towards low pitch, and had several deep gouges on the leading edge of the blade at the blade tip. The blade also exhibited chordwise scratches on the blade face.

Pilot Information

Certificate:	Private	**Age:**	47
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Front
Other Aircraft Rating(s):	None	**Restraint Used:**	4-point
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 Without waivers/limitations	**Last FAA Medical Exam:**	September 29, 2009
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	November 10, 2010
Flight Time:	700 hours (Total, all aircraft), 150 hours (Total, this make and model), 700 hours (Pilot In Command, all aircraft), 24 hours (Last 90 days, all aircraft), 10 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Champion	**Registration:**	N9588S
Model/Series:	7GCAA	**Aircraft Category:**	Airplane
Year of Manufacture:	1965	**Amateur Built:**	
Airworthiness Certificate:	Aerobatic; Normal	**Serial Number:**	7
Landing Gear Type:	Tailwheel	**Seats:**	2
Date/Type of Last Inspection:	August 28, 2012 Annual	**Certified Max Gross Wt.:**	1650 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	2395 Hrs as of last inspection	**Engine Manufacturer:**	Lycoming
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	O-320-A2B
Registered Owner:	KING MARK A	**Rated Power:**	150 Horsepower
Operator:	KING MARK A	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	PAH,410 ft msl	**Distance from Accident Site:**	17 Nautical Miles
Observation Time:	16:53 Local	**Direction from Accident Site:**	39°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	11 knots / 19 knots	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	220°	**Turbulence Severity Forecast/Actual:**	/ Moderate
Altimeter Setting:	29.87 inches Hg	**Temperature/Dew Point:**	31°C / 8°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Bardwell, KY (None)	**Type of Flight Plan Filed:**	None
Destination:	Bardwell, KY (None)	**Type of Clearance:**	None
Departure Time:	16:35 Local	**Type of Airspace:**	

Airport Information

Airport:	Private None	**Runway Surface Type:**	Grass/turf
Airport Elevation:	525 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	19	**IFR Approach:**	None
Runway Length/Width:	1200 ft / 100 ft	**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	1 Minor	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 Minor	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Minor	**Latitude, Longitude:**	36.839168,-88.995834

Administrative Information

Investigator In Charge (IIC):	Monville, Timothy
Additional Participating Persons:	Matthew J Galica; FAA/FSDO; Louisville, KY
Original Publish Date:	February 11, 2015
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=89166