Aviation Investigation Final Report

Location:	Milton, Florida	**Accident Number:**	ERA19FA020
Date & Time:	October 19, 2018, 10:00 Local	**Registration:**	N107KW
Aircraft:	Bowers Flybaby	**Aircraft Damage:**	Substantial
Defining Event:	Loss of engine power (partial)	**Injuries:**	1 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot was flying the experimental, amateur-built airplane to a nearby airport to conduct touch-and-go takeoffs and landings. Witnesses near the accident site heard the airplane's engine power increasing and decreasing. One witness stated that, about 100 ft above ground level, the airplane's wings started to rock back and forth, then the airplane entered a roll to the left, followed by a steep uncontrolled descent until it impacted with trees and terrain.

Postaccident examination of the airplane, engine, and fuel system revealed no mechanical deficiencies that would have precluded normal operation; however, witness reports of repeated fluctuations in power settings, combined with a lack of rotational damage to the propeller, suggest that the engine may have experienced a loss of power. Although conditions at the time of the accident were conducive to serious carburetor icing at glide power settings, the airplane was likely en route and operating at a higher power setting when the engine began to experience a loss of power for reasons that could not be determined based on the available evidence. The accident site was located in an area of numerous fields that would have allowed for a forced landing; whether the pilot was attempting to maneuver to one of these fields could not be determined. The circumstances of the accident are consistent with the pilot's exceedance of the airplane's critical angle of attack and an aerodynamic stall/spin at low altitude.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: A loss of engine power for reasons that could not be determined, and the pilot's subsequent exceedance of the airplane's critical angle of attack, which resulted in an aerodynamic stall at low altitude.

Findings

Not determined	(general) - Unknown/Not determined
Aircraft	Airspeed - Not attained/maintained
Aircraft	Angle of attack - Capability exceeded
Personnel issues	Aircraft control - Pilot

Factual Information

History of Flight

Enroute	Loss of engine power (partial) (Defining event)
Maneuvering	Aerodynamic stall/spin

On October 19, 2018, at 1000 central daylight time, an experimental, amateur-built Bowers Flybaby, N107KW, was substantially damaged when it was involved in an accident near Milton, Florida. The pilot was fatally injured. The flight was conducted as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

The owner of the airplane reported that the accident pilot was his friend and an experienced military and airline pilot. He stated that the pilot routinely flew the accident airplane to nearby airports to conduct touch-and-go takeoffs and landings. The owner reported that he assisted the pilot with the preflight inspection before the accident flight; they topped off the fuel tank with 12 gallons of fuel, then the owner "hand propped" the engine with the pilot in the cockpit and watched him depart the airport traffic pattern to the east. During takeoff and climb, the engine sounded "good and solid."

Witnesses near the accident site stated that they heard the airplane's engine power increasing and decreasing. One witness stated that the airplane descended to about 100 ft above ground level, just above the treetops, when the wings started to rock back and forth. The airplane then made a left turn to the south, immediately rolled left and descended steeply until impact. An additional witness stated that he heard a "backfire" as the airplane was descending.

Pilot Information

Certificate:	Airline transport; Flight engineer	**Age:**	68,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Single
Other Aircraft Rating(s):	None	**Restraint Used:**	4-point
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:**	June 16, 2016
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	August 9, 2018
Flight Time:	7859 hours (Total, all aircraft), 16 hours (Total, this make and model), 11.8 hours (Last 90 days, all aircraft), 4.5 hours (Last 30 days, all aircraft)		

The pilot had completed the requirements of BasicMed on June 19, 2018. The pilot's logbooks showed a total of 16 hours in the accident airplane make and model as of the last entry recorded on September 23, 2018, with 4.6 hours and 7.1 hours in the previous 30 and 90 days,

respectively.

Aircraft and Owner/Operator Information

Aircraft Make:	Bowers	**Registration:**	N107KW
Model/Series:	Flybaby	**Aircraft Category:**	Airplane
Year of Manufacture:	2008	**Amateur Built:**	Yes
Airworthiness Certificate:	Experimental (Special)	**Serial Number:**	01
Landing Gear Type:	Tailwheel	**Seats:**	1
Date/Type of Last Inspection:	April 26, 2018 Condition	**Certified Max Gross Wt.:**	925 lbs
Time Since Last Inspection:	23 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	as of last inspection	**Engine Manufacturer:**	Continental
ELT:	Not installed	**Engine Model/Series:**	A-80-8
Registered Owner:		**Rated Power:**	80 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None

According to FAA airworthiness and airplane maintenance records, the airplane was issued a special airworthiness certificate in the experimental category on September 20, 2008. It was a single place, open cockpit, low wing, tailwheel-equipped airplane constructed of wood and fabric. According to the airplane logbooks, during the last condition inspection on April 26, 2018, the left exhaust stack was repaired with welding; no additional mechanical irregularities were noted during the inspection.

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	CEW,213 ft msl	**Distance from Accident Site:**	15 Nautical Miles
Observation Time:	10:25 Local	**Direction from Accident Site:**	75°
Lowest Cloud Condition:		**Visibility**	10 miles
Lowest Ceiling:	Overcast / 1000 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	5 knots /	**Turbulence Type Forecast/Actual:**	None / None
Wind Direction:	90°	**Turbulence Severity Forecast/Actual:**	N/A / N/A
Altimeter Setting:	30.26 inches Hg	**Temperature/Dew Point:**	24°C / 19°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Harold, FL (8FL6)	**Type of Flight Plan Filed:**	None
Destination:		**Type of Clearance:**	None
Departure Time:	09:35 Local	**Type of Airspace:**	Class G

Review of the FAA SAIB CE-09-35 "Carburetor Icing Prevention" chart showed a potential for serious icing at glide power settings for the conditions near the time of the accident.

Airport Information

Airport:	Yellow River Airstrip FD93	**Runway Surface Type:**	
Airport Elevation:	150 ft msl	**Runway Surface Condition:**	Unknown
Runway Used:		**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Fatal	**Latitude, Longitude:**	30.70861,-86.77111

The airplane debris path was confined to an area immediately adjacent to the wreckage near 50-ft-tall trees. There were several fresh broken branches in nearby trees. The airplane collided with trees and

impacted level terrain on a heading of about 120°. The site was located about 500 ft north of a 2-lane highway, about 1,400 ft east of a county road, and 1,000 ft west of a farm pasture. All primary structural components and flight control surfaces were accounted for in the debris field.

The cockpit was crushed, but the pilot's four-point harness remained intact. The magneto switch was in the left magneto position and the key was bent at a 90° angle. The throttle control lever was in the out (idle) position and the carburetor heat and engine primer were in the forward (off) position. The engine remained attached to the firewall, which was separated from the fuselage and was partially imbedded in the ground. Both wings separated from the fuselage at impact but remained partially attached by tension wires and control cables.

The tail section, including the rudder and elevator, remained attached and showed little damage. Control continuity was established from the rudder, elevator, and ailerons to their respective cockpit controls; there was no evidence of any preimpact failures or malfunctions.

One propeller blade was partially fractured about 12 inches from the hub. There was minimal rotational scoring and no evidence of leading edge gouging. The opposing blade remained attached to the hub and was intact.

Examination of the engine revealed that oil was present in the rocker boxes and the galleries. Thumb compression and suction on all cylinders was confirmed with the top spark plugs removed through 720° when the engine was rotated at the propeller hub. All valves, pushrods, and springs operated normally, and the rotation was smooth with no anomalies noted. The pistons appeared well-lubricated and there was no interior engine damage observed. The spark plugs were examined and appeared to have minimal wear when compared to the Champion Check-A-Plug chart.

The left magneto was not damaged and produced spark from all terminals. The right magneto was damaged by impact forces.

The gascolator and its filter were damaged by impact forces and devoid of fuel, but had an odor consistent with 100 low-lead aviation fuel; the fuel filter screen was free of debris. The carburetor was impact damaged near the air intake and throttle disk, but the internal components remained intact; the brass float, plunger, and damper remained in their respective locations and did not appear to be damaged. The fuel line leading to the carburetor contained residual fuel. The 12-gallon fuel tank, which was mounted on the firewall, was breached during the impact and contained about 2 gallons of fuel. A water-finding paste was used to test the fuel and it did not reveal the presence of water.

Medical and Pathological Information

The Office of Medical Examiner, District One, Florida, performed the autopsy on the pilot and determined that the manner of death was multiple blunt traumatic injuries.

Toxicological testing performed on specimens from the pilot by the Federal Aviation Administration Forensic Sciences Laboratory was negative for carbon monoxide, drugs, and ethanol.

Administrative Information

Investigator In Charge (IIC):	Mccarter, Lawrence
Additional Participating Persons:	Clayton Caessens; FAA FSDO; Birmingham, AL
Original Publish Date:	September 23, 2020
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=98513