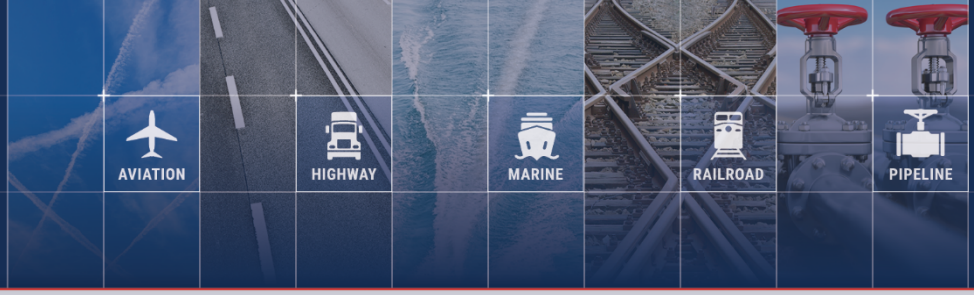

Aviation Investigation Final Report

Location:	Bolivar, Missouri	**Accident Number:**	CEN18FA186
Date & Time:	May 22, 2018, 09:30 Local	**Registration:**	N622DP
Aircraft:	James Donald Baker Zenith	**Aircraft Damage:**	Destroyed
Defining Event:	Loss of control in flight	**Injuries:**	1 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The private pilot departed for a local personal flight in the experimental airplane that he had built and flown for about 500 hours. A witness saw the airplane flying about 50 feet above trees with the nose oscillating up and down. According to the witness, the engine was not "making any strange noises [and had a] steady tone." The airplane struck trees and impacted the ground about 0.75 mile south of the airport.

Postaccident examination of the airframe, engine, and propeller revealed no discrepancies or anomalies that would have prevented normal operation.The damage to the propeller blades was consistent with rotation at impact. An autopsy of the pilot was not performed. According to the toxicology report, no ethanol or drugs were detected. Given the oscillations described by the witness, it is likely that the pilot did not maintain airplane control following the takeoff.

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 airplane control after takeoff.

Findings

Personnel issues	Aircraft control - Pilot
Aircraft	Pitch control - Not attained/maintained
Environmental issues	Tree(s) - Contributed to outcome

Factual Information

History of Flight

Initial climb	Loss of control in flight (Defining event)
Uncontrolled descent	Collision with terr/obj (non-CFIT)

On May 22, 2018, about 0930 central daylight time, an experimental amateur-built Zenith 601, N622DP, collided with trees and impacted terrain after takeoff from Bolivar Municipal Airport (M17), Bolivar, Missouri. The private pilot was fatally injured, and the airplane was destroyed. The airplane was owned by the pilot who operated it under the provisions of Title 14 *Code of Federal Regulations* Part 91 as a personal flight. Visual meteorological conditions were reported, and no flight plan had been filed. The local personal flight originated about 0925.

According to one witness, the airplane was flying "low above the trees," and the nose "going up and down about 50 feet above the trees." The witness reported that the engine wasn't "making any strange noises [and had a] steady tone."

The accident site was located about 0.75 mile south of M17 between the 16th and 18th holes at the Silo Ridge Golf and Country Club.

Pilot Information

Certificate:	Private	**Age:**	87,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	3-point
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	BasicMed	**Last FAA Medical Exam:**	May 3, 2017
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	1662 hours (Total, all aircraft), 507 hours (Total, this make and model)		

The 87-year-old pilot held a private pilot certificate with an airplane single-engine land rating. He held a BasicMed certificate. The pilot reported having about 1,662 hours of flight experience of which about 507 hours were in the Zenith 601. The pilot also held three repairman experimental aircraft builder certificates.

Aircraft and Owner/Operator Information

Aircraft Make:	James Donald Baker	**Registration:**	N622DP
Model/Series:	Zenith 601	**Aircraft Category:**	Airplane
Year of Manufacture:	2007	**Amateur Built:**	Yes
Airworthiness Certificate:	Experimental light sport (Special)	**Serial Number:**	6-3960-B
Landing Gear Type:	Tricycle	**Seats:**	2
Date/Type of Last Inspection:	Condition	**Certified Max Gross Wt.:**	1200 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	506 Hrs	**Engine Manufacturer:**	Continental
ELT:		**Engine Model/Series:**	C85-12
Registered Owner:	On file	**Rated Power:**	85 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None

The airplane was constructed by the pilot from a kit and was issued a Federal Aviation Administration (FAA) certificate of airworthiness on June 21, 2007. It was powered by a Continental C85-12 engine, serial number 26363-6-12, rated at 85 horsepower, driving a Sensenich 2-blade, fixed pitch, wooden propeller, model number 68X54R. The Hobbs meter on the instrument panel indicated 506.5 hours.

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	SGF,1268 ft msl	**Distance from Accident Site:**	22 Nautical Miles
Observation Time:	09:30 Local	**Direction from Accident Site:**	180°
Lowest Cloud Condition:		**Visibility**	85 miles
Lowest Ceiling:	Broken / 400 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	/	**Turbulence Type Forecast/Actual:**	None / None
Wind Direction:		**Turbulence Severity Forecast/Actual:**	N/A / N/A
Altimeter Setting:	30.07 inches Hg	**Temperature/Dew Point:**	22°C / 21°C
Precipitation and Obscuration:			
Departure Point:	Bolivar, MO (M17)	**Type of Flight Plan Filed:**	None
Destination:	Bolivar, MO (M17)	**Type of Clearance:**	None
Departure Time:	09:25 Local	**Type of Airspace:**	Class G

At 0930, the reported weather at the Springfield-Branson National Airport (SGF), Springfield, Missouri,

located about 21 miles south of the accident site, was wind, calm, visibility, 85 miles, ceiling, 400 feet broken; temperature, 22°C., dew point, 21°C., and altimeter setting, 30.08 inches of mercury.

Airport Information

Airport:	Bolivar Municipal M17	**Runway Surface Type:**	Asphalt
Airport Elevation:	1092 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	18	**IFR Approach:**	None
Runway Length/Width:	4000 ft / 75 ft	**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Fatal	**Latitude, Longitude:**	37.600051,-93.409278(est)

Examination of the accident site revealed evidence consistent with the airplane striking the tops of trees on a magnetic heading of about 140°, descending in a nose-down attitude, and impacting terrain. The horizontal stabilizer was twisted 180° and displayed evidence of tree strikes. The leading edge of the right wing displayed numerous indentations consistent with tree strikes. A tree branch was embedded in the right main landing gear wheel pant. Broken tree branches lay scattered on the ground around the airplane. Flight control continuity was confirmed, and the shattered wooden propeller displayed evidence consistent with rotation at impact.

Medical and Pathological Information

An autopsy of the pilot was not performed. The pilot's death certificate listed the cause of death as blunt force trauma. FAA's Bioaeronautical Science Research Laboratory, Oklahoma City, Oklahoma, performed toxicology testing, and no ethanol or drugs were detected. Cyanide and carbon monoxide testing were no performed.

Administrative Information

Investigator In Charge (IIC):	Scott, Arnold
Additional Participating Persons:	ROD McLAUGHLIN; FAA FLIGHT STANDARDS DISTRICT OFFICE; KANSAS CITY, MO MARC GIBSON; FAA FLIGHT STANDARDS DISTRICT OFFICE; KANSAS CITY, MO RUSTY KNOX; FAA FLIGHT STANDARDS DISTRICT OFFICE; KANSAS CITY, MO
Original Publish Date:	May 29, 2019
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=97300