



AVIATION



HIGHWAY



MARINE



RAILROAD



PIPELINE

# Aviation Investigation Final Report

<b>Location:</b>	Woodstock, Georgia	<b>Accident Number:</b>	ERA19LA037
<b>Date &amp; Time:</b>	November 4, 2018, 09:33 Local	<b>Registration:</b>	N3515J
<b>Aircraft:</b>	Cessna 150	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Aerodynamic stall/spin	<b>Injuries:</b>	1 Fatal, 1 Serious
<b>Flight Conducted Under:</b>	Part 91: General aviation - Personal		

## Analysis

The private pilot and student pilot passenger were departing on a local personal flight from a 2,000-ft-long turf runway. The passenger reported that the airplane seemed to "struggle to climb" after clearing trees near the end of the runway. He heard the stall warning horn activate, and the airplane descended into trees and impacted the ground. Witnesses reported that the airplane "wobbled" as it climbed and that the right wing dropped before the airplane crashed into the woods.

Although the airplane's most recent annual inspection was completed about 8 years before the accident, examination of the airframe and engine did not reveal any evidence of a preaccident malfunction or anomaly. A review of the pilot's logbook revealed no current flight review or recent flight experience, and the pilot did not hold a current medical certificate. Reported wind conditions at a nearby airport indicated that a quartering tailwind may have been present about the time of the accident, with gusts up to 20 knots. Based on the available information, it is likely that the pilot failed to maintain airspeed during the initial climb in gusting wind conditions, which resulted in an exceedance of the airplane's critical angle of attack, an aerodynamic stall, and loss of control.

## 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 during the initial climb in gusting wind conditions, which resulted in an aerodynamic stall and loss of control. Contributing to the accident was the pilot's lack of recent flight experience.

## Findings

<b>Aircraft</b>	Airspeed - Not attained/maintained
<b>Personnel issues</b>	Aircraft control - Pilot
<b>Personnel issues</b>	Recent experience - Pilot
<b>Environmental issues</b>	Gusts - Effect on operation

## Factual Information

### History of Flight

<b>Initial climb</b>	Aerodynamic stall/spin (Defining event)
<b>Initial climb</b>	Loss of control in flight
<b>Uncontrolled descent</b>	Collision with terr/obj (non-CFIT)

On November 4, 2018, about 0933 eastern standard time, a Cessna 150E, N3515J, was substantially damaged after a collision with trees and terrain at Air Acres Airport (5GA4), Woodstock, Georgia. The private pilot was fatally injured, and the passenger was seriously injured. The airplane was privately owned and was operated by the pilot as a Title 14 *Code of Federal Regulations* Part 91 personal flight. Visual meteorological conditions prevailed, and no flight plan was filed for the local flight, which was originating at the time of the accident.

According to the passenger, who possessed a student pilot certificate, the flight departed to the north on runway 36. After clearing trees near the end of the runway, the airplane seemed to "struggle to climb." He heard the stall warning horn activate, and the airplane subsequently descended into the trees.

Two witnesses saw the airplane as it crossed the departure end of runway 36. They reported that the airplane "wobbled" and that the right wing dropped before the airplane descended into the trees.

### Pilot Information

<b>Certificate:</b>	Private	<b>Age:</b>	74,Male
<b>Airplane Rating(s):</b>	Single-engine land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	Lap only
<b>Instrument Rating(s):</b>	None	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 3 Without waivers/limitations	<b>Last FAA Medical Exam:</b>	December 18, 2014
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	877 hours (Total, all aircraft)		

## Pilot-rated passenger Information

<b>Certificate:</b>	Student	<b>Age:</b>	56, Male
<b>Airplane Rating(s):</b>	None	<b>Seat Occupied:</b>	Right
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	Lap only
<b>Instrument Rating(s):</b>	None	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 3 Without waivers/limitations	<b>Last FAA Medical Exam:</b>	June 8, 2017
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	30 hours (Total, all aircraft)		

The pilot, age 74, held a private pilot certificate with an airplane single-engine land rating. He reported 877 total hours of flight experience on his most recent Federal Aviation Administration (FAA) third class medical certificate application, dated December 18, 2014. The certificate expired for all classes on December 31, 2016. The pilot had not applied for BasicMed.

Review of the pilot's logbook revealed that the last recorded flight with a legible date occurred in November 2006. There were no flight reviews recorded in the logbook; however, there were flights logged indicating that the pilot received dual instruction.

The passenger in the right seat held an FAA student pilot and third-class medical certificate, dated June 8, 2017. He reported 30 hours total flight time.

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Cessna	<b>Registration:</b>	N3515J
<b>Model/Series:</b>	150 E	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>	1965	<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Utility	<b>Serial Number:</b>	15061215
<b>Landing Gear Type:</b>	Tricycle	<b>Seats:</b>	2
<b>Date/Type of Last Inspection:</b>	June 17, 2010 Annual	<b>Certified Max Gross Wt.:</b>	1601 lbs
<b>Time Since Last Inspection:</b>	61 Hrs	<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	2586 Hrs at time of accident	<b>Engine Manufacturer:</b>	Continental
<b>ELT:</b>	C91 installed, activated, did not aid in locating accident	<b>Engine Model/Series:</b>	O-200-A
<b>Registered Owner:</b>		<b>Rated Power:</b>	100 Horsepower
<b>Operator:</b>	On file	<b>Operating Certificate(s) Held:</b>	None

The all-metal, two-place, high-wing, single-engine airplane incorporated a fixed tricycle landing gear. The airplane was equipped with a Continental O-200-A, 100-horsepower reciprocating engine and a

McCauley fixed-pitch metal propeller. The airplane was manufactured in 1965 and was purchased by the pilot in August 2007, and later sold to the student pilot in May 2014.

According to the aircraft and engine logbooks, the most recent annual inspection was completed on June 17, 2010. The airplane had been flown about 61 hours since the last inspection. The total airframe time according to the logbooks was 2,586 hours. The engine had accrued 968 hours since major overhaul.

### Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	KRYY, 1040 ft msl	<b>Distance from Accident Site:</b>	9 Nautical Miles
<b>Observation Time:</b>	09:48 Local	<b>Direction from Accident Site:</b>	233°
<b>Lowest Cloud Condition:</b>	Clear	<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>	None	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	13 knots / 20 knots	<b>Turbulence Type Forecast/Actual:</b>	Unknown / Unknown
<b>Wind Direction:</b>	120°	<b>Turbulence Severity Forecast/Actual:</b>	Unknown / Unknown
<b>Altimeter Setting:</b>	30.3 inches Hg	<b>Temperature/Dew Point:</b>	14°C / 4°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	Woodstock, GA (5GA4)	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	Woodstock, GA (5GA4)	<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	09:33 Local	<b>Type of Airspace:</b>	Class G

Cobb County International Airport (RYY), Kennesaw, Georgia, was located about 9 miles southwest of the accident site. The RYY weather at 0948 included wind from 120° at 13 knots with gusts to 20 knots, 10 statute miles visibility, clear sky, temperature 14°C, dew point 4°C, and altimeter setting 30.31 inches of mercury.

Cherokee County Airport (CNI), Canton, Georgia, was located about 12 miles north of the accident site. The CNI weather at 0930 included wind from 080° at 12 knots with gusts to 18 knots, 10 statute miles visibility, clear sky, temperature 12°C, dew point 3°C, and altimeter setting 30.33 inches of mercury.

### Airport Information

<b>Airport:</b>	Air Acres 5GA4	<b>Runway Surface Type:</b>	Grass/turf
<b>Airport Elevation:</b>	918 ft msl	<b>Runway Surface Condition:</b>	Dry
<b>Runway Used:</b>	36	<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>	2000 ft / 100 ft	<b>VFR Approach/Landing:</b>	None

5GA4 was a private-use airport with a single turf runway, oriented north-south. The runway was 2,000 ft long and 100 ft wide. The airport was equipped with a windsock and no weather reporting equipment. Numerous areas of forested land were located at the boundaries of the airport.

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 Fatal	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>	1 Serious	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 Fatal, 1 Serious	<b>Latitude, Longitude:</b>	34.111389,-84.449165

An FAA inspector responded to the accident site and examined the wreckage. The airplane impacted terrain in a heavily-wooded area about 750 ft north-northwest of the departure end of runway 36. The wings, fuselage, and empennage sustained impact damage. The left main landing gear separated during the impact sequence. All major components of the airplane were accounted for at the site. There was no fire. Both wing fuel tanks were breached; however, some residual fuel was observed in each tank.

The wreckage was moved to 5GA4 for further examination. The right wing displayed compression damage from contact with trees inboard of the wing strut. The left wing displayed substantial compression damage to the leading edge at midspan. The empennage was fractured forward of the vertical stabilizer. The nose gear was forced up and aft into the engine cowling from impact forces.

Rudder control cable continuity was established from the rudder pedals to the empennage, where the turnbuckles had been disconnected by recovery personnel. Elevator and aileron control cable continuity was established from the cockpit to the control surfaces. The left wing was removed by recovery personnel. Control cable continuity of the manual wing flaps was established; however, the position at impact could not be established.

The fuel strainer contained automotive gasoline. No contaminants were noted.

The engine was rotated using the cockpit starter control. Suction and compression were observed on each cylinder and internal engine continuity was confirmed. The top spark plug was removed from each cylinder. The electrodes exhibited light wear and normal color when compared to a Champion Check-A-Plug chart. Both magnetos sparked on all leads when rotated.

The propeller remained attached to the engine. One blade exhibited s-bending and chordwise scratching. The other blade was curled forward at the tip. Both blades exhibited rotational impact signatures.

## Medical and Pathological Information

The pilot died in the hospital on November 7, 2018, 3 days after the accident. The State of Georgia death certificate listed the cause of death as hemorrhage as a result of the airplane crash. An autopsy and toxicology testing were not performed.

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Hicks, Ralph
<b>Additional Participating Persons:</b>	Danny Cox; FAA/FSDO; Atlanta, GA Jennifer Barclay; Textron Aviation; Wichita, KS
<b>Original Publish Date:</b>	April 20, 2020
<b>Note:</b>	The NTSB did not travel to the scene of this accident.
<b>Investigation Docket:</b>	<a href="https://data.nts.gov/Docket?ProjectID=98604">https://data.nts.gov/Docket?ProjectID=98604</a>

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).