



# Aviation Investigation Final Report

<b>Location:</b>	Ocala, Florida	<b>Accident Number:</b>	ERA24LA256
<b>Date &amp; Time:</b>	June 8, 2024, 19:50 Local	<b>Registration:</b>	N643E
<b>Aircraft:</b>	Zenith 701	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Loss of control in flight	<b>Injuries:</b>	1 Minor
<b>Flight Conducted Under:</b>	Part 91: General aviation - Personal		

## Analysis

The pilot was flying the experimental amateur-built airplane in the airport traffic pattern. After completing two low approaches to the runway, the pilot was approaching the runway for a third time and had been cleared by the air traffic controller to land. The pilot reported that while on short final approach, he encountered a large number of birds and elected to perform a go-around to the left of the runway; however, the airplane did not climb as the pilot expected and collided with trees short of the runway. The air traffic controller described that while the accident airplane was on final approach, at an altitude about 20 ft above the runway, it abruptly turned 45° left and appeared “out of control.” The airplane subsequently began to climb before it turned hard left and descended in a nose down attitude into the trees.

The pilot had accrued 490 total hours of flight experience, of which 1 hour was in the accident airplane make and model. The owner of the airplane stated that the pilot was attempting to build flight experience to meet the requirements of an airline transport pilot certificate. The owner agreed to let him fly the airplane, but required the pilot to fly with a flight instructor due to his lack of experience in the airplane make and model. The pilot did not follow the owner’s instructions and was flying solo at the time of the accident.

After the accident, the engine was test-run to full power at a recovery facility. Given that the engine was able to be successfully run after the accident, it is unlikely that there was a mechanical failure or malfunction before the accident that would have precluded its normal operation. The temperature and dewpoint conditions at the time of the accident were conducive to the formation of carburetor icing at cruise or idle engine power settings, and the pilot did not describe his use of carburetor heat during the landing approach or go-around attempt. It could not be determined whether or not carburetor icing impacted the engine’s production of power.

The air traffic controller’s description of the airplane’s abrupt left turn, that it appeared “out of control,” and that it descended in a steep nose down attitude suggest that the airplane had encountered an aerodynamic stall during the go-around attempt. The relatively low-energy impact signatures observed on the wreckage were also consistent with this description. Based on the available information, it is likely that the pilot failed to maintain control of the airplane during a go-around attempt, which resulted in an exceedance of the airplane’s critical angle of attack and an aerodynamic stall/spin. Whether a partial loss of engine power preceded this loss of control could not be determined.

**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 aircraft control and his exceedance of the airplane’s critical angle of attack, which resulted in an aerodynamic stall and spin during an attempted go-around.

Findings	
Personnel issues	Aircraft control - Pilot
Aircraft	Angle of attack - Capability exceeded

# Factual Information

## History of Flight

Approach-VFR go-around	Unknown or undetermined
Approach-VFR go-around	Loss of control in flight (Defining event)
Approach-VFR go-around	Aerodynamic stall/spin
Uncontrolled descent	Collision with terr/obj (non-CFIT)

On June 8, 2024, about 1950 eastern daylight time, an experimental amateur-built Zenith 701, N643E, was substantially damaged when it was involved in an accident near Ocala, Florida. The commercial pilot sustained minor injuries. The airplane was operated as a Title 14 Code of Federal Regulations Part 91 personal flight.

The pilot reported that the airplane was on short final approach to runway 36, a 7,467-ft-long runway at Ocala International Airport (OCF), Ocala, Florida. He reported that he encountered a large number of birds and elected to perform a go-around to the left of the runway; however, the airplane “did not climb as expected” and collided with trees near the end of the runway. The pilot did not describe whether or not he utilized carburetor heat during the landing approach or after initiating the go-around.

During an interview with a Federal Aviation Administration (FAA) inspector, an air traffic controller on duty at the time of the accident stated that the airplane departed about 1930 and the pilot stated that he would be “doing pattern work.” The pilot completed two orbits but did not perform any touch-and-go landings. After completing two low approaches, the airplane was cleared to land on runway 36 and turned onto the base leg of the airport traffic pattern. On final approach, at an altitude about 20 ft above the runway, the airplane turned abruptly 45° to the west and appeared out of control. The airplane subsequently began to climb and then turned “hard left and nose-dived” into the trees. The controller did not mention birds during his interview.

Airport security video captured the accident airplane on short final approach. Due to automatic panning, the video did not capture the accident sequence, but no birds were observed when the airplane was on short final approach.

During an interview with an FAA inspector, the airplane owner stated that the pilot was attempting to build flight experience to meet the requirements of an airline transport pilot certificate. He worked for the owner part-time and asked if he could fly the accident airplane. The owner stated that he agreed, but required the pilot to fly with a flight instructor due to his lack of experience in the airplane make and model. The pilot did not follow the owner’s

instructions and was flying solo at the time of the accident. The pilot reported a total flight experience of 490 hours, of which 1 hour was in the accident airplane make and model.

The FAA inspector observed the wreckage nose-down in a wooded area. Both wings were bent forward and sustained damaged to their leading edges. The fuselage also sustained substantial damage.

The wreckage was transported to a recovery facility, where an independent mechanic started the engine and conducted a test run to full power.

The reported wind at OCF at 1951 was from 250° at 8 knots. The reported temperature was 31°C and the dew point was 24°C. The calculated relative humidity at this temperature and dewpoint was 66 percent. Review of the icing probability chart contained within Federal Aviation Administration Special Airworthiness Information Bulletin CE-09-35 revealed the atmospheric conditions at the time of the accident were conducive to icing at "glide [idle] and cruise power."

### Pilot Information

<b>Certificate:</b>	Commercial; Private	<b>Age:</b>	23, Male
<b>Airplane Rating(s):</b>	Single-engine land; Multi-engine land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	3-point
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	
<b>Medical Certification:</b>	Class 1 Without waivers/limitations	<b>Last FAA Medical Exam:</b>	June 23, 2023
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	December 25, 2023
<b>Flight Time:</b>	490 hours (Total, all aircraft), 1 hours (Total, this make and model), 360 hours (Pilot In Command, all aircraft), 120 hours (Last 90 days, all aircraft), 100 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Zenith	<b>Registration:</b>	N643E
<b>Model/Series:</b>	701 NO SERIES	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>	2017	<b>Amateur Built:</b>	Yes
<b>Airworthiness Certificate:</b>	Experimental (Special)	<b>Serial Number:</b>	7-8942
<b>Landing Gear Type:</b>	Tricycle	<b>Seats:</b>	2
<b>Date/Type of Last Inspection:</b>	January 26, 2024 Condition	<b>Certified Max Gross Wt.:</b>	1100 lbs
<b>Time Since Last Inspection:</b>	4 Hrs	<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	65.2 Hrs as of last inspection	<b>Engine Manufacturer:</b>	Continental
<b>ELT:</b>	Installed, activated, did not aid in locating accident	<b>Engine Model/Series:</b>	GPU
<b>Registered Owner:</b>	On file	<b>Rated Power:</b>	90 Horsepower
<b>Operator:</b>	On file	<b>Operating Certificate(s) Held:</b>	None

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	OCF,89 ft msl	<b>Distance from Accident Site:</b>	1 Nautical Miles
<b>Observation Time:</b>	19:51 Local	<b>Direction from Accident Site:</b>	180°
<b>Lowest Cloud Condition:</b>		<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>	Broken / 9500 ft AGL	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	8 knots / None	<b>Turbulence Type Forecast/Actual:</b>	None / None
<b>Wind Direction:</b>	250°	<b>Turbulence Severity Forecast/Actual:</b>	N/A / N/A
<b>Altimeter Setting:</b>	29.91 inches Hg	<b>Temperature/Dew Point:</b>	31°C / 24°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	Ocala, FL	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	Ocala, FL	<b>Type of Clearance:</b>	None
<b>Departure Time:</b>		<b>Type of Airspace:</b>	Class D

## Airport Information

<b>Airport:</b>	Ocala International Airport OCF	<b>Runway Surface Type:</b>	Asphalt
<b>Airport Elevation:</b>	89 ft msl	<b>Runway Surface Condition:</b>	Dry
<b>Runway Used:</b>	36	<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>	7467 ft / 150 ft	<b>VFR Approach/Landing:</b>	Go around

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 Minor	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>	N/A	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 Minor	<b>Latitude, Longitude:</b>	29.171877,-82.224115(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Gretz, Robert
<b>Additional Participating Persons:</b>	Jeremy Puckett; FAA/FSDO; Orlando, FL
<b>Original Publish Date:</b>	January 16, 2025
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class 3</a>
<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=194448">https://data.nts.gov/Docket?ProjectID=194448</a>

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](#).