



# National Transportation Safety Board Aviation Accident Final Report

---

<b>Location:</b>	Dalton, GA	<b>Accident Number:</b>	ERA19LA286
<b>Date &amp; Time:</b>	09/28/2019, 1909 EDT	<b>Registration:</b>	UNREG
<b>Aircraft:</b>	SOLO WINGS WINDLASS	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Loss of control in flight	<b>Injuries:</b>	1 Fatal
<b>Flight Conducted Under:</b>	Part 91: General Aviation - Personal		

---

## Analysis

The airline transport pilot departed in the weight-shift control aircraft and climbed to just above tree height before entering a turn to the crosswind leg of the traffic pattern. Witnesses reported that the aircraft appeared to stall in the turn before making an uncontrolled, turning descent toward the ground. Although the pilot had received about 13 hours of instruction in weight-shift control aircraft, the accident flight was his first flight in the accident aircraft, and he did not have an endorsement for solo operation of a weight-shift control aircraft. Examination of the wreckage did not reveal any preimpact mechanical malfunctions. It is likely that the pilot failed to maintain airspeed during the turn, which resulted in an exceedance of the aircraft's critical angle of attack and an aerodynamic stall.

## Probable Cause and Findings

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

The pilot's exceedance of the aircraft's critical angle of attack during a turn shortly after takeoff, which resulted in an aerodynamic stall and subsequent impact with terrain. Contributing was the pilot's lack of experience in the accident aircraft.

## Findings

---

<b>Aircraft</b>	Angle of attack - Capability exceeded (Cause)
<b>Personnel issues</b>	Incorrect action performance - Pilot (Cause) Total experience w/ equipment - Pilot (Factor)

## Factual Information

On September 28, 2019, at 1909 eastern daylight time, an unregistered amateur-built experimental light-sport Solo Wings Windlass weight-shift control aircraft was substantially damaged when it collided with terrain shortly after takeoff from Pratermill Flight Park, Dalton, Georgia. The airline transport pilot was fatally injured. The aircraft was privately owned and operated 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.

According to the aircraft owner, he purchased the aircraft in 1998 and had flown it about 200 hours before putting it into storage for about 10 years. When the accident pilot expressed an interest in flying the aircraft and started taking lessons in weight-shift control aircraft, the owner took the aircraft out of storage and replaced the fuel lines, fuel filter, tires, tubes, wing spar bungee cord, primer, throttle cable, and battery. He then flew the aircraft a total of 4 to 5 hours since those repairs, with no anomalies noted. On the day of the accident, the owner completed a 30-minute flight and noted no anomalies. The pilot, who had not previously flown the accident aircraft, asked if he could fly it. The owner questioned if he was ready, to which the pilot responded, "yes," and the owner agreed.

The owner witnessed the accident flight and stated that the aircraft rotated about 300 ft down the turf runway and then climbed to an altitude above tree level. The aircraft then turned left and seemed to "falter in the turn" before falling to the ground.

A witness located on the property adjacent to the airport observed the aircraft fly south before making an easterly turn toward his property. He stated that the aircraft "lost lift in the turn and seemed to stall" then made an uncontrolled, turning descent toward the ground. He stated that the engine "revved higher than normal" at the time of the turn.

### PERSONNEL INFORMATION

According to Federal Aviation Administration (FAA) airmen records, the pilot held an airline transport pilot certificate with a rating for airplane multi-engine land, with commercial pilot privileges for glider and airplane single-engine land. He also held a flight instructor certificate with a rating for airplane single-engine. He was issued an FAA first-class medical certificate on August 28, 2018. At that time, the pilot reported 18,870 total hours of flight experience.

The pilot's flight instructor reported that he had provided the accident pilot about 14 to 16 hours of flight instruction in the 2 months preceding the accident. He considered the pilot one of his better students and stated that he had a good piloting sense. He stated that the pilot was ready for a check ride with another flight instructor to demonstrate proficiency for a weight-shift category endorsement. However, the pilot had not performed such a check ride and did not hold a sport pilot certificate with an endorsement for weight-shift-control-land aircraft. Review of the pilot's logbook showed 13 hours of instruction. The pilot had not logged any flight experience in the accident aircraft.

### AIRCRAFT INFORMATION

The two-seat weight-shift control aircraft was equipped with a cable-braced hang glider-style high-wing, tricycle landing gear, and a single Rotax 503, 50-horsepower engine in a pusher configuration.

## WRECKAGE AND IMPACT INFORMATION

Examination of the accident site and wreckage revealed that the aircraft came to rest beyond a tree line and in a fenced pasture located about 450 ft east of runway 17. The wing remained largely intact; however, the structural tubes were bent and fractured in several locations. The landing gear was separated from the fuselage. The aircraft was equipped with an airframe parachute; however, it had not been deployed. Grass along the debris field from the main wreckage displayed blighting consistent with fuel spillage. The 10-gallon fuel tank was separated from the aircraft and punctured and came to rest about 25 ft from the fuselage. Continuity of the throttle cable, wing brace cables, and control bar linkage was confirmed.

The composite, ground-adjustable propeller blades were fractured and fragmented near the blade roots; the propeller hub remained attached to the engine. Examination of the blades revealed chordwise scratching and leading edge damage on the surfaces. The leading edge strip on one blade was deformed from impact. The fibers on the fractured areas near the hub were bent in the direction opposite of rotation.

The engine case was free of cracks or holes. One of the two carburetors was missing. The owner reported that it was not found during the wreckage recovery. The recovered carburetor was separated from the engine during impact. It was normal in appearance. The fuel pump was normal in appearance. The in-line fuel filter was clean and unobstructed. Spark plugs were removed and showed normal wear. The engine rotated freely through several rotations with thumb compression observed and no other damage noted.

## MEDICAL AND PATHOLOGICAL INFORMATION

The Whitfield County, Georgia Coroner did not perform an autopsy or toxicological testing.

## History of Flight

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

## Pilot Information

<b>Certificate:</b>	Airline Transport; Flight Instructor; Commercial	<b>Age:</b>	61, Male
<b>Airplane Rating(s):</b>	Multi-engine Land; Single-engine Land	<b>Seat Occupied:</b>	Front
<b>Other Aircraft Rating(s):</b>	Glider	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	Airplane Single-engine	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 1 With Waivers/Limitations	<b>Last FAA Medical Exam:</b>	08/18/2018
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	(Estimated) 18870 hours (Total, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	SOLO WINGS	<b>Registration:</b>	UNREG
<b>Model/Series:</b>	WINDLASS	<b>Aircraft Category:</b>	Weight-Shift
<b>Year of Manufacture:</b>	1998	<b>Amateur Built:</b>	Yes
<b>Airworthiness Certificate:</b>		<b>Serial Number:</b>	None
<b>Landing Gear Type:</b>	Tricycle	<b>Seats:</b>	2
<b>Date/Type of Last Inspection:</b>	11/08/1999, 100 Hour	<b>Certified Max Gross Wt.:</b>	772 lbs
<b>Time Since Last Inspection:</b>	100 Hours	<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	207.6 Hours at time of accident	<b>Engine Manufacturer:</b>	Rotax
<b>ELT:</b>	Not installed	<b>Engine Model/Series:</b>	503
<b>Registered Owner:</b>	On file	<b>Rated Power:</b>	53 hp
<b>Operator:</b>	On file	<b>Operating Certificate(s) Held:</b>	None

## Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	DNN, 708 ft msl	Distance from Accident Site:	12 Nautical Miles
Observation Time:	1915 EDT	Direction from Accident Site:	270°
Lowest Cloud Condition:	Clear	Visibility	10 Miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	Calm /	Turbulence Type Forecast/Actual:	Unknown / Unknown
Wind Direction:		Turbulence Severity Forecast/Actual:	N/A / N/A
Altimeter Setting:	30.13 inches Hg	Temperature/Dew Point:	30° C / 20° C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Dalton, GA (GA72)	Type of Flight Plan Filed:	None
Destination:	Dalton, GA (GA72)	Type of Clearance:	None
Departure Time:	1909 EDT	Type of Airspace:	Class G

## Airport Information

Airport:	Pratermill Flight Park (GA72)	Runway Surface Type:	Grass/turf
Airport Elevation:	780 ft	Runway Surface Condition:	Dry; Vegetation
Runway Used:	17	IFR Approach:	None
Runway Length/Width:	1500 ft / 60 ft	VFR Approach/Landing:	Traffic Pattern

## Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Fatal	Latitude, Longitude:	34.883333, -84.888889 (est)

## Administrative Information

Investigator In Charge (IIC):	Lynn Spencer	Report Date:	04/20/2020
Additional Participating Persons:	Jim Payne; FAA/FSDO; Atlanta, GA		
Publish Date:	04/20/2020		
Note:	The NTSB did not travel to the scene of this accident.		
Investigation Docket:	<a href="http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=100344">http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=100344</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](#).