



# Aviation Investigation Final Report

<b>Location:</b>	Marion, South Carolina	<b>Accident Number:</b>	ERA18LA249
<b>Date &amp; Time:</b>	September 12, 2018, 13:20 Local	<b>Registration:</b>	N75SX
<b>Aircraft:</b>	Edward R. Sugg Sonex	<b>Aircraft Damage:</b>	Destroyed
<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 85-year-old commercial pilot was conducting a local pleasure flight in his experimental, amateur-built airplane. A witness near the accident site saw the airplane flying at low altitude before it entered a "straight up" climb followed by a descent and continued "straight down" toward the ground. It did not appear that the pilot attempted to pull out of the dive.

Examination of the airplane and engine revealed no mechanical discrepancies that would have precluded normal operation. Despite the pilot's age, his daughter stated that he had no known medical issues (cardiac, respiratory or physical) that would interfere with his flying, and no evidence of incapacitation or impairment were identified by the autopsy and toxicology testing. The reason for the airplane's impact with terrain could not be determined based on the available information.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: Impact with terrain for reasons that could not be determined based on the available information.

## Findings

<b>Personnel issues</b>	Aircraft control - Pilot
<b>Not determined</b>	(general) - Unknown/Not determined

# Factual Information

## History of Flight

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

On September 12, 2018, about 1320 eastern daylight time, an experimental, amateur-built Sonex airplane, N75SX, was destroyed when it impacted terrain while maneuvering near Marion, South Carolina. The commercial pilot was fatally injured. The airplane was registered to and 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 flight, which departed Florence Regional Airport (FLO), Florence, South Carolina, at an unknown time.

According to the pilot's daughter, her father was going for a local pleasure flight before Hurricane Florence moved through the area.

A witness, who was standing in his backyard about 1/4-mile from the accident site, heard the airplane's engine and it sounded like it had "...a whole lot of power." When he saw the airplane, he thought it was a crop duster because it was low to the ground, and then climbed straight up before it dove straight down as if it was going to "make a pass." But the airplane continued straight toward the ground and there did not appear to be an attempt by the pilot to "pull out" of the dive. The airplane descended behind a tree line and the witness heard it impact the ground.

The 1353 weather observation at FLO, located about 19 miles west of the accident site, included wind from 090° at 6 knots, 10 miles visibility, scattered clouds at 9,000 ft above ground level, temperature 33°C, dew point 23°C, and an altimeter setting of 30.08 inches of mercury.

The airplane impacted a field and the engine, cockpit, both wings, and the tail section sustained substantial damage. There was no postimpact fire. Due to Hurricane Florence, the airplane was recovered to a storage facility, where it was examined on November 15, 2018.

The airplane was relatively intact, but the left wing was separated from the fuselage. Flight control continuity was established from all major flight controls to the cockpit area and the flaps were found in the retracted position. The main landing gear had separated from the fuselage. The fuel tank and fuel strainer were not located; however, all fuel lines were dry and unobstructed.

The engine was separated from the firewall; both wooden propeller blades had separated from the hub and were not recovered with the wreckage. The engine was rotated manually via the starter ring and crankshaft continuity was established. The Nos. 1 and 3 spark plugs were removed, and the electrodes exhibited rust/corrosion deposits and normal wear. The Nos. 2 and 4 spark plugs exhibited normal wear per the Champion Check-a-Plug chart. The oil filter had separated from the engine and was crushed. The carburetor was separated from the engine and the bowl had separated from impact. The carburetor was partially disassembled, and no residual fuel was observed. No mechanical deficiencies were observed that would have precluded normal operation of the airplane or engine.

A handheld Garmin GPS 195 and a Grand Rapids 2000 EIS engine monitor were found in the wreckage and sent to the National Transportation Safety Board's recorder laboratory for download. Both units sustained impact damage and no data could be recovered.

A review of maintenance records revealed that the last condition inspection for the airplane and engine was completed on November 18, 2017, at a tachometer time of 640.5 hours and engine total time of 236.1 hours. A review of the airplane's flight time logbook revealed that the pilot regularly flew the airplane, and the last entry/flight was made on September 8, 2018, at a total tachometer time of 761.8 hours.

The 85-year-old pilot held a commercial pilot certificate with ratings for airplane single- and multiengine land and instrument airplane. He also held a flight instructor certificate with ratings for airplane single and multiengine. His last Federal Aviation Administration (FAA) third-class medical certificate was issued on January 19, 2017. At that time, the pilot reported 8,615 total hours of flight experience. According the pilot's daughter, her father flew often and had no known medical issues (cardiac, respiratory or physical) that would interfere with his flying.

The Medical University of South Carolina performed an autopsy on the pilot. The cause of death was determined to be "full body blunt trauma."

Toxicology testing performed at the FAA Forensic Sciences Laboratory was negative for all items tested.

## Pilot Information

<b>Certificate:</b>	Commercial; Flight instructor; Private	<b>Age:</b>	85, Male
<b>Airplane Rating(s):</b>	Single-engine land; Multi-engine land	<b>Seat Occupied:</b>	Unknown
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	Unknown
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	Airplane multi-engine; Airplane single-engine	<b>Toxicology Performed:</b>	Yes
<b>Medical Certification:</b>	Class 3 With waivers/limitations	<b>Last FAA Medical Exam:</b>	January 19, 2017
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	(Estimated) 8615 hours (Total, all aircraft), 115 hours (Total, this make and model)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Edward R. Sugg	<b>Registration:</b>	N75SX
<b>Model/Series:</b>	Sonex	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>	2007	<b>Amateur Built:</b>	Yes
<b>Airworthiness Certificate:</b>	Experimental light sport (Special)	<b>Serial Number:</b>	0075
<b>Landing Gear Type:</b>	Tricycle	<b>Seats:</b>	2
<b>Date/Type of Last Inspection:</b>	November 18, 2017 Condition	<b>Certified Max Gross Wt.:</b>	
<b>Time Since Last Inspection:</b>	21 Hrs	<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	761.8 Hrs at time of accident	<b>Engine Manufacturer:</b>	Jabiru
<b>ELT:</b>	Installed, not activated	<b>Engine Model/Series:</b>	2200
<b>Registered Owner:</b>		<b>Rated Power:</b>	85 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>	FLO, 146 ft msl	<b>Distance from Accident Site:</b>	19 Nautical Miles
<b>Observation Time:</b>	13:53 Local	<b>Direction from Accident Site:</b>	270°
<b>Lowest Cloud Condition:</b>	Scattered / 9000 ft AGL	<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>		<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	6 knots /	<b>Turbulence Type Forecast/Actual:</b>	None / None
<b>Wind Direction:</b>	90°	<b>Turbulence Severity Forecast/Actual:</b>	N/A / N/A
<b>Altimeter Setting:</b>	30.07 inches Hg	<b>Temperature/Dew Point:</b>	33°C / 23°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	Florence, SC (FLO )	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	Florence, SC (FLO )	<b>Type of Clearance:</b>	None
<b>Departure Time:</b>		<b>Type of Airspace:</b>	Unknown

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 Fatal	<b>Aircraft Damage:</b>	Destroyed
<b>Passenger Injuries:</b>		<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 Fatal	<b>Latitude, Longitude:</b>	34,-79(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Read, Leah
<b>Additional Participating Persons:</b>	Cornelius J Baker; FAA/FSDO; Columbia, SC
<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=98286">https://data.nts.gov/Docket?ProjectID=98286</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](#).