



# National Transportation Safety Board Aviation Accident Final Report

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<b>Location:</b>	Fayetteville, TN	<b>Accident Number:</b>	ERA11FA435
<b>Date &amp; Time:</b>	08/02/2011, 1110 CDT	<b>Registration:</b>	NONE
<b>Aircraft:</b>	RANS S18	<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		

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## Analysis

The pilot was making his inaugural flight in the recently purchased, recently reassembled unregistered experimental airplane. After the pilot's initial takeoff from his home airstrip, witnesses saw the airplane turn back toward the runway then lost sight of it behind a tree line. They continued to hear the airplane's engine operate until hearing the airplane impact the ground. Postaccident examination of the airplane revealed no preexisting mechanical anomalies, and structural damage indicated that it had impacted the ground in a stall/spin to the right. The pilot had not flown in about 6 years, and when a family member suggested that he get some refresher flight training before his first flight in the airplane, the pilot declined to do so.

## 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 adequate airspeed, which resulted in an inadvertent stall/spin. Contributing to the accident was the pilot's lack of recent flight experience.

## Findings

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<b>Aircraft</b>	Airspeed - Not attained/maintained (Cause)
<b>Personnel issues</b>	Incorrect action performance - Pilot (Cause) Recent experience - Pilot (Factor)

## Factual Information

### HISTORY OF FLIGHT

On August 2, 2011, about 1110 central daylight time, an unregistered experimental Rans S18 light sport airplane was substantially damaged when it impacted terrain near a private turf airstrip in Fayetteville, Tennessee. The certificated private pilot was fatally injured. Visual meteorological conditions prevailed, and no flight plan was filed for the personal flight, which was operated under the provisions of Title 14 Code of Federal Regulations Part 91.

Family members stated that the accident flight was the pilot's first flight in the airplane, but that he had taxied it on the grass airstrip several times in order to familiarize himself with the flight controls.

Two witnesses, located approximately 1/4 mile north of the north-south airstrip, stated that they heard an airplane that "sounded like a crop duster." They then observed the airplane airborne behind trees at the departure [northern] end of the runway, and stated that it appeared to bank sharply to the left, back towards the runway. They lost sight of the airplane, and afterwards, heard the sound of an impact. They also stated that the airplane's engine was running "loudly" until the sound of impact.

### PILOT INFORMATION

The pilot, age 70, held a private pilot certificate. According to the pilot's logbook, his last recorded flight was on August 14, 2005. A family member stated that the pilot's wife had urged him to get some flight instruction prior to flying the airplane by himself, since it had been some time since he had flown; however, the pilot declined to do so. The pilot's latest medical certificate was issued on June 6, 2005, and at the time, he indicated 640 hours of flight time.

### AIRPLANE INFORMATION

The two-seat airplane was powered by a Rotax 503 engine. According supporting documentation, the airplane was purchased during an on-line auction on July 12, 2011, and a bill of sale was signed for it on July 14, 2011. After transport, the airplane was reassembled on the pilot's property. No maintenance logbooks were located; however, the advertisement for sale stated that it had approximately 200 hours of total airframe and engine time, that it had always been hangared, and that it had previously flown under an "ultralight instructor exemption."

### METEOROLOGICAL INFORMATION

The nearest recorded weather was at an airport about 12 nautical miles south of the accident site, about 5 minutes after the accident, and included clear skies and calm wind.

### AIRSTRIP INFORMATION

The turf airstrip was mowed into a larger field, and partly indiscernible from its surroundings, oriented about 010/190 degrees magnetic, approximately 1,400 feet long and 50 feet wide.

## WRECKAGE AND IMPACT INFORMATION

The airplane came to rest inverted approximately 300 feet east of the airstrip near its southern end, in the vicinity of 35 degrees, 6.29 minutes north latitude, 086 degrees, 32.58 minutes west longitude. Two ground scars were located underneath the wreckage, each measuring about 1 foot in length, and oriented toward 080 degrees magnetic.

The nose and cockpit area exhibited significant fore-to-aft crush damage, and when the airplane was righted, the nose was observed bent upwards about 80 degrees.

The left and right wings, vertical stabilizer, horizontal stabilizer, flaps, ailerons, and elevators remained attached to the airframe. Continuity was confirmed from all flight control surfaces to the cockpit area.

The wooden propeller remained attached to the engine, although one blade was fracture-separated opposite the direction of rotation about one-quarter of its length from the hub. The leading edge of the separated portion of the blade exhibited gouging and chordwise scratching. The propeller rotated freely by hand, and crankshaft continuity as well as thumb compression on both cylinders were confirmed.

## MEDICAL AND TOXICOLOGICAL INFORMATION

An autopsy was conducted on the pilot at the Tennessee Office of the Medical Examiner, Nashville, Tennessee, where the cause of death was determined to be "multiple blunt force injuries."

Subsequent toxicological testing was performed by the FAA Forensic Toxicology Research Team, Oklahoma City, Oklahoma, with the following results:

Amlodipine in blood and urine, diphenhydramine in blood and urine, and rosuvastatin in urine only.

According to the National Institute of Health online reference, amlodipine is used to treat high blood pressure and chest pain, diphenhydramine is used to relieve symptoms of common cold, hay fever or allergies, and rosuvastatin is used to reduce cholesterol and other fatty substances in the blood.

## History of Flight

Approach-VFR pattern final	Aerodynamic stall/spin Loss of control in flight (Defining event)
Uncontrolled descent	Collision with terr/obj (non-CFIT)

## Pilot Information

<b>Certificate:</b>	Private	<b>Age:</b>	70, Male
<b>Airplane Rating(s):</b>	Single-engine Land	<b>Seat Occupied:</b>	Front
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	Seatbelt, Shoulder harness
<b>Instrument Rating(s):</b>	None	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	Yes
<b>Medical Certification:</b>	None	<b>Last Medical Exam:</b>	
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	640 hours (Total, all aircraft), 0 hours (Total, this make and model), 0 hours (Last 90 days, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Manufacturer:</b>	RANS	<b>Registration:</b>	NONE
<b>Model/Series:</b>	S18 NO SERIES	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	Yes
<b>Airworthiness Certificate:</b>	Experimental Light Sport	<b>Serial Number:</b>	
<b>Landing Gear Type:</b>	Tailwheel	<b>Seats:</b>	2
<b>Date/Type of Last Inspection:</b>		<b>Certified Max Gross Wt.:</b>	970 lbs
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	200 Hours	<b>Engine Manufacturer:</b>	Rotax
<b>ELT:</b>	Not installed	<b>Engine Model/Series:</b>	503
<b>Registered Owner:</b>	Larry Eugene Sheaks	<b>Rated Power:</b>	52 hp
<b>Operator:</b>	Larry Eugene Sheaks	<b>Air Carrier Operating Certificate:</b>	None

## Meteorological Information and Flight Plan

Observation Facility, Elevation:	MDQ, 756 ft msl	Observation Time:	1115 CDT
Distance from Accident Site:	15 Nautical Miles	Condition of Light:	Day
Direction from Accident Site:	183°	Conditions at Accident Site:	Visual Conditions
Lowest Cloud Condition:	Clear	Temperature/Dew Point:	31° C / 23° C
Lowest Ceiling:	None	Visibility	10 Miles
Wind Speed/Gusts, Direction:	Calm	Visibility (RVR):	
Altimeter Setting:	29.99 inches Hg	Visibility (RVV):	
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Fayetteville, TN (NONE)	Type of Flight Plan Filed:	None
Destination:	Fayetteville, TN (NONE)	Type of Clearance:	None
Departure Time:	1110 CDT	Type of Airspace:	

## Airport Information

Airport:	Private	Runway Surface Type:	Grass/turf
Airport Elevation:	720 ft	Runway Surface Condition:	Dry; Vegetation
Runway Used:	01	IFR Approach:	None
Runway Length/Width:	1400 ft / 50 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		

## Administrative Information

Investigator In Charge (IIC):	Paul R Cox	Adopted Date:	04/17/2013
Additional Participating Persons:	David Alderman; FAA/FSDO; Nashville, TN		
Publish Date:	04/17/2013		
Investigation Docket:	<a href="http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=81353">http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=81353</a>		

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