



Aviation Investigation Final Report

Location:	Kenai, Alaska	Accident Number:	GAA18CA469
Date & Time:	August 4, 2018, 15:30 Local	Registration:	N8443B
Aircraft:	Rans S7	Aircraft Damage:	Substantial
Defining Event:	Aerodynamic stall/spin	Injuries:	1 Minor, 1 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot in the tailwheel-equipped airplane reported that, during the takeoff roll about 40 knots airspeed with full flaps and about 50% of the 900-ft-long runway remaining, the airplane lifted off and began to climb. The airplane climbed above the tree line but then descended into ground effect. The pilot attempted to clear the trees ahead, but the airplane stalled. The left wing dropped, and the airplane descended below the tree line and touched down on the main landing gear, collided with trees, and then came to rest inverted.

The airplane sustained substantial damage to the left wing lift struts.

The pilot reported that he could have used the additional runway surface and held the airplane on the ground to achieve a more desirable airspeed. Additionally, the Pilot's Operating Handbook stated not to use full flap application during short-field takeoffs.

The pilot reported that there were no preaccident mechanical failures or malfunctions with the airplane that would have precluded normal operation.

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 airplane's climb capability due to his use of full flaps during a short-field takeoff, his failure to attain a positive climb rate after takeoff, and his exceedance of the airplane's critical angle of attack, which resulted in an aerodynamic stall.

Findings

Personnel issues	Aircraft control - Pilot
Personnel issues	Use of equip/system - Pilot
Aircraft	Climb capability - Capability exceeded
Aircraft	Angle of attack - Capability exceeded
Environmental issues	Tree(s) - Contributed to outcome

Factual Information

History of Flight

Initial climb	Aerodynamic stall/spin (Defining event)
Landing	Collision with terr/obj (non-CFIT)

Pilot Information

Certificate:	Private	Age:	62,Male
Airplane Rating(s):	Single-engine land; Single-engine sea	Seat Occupied:	Front
Other Aircraft Rating(s):	None	Restraint Used:	4-point
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	Yes
Medical Certification:	Sport pilot Without waivers/limitations	Last FAA Medical Exam:	July 16, 2013
Occupational Pilot:	No	Last Flight Review or Equivalent:	August 3, 2018
Flight Time:	(Estimated) 1273 hours (Total, all aircraft), 360 hours (Total, this make and model), 1273 hours (Pilot In Command, all aircraft)		

Passenger Information

Certificate:		Age:	Male
Airplane Rating(s):		Seat Occupied:	Rear
Other Aircraft Rating(s):		Restraint Used:	4-point
Instrument Rating(s):		Second Pilot Present:	No
Instructor Rating(s):		Toxicology Performed:	No
Medical Certification:		Last FAA Medical Exam:	
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:			

Aircraft and Owner/Operator Information

Aircraft Make:	Rans	Registration:	N8443B
Model/Series:	S7 S	Aircraft Category:	Airplane
Year of Manufacture:	2006	Amateur Built:	Yes
Airworthiness Certificate:	Experimental (Special)	Serial Number:	0405398
Landing Gear Type:	Tailwheel	Seats:	2
Date/Type of Last Inspection:	June 14, 2018 Condition	Certified Max Gross Wt.:	1320 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	382 Hrs at time of accident	Engine Manufacturer:	Rotax
ELT:	Installed, not activated	Engine Model/Series:	912S
Registered Owner:		Rated Power:	100 Horsepower
Operator:	On file	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	PALV,60 ft msl	Distance from Accident Site:	17 Nautical Miles
Observation Time:	23:44 Local	Direction from Accident Site:	214°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	5 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	240°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.87 inches Hg	Temperature/Dew Point:	21°C / 12°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Kenai, AK (PVT)	Type of Flight Plan Filed:	None
Destination:	Kenai, AK (PVT)	Type of Clearance:	None
Departure Time:		Type of Airspace:	Class G

Airport Information

Airport:	Private Airstrip PVT	Runway Surface Type:	Dirt
Airport Elevation:	100 ft msl	Runway Surface Condition:	Dry;Vegetation
Runway Used:	27	IFR Approach:	None
Runway Length/Width:	900 ft / 100 ft	VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	1 Minor	Aircraft Damage:	Substantial
Passenger Injuries:	1 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Minor, 1 None	Latitude, Longitude:	61.045276,-151.979721(est)

Administrative Information

Investigator In Charge (IIC):	Hicks, Michael
Additional Participating Persons:	
Original Publish Date:	June 10, 2019
Note:	This accident report documents the factual circumstances of this accident as described to the NTSB.
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=98001

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