



Aviation Investigation Final Report

Location:	Ozark, Arkansas	Accident Number:	CEN23LA338
Date & Time:	July 29, 2023, 18:00 Local	Registration:	N123TG
Aircraft:	RANS S-6ES	Aircraft Damage:	Destroyed
Defining Event:	Loss of engine power (total)	Injuries:	2 Minor
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot stated that on his second flight in the airplane, he completed some basic maneuvers without incident and returned to the airport. Shortly after, he and a passenger boarded for a local flight. The pilot completed an engine run up with no anomalies noted, and then departed from the grass runway. About 70 ft above ground level he felt a vibration and was unable to maintain altitude. The engine RPM and oil pressure decreased as the airspeed slowed. The airplane collided with trees and then impacted the ground. The pilot and passenger egressed without incident, then the airplane burst into flames.

The passenger recorded a video of the entire accident flight. The video revealed that during the initial climb, the engine RPM and sound appeared to gradually decrease. The airplane did not continue to climb, and the engine RPM continued to decrease. The airplane collided with a tree and then impacted the ground.

A postaccident photo from the pilot showed the airplane was mostly consumed by the fire.

The pilot provided a summary of his postaccident engine examination, which revealed that the oil supply line to the propeller speed reduction unit was completely clogged with an unknown gray material. Also, the gear reduction drive was seized, lacked oil, and the bearings were covered in a dry, rusty powder.

It is likely that the loss of engine power was due to oil starvation of the propeller speed reduction unit.

Probable Cause and Findings

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

Oil starvation of the propeller speed reduction unit which resulted in a total loss of engine power.

Findings

Aircraft	Recip eng oil sys - Not specified
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Factual Information

History of Flight

Initial climb	Loss of engine power (total) (Defining event)
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Pilot Information

Certificate:	Private	Age:	59,Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	3-point
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	
Medical Certification:	BasicMed	Last FAA Medical Exam:	November 28, 2022
Occupational Pilot:	No	Last Flight Review or Equivalent:	May 5, 2023
Flight Time:	142 hours (Total, all aircraft), 1 hours (Total, this make and model), 38 hours (Pilot In Command, all aircraft), 9 hours (Last 90 days, all aircraft), 1 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	RANS	Registration:	N123TG
Model/Series:	S-6ES	Aircraft Category:	Airplane
Year of Manufacture:	1991	Amateur Built:	Yes
Airworthiness Certificate:	Experimental (Special)	Serial Number:	0291162
Landing Gear Type:	Tricycle	Seats:	2
Date/Type of Last Inspection:	May 25, 2023 Annual	Certified Max Gross Wt.:	1320 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	1386 Hrs as of last inspection	Engine Manufacturer:	RAM Performance Subaru
ELT:	Not installed	Engine Model/Series:	E81
Registered Owner:	On file	Rated Power:	110 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:	KFSM, 448 ft msl	Distance from Accident Site:	26 Nautical Miles
Observation Time:	17:53 Local	Direction from Accident Site:	265°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	/	Turbulence Type Forecast/Actual:	/
Wind Direction:		Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.01 inches Hg	Temperature/Dew Point:	37°C / 22°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Ozark, AR	Type of Flight Plan Filed:	None
Destination:	Ozark, AR	Type of Clearance:	None
Departure Time:		Type of Airspace:	Class G

Airport Information

Airport:	Etna Airport 2AR1	Runway Surface Type:	Grass/turf
Airport Elevation:	536 ft msl	Runway Surface Condition:	Dry
Runway Used:	9	IFR Approach:	None
Runway Length/Width:	2130 ft / 100 ft	VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	1 Minor	Aircraft Damage:	Destroyed
Passenger Injuries:	1 Minor	Aircraft Fire:	On-ground
Ground Injuries:	N/A	Aircraft Explosion:	Unknown
Total Injuries:	2 Minor	Latitude, Longitude:	35.369317, -93.837472(est)

Administrative Information

Investigator In Charge (IIC):	Lindberg, Joshua
Additional Participating Persons:	Nathan Bradshaw; Federal Aviation Administration; Little Rock, AR
Original Publish Date:	September 28, 2023
Last Revision Date:	
Investigation Class:	Class 4
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=192753

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](#).