



Aviation Investigation Final Report

Location:	Knoxville, Tennessee	Accident Number:	ERA24LA018
Date & Time:	October 22, 2023, 09:35 Local	Registration:	N246ML
Aircraft:	ROTH FRANK RONALD AVID AIRCRAFT	Aircraft Damage:	Substantial
Defining Event:	Loss of engine power (total)	Injuries:	1 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot reported that he had completed a preflight inspection and engine run-up with no anomalies noted. Shortly after takeoff, during the initial climb when the airplane was about 400 ft above the ground level (agl), the engine suddenly lost all power. The pilot elected to land straight ahead on a riverbank. During the landing, the airplane struck trees and a metal fence before coming to rest in the river, resulting in substantial damage to the wings and the fuselage. A postaccident examination of the airplane's two-stroke engine was conducted by the pilot. The pilot reported that the piston in the power take-off cylinder (PTO) had seized.

Probable Cause and Findings

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

A total loss of engine power due to a seized piston in the power take-off cylinder.

Findings

Aircraft	Recip eng cyl section - Failure
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Factual Information

History of Flight

Initial climb	Loss of engine power (total) (Defining event)
Landing	Collision with terr/obj (non-CFIT)

On October 22, 2023, at 0935 eastern daylight time, an experimental, amateur-built Avid Aircraft, N246ML, was substantially damaged when it was involved in an accident near Knoxville, Tennessee. The private pilot was not injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

The pilot reported that after an uneventful preflight inspection and engine run-up, he departed runway 01 with the engine power set to 6,300 rpm. At 100 ft above the runway, he adjusted the engine rpm to 6,000. After about 1 minute of flying at an altitude of 400 ft agl, the engine decreased from 6,000 rpm to totally stopped within seconds. The pilot elected to land on a riverbank; however, the airplane contacted trees and a metal fence before coming to rest in the river.

The pilot conducted a postaccident examination of the airplane’s two-stroke engine and found that the piston in the power take-off cylinder had seized during the accident flight. The pilot subsequently started the engine and it engine operated without any anomalies.

The airplane’s most recent maintenance records were not located. The pilot reported the engine had accumulated about 177 hours of operation before the accident. He also stated the airplane had not been flown for about 10 years and was in poor condition when he purchased it. He reported that he did not perform any internal maintenance on the engine but did extensive work on the external components.

Pilot Information

Certificate:	Private	Age:	66,Male
Airplane Rating(s):	Single-engine land; Single-engine sea	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:	Class 3 Without waivers/limitations	Last FAA Medical Exam:	June 9, 2022
Occupational Pilot:	No	Last Flight Review or Equivalent:	July 8, 2022
Flight Time:	232 hours (Total, all aircraft), 23 hours (Total, this make and model), 232 hours (Pilot In Command, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	ROTH FRANK RONALD	Registration:	N246ML
Model/Series:	AVID AIRCRAFT	Aircraft Category:	Airplane
Year of Manufacture:	1996	Amateur Built:	Yes
Airworthiness Certificate:	Experimental (Special)	Serial Number:	1186-D
Landing Gear Type:	Tailwheel	Seats:	2
Date/Type of Last Inspection:	February 27, 2023 Condition	Certified Max Gross Wt.:	1150 lbs
Time Since Last Inspection:	53 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	177 Hrs at time of accident	Engine Manufacturer:	Rotax
ELT:	Not installed	Engine Model/Series:	582
Registered Owner:	On file	Rated Power:	64 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:	TYS,986 ft msl	Distance from Accident Site:	5 Nautical Miles
Observation Time:	10:53 Local	Direction from Accident Site:	180°
Lowest Cloud Condition:		Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	7 knots / None	Turbulence Type Forecast/Actual:	Unknown / Unknown
Wind Direction:	350°	Turbulence Severity Forecast/Actual:	N/A / Unknown
Altimeter Setting:	30.03 inches Hg	Temperature/Dew Point:	17°C / 6°C
Precipitation and Obscuration:			
Departure Point:	Knoxville, TN (TN98)	Type of Flight Plan Filed:	None
Destination:	Knoxville, TN (TN98)	Type of Clearance:	None
Departure Time:	09:35 Local	Type of Airspace:	Class E;Class G

Airport Information

Airport:	Sky Ranch Airport TN98	Runway Surface Type:	
Airport Elevation:	830 ft msl	Runway Surface Condition:	Water-calm
Runway Used:		IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	Forced landing

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 None	Latitude, Longitude:	35.900691,-83.962709

Administrative Information

Investigator In Charge (IIC):	Enders, Ryan
Additional Participating Persons:	David Lewis; FAA/FSDO; Nashville, TN
Original Publish Date:	December 5, 2024
Last Revision Date:	
Investigation Class:	Class 3
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=193290

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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](#).