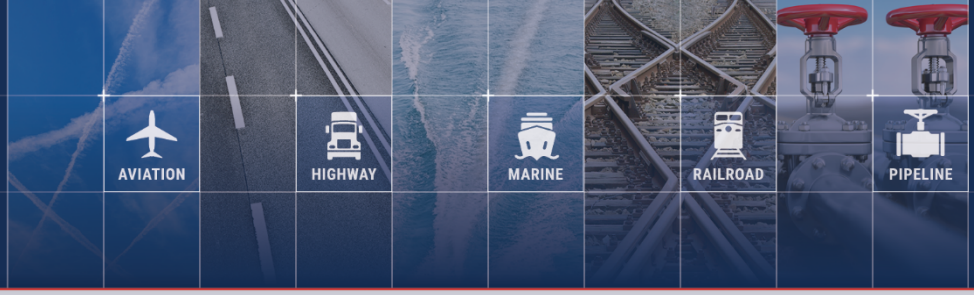

Aviation Investigation Final Report

Location:	NENANA, Alaska	**Accident Number:**	ANC23LA078
Date & Time:	September 16, 2023, 16:00 Local	**Registration:**	N907W
Aircraft:	RHODES STEVEN D SR3500	**Aircraft Damage:**	Substantial
Defining Event:	Fuel starvation	**Injuries:**	1 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot reported that while enroute he noticed a slight rise in engine gas temperature (EGT) with a slight decrease in fuel consumption. Then engine power surged followed by a rapid decrease in power. The pilot performed a forced landing to the tundra and the airplane nosed over, resulting in substantial damage.

Postaccident examination of the airplane revealed the fuel inlet screen into the fuel control unit was clogged, which prevented fuel from entering the engine. The pilot, who was the owner/builder, was unaware of the requirements to inspect and clean the fuel control inlet filter. The filter had been in operation for about 12 to 13 years before the accident. The installation service manual recommends that the owner/mechanic inspect and clean the fuel control inlet filter after break-in and at condition inspections or during annual inspections. The lack of maintenance of the fuel control inlet screen filter resulted in the screen becoming clogged and the subsequent fuel starvation.

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 fuel starvation. Contributing was the owner/builder's inadequate maintenance.

Findings

Personnel issues	Scheduled/routine maintenance - Owner/builder
Personnel issues	Knowledge of equipment - Owner/builder
Aircraft	Fuel filter-strainer - Not serviced/maintained

Factual Information

History of Flight

Enroute	Fuel starvation (Defining event)

On September 16, 2023, about 1600 Alaska daylight time, an experimental amateur-built Murphy Moose SR 3500 airplane, N907W, sustained substantial damage when it was involved in an accident near Nenana, Alaska. The pilot was not injured. The airplane was operated by the pilot as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

Pilot reported that, while en route in a float-equipped airplane, he noticed a slight rise in EGT with a slight decrease in fuel consumption. The engine was operating normally, but the pilot noted at a slight reduction in power output. Then the engine power began to surge followed by a rapid decrease in power. The pilot made a left turn into the wind and towards a large lake to perform an emergency landing. About 200 ft above ground level the engine lost total power. The pilot stated he did not have sufficient altitude to land on the lake; he elected to perform a forced landing to the tundra. After touchdown, the airplane slid for about 75 ft and then nosed over, sustaining substantial damage to the fuselage and wings.

Postaccident examination of the airplane revealed all the fuel lines from the gascolator to the engine fuel control unit contained fuel. The fuel inlet screen into the fuel control unit was clogged with fine nonmetallic debris which prevented fuel from entering the engine. The filter was installed about 12 to 13 years before the accident.

According to the service manual, the filter should be cleaned after a break-in period, and then after every 50 hours of operation. The manual also recommends removing and cleaning the fuel filters during condition and annual inspections. The pilot, who was also the owner/builder, was unaware of the requirements to inspect and clean the fuel control inlet filter.

Pilot Information

Certificate:	Airline transport; Commercial; Flight engineer; Flight instructor	**Age:**	60,Male
Airplane Rating(s):	Single-engine land; Single-engine sea; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	5-point
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	Airplane multi-engine; Airplane single-engine; Instrument airplane	**Toxicology Performed:**	
Medical Certification:	Class 1 With waivers/limitations	**Last FAA Medical Exam:**	September 12, 2023
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	February 1, 2023
Flight Time:	30712 hours (Total, all aircraft), 720 hours (Total, this make and model), 28200 hours (Pilot In Command, all aircraft), 120 hours (Last 90 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	RHODES STEVEN D	**Registration:**	N907W
Model/Series:	SR3500	**Aircraft Category:**	Airplane
Year of Manufacture:	2005	**Amateur Built:**	Yes
Airworthiness Certificate:	Experimental (Special)	**Serial Number:**	173SR
Landing Gear Type:	Float	**Seats:**	2
Date/Type of Last Inspection:	October 3, 2022 Continuous airworthiness	**Certified Max Gross Wt.:**	3675 lbs
Time Since Last Inspection:	15 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	720.7 Hrs at time of accident	**Engine Manufacturer:**	Barret Precision
ELT:	Installed, not activated	**Engine Model/Series:**	M-14P
Registered Owner:	On file	**Rated Power:**	400 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:		**Distance from Accident Site:**	
Observation Time:		**Direction from Accident Site:**	
Lowest Cloud Condition:	Unknown / 5000 ft AGL	**Visibility**	30 miles
Lowest Ceiling:	Broken / 5000 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	10 knots /	**Turbulence Type Forecast/Actual:**	None / None
Wind Direction:	320°	**Turbulence Severity Forecast/Actual:**	N/A / N/A
Altimeter Setting:		**Temperature/Dew Point:**	10°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Nowitna River, AK (PVT)	**Type of Flight Plan Filed:**	VFR
Destination:	Nenana, AK (PANN)	**Type of Clearance:**	None
Departure Time:	15:00 Local	**Type of Airspace:**	Class G

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	N/A	**Aircraft Fire:**	None
Ground Injuries:		**Aircraft Explosion:**	None
Total Injuries:	1 None	**Latitude, Longitude:**	64.650753,-149.83691

Administrative Information

Investigator In Charge (IIC):	Ward, Mark
Additional Participating Persons:	Jason Major; FAA
Original Publish Date:	July 24, 2024
Last Revision Date:	
Investigation Class:	Class 3
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=193088