



Aviation Investigation Final Report

Location:	Payette, Idaho	Accident Number:	WPR22LA014
Date & Time:	October 13, 2021, 10:20 Local	Registration:	N583DM
Aircraft:	Avid Mark IV	Aircraft Damage:	Substantial
Defining Event:	Fuel starvation	Injuries:	1 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The non-certificated pilot was conducting a local flight in an experimental airplane and during cruise flight about 1,000 ft above ground level, the engine began to intermittently lose power. He activated the fuel pump and shortly thereafter the engine shut down. The pilot maneuvered the airplane to land in a cultivated field. The airplane was substantially damaged when it nosed over during the landing roll.

Examination of the wreckage revealed that the airplane’s header tank did not have an outlet screen installed and the fuel selector valve contained a large quantity of debris. It is likely the debris, from the fuel tank construction and/or repairs, entered the fuel selector valve from the header tank, resulting in fuel starvation to the engine and the subsequent loss of engine power.

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 during cruise flight due to fuel starvation. Contributing to the accident was the lack of an outlet screen on the fuel system header tank.

Findings

Aircraft	Fuel selector/shutoff valve - Inoperative
Aircraft	Fuel - Fluid condition
Aircraft	Fuel filter-strainer - Not installed/available

Factual Information

History of Flight

Maneuvering	Fuel starvation (Defining event)
Maneuvering	Fuel contamination
Landing-landing roll	Nose over/nose down

On October 13, 2021, about 1020 Pacific daylight time, an Avid Mark IV experimental airplane, N583DM, was substantially damaged when it was involved in an accident near Payette, Idaho. The non-certificated pilot was not injured. The experimental amateur-built airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

The non-certificated pilot reported that while in level flight, about 1,000 ft above ground level, the engine began to intermittently lose power. He activated the fuel pump and shortly thereafter the engine shut down. The pilot then turned the airplane 180-degrees to the north to land in a cultivated field. During the landing roll, the airplane nosed over resulting in substantial damage to the vertical stabilizer.

A postaccident examination of the wreckage revealed bent tubular structure near the landing gear attachment, forward cabin areas and vertical stabilizer. The airplane's fuel system header tank did not have an outlet screen and the fuel selector valve contained a large quantity of debris from the fiberglass fuel tanks. According to the Federal Aviation Administration inspector who examined the wreckage, the contamination most likely resulted from the construction and previous repairs of the fuel and header fuel tanks.

Maintenance logbooks were not found during the investigation.

The pilot logbook revealed a total of 4 hours of flight time. The pilot reported to the Federal Aviation Administration inspector that he had mostly flown ultralight airplanes in the past and those flights were not entered in his logbook.

Pilot Information

Certificate:	None	Age:	62, Male
Airplane Rating(s):	None	Seat Occupied:	Right
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:	None	Last FAA Medical Exam:	
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:	4 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Avid	Registration:	N583DM
Model/Series:	Mark IV	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Experimental (Special)	Serial Number:	1582D
Landing Gear Type:	Tailwheel	Seats:	2
Date/Type of Last Inspection:	October 13, 2021 Condition	Certified Max Gross Wt.:	1151 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	472 Hrs at time of accident	Engine Manufacturer:	Subaru
ELT:	Not installed	Engine Model/Series:	EA81
Registered Owner:	Nelson Christopher H	Rated Power:	
Operator:	Nelson Christopher H	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	KONO,2193 ft msl	Distance from Accident Site:	5 Nautical Miles
Observation Time:	09:53 Local	Direction from Accident Site:	224°
Lowest Cloud Condition:	Few / 5000 ft AGL	Visibility	10 miles
Lowest Ceiling:	Broken / 7000 ft AGL	Visibility (RVR):	
Wind Speed/Gusts:	3 knots /	Turbulence Type Forecast/Actual:	Unknown / Unknown
Wind Direction:	160°	Turbulence Severity Forecast/Actual:	Unknown / Unknown
Altimeter Setting:	30.04 inches Hg	Temperature/Dew Point:	6°C / -4°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Ontario, OR (KNON)	Type of Flight Plan Filed:	None
Destination:	Ontario, OR (KNON)	Type of Clearance:	None
Departure Time:	10:00 Local	Type of Airspace:	Class G

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:		Aircraft Explosion:	None
Total Injuries:	1 None	Latitude, Longitude:	44.079228,-116.93496(est)

Administrative Information

Investigator In Charge (IIC):	Swick, Andrew
Additional Participating Persons:	Brian Lord; FAA-FSDO; Boise, ID
Original Publish Date:	August 15, 2023
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=104121

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