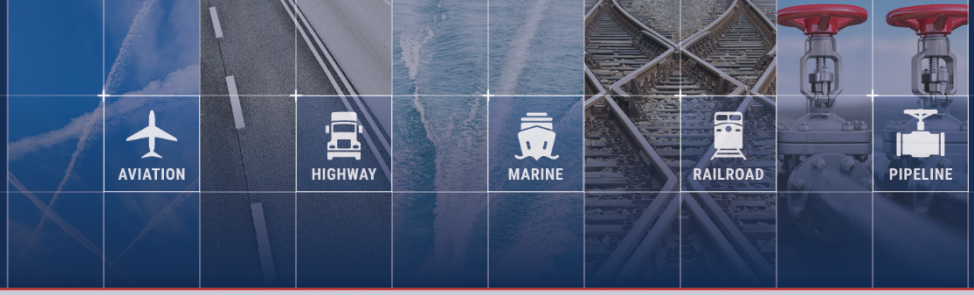

Aviation Investigation Final Report

Location:	Sutton-Alpine, Alaska	**Accident Number:**	ANC22LA068
Date & Time:	August 12, 2022, 15:02 Local	**Registration:**	N6577A
Aircraft:	Cessna 180	**Aircraft Damage:**	Substantial
Defining Event:	Fuel exhaustion	**Injuries:**	1 Minor
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

About two hours into the flight, while at cruise altitude over mountainous terrain, the airplane's engine sustained a loss of power. The pilot was unable to restore engine power and performed a forced landing to a canyon, resulting in substantial damage when the airplane impacted trees. Postaccident examination of the airplane revealed that the fuel lines and carburetor contained about 2 oz of fuel. The fuel strainer remained undamaged and did not contain any fuel and the fuel tanks contained minimal fuel. The examination did not reveal any mechanical malfunctions or failures that would have precluded normal operation.

The pilot stated that he departed on the flight with about 3 hours of fuel. He also stated to Federal Aviation Administration (FAA) inspectors that the airplane was "low" on fuel when the loss of engine power occurred. There were signs of fuel stains on the airplane at the accident site; therefore, it is possible that fuel leaked the from tanks while the airplane sat at the accident site. However, since there was no fuel found in the undamaged fuel strainer, it is likely that the pilot did not have as much fuel onboard as he thought, and that the loss of engine power was due to fuel exhaustion.

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 exhaustion.

Findings

Aircraft	Fuel - Fluid level
Aircraft	Fuel - Fluid management
Personnel issues	Fuel planning - Pilot
Personnel issues	Preflight inspection - Pilot

Factual Information

History of Flight

Enroute	Fuel exhaustion (Defining event)

On August 12, 2022, at 1502 Alaska daylight time, a Cessna 180 airplane, N6577A, was substantially damaged when it was involved in an accident near Sutton-Alpine, Alaska. The pilot sustained minor injuries. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

The pilot reported that he departed from his home airport, Anderson Lake Airport (0AK1), Wasilla, Alaska, about 1300 with 37 gallons of fuel onboard. About two hours into the flight, while at 7,500 ft mean sea level (msl), the engine lost total power, and he assumed it was due to fuel starvation. He was unable to restart the engine and maneuvered the airplane for a forced landing in a canyon. The airplane impacted trees and brush and came to rest upright in a nose-low attitude. The pilot later reported that before the flight he had fueled the airplane from his personal 500-gallon fuel tank, and that the airplane had about three hours of fuel for the two-hour flight.

The responding FAA inspectors reported that the airplane sustained substantial damage to the fuselage, both wings, vertical stabilizer, rudder, and horizontal stabilizer. Initial postaccident examination of the engine revealed no signs of a catastrophic failure or an oil leak. The throttle and mixture control linkages were intact and operational from cockpit controls to the carburetor. The main fuel line to carburetor was removed and fuel was present. The main fuel shutoff valve in the cockpit was selected from OFF to BOTH and about 2 oz of fuel drained from the main fuel line. The carburetor was removed; fuel sprayed into to the carburetor venturi when the throttle linkage was moved, which indicated that the fuel accelerator pump was operational. The fuel strainer (gascolator) was disassembled, which revealed a pink-red fuzzy material and some debris on the strainer screen. There was not enough debris to obstruct fuel flow. The fuel strainer remained undamaged and did not contain any fuel. They were unable to determine if any fuel leaked from the fuel tanks at the accident site or during the recovery, but there were signs of fuel staining on the airplane. There was minimal fuel found in the tanks during the examination.

The pilot stated to the FAA that, during the emergency descent, he only accomplished a couple of [troubleshooting] items in attempt to restart the engine. The pilot could not recall if he attempted to prime the engine. He also stated to the FAA that he was low on fuel when the engine lost power.

A follow-up engine examination was completed by the NTSB. The crankshaft was rotated without issue and suction and compression was obtained from each cylinder. The magnetos produced a spark at each ignition lead as the engine was rotated. The examination did not reveal any mechanical malfunctions or failures that would have precluded normal operation.

Pilot Information

Certificate:	Private	**Age:**	76,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:	Class 3 With waivers/limitations	**Last FAA Medical Exam:**	July 25, 2021
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	August 18, 2022
Flight Time:	10000 hours (Total, all aircraft), 1000 hours (Total, this make and model), 10000 hours (Pilot In Command, all aircraft), 156 hours (Last 90 days, all aircraft), 55 hours (Last 30 days, all aircraft), 4 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N6577A
Model/Series:	180	**Aircraft Category:**	Airplane
Year of Manufacture:	1956	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	32474
Landing Gear Type:	Tailwheel	**Seats:**	4
Date/Type of Last Inspection:	September 10, 2021 Annual	**Certified Max Gross Wt.:**	2550 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	6066.64 Hrs as of last inspection	**Engine Manufacturer:**	Continental Motors
ELT:	C126 installed, activated, did not aid in locating accident	**Engine Model/Series:**	O-470-50
Registered Owner:	NAFUS GIFFORD WILLIAM	**Rated Power:**	285 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:	PAAQ,233 ft msl	**Distance from Accident Site:**	10 Nautical Miles
Observation Time:	15:53 Local	**Direction from Accident Site:**	191°
Lowest Cloud Condition:		**Visibility**	10 miles
Lowest Ceiling:	Broken / 9000 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	5 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	260°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.8 inches Hg	**Temperature/Dew Point:**	17°C / 14°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Wasilla, AK (0AK1)	**Type of Flight Plan Filed:**	None
Destination:	Wasilla, AK (0AK1)	**Type of Clearance:**	None
Departure Time:	13:05 Local	**Type of Airspace:**	Class G

Wreckage and Impact Information

Crew Injuries:	1 Minor	**Aircraft Damage:**	Substantial
Passenger Injuries:	N/A	**Aircraft Fire:**	None
Ground Injuries:		**Aircraft Explosion:**	None
Total Injuries:	1 Minor	**Latitude, Longitude:**	61.757487,-149.0227

Administrative Information

Investigator In Charge (IIC):	Lindberg, Joshua
Additional Participating Persons:	Charles Gillespie; Federal Aviation Administration; Anchorage, AK Andrew Flack; Federal Aviation Administration; Anchorage, AK Greg Varner; Federal Aviation Administration; Wasilla, AK
Original Publish Date:	June 26, 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=105762