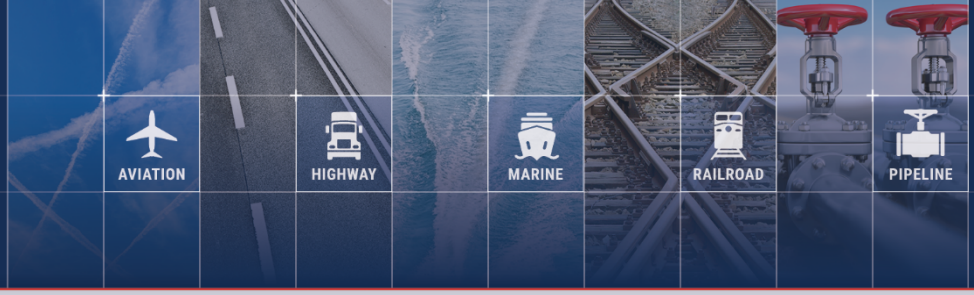

Aviation Investigation Final Report

Location:	White Mountain, Alaska	**Accident Number:**	ANC18LA059
Date & Time:	July 31, 2018, 23:00 Local	**Registration:**	N185KB
Aircraft:	Cessna A185F	**Aircraft Damage:**	Substantial
Defining Event:	Loss of engine power (partial)	**Injuries:**	4 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The private pilot was conducting a cross-country flight when he demonstrated a momentary zero-G maneuver, shortly after which the engine lost partial power. The pilot was unable to restore engine power and subsequently conducted a forced landing to tundra covered terrain, during which the airplane nosed over, resulting in substantial damage.

Postaccident examination of the airframe and engine revealed no anomalies that would have precluded normal operation; however, one engine exhaust valve exhibited signatures consistent with uneven excessive heat exposure, but no mechanical failure of the valve, therefore would not have resulted in a loss of power. It is unlikely that a momentary zero G maneuver would result in a partial power loss that could not be restored.

Probable Cause and Findings

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

A partial loss of engine power for reasons that could not be determined because postaccident examination of the engine revealed no mechanical malfunctions or failures that would have precluded normal operation.

Findings

Not determined	(general) - Unknown/Not determined

Factual Information

History of Flight

Enroute-cruise	Loss of engine power (partial) (Defining event)
Landing-landing roll	Collision during takeoff/land

On July 31, 2018, about 2300 Alaska daylight time, a Cessna 185 airplane, N185KB, sustained substantial damage when it was involved in an accident near White Mountain, Alaska. The private pilot and three passengers were uninjured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

The pilot reported that he was flying with a friend in the front seat and his two sons in the rear seat. Earlier that day, he fueled the airplane with 55 gallons, which resulted in 84 gallons of usable fuel for the 120-mile round trip. The flight to the destination was uneventful. The pilot departed on the return flight that evening and proceeded to the coast to avoid rising inland terrain and low clouds. The pilot-rated passenger in the front seat reported that, while maneuvering toward the coast, the pilot demonstrated an "up down" maneuver for his sons in the rear seats. He accelerated the airplane and gently pulled and pushed the nose over so that they could feel momentary weightlessness. About 45 seconds to 1 minute later, the pilot noticed that the propeller rpm had reduced from 2300 to 1920 rpm. He advanced the propeller control lever forward, but there was no response. He then pushed the throttle and mixture controls full forward, with no corresponding response. He activated the auxiliary fuel pump switch; however, full engine power was not restored, and the pilot performed a forced landing to terrain. The passenger stated that the landing appeared normal, and she was surprised when the airplane nosed over onto its back during the landing roll. The left wing, both lift struts, vertical stabilizer and rudder, and fuselage sustained substantial damage.

The occupants egressed and the pilot called a family member, however; diminishing visibility prevented rescue that night. They sheltered inside the airplane for the night with one sleeping bag and some survival equipment and were rescued the following morning. The pilot and passenger each stated they regretted not having more sleeping bags, rain gear, and a hand-held aviation VHF radio on board.

Examination of the airframe and engine revealed no anomalies with the exception of one exhaust valve, which exhibited green crescent signatures consistent with exposure to excessively high temperatures; however, there was no sign of valve failure, such as fractures or restricted movement of the valve. All fuel samples were clear and fuel was present in the fuel lines to the engine.

Pilot Information

Certificate:	Private	**Age:**	43,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	4-point
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 Without waivers/limitations	**Last FAA Medical Exam:**	June 19, 2017
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	830 hours (Total, all aircraft), 77 hours (Total, this make and model), 830 hours (Pilot In Command, all aircraft), 21 hours (Last 90 days, all aircraft), 10 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Passenger Information

Certificate:		**Age:**	
Airplane Rating(s):		**Seat Occupied:**	Right
Other Aircraft Rating(s):		**Restraint Used:**	4-point
Instrument Rating(s):		**Second Pilot Present:**	No
Instructor Rating(s):		**Toxicology Performed:**	
Medical Certification:		**Last FAA Medical Exam:**	
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:			

Passenger Information

Certificate:		**Age:**	Male
Airplane Rating(s):		**Seat Occupied:**	Left
Other Aircraft Rating(s):		**Restraint Used:**	Lap only
Instrument Rating(s):		**Second Pilot Present:**	No
Instructor Rating(s):		**Toxicology Performed:**	
Medical Certification:		**Last FAA Medical Exam:**	
Occupational Pilot:		**Last Flight Review or Equivalent:**	
Flight Time:			

Passenger Information

Certificate:		**Age:**	
Airplane Rating(s):		**Seat Occupied:**	Right
Other Aircraft Rating(s):		**Restraint Used:**	Lap only
Instrument Rating(s):		**Second Pilot Present:**	No
Instructor Rating(s):		**Toxicology Performed:**	
Medical Certification:		**Last FAA Medical Exam:**	
Occupational Pilot:		**Last Flight Review or Equivalent:**	
Flight Time:			

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N185KB
Model/Series:	A185F F	**Aircraft Category:**	Airplane
Year of Manufacture:	1979	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	18503698
Landing Gear Type:	Tailwheel	**Seats:**	6
Date/Type of Last Inspection:	August 18, 2017 Annual	**Certified Max Gross Wt.:**	12499 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	2547 Hrs as of last inspection	**Engine Manufacturer:**	CONT MOTOR
ELT:	C126 installed, activated, did not aid in locating accident	**Engine Model/Series:**	IO-520-D
Registered Owner:		**Rated Power:**	300 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:	PAWM,267 ft msl	**Distance from Accident Site:**	8 Nautical Miles
Observation Time:	23:31 Local	**Direction from Accident Site:**	29°
Lowest Cloud Condition:	Few / 1300 ft AGL	**Visibility**	10 miles
Lowest Ceiling:	Broken / 2200 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	9 knots /	**Turbulence Type Forecast/Actual:**	None /
Wind Direction:	110°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.77 inches Hg	**Temperature/Dew Point:**	16°C / 15°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Council, AK (K29)	**Type of Flight Plan Filed:**	None
Destination:	Nome, AK (OME)	**Type of Clearance:**	None
Departure Time:	22:45 Local	**Type of Airspace:**	Class G

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	3 None	**Aircraft Fire:**	None
Ground Injuries:		**Aircraft Explosion:**	None
Total Injuries:	4 None	**Latitude, Longitude:**	64.566665,-163.5686(est)

Administrative Information

Investigator In Charge (IIC):	Price, Noreen		
Additional Participating Persons:	Peter Alexis; FAA FSDO; Nome, AK		
Original Publish Date:	May 27, 2021	**Investigation Class:**	3
Note:	The NTSB did not travel to the scene of this accident.		
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=97961		

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available here.