



# Aviation Investigation Final Report

<b>Location:</b>	Newman Lake, Washington	<b>Accident Number:</b>	WPR16LA045
<b>Date &amp; Time:</b>	January 1, 2016, 15:30 Local	<b>Registration:</b>	N2684A
<b>Aircraft:</b>	Piper PA18	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Loss of engine power (partial)	<b>Injuries:</b>	1 None
<b>Flight Conducted Under:</b>	Part 91: General aviation - Personal		

## Analysis

The private pilot performed two low passes to the snow-covered airstrip, during which the airplane's flaps were extended and carburetor heat was on. After completing the second low pass, the pilot retracted the wing flaps, turned off the carburetor heat, and applied engine power to go around. The engine subsequently experienced roughness and a partial loss of power. The pilot turned the carburetor heat back on, but engine power was not restored. Unable to maintain altitude, the pilot elected to land on the airstrip he had been overflying. During the landing, the airplane nosed over due to the depth of the accumulated snow, which resulted in substantial damage.

A postaccident examination of the carburetor revealed full control continuity to the carburetor heat/air box, the butterfly valve reached full travel, and full control continuity from the cockpit throttle and mixture controls to the carburetor was confirmed. An engine run revealed no anomalies. Although the airplane was operating in conditions that were conducive to a serious risk of carburetor ice accumulation at a descent power setting, the engine was operating at a takeoff/go-around power setting at the time of the loss of power, and it is unlikely that carburetor ice would have accumulated during this time. Therefore, the reason for the partial loss of engine power could not be determined.

## 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 did not reveal any anomalies that would have precluded normal operation.

## Findings

Not determined	(general) - Unknown/Not determined
----------------	------------------------------------

# Factual Information

## History of Flight

<b>Maneuvering-low-alt flying</b>	Loss of engine power (partial) (Defining event)
<b>Landing-landing roll</b>	Nose over/nose down

On January 1, 2016, about 1530 Pacific standard time, a Piper PA18-150, N2684A, was substantially damaged during a precautionary landing to a private dirt airstrip following a partial loss of engine power near Newman Lake, Washington. The private pilot, the sole occupant of the airplane, was not injured. Visual meteorological conditions prevailed for the local flight, which was being operated in accordance with 14 Code of Federal Regulation Part 91, and a flight plan was not filed. The local flight departed Felts Field (SFF), Spokane, Washington, about 1500, with the destination being a private airstrip about 13 nautical miles northeast of SFF.

In a statement submitted to the National Transportation Safety Board investigator-in-charge, the pilot reported that after departing SFF, his intention was to make several slow, low passes over the private airstrip, which was located about 13 nautical miles northeast of SFF. He initially climbed to 6,000 ft mean sea level, cycled the carburetor heat while on descent to the airstrip, then made an initial low pass with full flaps and carburetor heat applied, followed by a go-around with carburetor heat off. The pilot opined that he subsequently made a second low pass in the same configuration, but during the go-around experienced engine roughness, a loss of power, the engine backfiring, and a loss of engine rpm from 2,400 to 2,200. He then applied carburetor heat, but there was no increase in rpm. Unable to maintain altitude, the pilot elected to make a precautionary landing on the private airstrip, which was covered with what the pilot described as covered with snow. Upon touchdown the airplane nosed over, which resulted in substantial damage to both wing struts and the rudder.

A postaccident examination of the airplane and engine overseen by a Federal Aviation Administration aviation safety inspector, which included an engine run, revealed no preimpact malfunctions or failures that would have precluded normal operation. During the examination the inspector noted that the carburetor heat/air box had full continuity, the butterfly valve reached full travel, and full continuity of control was confirmed from the throttle and mixture controls in the cockpit to the carburetor.

At 1450, the weather reporting facility located at SFF reported wind calm, visibility 10 miles, sky clear, temerature -7 C, dew point -9 C, and altimeter reading of 30.52 inches of mercury.

The carburetor icing probability chart from the FAA Special Airworthiness Information Bulletin (SAIB), CE-09-35 Carburetor Icing Prevention, indicated that the airplane was operating in an area associated with a serious risk of carburetor ice accumulation at descent power.

## Pilot Information

<b>Certificate:</b>	Private	<b>Age:</b>	18,Male
<b>Airplane Rating(s):</b>	Single-engine land	<b>Seat Occupied:</b>	Front
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	4-point
<b>Instrument Rating(s):</b>	None	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 2 None	<b>Last FAA Medical Exam:</b>	October 22, 2013
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	December 8, 2014
<b>Flight Time:</b>	313 hours (Total, all aircraft), 193 hours (Total, this make and model), 195 hours (Pilot In Command, all aircraft), 45 hours (Last 90 days, all aircraft), 16 hours (Last 30 days, all aircraft), 0.5 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Piper	<b>Registration:</b>	N2684A
<b>Model/Series:</b>	PA18 150	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>	1952	<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Restricted (Special)	<b>Serial Number:</b>	18-2190
<b>Landing Gear Type:</b>	Tailwheel	<b>Seats:</b>	2
<b>Date/Type of Last Inspection:</b>	August 19, 2015 Annual	<b>Certified Max Gross Wt.:</b>	1750 lbs
<b>Time Since Last Inspection:</b>	64 Hrs	<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	4346.311 Hrs at time of accident	<b>Engine Manufacturer:</b>	Lycoming
<b>ELT:</b>	Installed, activated, aided in locating accident	<b>Engine Model/Series:</b>	O-320 A2B
<b>Registered Owner:</b>	On file	<b>Rated Power:</b>	150 Horsepower
<b>Operator:</b>	On file	<b>Operating Certificate(s) Held:</b>	None

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	SFF,1957 ft msl	<b>Distance from Accident Site:</b>	13 Nautical Miles
<b>Observation Time:</b>	14:50 Local	<b>Direction from Accident Site:</b>	210°
<b>Lowest Cloud Condition:</b>	Clear	<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>	None	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	/	<b>Turbulence Type Forecast/Actual:</b>	/ None
<b>Wind Direction:</b>		<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	30.52 inches Hg	<b>Temperature/Dew Point:</b>	-7°C / -9°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	Spokane, WA (SFF )	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	Spokane, WA (SFF )	<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	15:00 Local	<b>Type of Airspace:</b>	Class E

## Airport Information

<b>Airport:</b>	Warners Airstrip N/A	<b>Runway Surface Type:</b>	Dirt;Snow
<b>Airport Elevation:</b>	3550 ft msl	<b>Runway Surface Condition:</b>	Snow
<b>Runway Used:</b>	01	<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>	2500 ft / 25 ft	<b>VFR Approach/Landing:</b>	Precautionary landing

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 None	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>		<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 None	<b>Latitude, Longitude:</b>	47.776668,-117.095001

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Little, Thomas
<b>Additional Participating Persons:</b>	Robert Tichnor; Federal Aviation Administration; Spokane, WA Phillip W Griffis; Federal Aviation Administration; Spokane, WA
<b>Original Publish Date:</b>	May 23, 2017
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class</a>
<b>Note:</b>	The NTSB did not travel to the scene of this accident.
<b>Investigation Docket:</b>	<a href="https://data.nts.gov/Docket?ProjectID=92520">https://data.nts.gov/Docket?ProjectID=92520</a>

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

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](#).