



National Transportation Safety Board Aviation Accident Final Report

Location:	Helena, MT	Accident Number:	WPR15LA087
Date & Time:	01/20/2015, 1220 MST	Registration:	N4666R
Aircraft:	PIPER PA 28-140	Aircraft Damage:	Substantial
Defining Event:	Loss of engine power (total)	Injuries:	1 Minor, 1 None
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

The private pilot reported that a preflight inspection and engine run-up revealed no anomalies; however, during the initial climb after takeoff, the engine was not developing full power. The pilot initiated a shallow left turn back to the runway, but the airplane was not able to maintain altitude or airspeed and subsequently impacted a house.

A postaccident examination of the airframe and engine did not reveal any mechanical anomalies that would have precluded normal operation, and the reason for the 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:

Loss of engine power after takeoff for reasons that could not be determined because postaccident examination did not reveal any evidence of an anomaly that would have precluded normal operation.

Findings

Environmental issues	Residence/building - Effect on equipment
Not determined	Not determined - Unknown/Not determined (Cause)

Factual Information

On January 20, 2015, at 1220 mountain standard time, a Piper PA-28-140, N4666R, experienced a loss of engine power during takeoff from the Helena Regional Airport (HLN), Helena, Montana, and subsequently impacted a shed and a house. The flight was operated under the provisions of 14 Code of Federal Regulations Part 91 as a personal flight. The private pilot was not injured; the passenger/owner sustained minor injuries. The airplane sustained substantial damage throughout its structure. Visual meteorological conditions prevailed for the personal flight that was destined for Missoula, Montana. No flight plan had been filed.

The pilot reported that he performed a thorough preflight inspection, which included checking the flight controls, and fuel and fuel sumps; no discrepancies were noted. After the engine started, and while it was warming up, he contacted ground control for a clearance to taxi to the active runway for departure. The ground controller cleared him to taxi the airplane to runway 27, where he commenced with an engine run-up. During the takeoff roll, the airplane rotated at 65 mph. During the climb out, he stated that it was quiet; the engine was not developing full power. The pilot stated that there was no safe place to land straight ahead, and as the engine was still running, he decided to turn back for the airport. The pilot stated that they were about 350-400 feet above the ground, and the engine was developing 2,300 rpm when he made a shallow left turn to return to the airport. The airplane could not maintain altitude or airspeed, and it collided with a house.

The owner/passenger reported that he purchased the airplane about 2 weeks prior to the accident. An annual inspection had taken place in August 2014. On January 16, 2015, the owner called Executive Aviation, a fixed based operator (FBO), and requested that the airplane be topped off with aviation fuel; the airplane was refueled with 26.3 gallons of fuel with the majority of the fuel placed in the right fuel tank. The owner stated that the airplane had been tied down outside on the tarmac since August and had accrued about 2.19 hours since the annual inspection.

An officer from the Helena Police Department reported that the airplane struck power lines, a tree, a propane tank, and came to rest in a shed and adjacent house.

The responding Federal Aviation Administration (FAA) inspector reported that both of the airplane's wings had separated from the airframe. Both wings' fuel tanks were breached in the accident sequence, blue colored liquid was near the right wing pooled in the snow.

An engine inspection was performed on April 28, 2015, at Helena Aircraft, under the supervision of an FAA inspector. A visual inspection of the engine revealed no obvious damage to the engine.

The engine remained attached to the engine mount, and the airframe. The fuel strainer screen, electric fuel pump screen, and the air filter contained no obstructions. The top spark plugs were removed, and manual rotation of the engine produced thumb compression in all cylinders in firing order. The magneto switches were turned on, and the spark plug leads produced spark at each cylinder when the engine was manually rotated; magneto-to-engine timing was also

established and within manufacturer specification limits. The spark plugs were placed on a spark plug test bench, the top No. four, and bottom No. two did not fire.

The carburetor functionally checked, and appeared to function normally when the throttle and mixture were manipulated. The carburetor was removed with partial soot identified in the throat area. The accelerator pump functioned properly; however, the retaining cotter pin was not present. The carburetor bowl was empty.

The fuel selector was selected to the right fuel tank inside the cockpit. The right main fuel tank filler port was placarded to allow auto gas; there was no fuel inside the fuel tank.

A detailed report is attached to the factual docket for this accident.

History of Flight

Initial climb	Loss of engine power (total) (Defining event)
Emergency descent	Collision with terr/obj (non-CFIT)

Pilot Information

Certificate:	Private	Age:	75, Male
Airplane Rating(s):	Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Lap Only
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 3 With Waivers/Limitations	Last FAA Medical Exam:	06/17/2014
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:	(Estimated) 897.7 hours (Total, all aircraft), 24 hours (Total, this make and model)		

Aircraft and Owner/Operator Information

Aircraft Make:	PIPER	Registration:	N4666R
Model/Series:	PA 28-140	Aircraft Category:	Airplane
Year of Manufacture:	1966	Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	28-21422
Landing Gear Type:	Tricycle	Seats:	
Date/Type of Last Inspection:	08/06/2014, Annual	Certified Max Gross Wt.:	
Time Since Last Inspection:	3 Hours	Engines:	1 Reciprocating
Airframe Total Time:	as of last inspection	Engine Manufacturer:	LYCOMING
ELT:	Installed, not activated	Engine Model/Series:	O-320 SERIES
Registered Owner:	Duane Felstet	Rated Power:	0 hp
Operator:	On file	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	KHLN, 3868 ft msl	Distance from Accident Site:	2 Nautical Miles
Observation Time:	1153 MST	Direction from Accident Site:	85°
Lowest Cloud Condition:	Clear	Visibility	10 Miles
Lowest Ceiling:	Broken / 6500 ft agl	Visibility (RVR):	
Wind Speed/Gusts:	10 knots /	Turbulence Type Forecast/Actual:	/ None
Wind Direction:	270°	Turbulence Severity Forecast/Actual:	/ N/A
Altimeter Setting:	30.27 inches Hg	Temperature/Dew Point:	3° C / -6° C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Helena, MT (HLN)	Type of Flight Plan Filed:	None
Destination:	MISSOULA, MT (MSO)	Type of Clearance:	None
Departure Time:	1200 MST	Type of Airspace:	Class D

Airport Information

Airport:	HELENA RGNL (HLN)	Runway Surface Type:	N/A
Airport Elevation:	3877 ft	Runway Surface Condition:	Unknown
Runway Used:	N/A	IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	Forced Landing

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	1 Minor	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Minor, 1 None	Latitude, Longitude:	46.603333, -112.010556 (est)

Administrative Information

Investigator In Charge (IIC):	Tealeye Cornejo	Report Date:	03/23/2017
Additional Participating Persons:	Rickey E Koffman; Federal Aviation Administration; Helena, MT		
Publish Date:	03/23/2017		
Note:	The NTSB did not travel to the scene of this accident.		
Investigation Docket:	http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=90622		

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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](#).