



# National Transportation Safety Board Aviation Accident Final Report

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<b>Location:</b>	Redmond, OR	<b>Accident Number:</b>	WPR15LA137
<b>Date &amp; Time:</b>	03/01/2015, 0940 PST	<b>Registration:</b>	N9133G
<b>Aircraft:</b>	PIPER PA 46-310P	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Loss of engine power (total)	<b>Injuries:</b>	1 None
<b>Flight Conducted Under:</b>	Part 91: General Aviation - Personal		

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## Analysis

The private pilot reported that, about 30 minutes into the private, cross-country flight and while the airplane was cruising at 23,000 ft mean sea level, the engine started running roughly. The pilot noticed that the No. 5 cylinder head temperature (CHT) was lower than normal. He cycled the magnetos and noticed that the engine ran rougher than normal when the left magneto was selected. He then enriched the mixture, and the engine smoothed out. He continued to monitor the engine and adjust the mixture. About 30 minutes later, the engine lost power. The pilot diverted to a nearby airport and attempted to line up for a runway but did not have sufficient altitude. He performed a forced landing to the airport infield, which resulted in the nose landing gear collapsing and structural damage to the wing spar.

Postaccident examination of the engine did not reveal any anomalies that would have precluded normal operation. During an engine test run up to full power, the only anomaly noted was that the No. 5 CHT was 50 to 70° lower than all the other cylinders. However, the lower CHT likely would not cause a loss of engine power.

## Probable Cause and Findings

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

A loss of engine power during cruise flight 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

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Not determined

Not determined - Unknown/Not determined (Cause)

## Factual Information

On March 1, 2015, at 0940 Pacific standard time, a Piper PA-46-310P, N9133G, executed a forced landing into Roberts Field Airport, Redmond, Oregon, after a loss of engine power. The airplane was registered to, and operated by, the private pilot under the provisions of 14 Code of Federal Regulations, Part 91. The pilot was not injured, and the airplane sustained substantial damage to both wings. Visual meteorological conditions prevailed, and an instrument flight plan had been filed. The flight originated from Oak Harbor, Washington, at 0800.

The pilot reported that he was cruising at 23,000 feet mean sea level (msl) when he noticed the engine running a bit rough as he passed Portland, Oregon. He noticed that the number 5 cylinder head temperature (cht) was lower than normal. The pilot cycled the magnetos and noticed that the engine ran rougher than normal when the left magneto was selected. The engine smoothed out when he enriched the mixture. He continued to monitor the engine and adjusting the mixture. About 30 minutes later engine power completely dropped off. The pilot diverted to Roberts Field, Redmond, Oregon, using his GPS for navigation. About 2 miles out he acquired the airport visually, and attempted to line up for a runway but did not have enough altitude. He performed a forced landing into the airport infield. The landing resulted in a collapsed nose landing gear, and wing spar damage at both main landing gear mounts.

On March 3, 2015, an airframe and power plants (A&P) mechanic examined the airplane under the supervision of a Federal Aviation Administration (FAA) inspector. He reported on the airframe structural damage, and that he found no obvious reason for the loss of engine power. The airplane was then relocated to a facility in Greeley, Colorado, for further examination.

The airplane was equipped with a EDM 930 engine data monitoring system. On April 14 the data from the EDM 930 was downloaded and sent to the NTSB Investigator-in-Charge (IIC). The data showed that about 25 minutes before the loss of engine power the number 5 cylinder head temperature (cht) started to trend about 50°F below its previous steady temperature (300°F), and then fluctuate twice between 300°F – 250°F during the last 12 minutes. The exhaust gas temperature (egt) remained steady for cylinder number 5 throughout the record. All the remaining cylinders exhibited steady egt and cht values.

On May 13, 2015, the NTSB IIC, and a technical representative from the engine manufacturer examined the airplane. A fuel sample was taken from the fuel strainer. The fuel sample was light green in color and tested negative for water or kerosene/jet fuel contamination. Results of a chemical analysis confirmed that the sample was chemically consistent with 100LL avgas. The engine was examined externally, the cylinders bore scoped, sparkplugs inspected, internal magneto timing verified, and internal continuity confirmed by rotating the propeller/crankshaft. The number 5 cylinder fuel injection nozzle was removed, examined, and found to be in good condition with no blockages. An external fuel tank was plumbed into the right-wing fuel outlet and an external priming pump placed inline. The engine started on the first attempt, ran smoothly at idle, magneto checked performed, and the engine was run up to red line producing full power. No anomalies were noted during the engine run other than that the number 5 cylinder head temperature was notably 50°-70°F cooler than all the other cylinders.

## History of Flight

Enroute-cruise	Loss of engine power (total) (Defining event)
Landing-landing roll	Runway excursion

## Pilot Information

Certificate:	Private	Age:	68, Male
Airplane Rating(s):	Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	3-point
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 3 Waiver Time Limited Special	Last FAA Medical Exam:	01/23/2015
Occupational Pilot:	No	Last Flight Review or Equivalent:	04/22/2014
Flight Time:	2572 hours (Total, all aircraft), 1299 hours (Total, this make and model), 90 hours (Last 90 days, all aircraft), 29 hours (Last 30 days, all aircraft), 3 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

Aircraft Make:	PIPER	Registration:	N9133G
Model/Series:	PA 46-310P	Aircraft Category:	Airplane
Year of Manufacture:	1988	Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	4608111
Landing Gear Type:	Tricycle	Seats:	6
Date/Type of Last Inspection:	10/16/2014, Annual	Certified Max Gross Wt.:	4101 lbs
Time Since Last Inspection:	94 Hours	Engines:	1 Reciprocating
Airframe Total Time:	3208.3 Hours as of last inspection	Engine Manufacturer:	CONT MOTOR
ELT:	C126 installed, not activated	Engine Model/Series:	TSIO-520 SER
Registered Owner:	On file	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:	KRDM, 3080 ft msl	Distance from Accident Site:	0 Nautical Miles
Observation Time:	0956 PST	Direction from Accident Site:	
Lowest Cloud Condition:	Clear	Visibility	10 Miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	5 knots /	Turbulence Type Forecast/Actual:	/ None
Wind Direction:	180°	Turbulence Severity Forecast/Actual:	/ N/A
Altimeter Setting:	30.19 inches Hg	Temperature/Dew Point:	1°C / -9°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Friday Harbor, WA (KFHR)	Type of Flight Plan Filed:	IFR
Destination:	North Las Vegas, NV (KVG T)	Type of Clearance:	IFR
Departure Time:	0800 PST	Type of Airspace:	Class A

## Airport Information

Airport:	Roberts Field Airport (KRDM)	Runway Surface Type:	
Airport Elevation:	3080 ft	Runway Surface Condition:	
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:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 None	Latitude, Longitude:	44.253889, -121.150000 (est)

## Administrative Information

Investigator In Charge (IIC):	Van McKenny	Report Date:	09/06/2017
Additional Participating Persons:	Keith Ruconich; FAA; Hillsboro, OR Chris Lang; Continental Motors Inc; Mobile, AL		
Publish Date:	09/06/2017		
Note:	The NTSB did not travel to the scene of this accident.		
Investigation Docket:	<a href="http://dms.ntsb.gov/pubdms/search/dockList.cfm?mKey=90955">http://dms.ntsb.gov/pubdms/search/dockList.cfm?mKey=90955</a>		

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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](#).