



# National Transportation Safety Board Aviation Accident Final Report

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<b>Location:</b>	Pembroke Pines, FL	<b>Accident Number:</b>	ERA16LA111
<b>Date &amp; Time:</b>	02/24/2016, 1615 EST	<b>Registration:</b>	N6449P
<b>Aircraft:</b>	CESSNA 152	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Loss of engine power (partial)	<b>Injuries:</b>	1 Minor
<b>Flight Conducted Under:</b>	Part 91: General Aviation - Personal		

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## Analysis

The engine's valves were adjusted the week before the flight to remedy engine performance issues that would typically begin between 10 and 45 minutes in flight. The private pilot performed a full preflight check with no anomalies noted. He then departed, orbited the airport for about 45 minutes, and continued flying over the airport. No engine issues were noted until about 1 hour 5 minutes after takeoff, when the engine began to run roughly. The pilot entered the traffic pattern, but, while operating with the mixture control full rich and the engine at 2,250 rpm with normal oil temperature and pressure, the engine went to idle and did not respond to throttle input. Unable to reach the intended runway, the pilot initiated a descent for a forced landing to a road but, while descending, collided with a utility pole and then impacted the ground hard.

Examination of the engine revealed no evidence of preimpact mechanical failures or malfunctions that would have precluded normal operation. Although a blockage of the left fuel vent line was noted several months after the accident, the airplane was equipped with vented fuel caps, which would have mitigated the issue had it existed at the time of the accident. In addition, although the magnetos were improperly timed, this would have been detectable by the pilot before takeoff and likely did not contribute to the reported loss of engine power. Further, although the weather conditions were favorable for the formation of serious carburetor icing at glide power, the pilot was not operating in that regime when the loss of engine power occurred. Therefore, the reason for the loss of engine power could not be determined based on the available evidence.

## Probable Cause and Findings

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

The loss of engine power while on approach for reasons that could not be determined based on the available evidence.

## Findings

Environmental issues	Pole - Contributed to outcome
Not determined	Not determined - Unknown/Not determined (Cause)

## Factual Information

On February 24, 2016, about 1615 eastern standard time, a privately owned and operated Cessna 152, N6449P, was substantially damaged during a forced landing to a road in Pembroke Pines, Florida. The private pilot sustained minor injuries. Visual meteorological conditions prevailed, and no flight plan had been filed for the local flight that originated about 1 hour 5 minutes earlier from North Perry Airport (HWO), Hollywood, Florida. The personal flight was being operated under the provisions of 14 *Code of Federal Regulations* Part 91.

According to the pilot, the engine's valves were adjusted 1 week before the accident in an effort to troubleshoot repeated engine performance issues that would manifest as a rough running engine followed by partial loss of power typically between 10 and 45 minutes into a flight. In advance of the flight, he performed a full preflight check and reported, "everything was normal." The pilot departed and orbited the airport for about 45 minutes, noting no engine discrepancies at the typical elapsed time. He elected to continue flying over the airport in an effort to break-in the piston rings. At about 1 hour 5 minutes into the flight while flying over the southwest corner of the airport, the engine began to run rough. He proceeded to the north side of the airport to sequence for landing on runway 19L, and while operating with the mixture control full rich and the engine at 2,250 rpm, the engine, "totally dropped out", but the oil temperature and pressure were indicating normal. He added power but the engine did not respond and was operating, "pretty much at idle." He declared an emergency with HWO air traffic control tower, and, while on final approach realized he was unable to land on the intended runway. While descending for a forced landing to a road, the left wing contacted a utility pole, and the airplane then impacted the ground which sheared off the nose landing gear.

According to a Federal Aviation Administration (FAA) inspector, the accident site was located about .3 nautical mile nearly due north of the approach end of runway 19L. The airplane was moved from the road and secured at HWO, but was not examined before being sold about 2 months after the accident.

The individual who purchased the airplane had his mechanic begin troubleshooting to determine the reason for the loss of engine power. His mechanic found an insect nest in the left fuel vent line between the opening and check valve. In a continued effort to troubleshoot the reason for the loss of engine power, the mechanic checked the fuel supply and timing of the magnetos, then removed the engine. The airplane was subsequently relocated to another airport.

Examination of the airplane and engine by several FAA airworthiness inspectors several months after the accident revealed all valves gaps were between 0.007 and 0.009 inch, which was within limits per Lycoming Service Instruction No. 1068A. Because a run-out test of the crankshaft flange had not been performed, and the engine had been previously removed from the airframe, an engine run was not performed. Rotation of the propeller revealed crankshaft, camshaft, and valve train continuity. Thumb suction and compression was noted in each cylinder. The magnetos produced spark at all spark plugs and were timed 25 degrees before top dead center (BTDC), while the engine data plate specifies the timing to be 20 degrees BTDC.

No defects were noted to the P-leads and terminals, and no defects of the spark plugs were noted, though the Nos. 3 and 4 lower plugs were wet with oil. No blockage of the fuel vent crossover line, or of the air induction and exhaust systems was noted, and the vented type fuel caps functioned normally. Examination of the propeller revealed the tip of one blade was bent aft about 90 degrees and exhibited coarse spanwise scratches on the cambered side of the blade. The opposite blade was bent forward about 90 degrees and exhibited coarse chordwise scratches on the blade back, or non-cambered side of the blade. Gouges were also noted on the leading edge in the area of the blade that was bent forward. Because the engine had been removed, relocated, and then temporarily installed before being examined, there was no fuel found in the carburetor, but the fuel line to the carburetor did contain fuel.

A special surface observation taken at HWO about 5 minutes after the accident reported the temperature and dew point to be 28 and 20 degrees Celsius, respectively.

According to a FAA Special Airworthiness Information Bulletin CE-09-35, based on the reported temperature and dewpoint about the time of the accident, the conditions were favorable for serious icing at glide engine power settings.

### History of Flight

Approach-VFR pattern final	Loss of engine power (partial) (Defining event)
Emergency descent	Off-field or emergency landing Collision with terr/obj (non-CFIT)
Landing-flare/touchdown	Hard landing

### Pilot Information

Certificate:	Private	Age:	52, Male
Airplane Rating(s):	Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	None None	Last FAA Medical Exam:	03/15/2011
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:	261 hours (Total, all aircraft), 250 hours (Total, this make and model), 3 hours (Last 90 days, all aircraft)		

## Aircraft and Owner/Operator Information

Aircraft Make:	CESSNA	Registration:	N6449P
Model/Series:	152 NO SERIES	Aircraft Category:	Airplane
Year of Manufacture:	1981	Amateur Built:	No
Airworthiness Certificate:	Utility	Serial Number:	15285015
Landing Gear Type:	Tricycle	Seats:	2
Date/Type of Last Inspection:		Certified Max Gross Wt.:	1670 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	at time of accident	Engine Manufacturer:	LYCOMING
ELT:		Engine Model/Series:	O-235-L2C
Registered Owner:	On file	Rated Power:	110 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:	HWO, 8 ft msl	Distance from Accident Site:	1 Nautical Miles
Observation Time:	1620 EST	Direction from Accident Site:	10°
Lowest Cloud Condition:		Visibility	10 Miles
Lowest Ceiling:	Broken / 4100 ft agl	Visibility (RVR):	
Wind Speed/Gusts:	17 knots / 24 knots	Turbulence Type Forecast/Actual:	/ None
Wind Direction:	220°	Turbulence Severity Forecast/Actual:	/ N/A
Altimeter Setting:	29.89 inches Hg	Temperature/Dew Point:	28° C / 20° C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Hollywood, FL (HWO)	Type of Flight Plan Filed:	None
Destination:	Hollywood, FL (HWO)	Type of Clearance:	VFR
Departure Time:	1510 EST	Type of Airspace:	Class D

## Airport Information

Airport:	North Perry (HWO)	Runway Surface Type:	Asphalt
Airport Elevation:	8 ft	Runway Surface Condition:	Dry
Runway Used:	19L	IFR Approach:	None
Runway Length/Width:	3260 ft / 100 ft	VFR Approach/Landing:	Forced Landing

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 Minor	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>	N/A	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 Minor	<b>Latitude, Longitude:</b>	26.007222, -80.237222

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Timothy W Monville	<b>Report Date:</b>	07/08/2019
<b>Additional Participating Persons:</b>	Michael Spencer; FAA/FSDO; Miramar, FL		
<b>Publish Date:</b>	07/08/2019		
<b>Note:</b>	The NTSB did not travel to the scene of this accident.		
<b>Investigation Docket:</b>	<a href="http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=92764">http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=92764</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](#).