



# National Transportation Safety Board Aviation Accident Final Report

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<b>Location:</b>	Cuba, NM	<b>Accident Number:</b>	CEN16LA349
<b>Date &amp; Time:</b>	09/04/2016, 0435 MDT	<b>Registration:</b>	N9241J
<b>Aircraft:</b>	PIPER PA 28-180	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Loss of engine power (partial)	<b>Injuries:</b>	2 None
<b>Flight Conducted Under:</b>	Part 91: General Aviation - Personal		

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## Analysis

The private pilot and passenger departed on a night cross-country flight using flight following. About 2 hours after departure, the engine suddenly lost partial power. The pilot checked the engine gauges, which were all in the green, and advised air traffic control (ATC) of the loss of engine power. The pilot switched fuel tanks, then activated the carburetor heat. He tried switching magnetos and enriching the mixture for "a few seconds." He then leaned the mixture again and "deactivated the carb heat," all with no changes observed in engine power. The pilot declared an emergency with ATC and used his tablet computer's navigation application to align the airplane over a road. Upon touchdown, the airplane's wing impacted a guardrail, and the airplane subsequently nosed over. Although weather conditions at the nearest weather reporting facility about 50 miles from the accident site were conducive to the accumulation of serious carburetor icing at cruise power, the investigation could not determine whether the loss of power was a result of carburetor ice, and no postaccident examination of the engine was conducted to rule out other causes.

## 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 based on available information.

## Findings

<b>Environmental issues</b>	Conducive to carburetor icing - Contributed to outcome (Cause) Tree(s) - Contributed to outcome Dark - Contributed to outcome
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## Factual Information

On September 4, 2016, about 0435 mountain daylight time, a Piper PA 28-180 airplane, N9241J, impacted ground obstacles and nosed over during a forced landing following a partial loss of engine power near Cuba, New Mexico. The pilot and his passenger reported no injuries. The airplane was substantially damaged during the nose over. The airplane was registered to an individual and was operated by the pilot under the provisions of 14 Code of Federal Regulations Part 91 as a personal flight. Night visual meteorological conditions prevailed along the route of flight and the flight did not operate on a flight plan. The flight originated from the Levelland Municipal Airport (LLN), near Levelland, Texas, about 0235 central daylight time, and was destined for the Four Corners Regional Airport (FMN), near Farmington, New Mexico.

The flight landed at LLN to obtain fuel and subsequently departed for FMN. About an hour after departing LLN, Albuquerque Center advised the pilot that there was light to moderate precipitation extending approximately 20 miles north of Albuquerque. He observed on an iPad application that the weather was a "non-factor" by the time he reached Albuquerque. The pilot continued the flight northwest and felt the engine suddenly lose power. He checked the engine gauges, which were all in the green. He advised Albuquerque Center of the loss of engine power. The pilot switched fuel tanks then activated the carb heat. He tried switching magnetos and enriching the mixture for "a few seconds." He leaned the mixture again and "deactivated the carb heat." He advised Albuquerque Center that the airplane was not going to be able to maintain altitude and declared an emergency. He used the iPad application map and he aligned the airplane over a road. The airplane's wing impacted a guard rail during the forced landing and the airplane subsequently nosed over. The pilot reported that fuel leaked from the fuel tank caps vents while he and his passenger exited the inverted airplane.

At 0453, the recorded weather at the Santa Fe Municipal Airport (SAF), near Santa Fe, New Mexico, was: Wind calm; visibility 10 statute miles; sky condition clear; temperature 16 degrees C; dew point 12 degrees C; altimeter 30.08 inches of mercury.

SAF's temperature and dew point were plotted on a carburetor icing probability chart. The plot shows a probability of serious icing at a cruise power settings at the temperature and dew point reported about the time of the accident.

The Pilot's Handbook of Aeronautical Knowledge, in part, stated:

When conditions are conducive to carburetor icing during flight, periodic checks should be made to detect its presence. If detected, full carburetor heat should be applied immediately, and it should be left in the ON position until you are certain that all the ice has been removed. If ice is present, applying partial heat or leaving heat on for an insufficient time might aggravate the situation. In extreme cases of carburetor icing, even after the ice has been removed, full carburetor heat

should be used to prevent further ice formation. A carburetor temperature gauge, if installed, is very useful in determining when to use carburetor heat.

## History of Flight

<b>Enroute-cruise</b>	Other weather encounter Loss of engine power (partial) (Defining event)
<b>Emergency descent</b>	Off-field or emergency landing
<b>Landing</b>	Collision during takeoff/land Nose over/nose down

## Pilot Information

<b>Certificate:</b>	Private	<b>Age:</b>	29, Male
<b>Airplane Rating(s):</b>	Single-engine Land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	Lap Only
<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 1 Without Waivers/Limitations	<b>Last FAA Medical Exam:</b>	08/18/2015
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	12/16/2015
<b>Flight Time:</b>	338 hours (Total, all aircraft), 261 hours (Total, this make and model), 107 hours (Last 90 days, all aircraft), 38 hours (Last 30 days, all aircraft), 6 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

Aircraft Make:	PIPER	Registration:	N9241J
Model/Series:	PA 28-180	Aircraft Category:	Airplane
Year of Manufacture:	1966	Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	28-3315
Landing Gear Type:	Tricycle	Seats:	4
Date/Type of Last Inspection:	09/01/2015, Annual	Certified Max Gross Wt.:	
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	3975.28 Hours at time of accident	Engine Manufacturer:	LYCOMING
ELT:	Installed	Engine Model/Series:	O-360-A3A
Registered Owner:	Individual	Rated Power:	180 hp
Operator:	On file	Operating Certificate(s) Held:	None

## Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Night
Observation Facility, Elevation:	KSAF, 6344 ft msl	Distance from Accident Site:	49 Nautical Miles
Observation Time:	0453 MDT	Direction from Accident Site:	119°
Lowest Cloud Condition:	Clear	Visibility	10 Miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	Calm /	Turbulence Type Forecast/Actual:	/
Wind Direction:		Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.08 inches Hg	Temperature/Dew Point:	16°C / 12°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	LEVELLAND, TX (LLN)	Type of Flight Plan Filed:	None
Destination:	FARMINGTON, NM (FMN)	Type of Clearance:	VFR Flight Following
Departure Time:	0235 CDT	Type of Airspace:	

## Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	1 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 None	Latitude, Longitude:	36.011389, -106.970556 (est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Edward F Malinowski	<b>Report Date:</b>	01/26/2017
<b>Additional Participating Persons:</b>	Jeffrey Burns; Federal Aviation Administration; Albuquerque, NM		
<b>Publish Date:</b>	01/26/2017		
<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=93945">http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=93945</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](#).