



# National Transportation Safety Board Aviation Accident Final Report

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<b>Location:</b>	Tishomingo, OK	<b>Accident Number:</b>	CEN18LA075
<b>Date &amp; Time:</b>	01/13/2018, 1130 CST	<b>Registration:</b>	N4345K
<b>Aircraft:</b>	PIPER PA 28-236	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Fuel exhaustion	<b>Injuries:</b>	1 Serious
<b>Flight Conducted Under:</b>	Part 91: General Aviation - Personal		

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## Analysis

The private pilot departed on a cross-country flight; he reported that 35 to 40 gallons of fuel were in the airplane's fuel tanks for a flight that he thought would require 20 gallons of fuel. As the airplane was nearing the destination, the pilot was concerned about the fuel level in the left tank because the fuel gauge indicated that the tank was between one-quarter full and empty and no fuel remained in the right tank, which the pilot had intentionally run dry. The pilot elected to divert to ensure that the airplane would have adequate fuel to complete the flight to the destination. Upon landing at the diversion airpark, the pilot learned that the airpark had no fuel. The pilot subsequently took off from the airpark, and the airplane reached an altitude of about 1,500 ft above ground level when the engine "sputtered." The pilot attempted to return to the airpark, but the airplane could not clear the trees in the area. The pilot attempted a forced landing, but the airplane impacted the trees and subsequently impacted terrain. The airplane was in an inverted position at the time of impact.

The pilot reported that the left tank "apparently goes empty somewhere prior to the E [empty] on the fuel gauge." However, the pilot did not mention whether he visually checked the amount of fuel before leaving the diversion airpark. Thus, the pilot likely departed without sufficient fuel on board to complete the flight to another diversion airpark. Further, the fuel amount was lower than the pilot expected during the flight, which was consistent with poor preflight fuel planning and in-flight fuel monitoring.

## Probable Cause and Findings

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

The pilot's inadequate preflight fuel planning and in-flight fuel monitoring and his decision to take off with an unverified amount of fuel, which resulted in fuel exhaustion and a subsequent impact with trees during an attempted forced landing.

## Findings

<b>Aircraft</b>	Fuel - Fluid management (Cause)
<b>Personnel issues</b>	Fuel planning - Pilot (Cause) Decision making/judgment - Pilot (Cause) Expectation/assumption - Pilot (Cause) Identification/recognition - Pilot (Cause)
<b>Environmental issues</b>	Tree(s) - Contributed to outcome

## Factual Information

On January 13, 2018, about 1130 central standard time, a Piper PA 28-236 airplane, N4345K, impacted terrain during a forced landing following an inflight loss of engine power near Tishomingo, Oklahoma. The pilot was seriously injured. The airplane sustained substantial fuselage damage. The airplane was registered to Piper-Dakota LLC and operated by the pilot as a 14 Code of Federal Regulations Part 91 personal flight. Day visual meteorological conditions prevailed in the area about the time of the accident, and the flight was operated not operated on a flight plan. The flight originated about 1000 from the Memorial Field Airport (HOT), near Hot Springs, Arkansas, and was destined for the Ardmore Downtown Executive Airport, near Ardmore, Oklahoma.

According to the pilot, he departed from HOT with about 35 to 40 gallons of fuel between the left and right fuel tanks. The pilot estimated that the flight would require 20 gallons of fuel. As he was nearing the destination the pilot was concerned about the fuel level in the left tank as it indicated between 1/4 full and empty. There was also no fuel remaining in the right tank as he intentionally ran it dry. The pilot elected to divert to the Tishomingo Airpark (OF9), near Tishomingo, Oklahoma, to ensure the airplane had adequate fuel to complete the flight to Ardmore. The pilot said that upon landing he found out that there was no fuel at OF9 and that it had not had any fuel for many months. An airpark attendant advised that there was no place nearby to obtain fuel and that the pilot should try the next available airport. The pilot subsequently took off from OF9. When the airplane reached an altitude of about 1,500 ft above ground level, the engine "sputtered" as if out of fuel. The pilot immediately turned back to the airport. However, the airplane was at an altitude where it could not clear the trees in area. The airplane impacted the trees and subsequently impacted terrain inverted.

The pilot did not indicate in his accident report that he visually checked the fuel level before departing OF9. However, he stated that the "left tank apparently goes empty somewhere prior to the "E" on the fuel gauge" and that the gauges were inaccurate. Federal Aviation Regulation Part 23.1337, Powerplant Instruments Installation, in part stated, "Each fuel quantity indicator must be calibrated to read "zero" during level flight when the quantity of fuel remaining in the tank is equal to the unusable fuel supply."

### History of Flight

Enroute	Fuel exhaustion (Defining event)
Emergency descent	Off-field or emergency landing
Landing	Collision with terr/obj (non-CFIT)

## Pilot Information

<b>Certificate:</b>	Private	<b>Age:</b>	72, 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>	3-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 3 Without Waivers/Limitations	<b>Last FAA Medical Exam:</b>	
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	01/01/2017
<b>Flight Time:</b>	634 hours (Total, all aircraft), 522 hours (Total, this make and model)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	PIPER	<b>Registration:</b>	N4345K
<b>Model/Series:</b>	PA 28-236	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>	1984	<b>Amateur Built:</b>	No
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	28-8411012
<b>Landing Gear Type:</b>	Tricycle	<b>Seats:</b>	4
<b>Date/Type of Last Inspection:</b>	05/02/2017, Annual	<b>Certified Max Gross Wt.:</b>	3000 lbs
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	2128 Hours	<b>Engine Manufacturer:</b>	LYCOMING
<b>ELT:</b>	Installed, not activated	<b>Engine Model/Series:</b>	O-540-J3A5D
<b>Registered Owner:</b>	PIPER-DAKOTA LLC	<b>Rated Power:</b>	235 hp
<b>Operator:</b>	On file	<b>Operating Certificate(s) Held:</b>	None

## Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	KADM, 725 ft msl	Distance from Accident Site:	18 Nautical Miles
Observation Time:	1155 CST	Direction from Accident Site:	290°
Lowest Cloud Condition:	Clear	Visibility	10 Miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	3 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	340°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.65 inches Hg	Temperature/Dew Point:	1°C / -11°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	HOT SPRINGS, AR (HOT)	Type of Flight Plan Filed:	None
Destination:	ARDMORE, OK (1F0)	Type of Clearance:	None
Departure Time:	1000 CST	Type of Airspace:	

## Wreckage and Impact Information

Crew Injuries:	1 Serious	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Serious	Latitude, Longitude:	34.198611, -96.674444 (est)

## Administrative Information

Investigator In Charge (IIC):	Edward F Malinowski	Report Date:	11/15/2018
Additional Participating Persons:	Timothy D Wells; Federal Aviation Administration; Oklahoma City, OK		
Publish Date:	11/15/2018		
Note:	The NTSB did not travel to the scene of this accident.		
Investigation Docket:	<a href="http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=96611">http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=96611</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](#).