



# National Transportation Safety Board Aviation Accident Final Report

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<b>Location:</b>	Brookneal, VA	<b>Accident Number:</b>	ERA15CA120
<b>Date &amp; Time:</b>	02/04/2015, 1646 EST	<b>Registration:</b>	N619GB
<b>Aircraft:</b>	PIPER PA 18-150	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Fuel exhaustion	<b>Injuries:</b>	2 Minor
<b>Flight Conducted Under:</b>	Part 91: General Aviation - Instructional		

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## Analysis

According to the flight instructor and the pilot-rated student, both believed the airplane had been fueled at the time it was pulled out of the hanger by line personnel, and they had observed a fuel truck parked near the airplane prior to the flight. The student had performed the preflight inspection, during which he interpreted the fuel sight gauges as indicating full fuel; however, he did not visually check the fuel in the tanks. When the instructor arrived at the airplane, he asked the student how much fuel was on board and the student said the tanks were full. The flight departed from Lynchburg, Virginia and made several takeoffs and landings at a nearby airport. About 1 hour into the flight as the airplane was 1,000 feet above ground level, the engine lost all power. As the instructor began a turn toward a nearby pasture, the engine started producing power again and the instructor chose to continue the turn, heading toward the nearest airport. The engine then lost all power again. No longer able to glide to the nearby pasture, the instructor flew the airplane straight ahead and let it settle into the trees. The airplane struck the trees and terrain and came to rest inverted. Examination of the wreckage by a Federal Aviation Administration inspector revealed substantial damage to the wings and fuselage. The inspector recovered about 1 pint of fuel from each fuel tank. Additionally, neither pilot reported any mechanical malfunctions or anomalies that would have precluded normal operation of the airframe or engine.

After the accident, the flight school held safety briefings with its instructors, faculty, and students. These briefings included discussion of the circumstances of the accident, and the implementation of policy changes related to pre and post flight responsibilities of students and instructors, new fuel level measuring procedures, and dispatch records of fuel status. These changes were applied to all airplane types and operations at the school, and were subsequently written in the Flight Operations Manual.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The flight instructor and pilot-rated student's inadequate preflight inspection, which resulted in a total loss of engine power due to fuel exhaustion.

## Findings

<b>Aircraft</b>	Fuel quantity indicator - Incorrect use/operation (Cause) Fuel - Not inspected (Cause)
<b>Personnel issues</b>	Lack of action - Instructor/check pilot (Cause) Lack of action - Student pilot (Cause)

## Factual Information

### History of Flight

Prior to flight	Preflight or dispatch event
Maneuvering-low-alt flying	Fuel exhaustion (Defining event) Loss of engine power (total)
Emergency descent	Off-field or emergency landing
Landing	Collision with terr/obj (non-CFIT)

### Flight Instructor Information

Certificate:	Flight Instructor; Commercial	Age:	52
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Rear
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	Airplane Multi-engine; Airplane Single-engine	Toxicology Performed:	No
Medical Certification:	Class 2 With Waivers/Limitations	Last Medical Exam:	08/02/2013
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	08/01/2014
Flight Time:	5130 hours (Total, all aircraft), 100 hours (Total, this make and model), 5018 hours (Pilot In Command, all aircraft), 50 hours (Last 90 days, all aircraft), 14 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

### Pilot Information

Certificate:	Private	Age:	22
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Front
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	None	Toxicology Performed:	
Medical Certification:	Class 2 With Waivers/Limitations	Last Medical Exam:	
Occupational Pilot:	No	Last Flight Review or Equivalent:	09/30/2014
Flight Time:	230 hours (Total, all aircraft), 12 hours (Total, this make and model), 130 hours (Pilot In Command, all aircraft), 50 hours (Last 90 days, all aircraft), 10 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

Aircraft Manufacturer:	PIPER	Registration:	N619GB
Model/Series:	PA 18-150	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	18-8425
Landing Gear Type:	Tailwheel	Seats:	2
Date/Type of Last Inspection:	08/12/2014, Annual	Certified Max Gross Wt.:	1750 lbs
Time Since Last Inspection:	50 Hours	Engines:	1 Reciprocating
Airframe Total Time:	6288.5 Hours	Engine Manufacturer:	LYCOMING
ELT:	Installed, not activated	Engine Model/Series:	O-320-A2B
Registered Owner:	LIBERTY UNIVERSITY SCHOOL OF AERONAUTICS	Rated Power:	150 hp
Operator:	LIBERTY UNIVERSITY SCHOOL OF AERONAUTICS	Air Carrier Operating Certificate:	Pilot School (141)

## Meteorological Information and Flight Plan

Observation Facility, Elevation:	LYH, 938 ft msl	Observation Time:	2154 UTC
Distance from Accident Site:	14 Nautical Miles	Condition of Light:	Day
Direction from Accident Site:	320°	Conditions at Accident Site:	Visual Conditions
Lowest Cloud Condition:	Clear	Temperature/Dew Point:	10° C / -6° C
Lowest Ceiling:	None	Visibility	10 Miles
Wind Speed/Gusts, Direction:	9 knots, 200°	Visibility (RVR):	
Altimeter Setting:	30.05 inches Hg	Visibility (RVV):	
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	BROOKNEAL, VA (0V4)	Type of Flight Plan Filed:	None
Destination:	LYNCHBURG, VA (LYH)	Type of Clearance:	None
Departure Time:	1630 EST	Type of Airspace:	Class E

## Airport Information

Airport:	BROOKNEAL/CAMPBELL COUNTY (0V4)	Runway Surface Type:	N/A
Airport Elevation:	596 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:	2 Minor	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 Minor		

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Douglass P Brazy	<b>Adopted Date:</b>	08/12/2015
<b>Additional Participating Persons:</b>	Manuel Carvalho; Federal Aviation Administration; Richmond, VA		
<b>Publish Date:</b>	08/12/2015		
<b>Note:</b>	This accident report documents the factual circumstances of this accident as described to the NTSB.		
<b>Investigation Docket:</b>	<a href="http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=90691">http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=90691</a>		

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