



# National Transportation Safety Board Aviation Accident Final Report

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<b>Location:</b>	Doylestown, PA	<b>Accident Number:</b>	ERA10LA104
<b>Date &amp; Time:</b>	01/01/2010, 1108 EST	<b>Registration:</b>	N4026J
<b>Aircraft:</b>	CESSNA 150G	<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 accident flight was the first flight since an overhauled engine was installed. The pilot performed an engine run-up before takeoff and noted no discrepancies. During the initial climb, between 50 and 75 feet above ground level, the engine experienced a partial loss of power. The pilot executed a forced landing into a field; the airplane came to rest upright and there were no injuries to the pilot or passenger. Postaccident inspection of the engine revealed no evidence of preimpact failure or malfunction. The temperature and dew point at the time of the accident were favorable for serious carburetor ice at cruise power.

## 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 due to carburetor icing.

## Findings

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<b>Environmental issues</b>	Conducive to carburetor icing - Effect on equipment (Cause)
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## Factual Information

On January 1, 2010, about 1108 eastern standard time, a Cessna 150G, N4026J, registered to a private individual, experienced a partial loss of engine power during the climb shortly after takeoff from Doylestown Airport (DYL), Doylestown, Pennsylvania. Visual meteorological conditions prevailed at the time and no flight plan was filed for the 14 Code of Federal Regulations (CFR) Part 91 personal, local flight from DYL. The airplane was substantially damaged and the certificated commercial pilot and one passenger were not injured. The flight originated from DYL about 1106.

The pilot stated that the purpose of the flight was for him to fly the airplane following extensive engine maintenance. He intended on orbiting the airport for 1 hour, then intended on landing and having a mechanic (passenger), visually inspect the engine. A total of approximately 6 gallons of 100 low lead (100LL) fuel were in each fuel tank as determined by a dipstick and confirmed by the fuel quantity gauges. No contaminants were noted in either fuel tank or gascolator during his preflight check, and he did not notice any discrepancies during the engine run-up before takeoff.

The pilot further stated that after takeoff during climb out when the flight was between 50 and 75 feet above ground level, he noticed a partial loss of engine power. With trees ahead he turned to the right towards an open field and while in a right turn, the right main landing gear contacted the ground. The left main landing gear then contacted the ground causing the gear to separate. The airplane came to rest upright in a left wing low attitude which resulted in fuel leaking from the left fuel cap.

Inspection of the accident site by a Federal Aviation Administration (FAA) inspector revealed the airplane was resting in the middle of a corn field with the left and nose landing gears separated. A small fire in the engine compartment had been quickly extinguished. The airplane was recovered for further examination.

Inspection of the engine by an FAA airworthiness inspector following recovery of the airplane revealed the air induction housing was crushed around the carburetor, but there were no obstructions of the air induction system. The air induction filter which had been separated and recovered from the accident site was determined to have been properly installed. The throttle, mixture, and carburetor heat control cables were connected and properly attached; however, impact damage precluded range of motion checks. The accelerator pump of the carburetor operationally checked good. The spark plugs were new and exhibited light gray coloration of the porcelain insulator. The engine was rotated by hand and spark was noted at all spark plugs, and compression was noted in all cylinders. No indication of a failure or malfunction was noted to the muffler.

A surface observation weather report taken at DYL at 1054, or approximately 14 minutes before the accident indicates in part that the dry bulb and dew point temperatures were 35 and 33 degrees Fahrenheit respectively, and the relative humidity was 92 percent.

According to FAA Special Airworthiness Information Bulletin (SAIB) CE-09-35, based on the recorded temperature and dew point about the time of the accident, the conditions were favorable for serious carburetor icing at cruise power setting.

FAA Advisory Circular (AC) 20-113 dated October 22, 1981, titled, "Pilot Precautions and Procedures to be Taken in Preventing Aircraft Reciprocating Engine Induction System and

Fuel System Icing Problems” states that induction system icing is more likely when the temperature is below 70 degrees Fahrenheit and the relative humidity is above 80 percent.

An overhauled engine was installed the day before and test run after installation. The recording tachometer time at the time of installation was 6,275.32, while the tachometer at the time of the accident was 6,275.41.

## History of Flight

Initial climb	Fuel related Loss of engine power (partial) (Defining event)
Emergency descent	Off-field or emergency landing
Landing	Collision with terr/obj (non-CFIT)

## Pilot Information

Certificate:	Flight Instructor; Commercial	Age:	46, Male
Airplane Rating(s):	Single-engine Land; Single-engine Sea	Seat Occupied:	Right
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	Airplane Single-engine; Instrument Airplane	Toxicology Performed:	No
Medical Certification:	Class 1 With Waivers/Limitations	Last Medical Exam:	04/30/2009
Occupational Pilot:	No	Last Flight Review or Equivalent:	06/19/2009
Flight Time:	1400 hours (Total, all aircraft), 200 hours (Total, this make and model), 1200 hours (Pilot In Command, all aircraft), 10 hours (Last 90 days, all aircraft), 2 hours (Last 30 days, all aircraft)		

## Aircraft and Owner/Operator Information

Aircraft Manufacturer:	CESSNA	Registration:	N4026J
Model/Series:	150G	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Utility	Serial Number:	15065326
Landing Gear Type:	Tricycle	Seats:	2
Date/Type of Last Inspection:	10/06/2009, Annual	Certified Max Gross Wt.:	1600 lbs
Time Since Last Inspection:	4 Hours	Engines:	1 Reciprocating
Airframe Total Time:	6275 Hours	Engine Manufacturer:	CONT MOTOR
ELT:	Installed, activated, did not aid in locating accident	Engine Model/Series:	O-200-A
Registered Owner:	FRATTONE CLIFFORD T	Rated Power:	100 hp
Operator:	FRATTONE CLIFFORD T	Air Carrier Operating Certificate:	None

## Meteorological Information and Flight Plan

Observation Facility, Elevation:	DYL, 394 ft msl	Observation Time:	1054 EST
Distance from Accident Site:		Condition of Light:	Day
Direction from Accident Site:		Conditions at Accident Site:	Visual Conditions
Lowest Cloud Condition:		Temperature/Dew Point:	2°C / 1°C
Lowest Ceiling:	Overcast / 6500 ft agl	Visibility	4 Miles
Wind Speed/Gusts, Direction:	6 knots, 290°	Visibility (RVR):	
Altimeter Setting:	29.91 inches Hg	Visibility (RVV):	
Precipitation and Obscuration:	Moderate - Mist; No Precipitation		
Departure Point:	Doylestown, PA (DYL)	Type of Flight Plan Filed:	None
Destination:	Doylestown, PA (DYL)	Type of Clearance:	None
Departure Time:	1106 EST	Type of Airspace:	

## Airport Information

Airport:	Doylestown Airport (DYL)	Runway Surface Type:	Asphalt
Airport Elevation:		Runway Surface Condition:	
Runway Used:	05	IFR Approach:	None
Runway Length/Width:	3004 ft / 60 ft	VFR Approach/Landing:	Forced Landing

## Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	1 None	Aircraft Fire:	On-Ground
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 None		

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Timothy W Monville	<b>Adopted Date:</b>	05/06/2010
<b>Additional Participating Persons:</b>	William Rush; FAA/FSDO; Allentown, PA William H Collier; FAA/FSDO; Allentown, PA		
<b>Publish Date:</b>	05/06/2010		
<b>Investigation Docket:</b>	<a href="http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=75217">http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=75217</a>		

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