



National Transportation Safety Board Aviation Accident Final Report

Location:	Littleton, MA	Accident Number:	ERA16LA300
Date & Time:	08/19/2016, 1349 EDT	Registration:	N9230U
Aircraft:	CESSNA 150	Aircraft Damage:	Substantial
Defining Event:	Loss of engine power (total)	Injuries:	1 None
Flight Conducted Under:	Part 91: General Aviation - Instructional		

Analysis

The student pilot was conducting a solo cross-country flight and filled the airplane's fuel tanks before departing on the first leg of the flight. While descending from 4,500 ft mean sea level approaching the destination airport, engine power decreased from 2,500 to 1,300 rpm. The student advanced the mixture to full rich and applied carburetor heat; however, there was no change in engine performance. Soon after, the engine experienced a total loss of power and the student performed a forced landing to a field.

About 10 gallons of fuel were drained from the airplane during recovery. Examination of the airframe and engine did not reveal any evidence of preaccident mechanical malfunction or abnormalities. A review of a carburetor icing chart revealed that the atmospheric conditions at the time of the accident were conducive to icing at glide and cruise power; however, since engine performance did not improve after the application of carburetor heat, it is unlikely that the loss of engine power was the result of carburetor ice.

Probable Cause and Findings

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

A total loss of engine power during descent for reasons that could not be determined because postaccident examination of the airframe and engine revealed no anomalies that would have precluded normal operation.

Findings

Not determined

Not determined - Unknown/Not determined (Cause)

Factual Information

On August 19, 2016, at 1349 eastern daylight time, a Cessna 150M, N9230U, was substantially damaged when it impacted trees and terrain during a forced landing near Littleton, Massachusetts. The student pilot was not injured. Visual meteorological conditions prevailed, and no flight plan was filed for the solo instructional flight that was operated under the provisions of Title 14 *Code of Federal Regulations* Part 91. The flight departed from Sanford Seacoast Regional Airport (SFM), Sanford, Maine, with the intended destination of Minute Man Air Field (6B6), Stow, Massachusetts.

According to the student pilot, he was on a solo cross-country flight and topped-off the fuel tanks with 100 low lead aviation fuel prior to departing on the first leg of the flight. He departed 6B6, landed at Laconia Municipal Airport (LCI), Laconia, New Hampshire, and then continued to SFM. After departing SFM, while in a cruise descent from 4,500 feet mean sea level (msl) on a 4 mile straight-in approach to runway 21 to 6B6, the engine lost partial power when the rpm decreased from 2,500 to 1,300 rpm around 2,500 feet msl. The student thought he could make it to the runway, but then began searching for a field to perform a forced landing. He located a field, turned toward it, and then began troubleshooting the engine. The student pilot advanced the mixture to full rich and applied carburetor heat; however, there was no change in the engine performance. As he was about to turn onto the final leg of the traffic pattern to the field, about 800 feet msl, the engine lost total power. The pilot landed the airplane in the selected field, which was about 300 feet msl, it impacted a stone wall and trees, and then came to rest in the upright position.

According to the flight instructor, the student pilot received his student pilot certificate in September 2014. His most recent third-class medical certificate was issued on September 18, 2014. At the time of the accident, he had accumulated 73 hours of total flight time, of which 51 hours were in the same make and model as the accident airplane and 11 hours were as pilot-in-command.

According to Federal Aviation Administration records, the airplane was manufactured in 1976, issued an airworthiness certificate in May 2015, and was registered a flight school. In addition, it was equipped with a Lycoming O-200 series, 100-horsepower engine. According to the flight instructor, a 100-hour inspection was performed on the airplane August 4, 2016, at a total time of 8,216.4 hours, and a tach time of 969 hours. At the time of the accident, the tachometer indicated 986.8 hours.

Examination of the airplane revealed that both wings were partially separated from the fuselage and the leading edges were impact damaged. The engine was examined and fuel was noted in the carburetor bowl. The fuel was free of water and debris. The rocker arm covers were removed and no anomalies were noted. Crankshaft and valve train continuity was confirmed from the propeller to the accessory section of the engine by rotating the propeller. In addition, evidence of compression was observed on all cylinders. The magnetos produced spark on all towers, the spark plugs exhibited normal wear, and were in "new condition." During the recovery, about 10 gallons of fuel were drained from the airplane.

The reported weather around the time of the accident at Laurence G Hanscom Field (BED), Bedford, Massachusetts, which was located 10 miles east of the accident location, indicated wind from 330° at 4 knots, 10 miles visibility, few clouds at 6,000 feet above ground level (agl), temperature 31° C, dew point 13° C, and an altimeter setting of 29.90 inches of mercury.

The carburetor icing probability chart from Federal Aviation Administration (FAA) Special Airworthiness Information Bulletin (SAIB): CE-09-35 Carburetor Icing Prevention, June 30, 2009, shows a probability of icing at glide and cruise power at the temperature and dew point reported at the time of the accident.

According to the NTSB Pilot/Operator Report that was filed by the flight instructor, under the mechanical malfunction/failure section of the report it stated that the "engine fail[ed] due to carb[uretor] ice."

History of Flight

Enroute-cruise	Loss of engine power (partial) Loss of engine power (total) (Defining event)
Landing	Collision during takeoff/land

Pilot Information

Certificate:	Student	Age:	18, Male
Airplane Rating(s):	None	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	3-point
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 3 Without Waivers/Limitations	Last FAA Medical Exam:	09/18/2014
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:	73.6 hours (Total, all aircraft), 50.9 hours (Total, this make and model), 11.4 hours (Pilot In Command, all aircraft), 5.6 hours (Last 90 days, all aircraft), 5.6 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	CESSNA	Registration:	N9230U
Model/Series:	150 M	Aircraft Category:	Airplane
Year of Manufacture:	1976	Amateur Built:	No
Airworthiness Certificate:	Normal; Utility	Serial Number:	15078180
Landing Gear Type:	Tricycle	Seats:	2
Date/Type of Last Inspection:	08/04/2016, Annual	Certified Max Gross Wt.:	1601 lbs
Time Since Last Inspection:	18 Hours	Engines:	1 Reciprocating
Airframe Total Time:	8216.4 Hours as of last inspection	Engine Manufacturer:	CONT MOTOR
ELT:	Installed, activated, did not aid in locating accident	Engine Model/Series:	O-200-A-48
Registered Owner:	Aptis Aviation	Rated Power:	100 hp
Operator:	Aptis Aviation	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	BED, 133 ft msl	Distance from Accident Site:	10 Nautical Miles
Observation Time:	1356 EDT	Direction from Accident Site:	110°
Lowest Cloud Condition:	Few / 6000 ft agl	Visibility	10 Miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	4 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	330°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.9 inches Hg	Temperature/Dew Point:	31° C / 13° C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Sanford, ME (SFM)	Type of Flight Plan Filed:	VFR
Destination:	Stow, MA (6B6)	Type of Clearance:	VFR Flight Following
Departure Time:	EDT	Type of Airspace:	

Airport Information

Airport:	MINUTE MAN AIR FIELD (6B6)	Runway Surface Type:	Grass/turf
Airport Elevation:	268 ft	Runway Surface Condition:	Dry; Vegetation
Runway Used:	N/A	IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	Forced Landing; Straight-in

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 None	Latitude, Longitude:	42.523889, -71.491667 (est)

Administrative Information

Investigator In Charge (IIC):	Heidi Kemner	Report Date:	11/15/2018
Additional Participating Persons:	Chris Mard; FAA/FSDO; Boston, MA		
Publish Date:	11/15/2018		
Note:	The NTSB did not travel to the scene of this accident.		
Investigation Docket:	http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=93901		

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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](#).