



Aviation Investigation Final Report

Location:	Fulton, New York	Accident Number:	ERA19LA151
Date & Time:	April 11, 2019, 14:30 Local	Registration:	N3795J
Aircraft:	Cessna 150	Aircraft Damage:	Substantial
Defining Event:	Loss of engine power (total)	Injuries:	1 Serious
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

After descending with the engine power above 2,000 rpm, the pilot entered the traffic pattern for the destination airport. Just after turning onto the base leg of the pattern, the pilot applied the carburetor heat and the engine “faltered” and lost partial power. The pilot then deactivated the carburetor heat, and the engine regained some power. He reapplied the carburetor heat, and the engine stopped. He attempted to restart the engine but was unsuccessful. While performing a forced landing to a road, the right wing impacted a utility pole and the airplane rolled over and sustained substantial damage to both wings and the fuselage.

The weather conditions at the time of the accident were favorable for carburetor icing at altitude and at the surface. It is likely that carburetor ice developed during the descent; when the pilot applied the carburetor heat while in the traffic pattern, the ice began to melt, which introduced water into the engine intake and resulted in the engine losing partial power. The pilot’s subsequent cycling of the carburetor heat at a relatively low power setting likely resulted in the total loss of engine power.

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 due to carburetor icing. Contributing was the pilot’s failure to leave the carburetor heat on fully after his initial application of carburetor heat.

Findings

Aircraft	Intake anti-ice, deice - Incorrect use/operation
Environmental issues	Conducive to carburetor icing - Contributed to outcome
Personnel issues	Incorrect action performance - Pilot
Personnel issues	Identification/recognition - Pilot

Factual Information

History of Flight

Approach-VFR pattern base	Loss of engine power (total) (Defining event)
Approach-VFR pattern base	Off-field or emergency landing
Landing	Collision with terr/obj (non-CFIT)

On April 11, 2019, about 1430 eastern daylight time, a Cessna 150G, N3795J, was substantially damaged when it was involved in an accident near Fulton, New York. The private pilot received serious injuries. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

The pilot reported that the airplane was last flown on July 21, 2018. The airplane had a supplemental type certificate for the use of automotive fuel, but the pilot kept it stored with 100LL aviation fuel. Before the accident flight, he added fewer than 5 gallons of 100LL aviation fuel to top off both tanks before departure. The 2-hour flight was uneventful, and he reduced engine power for the descent, but it remained above 2,000 rpm. Just after turning onto the base leg of the traffic pattern for landing, the pilot applied the carburetor heat as he prepared to reduce the engine power below 2,000 rpm. As soon as he applied the carburetor heat, the engine “faltered” and lost partial power. The engine noise decreased but did not cease. He then pushed the carburetor heat fully off, and the engine seemed to regain some, but not all, power. He then reapplied the carburetor heat and the engine lost all power. The pilot performed a forced landing to a road in a populated area about 1.3 nautical miles from the end of the runway. During landing, the right wing impacted a utility pole, and the airplane came to rest inverted with both wings partially separated from the fuselage.

Examination of the wreckage by a Federal Aviation Administration (FAA) inspector revealed substantial damage to both wings and the fuselage. First responders observed fuel on the roadway and leaking from the airplane upon their arrival. The fuel selector was found in the “on” position.

Engine crankshaft, valvetrain, and accessory gear continuity were confirmed when the crankshaft was rotated by hand. The exhaust, induction, and carburetor heat exchanger components were intact and showed no indication of leaks. Due to impact damage, the carburetor heat cable could not be tested; however, the control arm on the induction airbox operated normally. Both magnetos produced spark on all towers when rotated, and the ignition harness remained intact, with some damage noted to the Nos. 1 and 3 leads at the top spark plug ends. The spark plugs on cylinder Nos. 1 and 3 were oil-soaked. There was no sooting observed on any of the spark plugs and all insulators were appeared white in color. The carburetor floats, inlet valve jets, and accelerator pump were intact. The inlet screen was clear of any contaminants. The inlet valve functioned properly when air pressure was applied to the fuel inlet while float assembly was exercised up and down.

A computer model of the weather conditions in the area of the accident site around the accident time indicated conditions favorable to the development of carburetor icing from the surface to 13,000 ft mean sea level at glide and cruise power settings.

According to FAA Special Airworthiness Information Bulletin CE-09-35:

Pilots should be aware that carburetor icing doesn't just occur in freezing conditions, it can occur at temperatures well above freezing temperatures when there is visible moisture or high humidity. Icing can occur in the carburetor at temperatures above freezing because vaporization of fuel, combined with the expansion of air as it flows through the carburetor, (Venturi Effect) causes sudden cooling, sometimes by a significant amount within a fraction of a second. Carburetor ice can be detected by a drop in rpm in fixed pitch propeller airplanes and a drop in manifold pressure in constant speed propeller airplanes. In both types, usually there will be a roughness in engine operation...

To recognize carburetor icing, the warning signs are:

- A drop in rpm in fixed pitch propeller airplanes.*
- A drop in manifold pressure in constant speed propeller airplanes.*
- In both types, usually there will be a roughness in engine operation. The pilot should respond to carburetor icing by applying full carburetor heat immediately. The engine may run rough initially for short time while ice melts.*

Pilot Information

Certificate:	Private	Age:	49,Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	4-point
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 3 With waivers/limitations	Last FAA Medical Exam:	August 7, 2017
Occupational Pilot:	No	Last Flight Review or Equivalent:	January 18, 2019
Flight Time:	(Estimated) 147 hours (Total, all aircraft), 33 hours (Total, this make and model), 62 hours (Pilot In Command, all aircraft), 3 hours (Last 90 days, all aircraft), 3 hours (Last 30 days, all aircraft), 3 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	Registration:	N3795J
Model/Series:	150 G	Aircraft Category:	Airplane
Year of Manufacture:	1966	Amateur Built:	
Airworthiness Certificate:	Utility	Serial Number:	15065095
Landing Gear Type:	Tricycle	Seats:	2
Date/Type of Last Inspection:	October 28, 2018 Annual	Certified Max Gross Wt.:	1600 lbs
Time Since Last Inspection:	2 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	3583 Hrs at time of accident	Engine Manufacturer:	Continental
ELT:	Installed	Engine Model/Series:	O-200-A
Registered Owner:		Rated Power:	100 Horsepower
Operator:	On file	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	FZY,475 ft msl	Distance from Accident Site:	2 Nautical Miles
Observation Time:	14:54 Local	Direction from Accident Site:	45°
Lowest Cloud Condition:		Visibility	10 miles
Lowest Ceiling:	Overcast / 6500 ft AGL	Visibility (RVR):	
Wind Speed/Gusts:	4 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	340°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.22 inches Hg	Temperature/Dew Point:	5°C / -6°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Malone, NY (MAL)	Type of Flight Plan Filed:	VFR
Destination:	Fulton, NY (FZY)	Type of Clearance:	None
Departure Time:	12:30 Local	Type of Airspace:	Class G

Airport Information

Airport:	Oswego County FZY	Runway Surface Type:	Asphalt
Airport Elevation:	475 ft msl	Runway Surface Condition:	
Runway Used:	06	IFR Approach:	None
Runway Length/Width:	3997 ft / 100 ft	VFR Approach/Landing:	Forced landing;Traffic pattern

Wreckage and Impact Information

Crew Injuries:	1 Serious	Aircraft Damage:	Substantial
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Serious	Latitude, Longitude:	43.329166,-76.413887(est)

Administrative Information

Investigator In Charge (IIC):	Brazy, Douglass		
Additional Participating Persons:	Thomas G McCormick; FAA/FSDO ; Rochester, NY Henry Soderlund; Textron Aviation Inc; Wichita, KS Kurt Gibson; Continental Aero Technologies; Mobile, AL		
Original Publish Date:	January 20, 2022	Investigation Class:	3
Note:	The NTSB did not travel to the scene of this accident.		
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=99259		

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

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](#).