Aviation Investigation Final Report

Location:	Rushville, Indiana	**Accident Number:**	CEN18LA352
Date & Time:	August 27, 2018, 13:50 Local	**Registration:**	N4379L
Aircraft:	Cessna 172	**Aircraft Damage:**	Substantial
Defining Event:	Loss of engine power (total)	**Injuries:**	2 Minor
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot indicated that, during the cross-country flight, the engine "sputtered" several times then regained power. During the descent, it sputtered again and then lost power. The pilot reported she did not believe she was experiencing carburetor icing conditions during the cruise portion of the flight and did not remember what temperature the carburetor temperature gauge was displaying at the time. During the descent, the pilot attempted to troubleshoot the engine power loss without applying carburetor heat but was not successful in regaining engine power. During the forced landing, she attempted to maneuver the airplane between a power line pole and several trees. The airplane struck the power lines and impacted a field in a slightly nose-down attitude, which resulted in substantial damage to the wings and fuselage.

Postaccident examination of the airplane and engine revealed no mechanical malfunctions or failures that would have precluded normal operation. The airplane had adequate fuel on board to complete the flight. The weather conditions at the time of the accident were conducive to serious carburetor icing at glide power settings. The loss of engine power likely occurred due to carburetor icing and the pilot's failure to apply carburetor heat in conditions conducive to carburetor icing.

Probable Cause and Findings

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

Loss of engine power due to carburetor icing and the pilot's failure to use carburetor heat in weather conditions conducive to carburetor icing.

Findings

Personnel issues	Lack of action - Pilot
Personnel issues	Identification/recognition - Pilot
Aircraft	Intake anti-ice, deice - Not used/operated
Environmental issues	Conducive to carburetor icing - Effect on equipment

Factual Information

History of Flight

Enroute	Other weather encounter
Enroute	Loss of engine power (total) (Defining event)
Enroute	Attempted remediation/recovery
Enroute	Off-field or emergency landing
Landing	Collision during takeoff/land

On August 27, 2018, about 1350 eastern daylight time, a Cessna 172G , N4379L, sustained substantial damage when it was involved in an accident near Rushville, Indiana. The private pilot and the passenger sustained minor injuries. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

The pilot reported that the purpose of the flight was to fly cross-country to visit family members. She landed at the Greater Portsmouth Regional Airport (PMH), Portsmouth, Ohio, and topped off both fuel tanks. She then departed about 1145 for her planned next stop at the Crawfordsville Municipal Airport (CFJ), Crawfordsville, Indiana.

After the departure climb from PMH, the engine temporarily "sputtered" and then operated normally. While in cruise flight about 2,900 ft above mean sea level (msl) and traveling about 85 kts with a heading of 300°, the engine "sputtered" and ceased producing power. The pilot stated the outside air temperature gauge indicated about 80° F and she did not believe the engine was experiencing carburetor icing conditions. The pilot did not remember what temperature the carburetor temperate gauge was displaying at the time. The engine power decreased to 1,500 rpm, then 1,000 rpm. The pilot advanced the mixture to the full rich position and the engine "smoothed out a little." As the airplane descended to 2,000 ft msl, the engine began "sputtering" again and the engine power decreased to about 1,000 rpm and ceased producing power. She attempted to troubleshoot the engine power loss without applying carburetor heat but was not successful in regaining engine power.

Although her aeronautical navigational chart showed a private airstrip close to her location for executing a forced landing, the pilot elected not to land there due to her airspeed and altitude, and instead choose to land in an open soybean field. During the forced landing sequence, she attempted to maneuver the airplane between a powerline pole and several trees. The airplane struck the powerlines and impacted the field, coming to rest in a slightly nose down attitude.

Two Federal Aviation Administration (FAA) aviation safety inspectors traveled to the accident site to document the wreckage. The airplane sustained substantial damage to both wings and the fuselage from the impact sequence. The inspectors noted that the both the left and right wing fuel tanks had not been breached and contained an adequate amount of usable fuel for the flight to CFJ.

An airframe and engine examination were performed by an airframe and powerplant mechanic under the supervision of the FAA. During the examination, no preimpact mechanical malfunctions or failures were

noted with the airframe and engine. An examination of the airplane's maintenance records revealed no evidence of uncorrected mechanical discrepancies with the airframe and engine.

The airplane was equipped with an analog carburetor temperature gauge that was located on the right side of the cockpit, about 6 inches to the right and level with the base of the control yoke. The gauge displayed a temperature range of -20° C to 20° C, with a yellow arc range of -15° C to 5° C, and a green arc range from 5° C to 20° C. There was also a placard that read, "keep needle out of yellow arc during possible carburetor icing conditions."

At the time of the accident, the nearest weather reporting station at Shelbyville Municipal Airport (GEZ), Indiana, 17 miles west-southwest of the accident site, reported a dew point of 72° F.

Based on the weather conditions reported by the pilot and at GEZ, the carburetor icing probability chart from the FAA Special Airworthiness Information Bulletin CE-09-35 Carburetor Icing Prevention, showed a probability of serious icing at glide power.

Pilot Information

Certificate:	Private	**Age:**	40,Female
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	Lap only
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:**	October 26, 2017
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:			

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N4379L
Model/Series:	172 G	**Aircraft Category:**	Airplane
Year of Manufacture:	1966	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	17254458
Landing Gear Type:	Tricycle	**Seats:**	2
Date/Type of Last Inspection:	November 1, 2017 Annual	**Certified Max Gross Wt.:**	2299 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:		**Engine Manufacturer:**	Continental Motors
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	O-300D
Registered Owner:		**Rated Power:**	145 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:	KGEZ,804 ft msl	**Distance from Accident Site:**	23 Nautical Miles
Observation Time:	17:53 Local	**Direction from Accident Site:**	255°
Lowest Cloud Condition:	Few / 4100 ft AGL	**Visibility**	10 miles
Lowest Ceiling:		**Visibility (RVR):**	
Wind Speed/Gusts:	13 knots / 20 knots	**Turbulence Type Forecast/Actual:**	None / None
Wind Direction:	210°	**Turbulence Severity Forecast/Actual:**	N/A / N/A
Altimeter Setting:	30.09 inches Hg	**Temperature/Dew Point:**	31°C / 22°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Portsmouth, OH (PMH)	**Type of Flight Plan Filed:**	VFR
Destination:	Crawfordsville, IN (CFJ)	**Type of Clearance:**	None
Departure Time:	11:45 Local	**Type of Airspace:**	Class G

Wreckage and Impact Information

Crew Injuries:	1 Minor	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 Minor	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Minor	**Latitude, Longitude:**	39.674999,-85.322219(est)

Administrative Information

Investigator In Charge (IIC):	Hodges, Michael
Additional Participating Persons:	Duane Hoff; FAA Indianapolis FSDO; Plainfield, IN Kurt Gibson; Continental Motors ; Mobile, AL
Original Publish Date:	September 14, 2020
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=98166