



Aviation Investigation Final Report

Location:	Tekamah, Nebraska	Accident Number:	CEN18LA199
Date & Time:	May 28, 2018, 09:30 Local	Registration:	N47252
Aircraft:	Aeronca 58B	Aircraft Damage:	Substantial
Defining Event:	Loss of engine power (partial)	Injuries:	2 Serious
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The private pilot reported that, about 30 minutes after departing for a personal, local flight, he was conducting a tribute over a cemetery and noticed that the engine was not running properly, so he proceeded to fly toward an airport located about 8 nautical miles (nm) to the east. While en route to the airport, the engine stopped developing full power and had a maximum rpm of about 1,500. The airplane descended, and during the forced landing, it impacted a ditch about 3 nm from the airport, which resulted in substantial damage to the airplane. The pilot stated that he should have landed the airplane in a flat field when the opportunity was possible, instead he "kept flying into a situation where there were no options."

Postaccident examination of the airframe and engine revealed no evidence of any preaccident mechanical malfunctions or failures that would have precluded normal operation. At the time of the loss of engine power, the airplane was operating in conditions conducive to carburetor icing at glide power. The pilot reported that he was not using carburetor heat. It is likely that, during the tribute, the pilot reduced engine power, resulting in a buildup in carburetor ice, which restricted the air and fuel flow and caused the reduced engine power. When the reduced engine power condition occurred, the pilot should have identified an appropriate forced landing site; however, he chose to continue to fly the airplane to an airport located about 8 nm away. When the engine lost total power, he had to make a forced landing on unsuitable terrain.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The partial loss of engine power due to the formation of carburetor ice. Contributing to the accident was the pilot's failure to use carburetor heat and his decision to continue flight with

reduced engine power rather than landing the airplane on suitable terrain.

Findings

Environmental issues	Conducive to carburetor icing - Effect on operation
Aircraft	Fuel control/carburetor - Incorrect use/operation
Personnel issues	Decision making/judgment - Pilot
Personnel issues	Use of equip/system - Pilot
Environmental issues	Rough terrain - Contributed to outcome

Factual Information

History of Flight

Enroute-cruise	Fuel related
Enroute-cruise	Loss of engine power (partial) (Defining event)
Landing	Collision with terr/obj (non-CFIT)

On May 28, 2018, about 0930 central daylight time, an Aeronca 58B, N47252, impacted terrain during a forced landing near Tekamah, Nebraska. The pilot and passenger received serious injuries; and the airplane sustained substantial damage. The airplane was owned and operated by the pilot under the provisions of Title 14 *Code of Federal Regulations* Part 91 as a personal flight. Visual meteorological conditions prevailed at the time of the flight, which was not on a flight plan. The airplane departed about 0845 from Tekamah Municipal Airport (TQE), Tekamah, Nebraska, on a local flight.

The pilot reported that he departed from his private airstrip located at his residence about 0700 and flew to TQE to pick up the passenger. While at TQE, he topped off the fuel and attached two American flags, which were about 3 ft X 5 ft in size, to the airplane's struts. He attached the flags because the flight was a "tribute flight" over two memorial services being held in the local area. The flight departed TQE about 0750 and proceeded to fly over Tekamah Cemetery, and then flew over to Summit Lake and circled it twice. They overflowed some neighbors' homes and then went to the pilot's airstrip and landed around 0810. About 0830, he departed to fly over the Craig Cemetery at 0900, and he noted that the engine was running fine. However, while flying over Craig Cemetery, the pilot noticed the engine was not running properly, so he headed toward TQE, located about 8 nautical miles (nm) east, to drop off the passenger. He stated that the engine was getting worse en route to TQE and not developing full power, with maximum rpm around 1,500 rpm. Although the engine was not developing full power, he continued to fly to TQE, hoping he could make it to the airport. The airplane continued to descend, and it impacted a ditch located 3 nm from TQE during the forced landing. The pilot stated that he should have landed in a flat field when the opportunity was possible, instead he "kept flying into a situation where there were no options."

A Federal Aviation Administration (FAA) inspector examined the wreckage at the accident site. He stated that there were flat bean fields located near the accident site, but the wreckage was found in a ditch. There were no apparent landing or skid marks leading to the ditch. The examination of the wreckage revealed that the wooden propeller blade tips were broken. The propeller spinner exhibited features consistent with torque. He was able to rotate the engine crankshaft one revolution. The carburetor was separated from the mount but was held on by the throttle cable. The flight controls exhibited continuity from the cockpit to the flight control surfaces. Fuel was present in the fuel tanks.

The FAA inspector reported that he interviewed the pilot. During the interview, the pilot did not recall pulling carburetor heat ON. The pilot stated that he did not have a problem with carburetor icing before.

The examination of the engine confirmed drivetrain continuity when the engine was rotated. Thumb compression was observed on all four cylinders, although the compression on cylinders No. 1 and 2 appeared "weak." All magneto leads checked good and the engine timing was verified at 30° before top dead center (TDC). All spark plugs produced an electrical spark, although the spark plug gaps for No. 1B, 3T, 4B, and 4T were greater than .016 to 0.21 inch specified. The carburetor floats were checked for freedom of movement. The inspection of the throttle plate and throttle arm revealed no defects.

At 0854, the surface weather observation at TQE was wind 260° at 3 kts; 10 miles visibility; few clouds at 8,500 ft; temperature 26° C; dew point 18° C; altimeter 29.92 inches of mercury. Based on the temperature and dew point about the time of the accident, the conditions were favorable for serious carburetor icing at glide power.

Pilot Information

Certificate:	Private	Age:	62, Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Rear
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 With waivers/limitations	Last FAA Medical Exam:	December 6, 2017
Occupational Pilot:	No	Last Flight Review or Equivalent:	September 16, 2016
Flight Time:	912.2 hours (Total, all aircraft), 153.6 hours (Total, this make and model), 852.2 hours (Pilot In Command, all aircraft), 5.5 hours (Last 90 days, all aircraft), 1.7 hours (Last 30 days, all aircraft), 1.1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Aeronca	Registration:	N47252
Model/Series:	58B	Aircraft Category:	Airplane
Year of Manufacture:	1944	Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	058B-9843
Landing Gear Type:	Tailwheel	Seats:	2
Date/Type of Last Inspection:	March 10, 2018 Annual	Certified Max Gross Wt.:	1260 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	2668 Hrs as of last inspection	Engine Manufacturer:	Continental
ELT:	Not installed	Engine Model/Series:	O-170-3
Registered Owner:		Rated Power:	65 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:	TQE, 1026 ft msl	Distance from Accident Site:	3 Nautical Miles
Observation Time:	08:54 Local	Direction from Accident Site:	95°
Lowest Cloud Condition:	Few / 8500 ft AGL	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	3 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	260°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.92 inches Hg	Temperature/Dew Point:	26°C / 18°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Tekamah, NE (TQE)	Type of Flight Plan Filed:	None
Destination:	Tekamah, NE (TQE)	Type of Clearance:	None
Departure Time:	08:45 Local	Type of Airspace:	

Wreckage and Impact Information

Crew Injuries:	1 Serious	Aircraft Damage:	Substantial
Passenger Injuries:	1 Serious	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 Serious	Latitude, Longitude:	41.768611,-96.241386

Administrative Information

Investigator In Charge (IIC):	Silliman, James
Additional Participating Persons:	Jeremy Kraemer; FAA Lincoln FSDO; Lincoln, NE
Original Publish Date:	December 16, 2019
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=97343

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