



National Transportation Safety Board Aviation Accident Final Report

Location:	Apalachicola, FL	Accident Number:	ERA14LA374
Date & Time:	08/01/2014, 1320 EDT	Registration:	N5276U
Aircraft:	CESSNA 172	Aircraft Damage:	Substantial
Defining Event:	Loss of engine power (total)	Injuries:	1 Minor
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

The commercial pilot reported that the accident flight was the first flight since maintenance was performed after water was found in the fuel system. The pilot performed a preflight, sumped the fuel tanks with no water noted, and conducted an engine run-up with no anomalies noted. After takeoff, the pilot performed one circuit in the traffic pattern, and, during the final approach, he chose to perform a go-around. He applied full throttle, and the airplane began to climb, but the engine then lost total power. He subsequently turned the fuel pump on, applied carburetor heat, and began to “pump” the throttle. The engine started but then lost total power again. The pilot restarted the engine two more times, but, after it lost power again, he chose to perform a forced landing to a marsh, which resulted in substantial damage to the fuselage.

A postaccident examination of the engine confirmed engine continuity from the propeller flange to the engine’s accessory section, and an engine test run was performed with no anomalies noted. The left tank fuel line to the engine was found partially blocked with “fresh” sealant-type material. However, a review of the maintenance records found no entries indicating when the sealant was applied to the fuel tank. The fuel selector was found in the “both” position. Given that the sealant was only partially blocking the fuel line and that both fuel tanks were feeding the engine, the blockage likely would not have affected the engine power.

Although the weather conditions were conducive to the accumulation of serious carburetor icing at glide power at the time of the accident and the total loss of engine power occurred after the engine had been operating at a low-power setting for the descent on final approach, the investigation could not determine whether carburetor ice caused 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 for reasons that could not be determined during postaccident

examination and testing.

Findings

Environmental issues	Wet/muddy terrain - Contributed to outcome Conducive to carburetor icing - Decision related to condition
Not determined	Not determined - Unknown/Not determined (Cause)

Factual Information

On August 1, 2014, about 1320 eastern daylight time, a Cessna 172RG, N5276U, was substantially damaged during a forced landing to a marsh following a total loss of engine power near Apalachicola, Florida. The commercial pilot incurred minor injuries. Visual meteorological conditions prevailed, and no flight plan was filed for the local personal flight. The airplane was registered to a corporation and operated by C.A.M.S. Flight School, which was conducted under the provisions of Title 14 Code of Federal Regulations Part 91. The flight was originating from Apalachicola Regional Airport-Cleve Randolph Field (AAF), Apalachicola, Florida, at the time of the accident.

According to the pilot, he was told that he was going to pick up the airplane since it had come out of maintenance after water was found in the fuel. He performed a preflight, and noted a total of 33 gallons of fuel in the airplane's fuel tanks. The pilot sumped the fuel tanks without any water noted and performed an engine run-up without any anomalies noted. He performed a takeoff and one circuit in the traffic pattern. During the final approach he decided to perform a go-around and applied full power. The airplane began to climb, but soon after, the engine lost total power. He then turned the fuel pump "ON" and applied carburetor heat but the engine did not respond. He repositioned the throttle and then started "pumping it." Then, the engine started, maintained "full" rpm for less than a minute, and then lost total power again. The pilot performed the same procedure of "pumping" the throttle, the engine starting, and then losing total power two more times. After the third loss of total engine power, he elected to perform a forced landing to a marsh area. The airplane impacted the marsh area and came to rest in an upright position.

According to Federal Aviation Administration (FAA) records, the airplane was issued a normal airworthiness certificate in February 1980. It was powered by a Lycoming O&VO 360 series, 180-hp, engine. According to the pilot, the most recent 100-hour inspection was completed on March 17, 2014. At the time of the accident, the tachometer indicated that the airplane had accumulated 7,287 hours of time.

A review of recorded data from the AAF automated weather observation station, revealed at 1253 the wind was variable at 4 knots, visibility of 10 miles, clear skies, temperature 28 degrees C, dewpoint 21 degrees C, and a barometric altimeter setting of 30.00 inches of mercury.

A postaccident examination of the airplane revealed that the airplane incurred substantial damage to both elevators and horizontal stabilizers. An undetermined amount of fuel was noted in both fuel tanks. The fuel selector valve, located in the cockpit, was noted in "Both" position. The engine remained attached to the fuselage through all engine mounts. One blade of the propeller was bent aft approximately 30 degrees and the other blade was not damaged.

The FAA inspector, who responded to the accident, stated that when the wings were removed to facilitate recovery, the left wing tank fuel line to the engine was partially blocked with a sealant type material. The sealant was "fresh" and photographic evidence showed that the sealant was neither weathered nor worn. Upon examining the maintenance records, there was no entry found that indicated when the sealant was applied to the fuel tank. In addition, no paperwork was produced that documented when the maintenance was performed to line the fuel tank with sealant.

A postaccident examination of the engine revealed that engine continuity was confirmed from

the propeller flange to the accessory section of the engine by rotating the propeller by hand. The fuel screens were removed and no debris was noted. In addition, the engine was started and operated without any anomalies noted.

A representative of the manufacturer was contacted and stated that if a fuel line was partially blocked from one fuel tank, as long as the fuel selector valve was on "BOTH," the fuel flow would be sufficient enough to maintain engine power.

The carburetor icing probability chart from Federal Aviation Administration (FAA) Special Airworthiness Information Bulletin (SAIB): CE-09-35 Carburetor Icing Prevention, June 30, 2009, showed a probability of serious icing at glide power at the temperature and dew point reported at the time of the accident. In addition it stated that in order to prevent carburetor icing, a pilot should "Use carburetor heat on approach and descent when operating at low power settings, or in conditions where carburetor icing is probable."

According to the pilot operating handbook, both the descent and before landing checklist stated that the carburetor heat should be "ON" in order to prevent carburetor icing.

History of Flight

Approach-VFR go-around	Loss of engine power (total) (Defining event)
Emergency descent	Off-field or emergency landing
Landing-flare/touchdown	Collision with terr/obj (non-CFIT)

Pilot Information

Certificate:	Flight Instructor; Commercial	Age:	50, Male
Airplane Rating(s):	Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	
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:	05/28/2014
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	02/25/2012
Flight Time:	1264 hours (Total, all aircraft), 118 hours (Total, this make and model), 1227 hours (Pilot In Command, all aircraft), 84 hours (Last 90 days, all aircraft), 39 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	CESSNA	Registration:	N5276U
Model/Series:	172 RG	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	172RG0319
Landing Gear Type:	Retractable - Tricycle	Seats:	
Date/Type of Last Inspection:	03/17/2014, 100 Hour	Certified Max Gross Wt.:	2650 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:		Engine Manufacturer:	LYCOMING
ELT:	Installed, not activated	Engine Model/Series:	O&VO-360 SER
Registered Owner:	N5276U ENTERPRISE LLC	Rated Power:	180 hp
Operator:	C.A.M.S Flight School	Air Carrier Operating Certificate:	None

Meteorological Information and Flight Plan

Observation Facility, Elevation:	AAF, 19 ft msl	Observation Time:	1253 EDT
Distance from Accident Site:	0 Nautical Miles	Condition of Light:	Day
Direction from Accident Site:	318°	Conditions at Accident Site:	Visual Conditions
Lowest Cloud Condition:	Clear	Temperature/Dew Point:	28°C / 21°C
Lowest Ceiling:	None	Visibility	10 Miles
Wind Speed/Gusts, Direction:	4 knots, Variable	Visibility (RVR):	
Altimeter Setting:	30 inches Hg	Visibility (RVV):	
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Apalachicola, FL (AAF)	Type of Flight Plan Filed:	None
Destination:	Apalachicola, FL (AAF)	Type of Clearance:	None
Departure Time:	1310 EDT	Type of Airspace:	

Airport Information

Airport:	APALACHICOLA REGIONAL (AAF)	Runway Surface Type:	N/A
Airport Elevation:	20 ft	Runway Surface Condition:	Vegetation
Runway Used:	24	IFR Approach:	None
Runway Length/Width:	5271 ft / 150 ft	VFR Approach/Landing:	Forced Landing

Wreckage and Impact Information

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

Administrative Information

Investigator In Charge (IIC):	Heidi Moats	Adopted Date:	02/03/2016
Additional Participating Persons:	Joseph Arvay; FAA/FSDO; Birmingham, AL		
Publish Date:	02/03/2016		
Note:	The NTSB did not travel to the scene of this accident.		
Investigation Docket:	http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=89787		

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