Aviation Investigation Final Report

Location:	Little Rock, Arkansas	**Accident Number:**	CEN18LA347
Date & Time:	August 22, 2018, 13:00 Local	**Registration:**	N7954W
Aircraft:	Piper PA-28-235	**Aircraft Damage:**	Substantial
Defining Event:	Loss of engine power (total)	**Injuries:**	2 Serious
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The private pilot and his passenger were on a multi-leg cross-country flight. The pilot reported that he departed with a total of 84 gallons of fuel in the auxiliary and main tanks and flew two flight legs that lasted a total of about 40 to 50 minutes. The fuel selector was positioned on the right fuel tank during the first two legs of flight. Before departing on the third flight leg, he switched the fuel selector to the left main fuel tank.

About 10 minutes after takeoff and after climbing to 4,500 ft above mean sea level, the pilot turned off the fuel boost pump and engaged the autopilot. He reported that the engine then rolled back to idle. He immediately turned the fuel boost pump back on but noted no difference. The pilot switched the fuel selector back to the right main tank since he had flown the previous legs on the right main tank without any problems. The engine then lost total power, and he attempted an engine restart without success. He performed a forced landing to a grassy field, during which the airplane impacted rough terrain, which resulted in substantial damage to the airplane. After recovery of the airplane, 22 gallons of fuel were removed from the left fuel tank and none was removed from the right fuel tank; however, the right fuel tank was compromised from impact damage. The postaccident examination of the airframe and engine revealed no evidence of preimpact mechanical malfunctions or failures that would have precluded normal operation. Thus, investigators were unable to determine the reason for the loss of engine power based on the available evidence.

Probable Cause and Findings

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

The total loss of engine power for reasons that could not be determined based on the available evidence, which resulted in a forced landing on unsuitable terrain.

Findings

Not determined	(general) - Unknown/Not determined
Environmental issues	Rough terrain - Contributed to outcome

Factual Information

History of Flight

Enroute-cruise	Loss of engine power (total) (Defining event)
Emergency descent	Off-field or emergency landing
Landing	Collision with terr/obj (non-CFIT)

****This report was modified on 12/11/2019. Please see the docket for this accident to view the original report.****

On August 22, 2018, about 1300 central daylight time, a Piper PA-28-235, N7954W, sustained substantial damage during a forced landing after a total loss of engine power during cruise flight about 14 nautical miles (nm) southeast of Little Rock, Arkansas. The pilot and passenger received serious injuries. 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 on a visual flight rules flight plan. The flight departed from the North Little Rock Municipal Airport (ORK), North Little Rock, Arkansas, about 1245 and was en route to the Pine Bluff Regional Airport Grider Field (PBF), Pine Bluff, Arkansas.

The pilot reported that he initially departed Marion County Regional Airport (KFLP), Flippin, Arkansas, with full fuel in the auxiliary and main tanks, a total of 84 gallons. Then he flew to Baxter County Airport (KBPK), Mountain Home, Arkansas, a distance of about 8 nautical miles (nm), to get the oil changed. From there he flew to North Little Rock Airport (KORK), North Little Rock, Arkansas, which took about 36 minutes of flight time. The pilot reported that the flight legs were all flown on the right main fuel tank.

Prior to departing for KPBF, he switched to the left main fuel tank. About 10 minutes after takeoff, the flight was about 10 miles south of Little Rock International Airport (KLIT), Little Rock, Arkansas, at 4,500 ft above mean sea level (msl), when the pilot turned off the fuel boost pump and engaged the autopilot. The pilot reported that the engine then rolled back to what the pilot perceived as idle. He immediately turned the fuel boost pump back on, but it made no difference. The pilot reported to air traffic control that the airplane was experiencing a partial loss of engine power. The air traffic controller advised the pilot that the closest airfield was a grass airstrip about 2 to 3 nm east of the pilot's position, or he could divert to KLIT.

The pilot chose to fly to KLIT. The pilot switched the fuel selector back to the right main tank, since he had flown on the right main tank without any problems. The engine then stopped producing power and he attempted an engine restart but without success. The airplane was about 1,560 ft above msl so he decided to perform a forced landing to a grass covered field on an island in the Arkansas River. During the forced landing, the airplane impacted rough terrain which resulted in substantial damage to the airplane.

The airplane wreckage was transported to an aviation recovery facility. The recovery crew reported that 22 gallons of fuel were removed from the left fuel tank and none was removed from the right fuel tank; however, the right fuel tank was compromised from impact damage. During the examination of the airplane at the aviation recovery facility, the fuel system was checked. The fuel lines from the fuel selector to the wing fuel tanks and to the engine were checked and there were no obstructions in the fuel lines. The fuel selector detents were checked and appeared normal. The fuel pump was checked, and no anomalies were noted.

The carburetor was removed and disassembled to check the float and fuel inside the body. The carburetor was half full of fuel. The fuel filters were clean. The fuel was tested for water contamination and none was found. The engine was rotated at the propeller and the drive train had continuity from the propeller to the accessory drives. All cylinders exhibited "thumb" compression. The spark plugs exhibited normal wear. Both magnetos were rotated and both produced spark to all leads. The exhaust manifold was examined and there were no preexisting anomalies. The examination of the flight controls revealed flight control continuity from the cockpit flight controls to the control surfaces.

Pilot Information

Certificate:	Private	**Age:**	49,Male
Airplane Rating(s):	Single-engine land	**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 With waivers/limitations	**Last FAA Medical Exam:**	March 27, 2018
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	July 17, 2018
Flight Time:	95 hours (Total, all aircraft), 43 hours (Total, this make and model), 47 hours (Pilot In Command, all aircraft), 65 hours (Last 90 days, all aircraft), 20 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N7954W
Model/Series:	PA-28-235	**Aircraft Category:**	Airplane
Year of Manufacture:	1973	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	28-7310160
Landing Gear Type:	Tricycle	**Seats:**	4
Date/Type of Last Inspection:	September 29, 2017 Annual	**Certified Max Gross Wt.:**	3000 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	4834 Hrs at time of accident	**Engine Manufacturer:**	Lycoming
ELT:	Installed, activated, aided in locating accident	**Engine Model/Series:**	O-540
Registered Owner:		**Rated Power:**	235 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:	LIT,266 ft msl	**Distance from Accident Site:**	14 Nautical Miles
Observation Time:	12:53 Local	**Direction from Accident Site:**	30°
Lowest Cloud Condition:	Few / 3500 ft AGL	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	5 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:		**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.15 inches Hg	**Temperature/Dew Point:**	29°C / 19°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Little Rock, AR (ORK)	**Type of Flight Plan Filed:**	VFR
Destination:	Pine Bluff, AR (PBF)	**Type of Clearance:**	None
Departure Time:	12:40 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:**	34.543609,-92.131111

Administrative Information

Investigator In Charge (IIC):	Silliman, James
Additional Participating Persons:	Nick Cusimano; FAA Little Rock FSDO; Little Rock, LA John Butler; Lycoming Engines; Arlington, TX
Original Publish Date:	February 11, 2020
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=98137