Aviation Investigation Final Report

Location:	Loveland, Ohio	**Accident Number:**	CEN20LA290
Date & Time:	July 18, 2020, 17:30 Local	**Registration:**	N4816A
Aircraft:	Piper PA22	**Aircraft Damage:**	Substantial
Defining Event:	Fuel starvation	**Injuries:**	1 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

Before the pilot's departure on a cross-country flight, he added 7.5 gallons of fuel to each wing fuel tank. The pilot reported that before adding fuel, both fuel gauges read ¼ tank. About an hour and half after departure, the engine lost power, had a momentary gain of power, and then lost power again. The pilot selected a road for a forced landing. During the landing, the airplane impacted several mailboxes and a light pole before coming to stop in a residential yard

Examination of the airplane found substantial damage to the left wing, damage to the right horizontal stabilizer and elevator, and right-side engine cowling. The right-wing fuel tank was then drained and about 5.5 gallons of fuel was recovered, the left-wing fuel tank did not contain any useable fuel. The left fuel gauge read about ¼ and the right fuel gauge read zero. The examination did not confirm the accuracy of the gauges or if the wires were swapped from the left and right fuel tanks. Fuel was added to right wing fuel tank, and the engine started. The engine was operated from idle, to a high power setting, with no abnormalities noted.

The pilot reported on the NTSB Form 6120.1, that he thought the reason for the engine failure was due to fuel exhaustion.

With fuel remaining in the right-wing fuel tank, the loss of engine power is consistent with fuel starvation.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:
The loss of engine power due to fuel starvation

Findings

Personnel issues	Fuel planning - Pilot
Aircraft	Fuel - Fluid management
Aircraft	Fuel indication system - Not specified

Factual Information

History of Flight

Enroute	Fuel starvation (Defining event)
Landing-landing roll	Collision during takeoff/land

On July 18, 2020, about 1730 eastern daylight time, a Piper PA-22 airplane, N4816A, was substantially damaged when it was involved in an accident near Loveland, Ohio. The pilot was not injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

According to the pilot, before adding fuel, both fuel gauges read ¼ tank and he added about 7.5 gallons to each tank, for an additional 15 gallons of fuel. He then departed the Wadsworth Municipal Airport (3G3), Wadsworth, Ohio, en route to the Cincinnati Municipal Airport-Lunken Field (LUK), Lunken, Ohio. About an hour and half after departure, the engine lost power, had a momentary gain of power, and then lost power again. The pilot selected a road for a forced landing. During the landing, the airplane impacted several mailboxes and a light pole before coming to stop in a residential yard.

The pilot reported that he typically switches fuel tanks every 10-15 minutes but did not recall if he did it on this flight. He also did not switch fuel tanks after the initial loss of engine power.

Examination of the airplane found substantial damage to the left wing, damage to the right horizontal stabilizer and elevator, and right-side engine cowling. The fuel selector was in the off position. The right-wing fuel tank was then drained and about 5.5 gallons of fuel was recovered, the left-wing fuel tank did not contain any useable fuel. The carburetor float bowl was checked and no contaminates were found. The left fuel gauge read about ¼ and the right fuel gauge read zero. The examination did not confirm the accuracy of the gauges or if the wires were swapped from the left and right fuel tanks.

During the examination, fuel was added to right wing fuel tank, and the engine started. The engine was operated from idle to a high power setting with no abnormalities noted.

The pilot reported on the NTSB Form 6120.1 that he thought the reason for the engine failure was due to fuel exhaustion.

Pilot Information

Certificate:	Private	**Age:**	31
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	Helicopter	**Restraint Used:**	Lap only
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 1	**Last FAA Medical Exam:**	March 1, 2016
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	April 30, 2019
Flight Time:	528 hours (Total, all aircraft), 168 hours (Total, this make and model), 383 hours (Pilot In Command, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N4816A
Model/Series:	PA22 150	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	22-3969
Landing Gear Type:	Tailwheel	**Seats:**	
Date/Type of Last Inspection:	March 4, 2020 Annual	**Certified Max Gross Wt.:**	
Time Since Last Inspection:		**Engines:**	Reciprocating
Airframe Total Time:		**Engine Manufacturer:**	Lycoming
ELT:		**Engine Model/Series:**	O-320-A2B
Registered Owner:	On file	**Rated Power:**	150 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:	KLUK	**Distance from Accident Site:**	
Observation Time:	16:53 Local	**Direction from Accident Site:**	
Lowest Cloud Condition:		**Visibility**	7 miles
Lowest Ceiling:	Broken / 5500 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	10 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	230°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.03 inches Hg	**Temperature/Dew Point:**	32°C / 21°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Wadsworth, OH (3G3)	**Type of Flight Plan Filed:**	
Destination:	Lunken, OH (KLUK)	**Type of Clearance:**	VFR
Departure Time:	14:50 Local	**Type of Airspace:**	

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 None	**Latitude, Longitude:**	39.267501,-84.26583(est)

Administrative Information

Investigator In Charge (IIC):	Hatch, Craig
Additional Participating Persons:	Brian Crogan; FAA FSDO; Cincinnati , OH
Original Publish Date:	February 2, 2021
Last Revision Date:	
Investigation Class:	Class 3
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=101622