Aviation Investigation Final Report

Location:	Myerstown, Pennsylvania	**Accident Number:**	ERA19LA061
Date & Time:	December 8, 2018, 13:14 Local	**Registration:**	N731LT
Aircraft:	Cessna P210	**Aircraft Damage:**	Substantial
Defining Event:	Fuel related	**Injuries:**	1 Serious
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot was flying the airplane to a nearby airport to obtain fuel. Before departing on the flight, he checked the fuel quantity using the onboard fuel totalizer and determined that both fuel gauges indicated adequate fuel for the intended flight. During the landing approach at the destination, the engine lost total power and the airplane impacted terrain short of the runway. The pilot reported that the loss of power was due to fuel starvation. A witness at the airport reported that the airplane made a "very sharp left-banking turn" as it flew overhead, then climbed steeply and made another sharp left turn to enter the traffic pattern for landing.

Examination of the airplane revealed no anomalies with the flight control system that would have prevented normal operation. No evidence of fuel was found in the engine-driven fuel pump filter; the filter was clean. There was no evidence of fuel in the lines between the engine-driven pump and engine gas producer. Before recovery from the accident site, less than 1 gallon of fuel was drained from the left wing tanks and less than 4 gallons of fuel was drained from the right wing fuel tanks.

The pilot's operating handbook for the airplane stated that, when the fuel tanks were 1/4-full or less, prolonged uncoordinated flight, such as slips or skids, could uncover the fuel tank outlets, causing fuel starvation and engine stoppage. It is likely that given the airplane's low fuel state, the abrupt maneuvers caused the fuel outlets to become uncovered, resulting in fuel starvation to the engine and a 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 due to fuel starvation.

Findings

Aircraft	Fuel - Fluid management
Personnel issues	Fuel planning - Pilot

Factual Information

History of Flight

Approach-VFR pattern final	Fuel related (Defining event)
Approach-VFR pattern final	Loss of control in flight

On December 8, 2018, at 1314 eastern standard time, a Cessna P210, N731LT, sustained substantial damage when it was involved in an accident near Myerstown, Pennsylvania. The private pilot was seriously injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

The pilot reported that he was flying to a nearby airport to refuel the airplane. He stated that he checked the fuel using the onboard fuel totalizer, and both fuel gauges indicated that there was enough fuel for the intended flight. During the approach, the engine lost total power on the downwind leg of the airport traffic pattern. The pilot reported that the loss of engine power was due to fuel starvation. The pilot also reported that he should have used a fuel tank dip stick to confirm the amount of fuel onboard.

According to a witness at the airport, as the airplane approached the airport, it made a "very sharp left-banking turn" as it flew over. The airplane then climbed steeply and made another sharp left turn to enter the left downwind for runway 19. He watched as the airplane continued the downwind leg, then made another sharp left turn to final. The airplane then turned to final and appeared to "stall" before impacting the ground. The airplane came to rest about one-half mile short of runway 19.

A review of photographs provided by a Federal Aviation Administration inspector revealed substantial damage to both left and right outboard wing sections. The engine was partially attached to the firewall and remained within the engine mount. Before recovery from the site, less than 1 gallon of fuel was drained from the left-wing tanks and less than 4 gallons of fuel was drained from the right-wing tanks. The fuel was examined for contamination, and none was found.

Examination of the fuel system revealed no evidence of fuel in the engine-driven fuel pump filter, and the filter was clean. There was no evidence of fuel in the lines between the engine-driven pump and engine gas producer.

The pilot's operating handbook for the airplane contained the note:

Unusable fuel is at a minimum due to the design of the fuel system. However, when the fuel tanks are 1/4 full or less, prolonged uncoordinated flight such as slips or skids can uncover the fuel tank outlets, causing fuel starvation and engine stoppage. Therefore, with low fuel reserves, do not allow the airplane to remain in uncoordinated flight for periods in excess of one minute.

Pilot Information

Certificate:	Private	**Age:**	69,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	3-point
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 With waivers/limitations	**Last FAA Medical Exam:**	July 3, 2017
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	(Estimated) 4500 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N731LT
Model/Series:	P210 N	**Aircraft Category:**	Airplane
Year of Manufacture:	1979	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	P21000436
Landing Gear Type:	Retractable - Tricycle	**Seats:**	4
Date/Type of Last Inspection:	February 20, 2018 Annual	**Certified Max Gross Wt.:**	2303 lbs
Time Since Last Inspection:		**Engines:**	1 Turbo shaft
Airframe Total Time:	5076 Hrs as of last inspection	**Engine Manufacturer:**	Allison
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	250-B17F2
Registered Owner:	On file	**Rated Power:**	250 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:	KMUI,487 ft msl	**Distance from Accident Site:**	1 Nautical Miles
Observation Time:	13:56 Local	**Direction from Accident Site:**	10°
Lowest Cloud Condition:	Few / 3100 ft AGL	**Visibility**	10 miles
Lowest Ceiling:	Overcast / 4400 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	/	**Turbulence Type Forecast/Actual:**	/
Wind Direction:		**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.45 inches Hg	**Temperature/Dew Point:**	-7°C / -10°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Smoketown, PA (S37)	**Type of Flight Plan Filed:**	None
Destination:	Myerstown, PA (9D4)	**Type of Clearance:**	VFR
Departure Time:		**Type of Airspace:**	Class G

Airport Information

Airport:	Deck 9D4	**Runway Surface Type:**	Asphalt
Airport Elevation:	523 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	19	**IFR Approach:**	None
Runway Length/Width:	3786 ft / 50 ft	**VFR Approach/Landing:**	Traffic pattern

Wreckage and Impact Information

Crew Injuries:	1 Serious	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Serious	**Latitude, Longitude:**	40.352222,-76.329719(est)

Administrative Information

Investigator In Charge (IIC):	Alleyne, Eric
Additional Participating Persons:	Gary G Martin; FAA/FSDO; Harrisburg, PA Henry J Soderlund; Textron Aviation ; Wichita, KS Jack Johnson; Rolls Royce; Indianapolis, IN
Original Publish Date:	March 16, 2022
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=98745