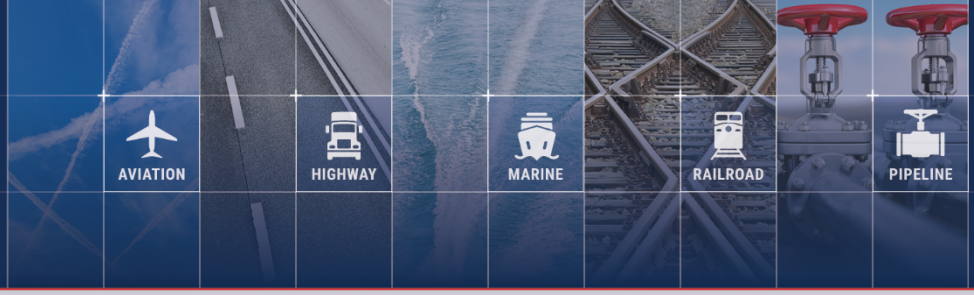

Aviation Investigation Final Report

Location:	Greenville, South Carolina	**Accident Number:**	ERA23LA049
Date & Time:	November 2, 2022, 12:52 Local	**Registration:**	N65615
Aircraft:	Cessna 172	**Aircraft Damage:**	Substantial
Defining Event:	Fuel starvation	**Injuries:**	1 Serious, 1 Minor
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot departed for the visual flight rules cross-country flight with about 12 gallons of fuel in each fuel tank for the planned 1 hour and 40-minute flight. She reported that while enroute the fuel gauges were reading “low” and were fluctuating. Closer to the destination, the fuel gauges indicated that more fuel was present in the right fuel tank, so the pilot moved the fuel selector from the “both” position to the “right” position. About 1.5 hours into the flight, while flying at an altitude of about 2,000 feet above ground level and while being provided with radar vectors to the airport traffic pattern at the destination airport, the engine “started sputtering and got quiet.” The pilot attempted to restart the engine, but was unsuccessful, and she subsequently performed a forced landing in a field. The impact with the ground resulted in substantial damage to the fuselage and right wing. Post-accident examination of the airplane found that the intact right-wing fuel tank was empty, that the intact left-wing fuel tank had about 6 gallons of 100LL aviation fuel remaining, and that the fuel selector was in the right tank position.

During a postaccident interview the pilot stated that when the engine lost power she did not use a checklist in her attempt to restart the engine. Review of the power loss in flight checklist found aboard the airplane revealed that the sixth item stated “fuel selector – check/switch/both.” Based on all available information, it is likely that after the pilot selected the right fuel tank earlier in the flight, its fuel supply was eventually exhausted and the engine lost power. It is also likely that, had the pilot used the checklist and selected the “both” position on the fuel selector, the fuel remaining in the left fuel tank could have restored engine power before the forced landing.

Probable Cause and Findings

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

The pilot's improper fuel management, which resulted in a total loss of engine power due to fuel starvation. Contributing was the pilot's failure to use the checklist aboard the airplane during her attempts to restore engine power.

Findings

Personnel issues	Use of equip/system - Pilot
Aircraft	Fuel - Fluid management
Personnel issues	Use of checklist - Pilot

Factual Information

History of Flight

Approach	Fuel starvation (Defining event)
Approach	Loss of engine power (total)
Landing	Off-field or emergency landing

Pilot Information

Certificate:	Private	**Age:**	38,Female
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	Lap only
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	
Medical Certification:	Class 3 Without waivers/limitations	**Last FAA Medical Exam:**	June 22, 2021
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	February 17, 2022
Flight Time:	181.9 hours (Total, all aircraft), 148 hours (Total, this make and model), 111.7 hours (Pilot In Command, all aircraft), 38 hours (Last 90 days, all aircraft), 15.9 hours (Last 30 days, all aircraft)		

Passenger Information

Certificate:		**Age:**	Female
Airplane Rating(s):		**Seat Occupied:**	Right
Other Aircraft Rating(s):		**Restraint Used:**	3-point
Instrument Rating(s):		**Second Pilot Present:**	No
Instructor Rating(s):		**Toxicology Performed:**	
Medical Certification:		**Last FAA Medical Exam:**	
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:			

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N65615
Model/Series:	172 P	**Aircraft Category:**	Airplane
Year of Manufacture:	1982	**Amateur Built:**	
Airworthiness Certificate:	Normal; Utility	**Serial Number:**	17275786
Landing Gear Type:	Tricycle	**Seats:**	4
Date/Type of Last Inspection:	November 2, 2022 100 hour	**Certified Max Gross Wt.:**	2400 lbs
Time Since Last Inspection:	1.5 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	at time of accident	**Engine Manufacturer:**	LYCOMING
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	O-320-D2J
Registered Owner:	ZIM SIM LLC	**Rated Power:**	160 Horsepower
Operator:	CHS Flight School	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	GMU,1017 ft msl	**Distance from Accident Site:**	4 Nautical Miles
Observation Time:	12:53 Local	**Direction from Accident Site:**	273°
Lowest Cloud Condition:	Few / 4800 ft AGL	**Visibility**	10 miles
Lowest Ceiling:	Broken / 10000 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	8 knots /	**Turbulence Type Forecast/Actual:**	None / None
Wind Direction:	30°	**Turbulence Severity Forecast/Actual:**	N/A / N/A
Altimeter Setting:	30.3 inches Hg	**Temperature/Dew Point:**	18°C / 11°C
Precipitation and Obscuration:	Light - None - Drizzle		
Departure Point:	Summerville, SC (DYB)	**Type of Flight Plan Filed:**	None
Destination:	Greenville, SC (GMU)	**Type of Clearance:**	None
Departure Time:	11:20 Local	**Type of Airspace:**	Class C

Airport Information

Airport:	GREENVILLE DOWNTOWN GMU	**Runway Surface Type:**	
Airport Elevation:	1048 ft msl	**Runway Surface Condition:**	Dry;Rough
Runway Used:		**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	Forced landing;Full stop

Wreckage and Impact Information

Crew Injuries:	1 Minor	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 Serious	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Serious, 1 Minor	**Latitude, Longitude:**	34.845437,-82.261335(est)

Administrative Information

Investigator In Charge (IIC):	Young, Joshua
Additional Participating Persons:	Jeanette Hibpshman; FAA/FSDO; Columbia, SC
Original Publish Date:	February 23, 2023
Last Revision Date:	
Investigation Class:	Class 4
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=106245