



# Aviation Investigation Final Report

---

<b>Location:</b>	Greenville, South Carolina	<b>Accident Number:</b>	ERA23LA049
<b>Date &amp; Time:</b>	November 2, 2022, 12:52 Local	<b>Registration:</b>	N65615
<b>Aircraft:</b>	Cessna 172	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Fuel starvation	<b>Injuries:</b>	1 Serious, 1 Minor
<b>Flight Conducted Under:</b>	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

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

## Factual Information

### History of Flight

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

### Pilot Information

<b>Certificate:</b>	Private	<b>Age:</b>	38,Female
<b>Airplane Rating(s):</b>	Single-engine land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	Lap only
<b>Instrument Rating(s):</b>	None	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	
<b>Medical Certification:</b>	Class 3 Without waivers/limitations	<b>Last FAA Medical Exam:</b>	June 22, 2021
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	February 17, 2022
<b>Flight Time:</b>	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

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

## Aircraft and Owner/Operator Information

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

## Meteorological Information and Flight Plan

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

## Airport Information

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

## Wreckage and Impact Information

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

## Administrative Information

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

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).