



AVIATION



HIGHWAY



MARINE



RAILROAD



PIPELINE

# Aviation Investigation Final Report

<b>Location:</b>	Pierson, Florida	<b>Accident Number:</b>	ERA24LA115
<b>Date &amp; Time:</b>	February 16, 2024, 01:40 Local	<b>Registration:</b>	N8257L
<b>Aircraft:</b>	Cessna 172	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Fuel exhaustion	<b>Injuries:</b>	1 Minor
<b>Flight Conducted Under:</b>	Part 91: General aviation - Positioning		

## Analysis

During a repositioning flight, the engine lost power shortly before reaching the intended destination. The pilot attempted to restart the engine; however, he was unable to restore engine power. The pilot performed a forced landing in a heavily forested area, resulting in substantial damage to the fuselage, and both wings.

The pilot stated that he performed a pre-flight fuel calculation with a total estimated fuel consumption of 33.75 gallons; the airplane had a 38-gallon usable fuel capacity. The pilot also reported that he had minimal sleep and was fatigued so he did not recalculate the amount of fuel on board during the flight. The pilot stated, "The accident happened due to fuel [exhaustion] and stretching the limits for way too much flying at night in a new-to-me aircraft the first time." The pilot reported there were no preaccident mechanical failures or malfunctions with the airplane that would have precluded normal operation.

## Probable Cause and Findings

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

The pilot's improper fuel planning, which resulted in fuel exhaustion and a total loss of engine power.

## Findings

Personnel issues	Fuel planning - Pilot
Aircraft	Fuel - Fluid level

## Factual Information

### History of Flight

<b>Enroute-descent</b>	Fuel exhaustion (Defining event)
<b>Emergency descent</b>	Off-field or emergency landing

### Pilot Information

<b>Certificate:</b>	Private	<b>Age:</b>	34, Male
<b>Airplane Rating(s):</b>	Single-engine land; Multi-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 1 Without waivers/limitations	<b>Last FAA Medical Exam:</b>	June 20, 2019
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	October 28, 2023
<b>Flight Time:</b>	1252.2 hours (Total, all aircraft), 15 hours (Total, this make and model), 1178.4 hours (Pilot In Command, all aircraft), 110 hours (Last 90 days, all aircraft), 52 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Cessna	<b>Registration:</b>	N8257L
<b>Model/Series:</b>	172 H	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>	1967	<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal; Utility	<b>Serial Number:</b>	17256457
<b>Landing Gear Type:</b>	Tricycle	<b>Seats:</b>	4
<b>Date/Type of Last Inspection:</b>	February 15, 2024 Annual	<b>Certified Max Gross Wt.:</b>	2300 lbs
<b>Time Since Last Inspection:</b>	4 Hrs	<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	6350.2 Hrs at time of accident	<b>Engine Manufacturer:</b>	Continental
<b>ELT:</b>	Installed, activated, did not aid in locating accident	<b>Engine Model/Series:</b>	O-300-D
<b>Registered Owner:</b>	On file	<b>Rated Power:</b>	145 Horsepower
<b>Operator:</b>	On file	<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>	Night
<b>Observation Facility, Elevation:</b>	KDED, 79 ft msl	<b>Distance from Accident Site:</b>	9 Nautical Miles
<b>Observation Time:</b>	02:15 Local	<b>Direction from Accident Site:</b>	123°
<b>Lowest Cloud Condition:</b>	Clear	<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>	None	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	/	<b>Turbulence Type Forecast/Actual:</b>	None / None
<b>Wind Direction:</b>		<b>Turbulence Severity Forecast/Actual:</b>	N/A / N/A
<b>Altimeter Setting:</b>	30.11 inches Hg	<b>Temperature/Dew Point:</b>	12°C / 11°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	Slidell, LA (ASD)	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	Deland, FL (DED)	<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	20:30 Local	<b>Type of Airspace:</b>	Class G

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 Minor	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>	N/A	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 Minor	<b>Latitude, Longitude:</b>	29.145388,-81.41857(est)

## Preventing Similar Accidents

Prevent the Preventable with Careful Fuel Management (SA-067)

### The Problem

Within fuel-related accidents, fuel exhaustion and fuel starvation continue to be leading causes. From 2011 to 2015, an average of more than 50 accidents per year occurred due to fuel management issues. Fuel exhaustion accounted for 56% of fuel-related accidents while fuel starvation was responsible for 35% of these accidents. Fuel exhaustion is running out of fuel whereas fuel starvation is having fuel onboard that doesn't reach the engine for reasons such as a blockage, improperly set fuel selector, or water contamination.

Running out of fuel or starving an engine of fuel is highly preventable. An overwhelming majority of our investigations of fuel management accidents—95%—cited personnel issues (such as use of equipment, planning, or experience in the type of aircraft being flown) as causal or contributing to fuel exhaustion or starvation accidents. Prudent pilot action can eliminate these issues. Less than 5% of investigations cited a failure or malfunction of the fuel system.

### What can you do?

- Pilots should know how much fuel they have onboard at all times.
- During preflight inspection, measure or visually confirm the fuel quantity. Do not rely exclusively on fuel gauges.

- Know how much fuel you will need for a given flight.
- Make sure you have a fuel reserve for each flight.
- Know your engine's fuel burn rate and actively monitor the fuel burn rate for the entire time the engine is operating.
- Know your aircraft's fuel system and how it works.
- Review your aircraft's POH and use the appropriate checklists.
- Don't stretch your available fuel supply. Stop and get gas!

See <https://www.nts.gov/Advocacy/safety-alerts/Documents/SA-067.pdf> for additional resources.

The NTSB presents this information to prevent recurrence of similar accidents. Note that this should not be considered guidance from the regulator, nor does this supersede existing FAA Regulations (FARs).

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Gibson, Kurt
<b>Additional Participating Persons:</b>	Joseph W Gramzinsky; FAA/FSDO; Orlando, FL
<b>Original Publish Date:</b>	April 30, 2024
<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=193812">https://data.nts.gov/Docket?ProjectID=193812</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](#).