



Aviation Investigation Final Report

Location:	Victoria, Texas	Accident Number:	CEN25LA060
Date & Time:	December 11, 2024, 15:00 Local	Registration:	N818BR
Aircraft:	Piper PA-31-350	Aircraft Damage:	Substantial
Defining Event:	Fuel exhaustion	Injuries:	1 Serious, 4 Minor
Flight Conducted Under:	Part 91: General aviation - Aerial observation		

Analysis

The pilot reported that before the flight the airplane was fueled with 142.4 gallons of 100 low-lead fuel and that the fuel tanks contained 236 total gallons of fuel before takeoff. The local aerial survey flight was flown at 16,500 ft mean sea level (msl) and lasted about 5 hours. At the end of the survey mission and about 10 miles from the destination airport, the pilot noticed low fuel indications, then both engines experienced a total loss of power. The pilot made a right 90° turn away from the airport and selected a service road for a forced landing. During the landing roll the airplane collided with three vehicles on the road. The airplane also collided with a metal traffic light pole, which resulted in a separation of the right wing and aft fuselage.

After the accident the pilot stated that the loss of engine power was due to fuel exhaustion. During the airplane wreckage recovery, about 3 gallons of fuel were drained from the left wing tanks and the right wing tanks were empty. The pilot also stated that he did not complete a detailed fuel burn calculation or a weight and balance calculation for the flight. It is likely that the airplane did not contain 236 gallons of fuel before takeoff, and the pilot was unaware of the actual fuel onboard due to inadequate preflight planning and preflight inspection.

Probable Cause and Findings

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

The pilot's inadequate preflight planning and preflight inspection, which resulted in a total loss of engine power due to fuel exhaustion.

Findings

Personnel issues	Fuel planning - Pilot
Personnel issues	Preflight inspection - Pilot
Aircraft	Fuel - Fluid level

Factual Information

History of Flight

Approach	Fuel exhaustion (Defining event)
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Pilot Information

Certificate:	Commercial	Age:	71,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Front
Other Aircraft Rating(s):	None	Restraint Used:	Lap only
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	
Medical Certification:	Class 2 With waivers/limitations	Last FAA Medical Exam:	May 30, 2024
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	September 14, 2023
Flight Time:	7034 hours (Total, all aircraft), 3000 hours (Total, this make and model), 6769 hours (Pilot In Command, all aircraft), 35 hours (Last 90 days, all aircraft), 7 hours (Last 30 days, all aircraft), 7 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	Registration:	N818BR
Model/Series:	PA-31-350	Aircraft Category:	Airplane
Year of Manufacture:	1981	Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	318152102
Landing Gear Type:	Retractable - Tricycle	Seats:	2
Date/Type of Last Inspection:	July 24, 2024 Annual	Certified Max Gross Wt.:	
Time Since Last Inspection:		Engines:	2 Reciprocating
Airframe Total Time:	20886.3 Hrs as of last inspection	Engine Manufacturer:	Lycoming
ELT:	Installed, not activated	Engine Model/Series:	TIO-540-J2B
Registered Owner:	MARC INC	Rated Power:	350 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:	KVCT, 111 ft msl	Distance from Accident Site:	2 Nautical Miles
Observation Time:	14:51 Local	Direction from Accident Site:	76°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	6 knots / 15 knots	Turbulence Type Forecast/Actual:	/
Wind Direction:	340°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.39 inches Hg	Temperature/Dew Point:	18°C / -7°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Victoria, TX (VCT)	Type of Flight Plan Filed:	None
Destination:	Victoria, TX (VCT)	Type of Clearance:	VFR flight following
Departure Time:	09:52 Local	Type of Airspace:	Class E

Airport Information

Airport:	VICTORIA RGNL VCT	Runway Surface Type:	
Airport Elevation:	115 ft msl	Runway Surface Condition:	Dry
Runway Used:		IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	Forced landing

Wreckage and Impact Information

Crew Injuries:	1 Minor	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	1 Serious, 3 Minor	Aircraft Explosion:	None
Total Injuries:	1 Serious, 4 Minor	Latitude, Longitude:	28.853376,-96.970445

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

Investigator In Charge (IIC):	Lindberg, Joshua
Additional Participating Persons:	Eric Vietje; FAA; San Antonio, TX
Original Publish Date:	January 21, 2025
Last Revision Date:	
Investigation Class:	Class 4
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=199415

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](#).