Aviation Investigation Final Report

Location:	Campbellton, Texas	**Accident Number:**	CEN22LA134
Date & Time:	February 28, 2022, 12:53 Local	**Registration:**	N108RF
Aircraft:	Cessna 208B	**Aircraft Damage:**	Substantial
Defining Event:	Fuel exhaustion	**Injuries:**	2 None
Flight Conducted Under:	Part 91: General aviation - Aerial observation		

Analysis

The pilot reported that after about 3 hours of total flight time, he proceeded to a nearby airport for fuel. During the descent, the “left fuel low” light illuminated and, shortly thereafter, the “reservoir fuel low” light illuminated. The pilot ensured the fuel tanks, fuel pump, and igniters were on, and he diverted to a nearby private strip. Soon after, the airplane’s engine began to lose power. The pilot increased the throttle, but the engine lost total power. The airplane descended rapidly and struck several trees before touching down on an upsloping field short of the runway. The pilot reported after the accident that he last refueled the airplane the day before the accident at Ozona Municipal Airport (OZA). He then flew the airplane a little over 1 hour to the departure airport to prepare for the accident flight. When asked if the airplane ran out of fuel, the pilot replied “no, I should have had more fuel.”

During an on-scene examination, the airplane’s electrical system was turned on and the “LT fuel low,” “RT fuel low,” and “reservoir fuel low” lights were all illuminated. In addition, the left and right fuel gauges indicated “empty.” Both the left and right fuel tanks were sumped, and no fuel was noted. About 2 cups of fuel were drained from the reservoir fuel tank, and a couple ounces of fuel were drained from the fuel strainer. Fuel was later added to the fuel tanks and the engine started and operated normally.

The circumstances of the accident are consistent with the pilot’s inadequate fuel planning, which resulted in fuel exhaustion 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:

The pilot's fuel mismanagement, which resulted in a total loss of engine power due to fuel exhaustion and subsequent impact with trees during a forced landing.

Findings

Personnel issues	Task monitoring/vigilance - Pilot
Aircraft	Fuel - Fluid level
Aircraft	Fuel - Fluid management
Personnel issues	Fuel planning - Pilot

Factual Information

History of Flight

Maneuvering	Fuel exhaustion (Defining event)
Maneuvering	Loss of engine power (total)
Emergency descent	Collision with terr/obj (non-CFIT)
Landing	Off-field or emergency landing

On February 28, 2022, about 1253 central standard time, a Cessna 208B airplane, N108RF, was substantially damaged when it was involved in an accident near Campbellton, Texas. The pilot and passenger were not injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 aerial observation flight.

The pilot reported that he started the day at San Marcos Regional Airport (HYI) and flew east toward Houston for a survey. This flight lasted about 1 hour 10 minutes. He then flew 1 hour southeast and started a second survey. After about 3 hours of total flight time, he proceeded to Pleasanton Municipal Airport (PEZ) to get fuel. During the descent, the "left fuel low" light illuminated, and shortly thereafter the "reservoir fuel low" light illuminated. The pilot ensured the fuel tanks, fuel pump, and igniters were on, and he diverted to a nearby private strip. Soon after, the airplane's engine began to lose power. The pilot increased the throttle, but the engine lost total power. The airplane descended rapidly when it struck several trees and touched down on an upsloping field short of the runway. The wing spar in the airplane's right wing sustained substantial damage.

During a telephone conversation, the pilot reported that he last refueled the airplane the day before the accident at Ozona Municipal Airport (OZA). He then flew the airplane a little over 1 hour to HYI to prepare for the accident flight. When asked if the airplane ran out of fuel, the pilot replied "no, I should have had more fuel."

During an on-scene examination by a Federal Aviation Administration inspector, the airplane was moved to level ground. Its electrical system was turned on and the "LT fuel low," "RT fuel low," and "reservoir fuel low" lights illuminated. In addition, the left and right fuel gauges showed 'empty.' Both the left and right fuel tanks were sumped and no fuel was noted. About 2 cups of fuel were drained from the reservoir fuel tank, and a couple ounces of fuel were drained from the fuel strainer.

The operator reported that once the airplane was repaired, fuel was added to both the left and right fuel tanks. The engine started and operated normally with no anomalies noted.

In the Air Traffic Mandatory Occurrence Report, air traffic control (ATC) reported that the pilot declared a mayday and attempted to divert to an airport. After the airplane landed in the field, the pilot contacted ATC and reported that he "lost track of fuel and ran out."

Pilot Information

Certificate:	Commercial	**Age:**	52,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	5-point
Instrument Rating(s):	Airplane	**Second Pilot Present:**	
Instructor Rating(s):	None	**Toxicology Performed:**	
Medical Certification:	Class 1 With waivers/limitations	**Last FAA Medical Exam:**	January 14, 2022
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	September 11, 2021
Flight Time:	13550 hours (Total, all aircraft), 9944 hours (Total, this make and model), 13480 hours (Pilot In Command, all aircraft), 89 hours (Last 90 days, all aircraft), 16 hours (Last 30 days, all aircraft), 3 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N108RF
Model/Series:	208B	**Aircraft Category:**	Airplane
Year of Manufacture:	1996	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	208B0528
Landing Gear Type:	Tricycle	**Seats:**	3
Date/Type of Last Inspection:	October 27, 2021 100 hour	**Certified Max Gross Wt.:**	8750 lbs
Time Since Last Inspection:	64 Hrs	**Engines:**	1 Turbo prop
Airframe Total Time:	15599 Hrs at time of accident	**Engine Manufacturer:**	P&W Canada
ELT:	C126 installed, not activated	**Engine Model/Series:**	PT6A-114A
Registered Owner:	Randigo LLC	**Rated Power:**	675 Horsepower
Operator:	Revolution Flight	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	KPEZ,430 ft msl	**Distance from Accident Site:**	17 Nautical Miles
Observation Time:	12:55 Local	**Direction from Accident Site:**	336°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	7 knots / None	**Turbulence Type Forecast/Actual:**	None / None
Wind Direction:	200°	**Turbulence Severity Forecast/Actual:**	N/A / N/A
Altimeter Setting:	30.35 inches Hg	**Temperature/Dew Point:**	18°C / -7°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Austin, TX (HYI)	**Type of Flight Plan Filed:**	None
Destination:	Pleasanton, TX (PEZ)	**Type of Clearance:**	VFR flight following
Departure Time:	09:45 Local	**Type of Airspace:**	Class E

Airport Information

Airport:	74 Ranch Airport 0XA5	**Runway Surface Type:**	Asphalt
Airport Elevation:	316 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	14	**IFR Approach:**	None
Runway Length/Width:	3887 ft / 1185 ft	**VFR Approach/Landing:**	Precautionary landing

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 None	**Aircraft Fire:**	None
Ground Injuries:		**Aircraft Explosion:**	None
Total Injuries:	2 None	**Latitude, Longitude:**	28.68538,-98.38311

Administrative Information

Investigator In Charge (IIC):	Link, Samantha
Additional Participating Persons:	Robert Arispe; Federal Aviation Administration; San Antonio, TX
Original Publish Date:	August 31, 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=104719