# Aviation Investigation Final Report

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| **Location:** | New Braunfels, Texas | **Accident Number:** | CEN14CA227 |
| **Date & Time:** | May 2, 2014, 17:00 Local | **Registration:** | N7308P |
| **Aircraft:** | Piper PA 24-250 | **Aircraft Damage:** | Substantial |
| **Defining Event:** | Fuel exhaustion | **Injuries:** | 4 None |
| **Flight Conducted Under:** | Part 91: General aviation - Personal | | |

## Analysis

The pilot with three passengers planned to depart and return on a cross-country flight. The pilot stated that the airplane's left fuel tank was filled to an inch below the collar, and the right fuel tank was filled to two inches below the collar. He estimated that the airplane had 40-45 gallons of fuel on board, with a planned en route time of 57 minutes, and about a 10 knot tailwind. Once at a cruise altitude of 7,500 feet, he set the manifold pressure at 21 inches and engine rpm at 2,300 for a fuel burn of 12.3 gallons/hr per the pilot operating handbook. The pilot reported for the return leg he again visually checked the fuel level in each tank. He estimated 12-15 gallons in the left tank and 10 in the right, for a total of 22-25 gallons. The pilot added that fuel burn seemed normal and he decided not to add fuel, he also stated that estimations are not an accurate science and that a fuel stick was not provided to confirm the fuel level. After departing for the return flight, he switched fuel tanks from the left side to the right side. About 15 minutes later, the pilot noticed a reduction in power and switched back to the left side fuel tank. Engine power was restored, and the pilot stated that he did not feel that the fuel had been exhausted from the right side based on his calculations. A few minutes later, the engine lost power and the pilot preformed a forced landing to a construction site. A post-crash examination of the airplane revealed substantial damage to the airplane's fuselage and left wing during the forced landing. Additionally, the fuel tanks were empty and were not breached in the accident.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:
The loss of engine power due to fuel exhaustion, which resulted from the pilot's inadequate preflight planning and inflight decision making.

## Findings

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| **Personnel issues** | Fuel planning - Pilot |
| **Personnel issues** | Decision making/judgment - Pilot |
| **Aircraft** | Fuel - Fluid level |

# Factual Information

## History of Flight

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| **Enroute-cruise** | Fuel exhaustion (Defining event) |
| **Emergency descent** | Off-field or emergency landing |

## Pilot Information

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| **Certificate:** | Private | **Age:** | 48 |
| **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:** | |
| **Instructor Rating(s):** | None | **Toxicology Performed:** | No |
| **Medical Certification:** | Class 3 With waivers/limitations | **Last FAA Medical Exam:** | January 14, 2013 |
| **Occupational Pilot:** | No | **Last Flight Review or Equivalent:** | July 23, 2013 |
| **Flight Time:** | 397 hours (Total, all aircraft), 7.5 hours (Total, this make and model), 345 hours (Pilot In Command, all aircraft), 10.3 hours (Last 90 days, all aircraft), 6.1 hours (Last 30 days, all aircraft) | | |

## Aircraft and Owner/Operator Information

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| **Aircraft Make:** | Piper | **Registration:** | N7308P |
| **Model/Series:** | PA 24-250 250 | **Aircraft Category:** | Airplane |
| **Year of Manufacture:** | 1961 | **Amateur Built:** | |
| **Airworthiness Certificate:** | Normal | **Serial Number:** | 24-2483 |
| **Landing Gear Type:** | Retractable - Tricycle | **Seats:** | |
| **Date/Type of Last Inspection:** | 100 hour | **Certified Max Gross Wt.:** | 2899 lbs |
| **Time Since Last Inspection:** | | **Engines:** | 1 Reciprocating |
| **Airframe Total Time:** | | **Engine Manufacturer:** | LYCOMING |
| **ELT:** | Installed, not activated | **Engine Model/Series:** | 0-540 SERIES |
| **Registered Owner:** | ANDERSON THOMAS DBA | **Rated Power:** | 250 Horsepower |
| **Operator:** | Anderson Aviation | **Operating Certificate(s) Held:** | None |

## Meteorological Information and Flight Plan

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| **Conditions at Accident Site:** | Visual (VMC) | **Condition of Light:** | Day |
| **Observation Facility, Elevation:** | KBAZ | **Distance from Accident Site:** | 5 Nautical Miles |
| **Observation Time:** | 17:51 Local | **Direction from Accident Site:** | |
| **Lowest Cloud Condition:** | 11000 ft AGL | **Visibility** | 10 miles |
| **Lowest Ceiling:** | Broken / 11000 ft AGL | **Visibility (RVR):** | |
| **Wind Speed/Gusts:** | 5 knots / | **Turbulence Type Forecast/Actual:** | / |
| **Wind Direction:** | 290° | **Turbulence Severity Forecast/Actual:** | / |
| **Altimeter Setting:** | 29.95 inches Hg | **Temperature/Dew Point:** | 27°C / -1°C |
| **Precipitation and Obscuration:** | | | |
| **Departure Point:** | Houston, TX (KDWH) | **Type of Flight Plan Filed:** | |
| **Destination:** | Bulverde, TX (1T8 ) | **Type of Clearance:** | VFR flight following |
| **Departure Time:** | 16:58 Local | **Type of Airspace:** | |

## Wreckage and Impact Information

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| **Crew Injuries:** | 1 None | **Aircraft Damage:** | Substantial |
| **Passenger Injuries:** | 3 None | **Aircraft Fire:** | None |
| **Ground Injuries:** | N/A | **Aircraft Explosion:** | None |
| **Total Injuries:** | 4 None | **Latitude, Longitude:** | 29.704999,-98.123886(est) |

## Administrative Information

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| **Investigator In Charge (IIC):** | Hatch, Craig |
| **Additional Participating Persons:** | John H Attebury; FAA FSDO; San Antonio, TX |
| **Original Publish Date:** | June 5, 2014 |
| **Last Revision Date:** | |
| **Investigation Class:** | Class |
| **Note:** | This accident report documents the factual circumstances of this accident as described to the NTSB. |
| **Investigation Docket:** | https://data.ntsb.gov/Docket?ProjectID=89160 |