Aviation Investigation Final Report

Location:	Weatherford, Oklahoma	**Accident Number:**	CEN13LA565
Date & Time:	September 25, 2013, 12:00 Local	**Registration:**	N8472Z
Aircraft:	Cessna 210-5(205)	**Aircraft Damage:**	Substantial
Defining Event:	Fuel exhaustion	**Injuries:**	1 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The airplane experienced a total loss of engine power during a descent to the planned destination airport. The pilot reported that, before departure, he had fuel added to the preexisting fuel onboard the airplane, which he "confirmed" during the preflight inspection by looking at the fuel gauges. He did not visually inspect the fuel tanks. He entered the amount of added fuel into a fuel totalizer, and the totalizer indicated that the total amount of fuel on board was greater than the amount of fuel needed for the flight. Postaccident examination of the airplane revealed about 3 to 4 gallons of fuel in the left fuel tank and less than 1 gallon of fuel in the right fuel tank. Because the pilot did not visually verify the amount of fuel onboard the airplane, the fuel totalizer likely showed an inaccurate amount of fuel and led to the pilot's belief that he had sufficient fuel for the flight.

Probable Cause and Findings

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

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

Findings

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

Factual Information

History of Flight

Prior to flight	Aircraft inspection event
Enroute-cruise	Fuel exhaustion (Defining event)
Enroute-cruise	Loss of engine power (total)
Emergency descent	Loss of engine power (total)
Landing	Collision with terr/obj (non-CFIT)

On September 25, 2013, about 1200 central daylight time, a Cessna 205, N8472Z, experienced a total loss of engine power during a visual descent to Thomas P. Stafford Airport (OJA), Weatherford, Oklahoma. The pilot performed an off airport landing to a field. The airplane sustained substantial damage. The airline transport pilot was uninjured. The airplane was registered to and operated by the pilot under 14 CFR Part 91 as a personal flight. Visual meteorological conditions prevailed for the flight that was not operating on a flight plan. The flight originated from Cheyenne Regional Airport/Jerry Olson Field (CYS), Cheyenne, Wyoming, about 0700 mountain daylight time and was destined to OJA.

The pilot stated that on September 24, 2013, he had 35 gallons of fuel added to airplane. He said after refueling, the total fuel on board was 75 gallons. On the day of the accident, he preflighted the airplane and entered the fuel added in the fuel totalizer for a total of 74.3 gallons, which he confirmed with the airplane fuel gauges. He said that the planned flight would use 52 gallons of fuel and the time en route to OJA was 3:46 hours. During the flight and about 1140, he began a descent during which the "engine sputtered." He switched from the right fuel tank to the left fuel tank, and the engine ran "smoothly." The pilot stated that at this time, there was about 17 gallons of fuel remaining and 57 gallons that been used and the airplane fuel gauges showed "fuel remaining" in the left fuel tank. He continued the descent, and the engine quit about 4,000 feet mean sea level. He turned the boost pump on and turned the airplane toward OJA. He then decided to land on a field west of OJA. After landing, the fuel totalizer indicated 15.7 gallons of fuel remaining and 58.6 gallons of fuel used.

The pilot stated that his recommendation of how the accident could have been avoided was:

"Top off when refueling if possible instead of just replacing fuel used, gives known quantity, plus additional margin of safety."

During a post-accident examination of the airplane by a Federal Aviation Administration inspector, approximately 3-4 gallons of fuel was drained from the left wing fuel tank and less than 1 gallon of fuel was drained from the right wing fuel tank.

Pilot Information

Certificate:	Airline transport	**Age:**	62
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	3-point
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 2 With waivers/limitations	**Last FAA Medical Exam:**	January 7, 2013
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	February 28, 2013
Flight Time:	21100 hours (Total, all aircraft), 620 hours (Total, this make and model), 15000 hours (Pilot In Command, all aircraft), 29 hours (Last 90 days, all aircraft), 15 hours (Last 30 days, all aircraft), 6 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N8472Z
Model/Series:	210-5(205)	**Aircraft Category:**	Airplane
Year of Manufacture:	1963	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	205-0472
Landing Gear Type:		**Seats:**	6
Date/Type of Last Inspection:	April 29, 2013 Annual	**Certified Max Gross Wt.:**	3300 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	3397 Hrs at time of accident	**Engine Manufacturer:**	Continental
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	IO-520-F-C-A
Registered Owner:	Pilot	**Rated Power:**	285 Horsepower
Operator:	Pilot	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	OJA,1605 ft msl	**Distance from Accident Site:**	1 Nautical Miles
Observation Time:	11:55 Local	**Direction from Accident Site:**	120°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	7 knots /	**Turbulence Type Forecast/Actual:**	/ None
Wind Direction:	190°	**Turbulence Severity Forecast/Actual:**	/ N/A
Altimeter Setting:	29.92 inches Hg	**Temperature/Dew Point:**	27°C / 10°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Cheyenne, WY (CYS)	**Type of Flight Plan Filed:**	None
Destination:	Weatherford, OK (OJA)	**Type of Clearance:**	None
Departure Time:	07:00 Local	**Type of Airspace:**	Class G

Airport Information

Airport:	Thomas P Stafford Airport OJA	**Runway Surface Type:**	
Airport Elevation:	1605 ft msl	**Runway Surface Condition:**	Vegetation
Runway Used:		**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	Forced landing

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 None	**Latitude, Longitude:**	35.530681,-98.680824(est)

Administrative Information

Investigator In Charge (IIC):	Gallo, Mitchell
Additional Participating Persons:	David Brown; Federal Aviation Administration, OKC FSDO; Oklahoma City, OK
Original Publish Date:	August 14, 2014
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=88156