Aviation Investigation Final Report

Location:	SEDONA, Arizona	**Accident Number:**	LAX99LA205
Date & Time:	May 28, 1999, 13:40 Local	**Registration:**	N9270C
Aircraft:	Cessna 180	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	3 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot and two passengers departed Wichita, Kansas, for a planned nonstop flight to Sedona, Arizona. The pilot was familiar with the route and had about 1,800 hours flying experience in the airplane, which had been modified to hold 73 gallons of fuel. While en route, all airplane systems functioned normally, and no adverse weather was encountered. Fuel exhaustion occurred upon arrival over the destination airport at 8,500 feet msl. The pilot repositioned the fuel selector to the left fuel tank, but engine power was not restored. The airport's elevation is 4,827 feet msl, and the runway is 5,132 feet long. The pilot descended into the airport's downwind leg, and then turned onto the base leg and final approach leg for runway 21. He reported experiencing a 15- to 20-knot wind from 270 degrees. Unable to glide to the runway, the pilot touched down hard in the dirt between 10 and 15 feet short of the runway, in a stalled attitude. The left main wheel contacted an 8- to 10-inch asphalt berm at the approach end of the runway. After the accident the pilot attempted to start the engine. He stated that the left fuel tank contained several gallons of fuel, and after several seconds of cranking the engine started and operated normally. He also reported that during the flight all of the airplane's systems had functioned normally. Under the direction of the Safety Board, an airframe and powerplant mechanic examined the airplane. The mechanic reported that both of the airplane's wing fuel tank gauges and the auxiliary tank gauge registered empty.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: Fuel exhaustion due to an inadequate fuel supply, and the pilot's inadequate in-flight planning fuel consumption calculations.

Findings

Occurrence #1: LOSS OF ENGINE POWER(TOTAL) - NONMECHANICAL
Phase of Operation: APPROACH - VFR PATTERN - DOWNWIND

Findings
1. (C) FLUID,FUEL - EXHAUSTION
2. (C) FUEL SUPPLY - INADEQUATE - PILOT IN COMMAND
3. (C) IN-FLIGHT PLANNING/DECISION - INADEQUATE - PILOT IN COMMAND
4. (C) FUEL CONSUMPTION CALCULATIONS - INADEQUATE - PILOT IN COMMAND

Occurrence #2: FORCED LANDING
Phase of Operation: EMERGENCY DESCENT/LANDING

Occurrence #3: HARD LANDING
Phase of Operation: EMERGENCY DESCENT/LANDING

Findings
5. COMPENSATION FOR WIND CONDITIONS - INADEQUATE - PILOT IN COMMAND
6. DISTANCE/ALTITUDE - MISJUDGED - PILOT IN COMMAND
7. STALL/MUSH - PILOT IN COMMAND

Factual Information

On May 28, 1999, about 1340 hours mountain standard time, a Cessna 180, N9270C, owned and operated by the pilot, experienced a total loss of engine power approaching the Sedona Airport, Sedona, Arizona. The pilot made a hard landing in the dirt short of runway 21, and the airplane was substantially damaged. Neither the private pilot nor the two passengers were injured during the personal flight which was conducted under 14 CFR Part 91. Visual meteorological conditions prevailed, and no flight plan was filed. The nonstop flight originated from Wichita, Kansas, at a pilot reported time of 1000 central daylight time.

The pilot verbally reported to the Safety Board investigator that he had previously flown from the Wichita Mid-Continent Airport to Sedona without refueling, and he was familiar with the route. He reported having about 1,800 hours experience flying his airplane. No adverse weather conditions were experienced during the en route portion of the flight.

The pilot stated that his airplane had been modified, and it carried a total of 73 gallons of fuel. The fuel consumption rate was normally about 10.5 gallons per hour.

The pilot reported that approaching the Sedona airport, the engine stopped because he had exhausted all fuel in the right and auxiliary fuel tanks. He reacted to the situation by repositioning the fuel selector to the left fuel tank, but engine power was not restored.

At the time of the engine power loss, the pilot was descending through 8,500 feet mean sea level, and was over the airport. The airport's elevation is 4,827 feet msl, and the runway is 5,132 feet long.

The pilot entered the traffic pattern and flew the downwind, base, and final approach legs. According to the pilot, he encountered a downdraft while on the base leg. On final approach the airspeed decreased, and he contacted the ground between 10 and 15 feet short of the runway in a stalled attitude.

After the accident the pilot attempted to start the engine. He stated that the left fuel tank contained several gallons of fuel, and after several seconds of cranking the engine started and operated normally. He also reported that during the flight all of the airplane's systems had functioned normally.

In the pilot's completed report, he indicated that his departure from Wichita was at 1000 central time, and the accident occurred at 1415 mountain standard time. A Red Rock Aviation line service technician, who was based at the Sedona airport, reported to the Safety Board investigator that he observed the accident, and it occurred about 1340 mountain standard time. Also, the wind was from 240 degrees at 8 knots, with gusts to 14 knots. The

temperature was 83 degrees Farenheit.

Under the direction of the Safety Board, an airframe and powerplant mechanic from Canyon Mesa Aviation examined the airplane. The mechanic reported that both of the airplane's wing fuel tank gauges and the auxiliary tank gauge registered empty.

Pilot Information

Certificate:	Private	**Age:**	47,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	October 5, 1998
Occupational Pilot:	UNK	**Last Flight Review or Equivalent:**	
Flight Time:	2500 hours (Total, all aircraft), 1800 hours (Total, this make and model), 6 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N9270C
Model/Series:	180 180	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	31369
Landing Gear Type:	Tailwheel	**Seats:**	4
Date/Type of Last Inspection:	May 21, 1999 Annual	**Certified Max Gross Wt.:**	2550 lbs
Time Since Last Inspection:	20 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	2700 Hrs	**Engine Manufacturer:**	Continental
ELT:	Installed, not activated	**Engine Model/Series:**	O-470K
Registered Owner:	DANNY M. RAMSAY	**Rated Power:**	230 Horsepower
Operator:		**Operating Certificate(s) Held:**	None
Operator Does Business As:		**Operator Designator Code:**	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:		**Distance from Accident Site:**	
Observation Time:		**Direction from Accident Site:**	
Lowest Cloud Condition:	Clear	**Visibility**	50 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	15 knots / 20 knots	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	270°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:		**Temperature/Dew Point:**	24°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	WICHITA , KS (ICT)	**Type of Flight Plan Filed:**	None
Destination:	(SEZ)	**Type of Clearance:**	None
Departure Time:	10:00 Local	**Type of Airspace:**	Class G

Airport Information

Airport:	SEDONA SEZ	**Runway Surface Type:**	Asphalt
Airport Elevation:	4827 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	21	**IFR Approach:**	None
Runway Length/Width:	5132 ft / 75 ft	**VFR Approach/Landing:**	Full stop;Traffic pattern

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	2 None	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	3 None	**Latitude, Longitude:**	34.939743,-111.940734(est)

Administrative Information

Investigator In Charge (IIC):	Pollack, Wayne
Additional Participating Persons:	BRUCE BESSETTE; SCOTTSDALE , AZ
Original Publish Date:	November 22, 2000
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=46465