



National Transportation Safety Board Aviation Accident Data Summary

Location:	Forsyth, MO	Accident Number:	CEN14LA112
Date & Time:	01/03/2014, 1949 CST	Registration:	N4505Z
Aircraft:	PIPER PA-22-108	Injuries:	2 None
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

The pilot reported that, while in cruise flight, the airplane experienced a total loss of engine power about 8 miles from the intended destination. The pilot was unable to restart the engine, and he subsequently ditched the airplane in a lake. A postaccident examination of the engine did not reveal any mechanical anomalies that would have prevented normal operation. No fuel was found in the fuel system during the postaccident examination; however, the airplane had been submerged for nearly 1 week before it was recovered from the lake.

Postaccident performance calculations indicated that it is likely that the engine lost power due to fuel exhaustion during the accident flight. Although the pilot reported that he had completed preflight planning calculations (the actual paperwork was lost during the accident), the investigation determined that the wind aloft values that the pilot likely used in his preflight planning calculations were significantly different from the actual wind aloft values. As a result, the airplane's actual ground speed was significantly less than what the pilot would have anticipated. The pilot also reported that he completed the accident flight at less than 65-percent engine power, which would have increased the length of the flight and the amount of fuel used during it when compared to higher engine power settings; the available cruise performance charts lacked true airspeed and engine speed data for operating below 65-percent engine power. Therefore, the pilot could not have estimated the total flight time and fuel required for the accident flight with a high level of accuracy. Additionally, the pilot reported that the mixture control cable had fractured during a previous flight and, to continue his cross-country trip, he safety-wired the carburetor mixture control arm in the full-rich position. As a result, the pilot was unable to properly lean the fuel mixture during the accident flight; however, it is unknown to what extent the pilot planned for this condition. Further, the pilot made an unplanned stop at an airport located along his planned route of flight. The additional fuel consumed during this unplanned stop (taxi, engine run-up, takeoff, and climb to cruise altitude) would have further reduced the amount of fuel available to complete the accident flight.

Flight Events

Enroute-cruise - Fuel exhaustion
Enroute-cruise - Loss of engine power (total)
Landing - Off-field or emergency landing
Landing - Ditching

Probable Cause

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's improper flight planning, which resulted in a total loss of engine power due to fuel exhaustion.

Findings

Aircraft-Fluids/misc hardware-Fluids-Fuel-Fluid level - C

Personnel issues-Task performance-Planning/preparation-Fuel planning-Pilot - C

Pilot Information

Certificate:	Private	Age:	56
Airplane Rating(s):	Single-engine Land	Instrument Rating(s):	None
Other Aircraft Rating(s):	None	Instructor Rating(s):	None
Flight Time:	160 hours (Total, all aircraft), 18 hours (Total, this make and model), 100 hours (Pilot In Command, all aircraft), 30 hours (Last 90 days, all aircraft), 20 hours (Last 30 days, all aircraft), 5 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	PIPER	Registration:	N4505Z
Model/Series:	PA-22-108	Engines:	1 Reciprocating
Operator:	On file	Engine Manufacturer:	Lycoming
Air Carrier Operating Certificate:	None	Engine Model/Series:	O-235-C1B
Flight Conducted Under:	Part 91: General Aviation - Personal		

Meteorological Information and Flight Plan

Observation Facility, Elevation:	BBG, 1302 ft msl	Weather Information Source:	Weather Observation Facility
Conditions at Accident Site:	Visual Conditions	Lowest Ceiling:	None
Condition of Light:	Night	Wind Speed/Gusts, Direction:	12 knots/ 18 knots, 150°
Temperature:	-2° C / -11° C	Visibility	10 Miles
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Sullivan, MO (UUV)	Destination:	Branson, MO (PLK)

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	1 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None

Administrative Information

Investigator In Charge (IIC):	Andrew T Fox	Adopted Date:	04/23/2014
Investigation Docket:	http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=88672		

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