Aviation Investigation Final Report

Location:	St. Charles, Missouri	**Accident Number:**	CEN15LA237
Date & Time:	May 19, 2015, 18:30 Local	**Registration:**	N118U
Aircraft:	Piper PA-22	**Aircraft Damage:**	Substantial
Defining Event:	Loss of engine power (partial)	**Injuries:**	2 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot stated that, while approaching the airport to land, he turned on the boost pump, reduced the throttle, and applied carburetor heat. While on downwind, he reduced the engine power to idle and lowered the flaps. While on the base leg, he advanced the throttle; however, the engine stayed at idle power. He turned off the carburetor heat, adjusted the throttle, and cycled the boost pump but was unable to regain engine power and elected to perform a forced landing to a plowed field. The airplane contacted a ditch at the end of the field, crossed over a road, and came to rest in another field, resulting in substantial damage.

A postaccident examination of the airplane revealed that the fuel level in the right wing tank was "low" and the left wing fuel tank was about half full of fuel. A test run of the engine revealed no anomalies. The temperature and dew point conditions were conducive to the formation of serious carburetor icing at glide power; however, the pilot reported that he had applied carburetor heat during the descent and that it was on when the engine would not regain power.

Probable Cause and Findings

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

A loss of engine power for reasons that could not be determined because postaccident examination of the airframe and engine did not reveal any anomalies that would have precluded normal operation.

Findings

Not determined	(general) - Unknown/Not determined

Factual Information

History of Flight

Approach-VFR pattern base	Loss of engine power (partial) (Defining event)
Landing-flare/touchdown	Collision with terr/obj (non-CFIT)

On May 19, 2015, at 1830 central daylight time, a Piper PA-22 airplane, N118U, collided with the terrain during an off airport landing following a loss of engine power while on approach to land at the St. Charles County Smartt Airport (SET), St. Charles, Missouri. The private pilot and passenger were not injured. The airplane was substantially damaged. The aircraft was registered to a private individual and was operated under the provisions of 14 Code of Federal Regulations Part 91 as a personal flight. Visual meteorological conditions prevailed for the flight, which not operated on a flight plan. The flight originated from the Tuscola Airport (K96), Tuscola, Illinois, at 1720.

The pilot reported that he switched from the right fuel tank, which contained about 7 gallons of fuel, to the left fuel tank, which contained about 12 gallons of fuel, when he was about 15 miles from the destination airport. While approaching the airport, he turned on the fuel boost pump, reduced the throttle to 20 inches of manifold pressure, applied carburetor heat, and began the descent to traffic pattern altitude. While on downwind, he reduced the engine power to idle and applied flaps. On base leg, he advanced the throttle; however, the engine stayed at idle power. He turned off the carburetor heat, adjusted the throttle, and cycled the boost pump, but was unable to gain engine power. Unable to make it to the runway, the pilot chose a plowed field in which to land. The airplane contacted a ditch at the end of the field, crossed over a road, and came to rest in another field. The right main gear collapsed resulting in substantial damage to the fuselage and right main wing struts.

A postaccident examination of the engine was conducted under the supervision of the Federal Aviation Administration (FAA). The inspector reported the fuel level in the right fuel tank was low and the left tank was about ½ full. The bent propeller was replaced with a serviceable one. The engine was started and it ran normally.

The temperature and dewpoint reported at SET at the time of the accident were 63 degrees Fahrenheit and 46 degrees Fahrenheit respectively. According to the FAA SAID CE-09-35 "Carburetor Icing Prevention" chart, serious carburetor icing could be expected at glide power. However, the pilot reported that he had applied carburetor heat during the descent and that it was on when the engine would not regain power.

Pilot Information

Certificate:	Private	**Age:**	50,Male
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:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 With waivers/limitations	**Last FAA Medical Exam:**	May 15, 2014
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	June 28, 2014
Flight Time:	256 hours (Total, all aircraft), 209 hours (Total, this make and model), 223 hours (Pilot In Command, all aircraft), 2 hours (Last 90 days, all aircraft), 1 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N118U
Model/Series:	PA-22	**Aircraft Category:**	Airplane
Year of Manufacture:	1956	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	22-3988
Landing Gear Type:	Tailwheel	**Seats:**	4
Date/Type of Last Inspection:	May 19, 2015 Annual	**Certified Max Gross Wt.:**	1801 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	3586.2 Hrs as of last inspection	**Engine Manufacturer:**	LYCOMING
ELT:	C91 installed, not activated	**Engine Model/Series:**	0-320-A4A
Registered Owner:	On file	**Rated Power:**	180 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Night/dark
Observation Facility, Elevation:	SET,437 ft msl	**Distance from Accident Site:**	0 Nautical Miles
Observation Time:	17:54 Local	**Direction from Accident Site:**	0°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	9 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	10°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.18 inches Hg	**Temperature/Dew Point:**	17°C / 8°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	St. Charles, MO (SET)	**Type of Flight Plan Filed:**	None
Destination:	St. Charles, MO (SET)	**Type of Clearance:**	None
Departure Time:	17:20 Local	**Type of Airspace:**	Class B

Airport Information

Airport:	ST CHARLES COUNTY SMARTT SET	**Runway Surface Type:**	Asphalt
Airport Elevation:	437 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	36	**IFR Approach:**	None
Runway Length/Width:	3800 ft / 75 ft	**VFR Approach/Landing:**	Forced landing

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
Total Injuries:	2 None	**Latitude, Longitude:**	38.93222,-90.431114(est)

Administrative Information

Investigator In Charge (IIC):	Sullivan, Pamela
Additional Participating Persons:	Daniel Blakley; FAA; St. Louis, MO
Original Publish Date:	September 12, 2016
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=91205