Aviation Investigation Final Report

Location:	Marsing, Idaho	**Accident Number:**	WPR18LA224
Date & Time:	August 14, 2018, 10:30 Local	**Registration:**	N89093
Aircraft:	Cessna 140	**Aircraft Damage:**	Substantial
Defining Event:	Loss of engine power (total)	**Injuries:**	2 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

During a low pass over the runway, the pilot advanced the throttle, but the engine failed to respond. After switching fuel tanks, the pilot initiated a forced landing to a shallow part of a river that paralleled the runway. The airplane came to rest upright in the river, partially submerged, and sustained substantial damage to the lower fuselage and firewall.

Postaccident examination of the airplane revealed that the engine initially would not run. The carburetor was removed, partially disassembled, and examined. Evidence of corrosion was observed in the float bowl. The carburetor bowl was cleaned internally, reassembled, and reinstalled on the engine. Additional attempts to run the engine revealed that the engine would not run at power settings below 1,300 rpm.

Subsequent examination of the carburetor revealed that the throttle shaft was loose in its bushings or mounting to the casting. When the carburetor was installed on a fuel flow bench, immediate leaks were noted audibly, one at the throttle shaft seals and one in the area of the accelerator pump. Indications of blockage in the idle chambers of the carburetor were present, and at idle ranges, the fuel flows were significantly out of specification which likely led to the loss of engine power. Removal of the idle tube showed significant corrosion and contaminants in that area. The source of contaminants was not determined.

Probable Cause and Findings

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

The loss of engine power during a low pass as a result of a blockage of the carburetor idle chambers which led to a forced landing in a river.

Findings

Aircraft	Fuel control/carburetor - Fatigue/wear/corrosion
Aircraft	Fuel control/carburetor - Not specified

Factual Information

History of Flight

Initial climb	Loss of engine power (total) (Defining event)
Emergency descent	Off-field or emergency landing

On August 14, 2018, about 1030 mountain daylight time, a Cessna 140 airplane, N89093, was substantially damaged when it was involved in an accident near Marsing, Idaho. The pilot and passenger were not injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

The pilot reported that after entering the airport traffic pattern, he reduced engine power, applied carburetor heat, and conducted a low pass over runway 12 at Sunrise Skypark Airport (ID40), Marsing, Idaho. As the airplane approached midfield, about 60 ft above ground level, the pilot advanced the throttle, but the engine did not respond. The pilot switched fuel tanks from the left to the right. With insufficient runway remaining to land, the pilot then initiated a forced landing to the shallow side of the Snake River, which paralleled the runway. During the forced landing, the airplane impacted water and came to rest upright, partially submerged in the river. The firewall and lower fuselage were substantially damaged.

Examination of the wreckage revealed that all engine accessories remained attached to the engine. Due to impact damage to the airframe fuel strainer, an external fuel source was attached to the carburetor inlet fuel line to perform an engine test run. Despite multiple attempts, the engine would not start. The airbox and carburetor were subsequently removed, and the carburetor was partially disassembled. An orange residue consistent with rust was observed in the float bowl, along with residual water. The float bowl and mixture metering sleeve were cleaned using carburetor cleaner, and the carburetor was reassembled. The engine then started, after multiple attempts, at a power setting of 1,800 rpm or more. When engine rpm was reduced below 1,300 rpm, the engine lost power. Once restarted, at 1,700 rpm, a magneto check was performed, and a decrease of 100 rpm for both magnetos was observed. The maximum rpm obtained during the engine run was 2,300 rpm. The carburetor was removed and retained for further examination.

The carburetor was examined at the manufacturer's facility under the supervision of a Federal Aviation Administration inspector. The inspector reported that the throttle shaft was loose in its bushings or mounting to the casting. Movement of the throttle indicated that the accelerator pump was not sealing against the wall of its chamber, which would not provide fuel required to increase power with throttle movement. In addition, when the carburetor was installed on the flow bench, immediate leaks were noted audibly, one at the throttle shaft seals and one in the area of the accelerator pump. Indications of blockage in the idle chambers of the carburetor were present, and at idle ranges, the [fuel] flows were significantly out of specification. Removal of the idle tube revealed significant corrosion and contaminants in that area.

Airframe and engine logbooks contained no specific entries related to an overhaul or maintenance on the carburetor.

Pilot Information

Certificate:	Private	**Age:**	66,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	Unknown
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 Without waivers/limitations	**Last FAA Medical Exam:**	September 30, 2016
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	November 21, 2016
Flight Time:	584 hours (Total, all aircraft), 61.3 hours (Total, this make and model), 482.2 hours (Pilot In Command, all aircraft), 22 hours (Last 90 days, all aircraft), 6.5 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N89093
Model/Series:	140 Undesignat	**Aircraft Category:**	Airplane
Year of Manufacture:	1946	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	8097
Landing Gear Type:	Tailwheel	**Seats:**	2
Date/Type of Last Inspection:	December 1, 2017 Annual	**Certified Max Gross Wt.:**	1451 lbs
Time Since Last Inspection:	61 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	2244.44 Hrs at time of accident	**Engine Manufacturer:**	Continental
ELT:	C91 installed, not activated	**Engine Model/Series:**	C85-12
Registered Owner:	On file	**Rated Power:**	85 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	KMAN,2537 ft msl	**Distance from Accident Site:**	13 Nautical Miles
Observation Time:	17:35 Local	**Direction from Accident Site:**	37°
Lowest Cloud Condition:	Clear	**Visibility**	7 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	5 knots / None	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	300°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.98 inches Hg	**Temperature/Dew Point:**	25°C / 6°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Nampa, ID	**Type of Flight Plan Filed:**	None
Destination:	Nampa, ID	**Type of Clearance:**	None
Departure Time:	09:30 Local	**Type of Airspace:**	Class G

Airport Information

Airport:	SUNRISE SKYPARK ID40	**Runway Surface Type:**	Asphalt
Airport Elevation:	2240 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	30	**IFR Approach:**	None
Runway Length/Width:	2892 ft / 40 ft	**VFR Approach/Landing:**	Forced landing;Go around

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 None	**Aircraft Fire:**	None
Ground Injuries:		**Aircraft Explosion:**	None
Total Injuries:	2 None	**Latitude, Longitude:**	43.414722,-116.69833

Administrative Information

Investigator In Charge (IIC):	Cawthra, Joshua
Additional Participating Persons:	Kenneth Hawkins; Federal Aviation Administration; Boise, ID
Original Publish Date:	August 24, 2021
Last Revision Date:	
Investigation Class:	Class 3
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=98078