Aviation Investigation Final Report

Location:	Ovid, New York	**Accident Number:**	ERA17LA166
Date & Time:	April 23, 2017, 12:50 Local	**Registration:**	N9907B
Aircraft:	Cessna 182A	**Aircraft Damage:**	Substantial
Defining Event:	Fuel starvation	**Injuries:**	1 Minor
Flight Conducted Under:	Part 91: General aviation - Skydiving		

Analysis

On the fourth skydiving flight of the day, the commercial pilot climbed the airplane to 10,000 ft mean sea level (msl), and after the last jumper had departed the airplane, the pilot initiated a steep left turning descent. When the airplane was at 3,000 ft msl, the engine lost total power. The pilot was unable to restart the engine and turned the airplane to land on the runway, but when he realized that it would not be able to reach the runway, he landed in a field short of the approach end of the runway. During the ground roll, the airplane nosed over and then came to rest inverted. The fuselage and wings sustained substantial damage.

Postaccident examination of the airplane revealed that the carburetor's fuel inlet screen and gascolator screen were blocked with fibrous debris and dirt. The airplane had undergone an annual inspection 3 weeks before the accident, and the mechanic who conducted the inspection stated that he had not removed and examined the carburetor fuel inlet screen. The mechanic's failure to remove and examine the carburetor inlet screen led to the accumulated contaminants going undetected, and the contaminants obstructed the fuel flow to the carburetor and resulted in fuel starvation and the subsequent loss of engine power.

Probable Cause and Findings

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

The mechanic's failure to inspect and clean the carburetor fuel inlet screen during the airplane's annual inspection, which allowed undetected debris and dirt to obstruct the fuel supply and resulted in fuel starvation and the subsequent total loss of engine power.

Findings

Personnel issues	Scheduled/routine maintenance - Maintenance personnel
Aircraft	Fuel control/carburetor - Inadequate inspection

Factual Information

History of Flight

Approach-VFR pattern downwind	Fuel starvation (Defining event)
Approach-VFR pattern downwind	Loss of engine power (total)
Approach-VFR pattern downwind	Attempted remediation/recovery
Landing	Off-field or emergency landing
Landing	Nose over/nose down

On April 23, 2017, about 1250 eastern daylight time, a Cessna 182-A, N9907B, experienced a complete loss of engine power during approach and performed a forced landing to a field near Ovid, NY. The commercial pilot received minor injuries and the airplane was substantially damaged. The airplane was operated by Skydive Finger Lakes, as a skydiving flight. Visual meteorological conditions prevailed and no flight plan was filed for the local flight that departed Ovid Airport (D82), Ovid, New York. The flight was conducted under the provisions of Title14 *Code of Federal Regulations* Part 91.

The pilot conducted a preflight inspection of the airplane and checked the fuel on board, but did not drained the sumps of the airplane's fuel tanks to test for water or contaminants. According to the pilot, there should have been enough fuel to perform 4 trips based on the "home-made" fuel dip stick that had markings to indicate the number of flight loads that could be flown. In addition, he fueled the airplane up to the "four load" level five days prior to the accident flight, which was the last time the airplane was flown.

At 0945, the pilot began the first flight for the day. After the flight, he checked the fuel tanks again; the right tank indicated two and a half loads and the left tank indicated a half load. He thought he had enough fuel for three additional jumps and did not refuel the airplane.

On the fourth flight of the day, at 10,000 ft mean sea level (msl), after the last jumper had departed the airplane, the pilot initiated a steep left turning descent, with between 45° and 60° of bank. The carburetor heat was applied for the entire descent. At 3,000 ft msl, the engine stopped producing power. The pilot was unable to restart the engine and made a turn to land on the runway, but when it was evident that the airplane would not be able to reach the airport, he landed it in a field about 2,500 ft from the approach end of the runway. During the ground roll, the airplane nosed over and came to rest inverted.

According to the airplane's mechanic, who also flew the airplane, skydiving flights normally climb to 11,000 ft msl to allow the parachutists to jump, then descend making left turns in a 60° bank; the entire flight from takeoff, through jump and landing takes about 27 minutes and the fuel burn was estimated to be about 14 gallons per hour (gph).

The pilot held a commercial pilot certificate with ratings for airplane single-engine land and instrument airplane. He held a third-class airman medical certificate issued on April 12, 2017. The pilot reported 312.1 hours of total flight time, with 55.6 hours in the same make and model as the accident airplane. In the previous 30 days he flew 13.6 hours in the accident airplane.

The single-seat, high-wing, fixed-tricycle landing gear airplane was manufactured in 1957 and held a standard airworthiness certificate in the normal category. It was powered by a Continental O-470, 230-hp engine and equipped with a constant-speed, two-blade McCauley propeller. According to the airplane flight manual, the engine burned 13.4 gph and 14.5 gph at 2,300 and 2,450 rpm respectively. Review of maintenance records revealed that the airplane's most recent annual inspection was completed on April 7, 2017. At the time, the engine had accrued 3,211.90 total hours, 1,760 hours since the most recent overhaul, and the airframe total time was 8,307.37 hours. The airplane had flown 17 hours since the annual inspection.

The weather conditions at Penn Yan Airport (PEO), Penn Yan, New York, located about 11 miles west of the accident site reported wind variable at 8 knots, visibility 10 statute miles, clear skies, temperature 16° C, dew point 3° C, and an altimeter setting of 30.09 inches of mercury.

A Federal Aviation Administration (FAA) Inspector who responded to the accident site reported that the left-wing strut was bent, the firewall was damaged, the engine mounts were broken, the nose landing gear was separated, and both wings were wrinkled but the fuel tanks remained intact. The under skin of the fuselage was streaked with exhaust soot its entire length. Two of the bottom spark plugs were removed and they showed evidence of high soot concentrations. The fuel selector valve was set in the "BOTH" position, and the magneto switch was also in the "BOTH" position.

The engine was examined, and the propeller was rotated through the 360° of rotation; it moved freely and there was compression observed at each cylinder. The FAA inspector examined the fuel tanks and found no visible fuel in the right tank and several small several small puddles of fuel under the left wing. When the airplane was recovered several hours later, the inspector was able to sump an undetermined amount of fuel out of both tanks. Residual fuel was discovered in the fuel line that fed the carburetor and fuel was observed from the acceleration pump when the throttle arm was moved. The carburetor fuel filter inlet screen and the gascolator screen had a large amount of contamination described as fibrous with dirt.

In an interview with the FAA inspector, the mechanic stated that he removed and cleaned the carburetor and gascolator screen, but did not remove and examine the carburetor inlet screen during the annual inspection.

Pilot Information

Certificate:	Commercial	**Age:**	22,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	Lap only
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 2 Without waivers/limitations	**Last FAA Medical Exam:**	April 12, 2017
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	
Flight Time:	312.1 hours (Total, all aircraft), 55.5 hours (Total, this make and model), 239.5 hours (Pilot In Command, all aircraft), 14 hours (Last 90 days, all aircraft), 14 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N9907B
Model/Series:	182A A	**Aircraft Category:**	Airplane
Year of Manufacture:	1957	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	34307
Landing Gear Type:	Tricycle	**Seats:**	1
Date/Type of Last Inspection:	April 7, 2017 Annual	**Certified Max Gross Wt.:**	2348 lbs
Time Since Last Inspection:	17 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	8307 Hrs at time of accident	**Engine Manufacturer:**	CONT MOTOR
ELT:	C91A installed, activated, did not aid in locating accident	**Engine Model/Series:**	O-470 SERIES
Registered Owner:	On file	**Rated Power:**	230 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:	PEO,988 ft msl	**Distance from Accident Site:**	11 Nautical Miles
Observation Time:	12:53 Local	**Direction from Accident Site:**	260°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	/	**Turbulence Type Forecast/Actual:**	/
Wind Direction:		**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.09 inches Hg	**Temperature/Dew Point:**	16°C / 3°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	OVID, NY (D82)	**Type of Flight Plan Filed:**	None
Destination:	OVID, NY (D82)	**Type of Clearance:**	None
Departure Time:	11:45 Local	**Type of Airspace:**	Class G

Airport Information

Airport:	OVID D82	**Runway Surface Type:**	
Airport Elevation:	1062 ft msl	**Runway Surface Condition:**	Rough;Soft;Vegetation;Wet
Runway Used:		**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	Forced landing

Wreckage and Impact Information

Crew Injuries:	1 Minor	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Minor	**Latitude, Longitude:**	42.658889,-76.796386(est)

Administrative Information

Investigator In Charge (IIC):	Mccarter, Lawrence
Additional Participating Persons:	Jim Seymour; FAA FSDO; Rochester, NY
Original Publish Date:	July 23, 2019
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=95049