Aviation Investigation Final Report

Location:	Homer, Alaska	**Accident Number:**	ANC20LA093
Date & Time:	September 13, 2020, 16:32 Local	**Registration:**	N8875C
Aircraft:	Piper PA22	**Aircraft Damage:**	Substantial
Defining Event:	Fuel contamination	**Injuries:**	1 Minor
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot reported that, during the airplane's initial climb, the engine experienced a total loss of power, and he performed a forced landing on a nearby beach. During the landing, the left wing struck the surface and the pilot lost control of the airplane, which sustained substantial damage to both wings and the fuselage.

The pilot stated that the flight was the first since the airplane had an annual inspection performed, which was about 2 months before the accident. He also reported that there were heavy rain showers at the airport during the previous month, and the airplane had issues with water intrusion in the left fuel tank. The fuel tank cap gaskets had recently been replaced. During the preflight inspection, he sumped all the drains and removed about 1/2 inch of water from the left-wing tank drain.

Postaccident examination of the airframe and engine revealed anomalies in the airframe fuel system. Specifically, the examination noted the presence of corroded fuel tank filler necks, a degraded gasket on the right fuel tank filler neck, and a 3-inch circumferential separation of the left fuel filler neck base from the fuel tank. A fuel sample from the engine carburetor bowl contained a mixture of water and fuel. Engine valve train and drive shaft continuity was established, and no anomalies were observed in the engine cylinders, induction system, and ignition system.

Based on the pilot's statements, the corroded condition of the fuel filler necks, the left fuel tank separation, and the presence of water in the carburetor, it is likely that the total loss of engine power was due to fuel contamination from rainwater intrusion into the fuel system. The pilot either did not completely drain water from the fuel tanks during the preflight inspection or was unable to access trapped water in the fuel tanks.

Probable Cause and Findings

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

The total loss of engine power during the initial climb due to fuel contamination. Contributing to the accident was the corrosion of the fuel tank filler necks, which resulted in water intrusion into the fuel tanks.

Findings

Aircraft	Fuel storage - Fatigue/wear/corrosion
Aircraft	Fuel - Fluid condition
Personnel issues	Aircraft control - Pilot
Personnel issues	Preflight inspection - Pilot

Factual Information

History of Flight

Initial climb	Fuel contamination (Defining event)
Emergency descent	Collision with terr/obj (non-CFIT)

On September 13, 2020, about 1632 Alaska daylight time, a Piper PA-22 airplane, N8875C, was substantially damaged when it was involved in an accident near Homer, Alaska. The private pilot sustained minor injuries. The airplane was operated as a Title 14 *Code of Federal Regulations* part 91 personal flight.

The pilot reported that he was conducting a local flight from the Homer Airport (HOM), Homer, Alaska. He said the flight was the airplane's first since an annual inspection on July 21. While performing the preflight inspection, the pilot sumped each of the four low point fuel drains and removed about 1/2 inch of water from the left-wing tank drain. The other samples were clear. The wing tank fuel levels were about 3/4 full.

He stated that after starting, he taxied a long distance to runway 22 with the fuel selector on the right tank, and then switched to the left tank for takeoff. After takeoff and during the initial climb from runway 22, about 200 ft, the engine experienced a total loss of power and the propeller continued to windmill. The pilot performed a forced landing to a beach on Kachemak Bay near the airport. During the landing, the left-wing tip struck the surface, which resulted in a loss of control. The airplane sustained substantial damage to both wings and the fuselage.

The pilot stated that the airport had experienced heavy rainfall the previous month and that the wing fuel tank cap gaskets had recently been replaced due to wear and corrosion on the filler necks. The airplane had experienced water intrusion into the left tank.

Postaccident examination of the airframe revealed that the right-wing fuel tank cap was secure in place. The right tank filler neck exhibited corrosion on over 25% of the surface, and a badly deteriorated and crumbling black gasket was present around the filler neck. The left fuel cap was secure with a gasket in place, and the tank filler neck exhibited surface corrosion on about 40% of the surface with some metal deterioration around the neck. The base of the left-wing filler neck indicated a 3-inch separation from the fuel tank around the circumference and outward from the neck about 1 inch. The fuel selector valve was in the off position and moved smoothly through the left, right and off positions, and all detents were evident. The gascolator was located in an area of significant impact deformation. The gascolator bowl was separated from the cap and contained no liquid. The filter screen was clear of debris.

The propeller rotated freely by hand, and crankshaft and camshaft continuity were confirmed. This ignition system was functionally tested with no anomalies noted. The piston heads, cylinder walls, and spark plugs indicated normal wear signatures. The carburetor was attached

to the oil sump and exhibited fractures at the throttle valve housing. Engine control continuity was confirmed from the cockpit to the carburetor and airbox. The carburetor was disassembled, and no mechanical anomalies were noted. A fuel sample from the carburetor bowl contained a mixture of brownish water and fuel. The inlet fuel screen was wet and clear of debris.

Pilot Information

Certificate:	Private	**Age:**	74,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	3-point
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	BasicMed Unknown	**Last FAA Medical Exam:**	
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	1000 hours (Total, all aircraft), 500 hours (Total, this make and model), 1000 hours (Pilot In Command, all aircraft), 10 hours (Last 90 days, all aircraft), 10 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N8875C
Model/Series:	PA22 135	**Aircraft Category:**	Airplane
Year of Manufacture:	1953	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	22-1486
Landing Gear Type:	Tricycle	**Seats:**	4
Date/Type of Last Inspection:	July 21, 2020 Annual	**Certified Max Gross Wt.:**	1951 lbs
Time Since Last Inspection:	1.1 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	2943.1 Hrs as of last inspection	**Engine Manufacturer:**	Lycoming
ELT:		**Engine Model/Series:**	O-290-DZ
Registered Owner:	On file	**Rated Power:**	135
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:	PAHO,84 ft msl	**Distance from Accident Site:**	1 Nautical Miles
Observation Time:	16:53 Local	**Direction from Accident Site:**	
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	7 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	250°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	3018 inches Hg	**Temperature/Dew Point:**	17°C / 6°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Homer, AK (HOM)	**Type of Flight Plan Filed:**	VFR
Destination:	Homer, AK (HOM)	**Type of Clearance:**	None
Departure Time:	16:32 Local	**Type of Airspace:**	Class E

Airport Information

Airport:	Homer HOM	**Runway Surface Type:**	Asphalt
Airport Elevation:	84 ft msl	**Runway Surface Condition:**	Dry;Soft
Runway Used:	22	**IFR Approach:**	None
Runway Length/Width:	6701 ft / 150 ft	**VFR Approach/Landing:**	Forced landing

Wreckage and Impact Information

Crew Injuries:	1 Minor	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:		**Aircraft Explosion:**	None
Total Injuries:	1 Minor	**Latitude, Longitude:**	59.63293,-151.50499(est)

Administrative Information

Investigator In Charge (IIC):	Price, Noreen
Additional Participating Persons:	Charles Gillespie; Federal Aviation Administration; Anchorage, AK
Original Publish Date:	April 18, 2022
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=101973