



Aviation Investigation Final Report

Location:	West Jordan, Utah	Accident Number:	WPR23LA203
Date & Time:	May 29, 2023, 11:52 Local	Registration:	N456Y
Aircraft:	Piper PA-28-181	Aircraft Damage:	Substantial
Defining Event:	Fuel starvation	Injuries:	2 None
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

The flight instructor was conducting a local flight in preparation for the student pilot's private pilot check ride. The preflight was completed and both wing fuel tanks were filled. The engine was started, and no anomalies were noted during the startup, taxi or runup. During takeoff, the ground roll and departure were normal until the airplane reached about 300 ft above ground level (agl) when the engine started to lose power. The flight instructor took control of the airplane and added full rich mixture and ensured that the throttle lever was at full power. Momentarily, there was increase in rpm before the engine lost all power. He executed a forced landing that caused the landing gear to collapse and damaged the right wing, which resulted in the fuel tank leaking onsite.

The postaccident examination revealed that the gascolator bowl bail wire attachment end was not engaged in the outboard attachment hole on the gascolator housing and was resting on the gascolator bracket forward of the hole. There was no observable impact damage to the gascolator or the surrounding area. The gascolator bowl was not sealed to the gascolator housing and was twisted inboard where the bowl's sump was pointing forward, instead of its normal position pointing outboard towards the cowling sump access hole. The interior surfaces of both upper and lower cowling were covered in a light residue of oil with the exception of the cowling and firewall area beneath the gascolator. The lower engine cowling was removed. The bail wire was not safety wired in place, and the strainer bowl retaining nut was safety wired to the gascolator sump fitting. The strainer bowl retaining nut was not properly positioned on the bottom of the bowl. The gascolator bowl was removed and the seal and screen were undamaged and clear of contamination. The gascolator bowl did not contain any fuel. The gascolator bail wire was not properly attached to the housing and the gascolator

bowl likely became unsealed, interrupting the fuel supply to the engine and causing the loss of engine power.

Probable Cause and Findings

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

Loss of engine power due to fuel starvation as a result of the mechanic’s failure to properly secure the fuel system gascolator strainer bowl.

Findings

Aircraft	Fuel filter-strainer - Incorrect service/maintenance
Personnel issues	(general) - Maintenance personnel

Factual Information

History of Flight

Initial climb	Sys/Comp malf/fail (non-power)
Initial climb	Fuel starvation (Defining event)
Landing-landing roll	Ground collision

On May 29, 2023, about 1152 mountain daylight time, a Piper PA-28-181, N456Y, was substantially damaged when it was involved in an accident near West Jordan, Utah. The flight instructor and student pilot were not injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 instructional flight.

The flight instructor reported that the local flight from South Valley Regional Airport (U42), Salt Lake City, Utah, was in preparation for the student pilot’s private pilot check ride. He reported that earlier in the morning the aircraft fuel strainer and wing tanks were sumped and were clear of contaminants. A few hours later the airplane was refueled for the accident flight and the airplane was sumped once more. The fuel strainer was clear of contaminants and the right wing had several drops of water visible in the sump tool. The left tank had a significant amount of water visible in the sump tool. The preflight was completed and the engine was started; no anomalies were noted during the startup, taxi, or runup. The flight instructor reported that they departed with the fuel selector on the left-wing tank position. During takeoff, the ground roll was normal, and the airplane departed about 2,000 ft down the runway. About 300 ft agl, the engine started to lose power. The flight instructor took control of the airplane and added full rich mixture and ensured that the throttle lever was at full power. Momentarily, there was an increase in rpm before they lost all engine power. He initiated a forced landing to a soccer field complex about 1/4 mile south of U42. During the landing, the right main landing gear collapsed, and the airplane veered to the right impacting a tree with its right wing. The right wing fuel tank had impact damage and was leaking fuel onsite.

Shortly after the accident, the airplane’s wing tanks were defueled from the filler ports, and the airplane was relocated to the airport. About 15 gallons of fuel was collected from the wing tanks. The gascolator and wing tanks were not sumped after the accident or during its relocation back to the airport.

A postaccident examination of the wreckage revealed that the gascolator bowl bail wire attachment end was not engaged with the outboard attachment hole on the gascolator housing and was resting on the gascolator bracket forward of the hole, as shown in figure 1. There was no observable impact damage to the gascolator or the surrounding area. The gascolator bowl was not sealed to the gascolator housing and was twisted inboard where the

bowl's sump was pointing forward, instead of its normal position pointing outboard toward the cowling sump access hole. The interior surfaces of both upper and lower cowling were covered in a light residue of oil with the exception of the cowling and firewall area beneath the gascolator.

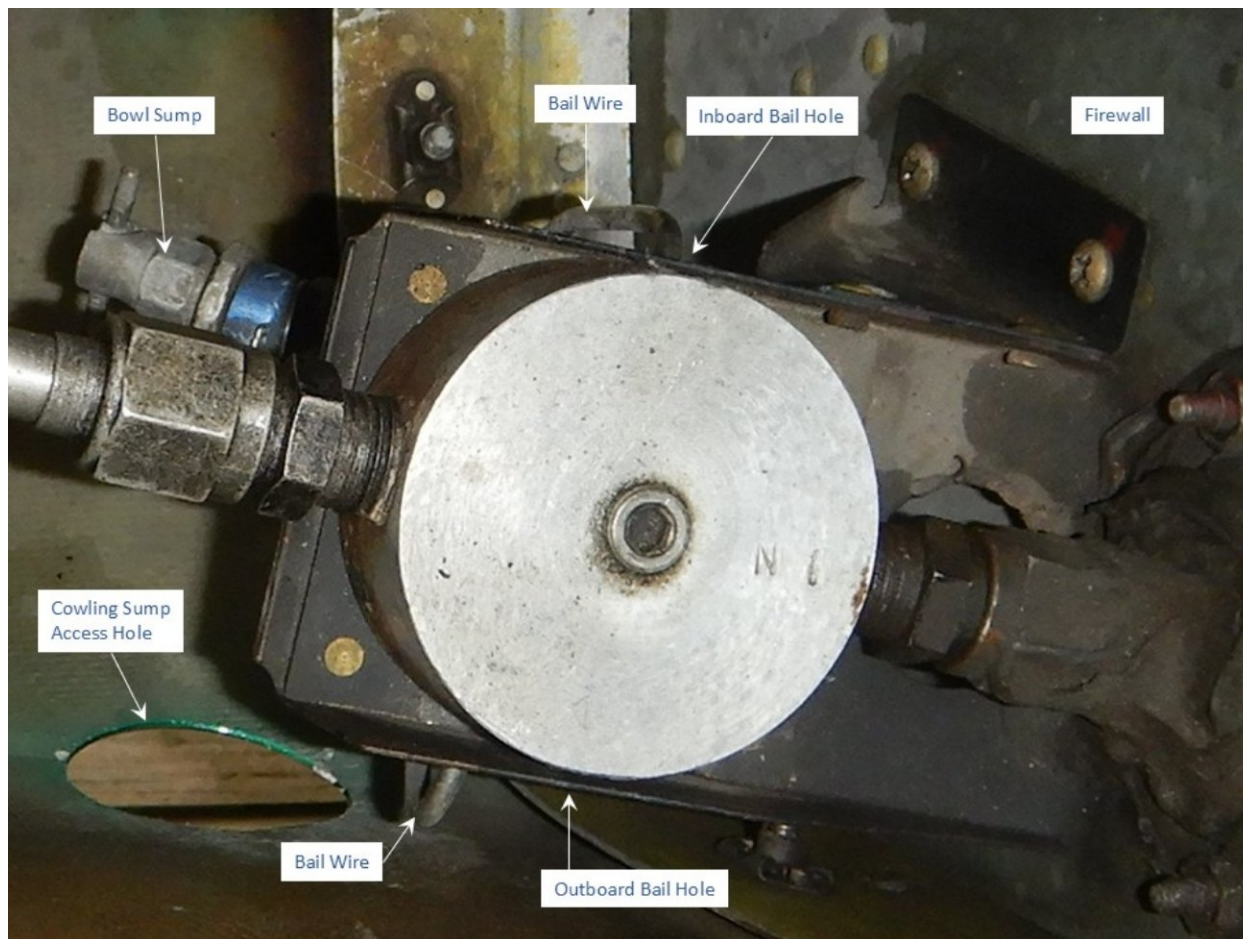


Figure 1-Gascolator as seen from above.

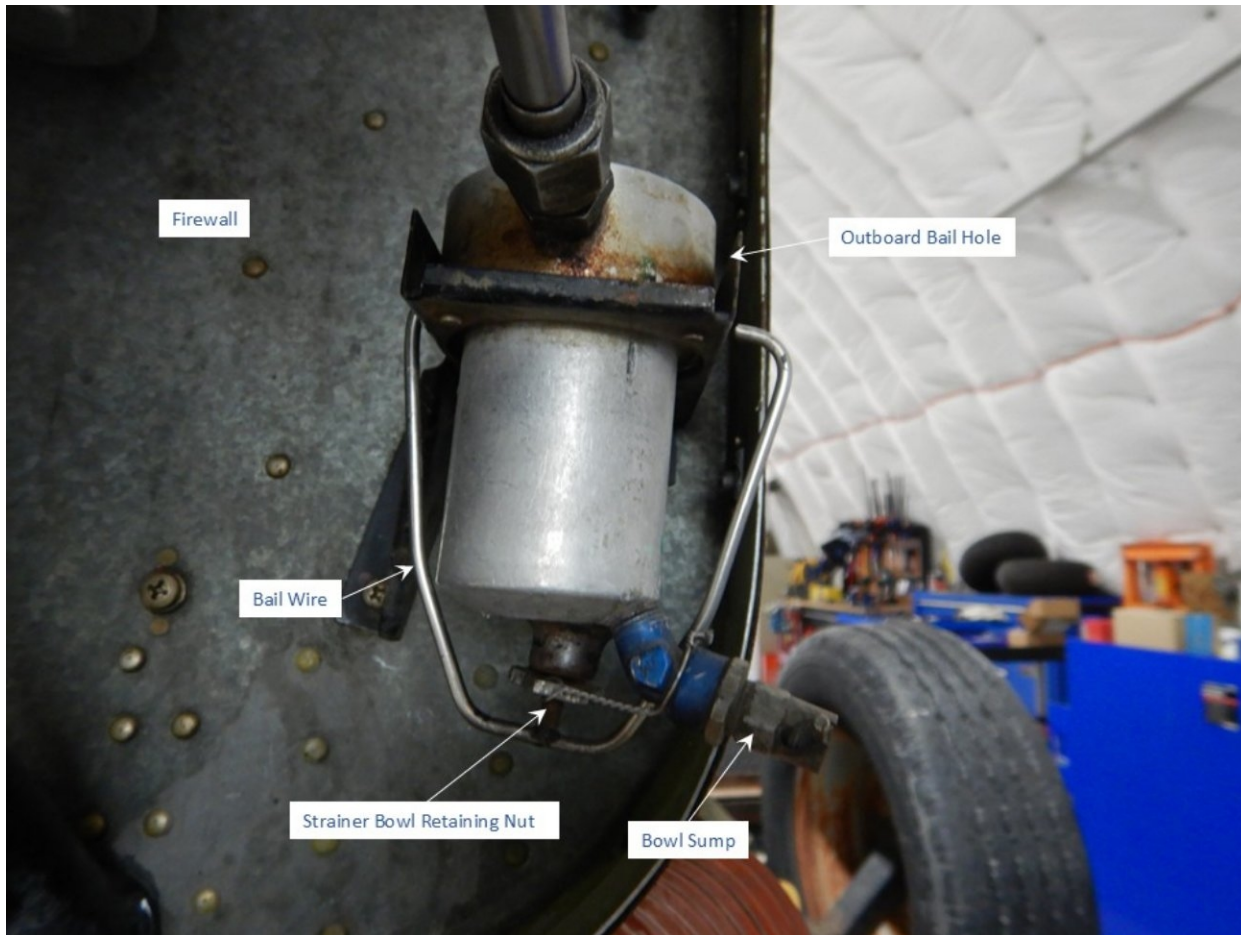


Figure 2-Gascolator forward side view, lower cowling removed.

The lower engine cowling was removed. The bail wire was not safety wired in place, and the strainer bowl retaining nut was safety wired to the gascolator sump fitting. The strainer bowl retaining nut was not properly positioned on the bottom of the bowl. The gascolator bowl was removed and the seal and screen were undamaged and clear of contamination. The gascolator bowl did not contain any fuel.

Review of the maintenance records showed that the last 100-hour inspection was completed on April 1, 2023, about two months before the accident. The airplane had about 3,828 hours of operation at the time of the last inspection and had about 60 hours of operation since that inspection.

Both Piper Service Letter 1141, dated April 11, 2011, and the Piper Maintenance Manual provide instructions to maintain and install the gascolator. The instructions direct the installer to safety bail nut and bail wire with MS20995-C32 safety wire, as shown in figure 2. They direct the installer to use the “double twist” method, as described in the latest revision of FAA

Advisory Circular (AC) 43.13-1, Chapter 7 (Aircraft Hardware, Control Cables, and Turnbuckles), Section 7 (Safetying).

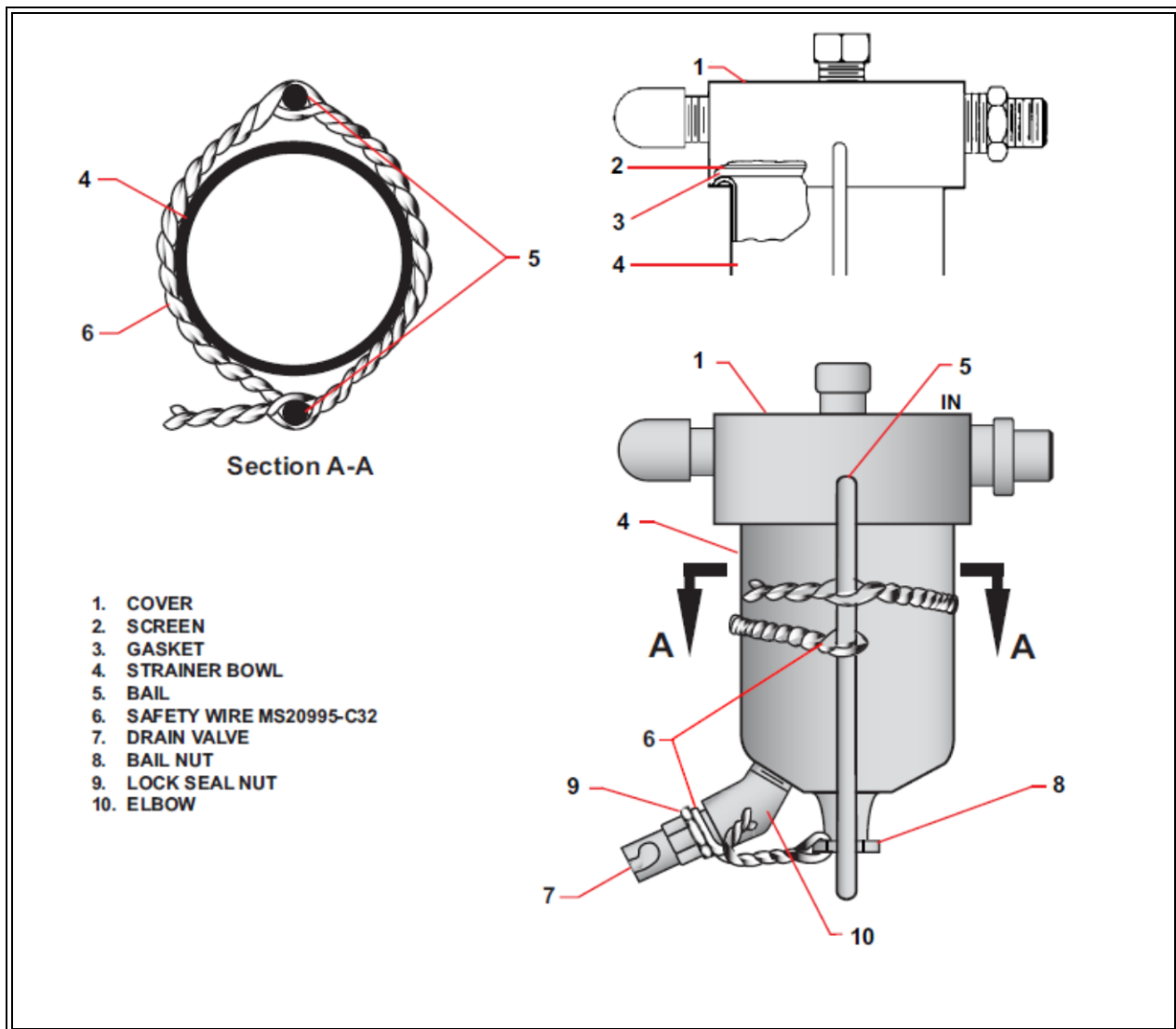


Figure 3-Excerpt from the Piper Maintenance Manual.

Pilot Information

Certificate:	Commercial; Flight instructor	Age:	23, Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Right
Other Aircraft Rating(s):	None	Restraint Used:	3-point
Instrument Rating(s):	Airplane	Second Pilot Present:	
Instructor Rating(s):	Airplane single-engine	Toxicology Performed:	
Medical Certification:	Class 1 Without waivers/limitations	Last FAA Medical Exam:	
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	October 1, 2021
Flight Time:	(Estimated) 1200 hours (Total, all aircraft), 1160 hours (Total, this make and model), 1000 hours (Pilot In Command, all aircraft), 100 hours (Last 90 days, all aircraft), 40 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

Student pilot Information

Certificate:	Student	Age:	37, Male
Airplane Rating(s):		Seat Occupied:	Left
Other Aircraft Rating(s):		Restraint Used:	3-point
Instrument Rating(s):		Second Pilot Present:	
Instructor Rating(s):		Toxicology Performed:	
Medical Certification:	Class 1 Without waivers/limitations	Last FAA Medical Exam:	December 13, 2022
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:	(Estimated) 60 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	Registration:	N456Y
Model/Series:	PA-28-181	Aircraft Category:	Airplane
Year of Manufacture:	2000	Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	2843353
Landing Gear Type:	Tricycle	Seats:	4
Date/Type of Last Inspection:	April 1, 2023 100 hour	Certified Max Gross Wt.:	2550 lbs
Time Since Last Inspection:	60.9 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	3889 Hrs as of last inspection	Engine Manufacturer:	LYCOMING
ELT:	Installed, not activated	Engine Model/Series:	O&VO-360 SER
Registered Owner:	CAVORITE AVIATION LLC	Rated Power:	180 Horsepower
Operator:	On file	Operating Certificate(s) Held:	Pilot school (141)

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	KU42,4603 ft msl	Distance from Accident Site:	1 Nautical Miles
Observation Time:	10:35 Local	Direction from Accident Site:	353°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	9 knots / None	Turbulence Type Forecast/Actual:	Unknown / Unknown
Wind Direction:	140°	Turbulence Severity Forecast/Actual:	Unknown / Unknown
Altimeter Setting:	30.02 inches Hg	Temperature/Dew Point:	21°C / 6°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	West Jordan, UT	Type of Flight Plan Filed:	None
Destination:	West Jordan, UT	Type of Clearance:	None
Departure Time:		Type of Airspace:	Class D

Airport Information

Airport:	South Valley Regional Airport U42	Runway Surface Type:	Asphalt
Airport Elevation:	4606 ft msl	Runway Surface Condition:	Dry
Runway Used:	16	IFR Approach:	None
Runway Length/Width:	5862 ft / 100 ft	VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	2 None	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 None	Latitude, Longitude:	40.609922,-111.99161(est)

Administrative Information

Investigator In Charge (IIC):	Swick, Andrew
Additional Participating Persons:	Jeff Smith; FAA-FSDO; SLC, UT
Original Publish Date:	April 24, 2025
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=192265

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The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).