



National Transportation Safety Board Aviation Accident Final Report

Location:	Trenton, SC	Accident Number:	ERA14LA059
Date & Time:	12/02/2013, 1530 EST	Registration:	N355PT
Aircraft:	MOFFITT OSCAR/ KIT PROSTAR A/C PT2	Aircraft Damage:	Substantial
Defining Event:	Loss of engine power (total)	Injuries:	1 Minor
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

According to the pilot, he was conducting a presale inspection of his experimental, amateur-built airplane. He ensured no debris was present in the gascolator and then conducted a test flight. During the test flight and while on final approach to land, the engine lost all power, and the pilot subsequently made a forced landing in a field. A postaccident examination of the gascolator revealed that the strainer bowl was not installed and safety wired in accordance with a service letter issued by the gascolator manufacturer. As a result, the gascolator strainer bowl became separated from the bail, which caused fuel starvation to the engine and total loss of engine power.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The airplane owner/pilot 's failure to follow the gascolator manufacturer's recommendations for installing and safety wiring the gascolator strainer bowl, which resulted in the bowl separating and a total loss of engine power due to fuel starvation.

Findings

Aircraft	Fuel filter-strainer - Incorrect service/maintenance (Cause)
Personnel issues	Preflight inspection - Pilot (Cause)

Factual Information

On December 2, 2013, about 1530 eastern standard time, an experimental, amateur-built, Prostar PT2, N355PT, was substantially damaged when it collided with terrain during a forced landing near Edgefield County Airport, Trenton, South Carolina. The private pilot sustained minor injuries. The airplane was registered to and operated by the private pilot under the provisions of 14 Code of Federal Regulations Part 91. Visual meteorological conditions prevailed and no flight plan was filed for the personal flight. The flight departed from Twin Lakes Airport (S17), Graniteville, South Carolina at 1500.

According to the pilot, he was conducting an inspection of his airplane in preparation of selling it. During the inspection he noted that the main fuel tank lines were old and brittle. He replaced the main fuel tank lines and drained the fuel system. While draining the fuel system, he discovered debris within the gasculator. He continued to drain the fuel system until debris was no longer present within the gasculator. He then checked the system for leaks. No leaks were noted and the pilot conducted a test flight. During the test flight, while on final approach to land, the engine lost all power and the pilot conducted a forced landing in a field. During the descent the airplane struck a tree before coming to rest at the base of the tree.

A post-accident examination of the airplane by a Federal Aviation Administration (FAA) inspector revealed damage to both wings and the airframe. An examination of the engine conducted and valve train continuity and compression were observed on all cylinders. Further examination revealed that there was a hole in the number 1 cylinder valve cover. The cowling was against the valve cover and the screws were punctured through the valve cover. Examination of the ignition system revealed that the magnetos and leads were all intact. Due to external damage to the engine an engine run was not performed.

Examination of the intake system revealed no blockage in the air box or carburetor venturi. The carburetor drain plug was removed and no fuel was observed in the carburetor. The fuel selector was moved to the "on" position to take a fuel sample from the gasculator and fuel was noted running freely from the gasculator. The fuel inlet line at the carburetor was removed; air was blown through it and no blockage was noted. Further examination of the gasculator revealed that between the thumb wheel and the gasculator bowl there was supposed to be an inverted bell that applied pressure to the bottom of the bowl; it was missing. There was no observable impact damage to the gasculator. The gasculator also contained a handmade gasket made from a cork material and there was no safety wire on the gasculator. The pilot stated to the FAA inspector that he believed that the gasculator was salvaged from a PA-28 airplane when his airplane was built. He went on to say that the gasculator always seemed to be loose, but the thumb wheel would not turn any more to tighten it further. Oil and dirt residue were found throughout the cowling. In the area where the gasculator was mounted the oil and dirt residue was gone and the cowling appeared clean.

The gasculator was consistent with a Piper part number 63839-03 gasculator. A review of the Piper Service Letter 1141, dated April 11, 2011 was performed. The service letter called out a new procedure for safety wiring the bail assembly on the gasculator. The gasket that Piper required for this gasculator was made from rubber.

History of Flight

Prior to flight	Aircraft inspection event
Approach-VFR pattern final	Loss of engine power (total) (Defining event)
Emergency descent	Off-field or emergency landing Collision with terr/obj (non-CFIT)

Pilot Information

Certificate:	Private	Age:	65
Airplane Rating(s):	Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 3 With Waivers/Limitations	Last Medical Exam:	02/28/2013
Occupational Pilot:	No	Last Flight Review or Equivalent:	08/01/2013
Flight Time:	(Estimated) 283.3 hours (Total, all aircraft), 11.5 hours (Total, this make and model), 208.4 hours (Pilot In Command, all aircraft), 16.8 hours (Last 90 days, all aircraft), 8.2 hours (Last 30 days, all aircraft), 0.4 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	MOFFITT OSCAR/ KIT PROSTAR A/C	Registration:	N355PT
Model/Series:	PT2	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	Yes
Airworthiness Certificate:	Experimental	Serial Number:	1072
Landing Gear Type:	Tailwheel	Seats:	2
Date/Type of Last Inspection:	09/10/2013, Annual	Certified Max Gross Wt.:	1550 lbs
Time Since Last Inspection:	1 Hours	Engines:	1 Reciprocating
Airframe Total Time:	515 Hours	Engine Manufacturer:	Lycoming
ELT:	C91 installed, not activated	Engine Model/Series:	4106-27
Registered Owner:	PUTT LARRY F	Rated Power:	150 hp
Operator:	PUTT LARRY F	Air Carrier Operating Certificate:	None

Meteorological Information and Flight Plan

Observation Facility, Elevation:	DNL, 422 ft msl	Observation Time:	1253 EST
Distance from Accident Site:	20 Nautical Miles	Condition of Light:	Day
Direction from Accident Site:	34°	Conditions at Accident Site:	Visual Conditions
Lowest Cloud Condition:	Few / 5000 ft agl	Temperature/Dew Point:	17° C / 3° C
Lowest Ceiling:	None	Visibility	10 Miles
Wind Speed/Gusts, Direction:	7 knots, 330°	Visibility (RVR):	
Altimeter Setting:	29.89 inches Hg	Visibility (RVV):	
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	GRANITEVILLE, SC (S17)	Type of Flight Plan Filed:	None
Destination:	Trenton, SC (6J6)	Type of Clearance:	None
Departure Time:	1506 EST	Type of Airspace:	

Airport Information

Airport:	Edgefield County Airport (6J6)	Runway Surface Type:	N/A
Airport Elevation:	611 ft	Runway Surface Condition:	Unknown
Runway Used:	N/A	IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	Forced Landing

Wreckage and Impact Information

Crew Injuries:	1 Minor	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Minor		

Administrative Information

Investigator In Charge (IIC):	Eric Alleyne	Adopted Date:	10/19/2015
Additional Participating Persons:	Cornelius J Baker; FAA/FSDO; West Columbia, SC		
Publish Date:	10/19/2015		
Note:	The NTSB did not travel to the scene of this accident.		
Investigation Docket:	http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=88502		

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

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