Aviation Investigation Final Report

Location:	Navada, Texas	**Accident Number:**	CEN11LA084
Date & Time:	November 27, 2010, 15:50 Local	**Registration:**	N4541L
Aircraft:	Grumman American AA-5B	**Aircraft Damage:**	Substantial
Defining Event:	Collision with terr/obj (non-CFIT)	**Injuries:**	1 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

According to the pilot, he was cruising at 3,000 feet when the engine sputtered. He switched from the right fuel tank to the left fuel tank and turned the boost pump on. He said that the engine regained power, but lost power shortly thereafter, so he performed a forced landing to an open plowed field. During the landing, the airplane cleared power lines but stalled and impacted in the field. A postaccident engine examination revealed the fuel filter contained considerable debris that resembled paint chips. The pilot said the airplane had recently been painted. The engine was test run with a clean fuel filter and it operated satisfactorily. The fuel system between the fuel tanks and the electric fuel pump was pressurized and checked for leaks. Two leaks were found, and fuel stains were noted in the area of the leaks. However, it is unlikely that these two leaks could cause a loss of engine power.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The loss of engine power due to debris obstructing the fuel filter, which resulted in fuel starvation. Contributing to the accident was the pilot's inadequate airspeed during the forced landing, which resulted in an aerodynamic stall.

Findings

Aircraft	(general) - Failure
Aircraft	(general) - Not attained/maintained
Aircraft	Fuel filter-strainer - Damaged/degraded
Personnel issues	Aircraft control - Pilot
Aircraft	Fuel - Not specified

Factual Information

History of Flight

Enroute-cruise	Loss of engine power (total)
Emergency descent	Off-field or emergency landing
Landing	Loss of control in flight
Uncontrolled descent	Collision with terr/obj (non-CFIT) (Defining event)

On November 27, 2010, approximately 1550 central standard time, a Grumman American AA-5B, N4541L, registered to and operated by the pilot, was substantially damaged when it impacted terrain during a forced landing after the engine lost power during near Navada, Texas. Visual meteorological conditions (VMC) prevailed at the time of the accident. The personal flight was being conducted under the provisions of 14 Code of Federal Regulations (CFR) Part 91 without a flight plan. The pilot, the sole occupant on board, was not injured. The cross-country flight originated at Bonham (F00), Texas, and was en route to Rockwall (F46), Texas.

The pilot told FAA inspectors that while in cruise flight, the engine lost power. During the ensuing forced landing, the pilot was able to clear power lines, but the airplane stalled and impacted terrain. The left wing was bent from the wing tip inboard about two ribs, and the spar in that area was broken. The nose and right main landing gears were also torn off.

According to the pilot's accident report, he was cruising at 3,000 feet when "the engine sputtered." The pilot switched from the right to the left fuel tank and turned the boost pump on. The engine "started to regain power, then began to lose RPM again." After clearing powerlines, "the right wing went up in response to a wind gust" and the airplane impacted an open plowed field.

At 1553, the surface wind conditions at Dallas Love Field Airport, approximately 35 miles southeast of the accident site were reported 190 degrees at 7 knots.

On December 7, 2010, the engine was examined and functionally tested at the facilities of Fletchaire, Incorporated, Fleet Support in Fredericksburg, Texas. Prior to the engine run, the carburetor bowl was examined and found to be clean and dry. The fuel filter contained considerable debris that resembled paint chips. The pilot said the airplane had recently been painted. The fuel filter was cleaned and reinstalled. The engine operated satisfactory.

The fuel system between the fuel tanks and the electric fuel pump was pressurized and checked for leaks. Two leaks were found. In a memo from Fletchaire, Inc., they reported finding one leak at the fitting that reduced the 3/8” fuel line to a 1/8” flare fitting. The leak was between the #6 tee (MS20826-6D) fitting and the 5401131-2 reducer. The other leak was a

cracked flare fitting on the copper primer line where it attached to the 5401131-2 reducer. Fuel stains were noted in this area. Fletchaire, Inc., said it was possible that "air may have been sucked into the fuel system, cavitating the fuel line at this point. This may not have caused this plane's demise."

Pilot Information

Certificate:	Private	**Age:**	63,Male
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 FAA Medical Exam:**	June 10, 2010
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	October 16, 2010
Flight Time:	782 hours (Total, all aircraft), 736 hours (Total, this make and model), 782 hours (Pilot In Command, all aircraft), 22 hours (Last 90 days, all aircraft), 8 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Grumman American	**Registration:**	N4541L
Model/Series:	AA-5B	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	AA5B1319
Landing Gear Type:	Tricycle	**Seats:**	4
Date/Type of Last Inspection:	June 1, 2010 Annual	**Certified Max Gross Wt.:**	2400 lbs
Time Since Last Inspection:	31 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	2314 Hrs as of last inspection	**Engine Manufacturer:**	Lycoming
ELT:	Installed, not activated	**Engine Model/Series:**	O-360-
Registered Owner:	Joe Allman	**Rated Power:**	180 Horsepower
Operator:	Joe Allman	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	DAL	**Distance from Accident Site:**	
Observation Time:	15:53 Local	**Direction from Accident Site:**	
Lowest Cloud Condition:	Few / 25000 ft AGL	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	7 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	190°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.13 inches Hg	**Temperature/Dew Point:**	17°C / -10°C
Precipitation and Obscuration:			
Departure Point:	Bonham, TX (F00)	**Type of Flight Plan Filed:**	None
Destination:	Rockwall, TX (F46)	**Type of Clearance:**	None
Departure Time:	15:00 Local	**Type of Airspace:**	Class E

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 None	**Latitude, Longitude:**	33.042778,-96.363891(est)

Administrative Information

Investigator In Charge (IIC):	Scott, Arnold
Additional Participating Persons:	Tony Baumgard; FAA Flight Standards District Office; Dallas, TX
Original Publish Date:	March 8, 2012
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=77891