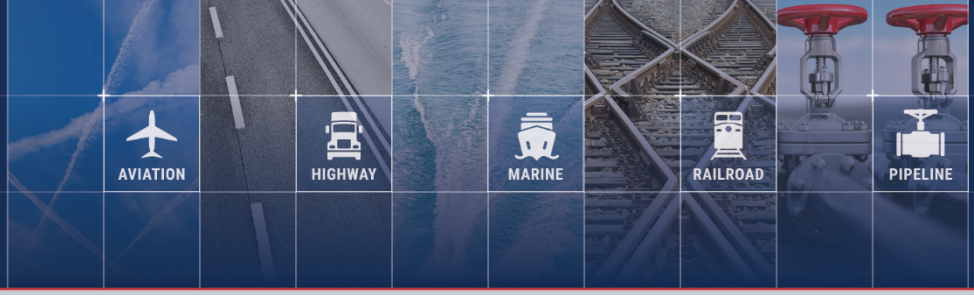

Aviation Investigation Final Report

Location:	Beaumont, Texas	**Accident Number:**	CEN13LA305
Date & Time:	May 23, 2013, 12:00 Local	**Registration:**	N121CM
Aircraft:	Stinson 108-3	**Aircraft Damage:**	Substantial
Defining Event:	Loss of engine power (partial)	**Injuries:**	1 Minor
Flight Conducted Under:	Part 91: General aviation		

Analysis

The pilot reported that the airplane's engine lost partial power shortly after takeoff. The airplane was unable to maintain altitude, so he executed a forced landing to a field, and the airplane nosed over. Postaccident examination revealed that the rubber boot between the carburetor heat box and cowl was missing its forward clamp, which was not found in the wreckage The clamp was likely missing because an improper clamp was used or a clamp was not installed properly, which allowed the boot to come loose and to be ingested into the inlet of the carburetor heat box, restricting the airflow and resulting in a rich fuel mixture and the subsequent partial loss of engine power. No other anomalies were found with the engine or its systems.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The lack of a forward clamp on the carburetor heat box rubber boot, which allowed the boot to be ingested into the inlet of the carburetor heat box, restricting the airflow and leading to a subsequent partial loss of engine power.

Findings

Aircraft	Air intake - Damaged/degraded
Aircraft	Air intake - Incorrect service/maintenance
Personnel issues	Installation - Maintenance personnel

Factual Information

History of Flight

Enroute-climb to cruise	Loss of engine power (partial) (Defining event)
Landing	Collision with terr/obj (non-CFIT)
Landing	Nose over/nose down

On May 23, 2013, about 1200 central daylight time, a Stinson 108-3, N121CM, sustained substantial damage when it nosed over during a forced landing following a loss of engine power near Beaumont, Texas. The pilot received minor injuries. The airplane sustained damage to the vertical tail surfaces, wings, wing struts, and fuselage. The aircraft was registered to and operated by Aircapital Nevada, Inc., under the provisions of 14 Code of Federal Regulations Part 91 as a business flight. Visual meteorological conditions prevailed for the flight, which was not operated on a flight plan. The flight was originating from the Beaumont Municipal Airport, Beaumont, Texas, and was bound for College Station, Texas.

The pilot reported that he had performed a pre-takeoff run-up and all engine indications were normal. He proceeded to take off and made two 90-degree turns prior to the loss of engine power. The pilot said that the engine was still producing some power, but he was not able to maintain altitude. He attempted to land in a field and the airplane nosed over.

Examination of the engine confirmed compression on all cylinders, valve system continuity, and magneto operation. The carburetor appeared new and the fuel strainer was clean with no debris. The fuel within the gascolator did not appear to have any water or sediment. The upper spark plugs were of three different electrode configurations. All of the plugs exhibited a wet-black appearance. The rubber boot that was located between the carburetor heat box and the cowl was very pliable and had cracks on the exterior surfaces. The rear of the boot was attached to the carburetor heat box with a clamp and sealant. The front of the boot did not have a clamp installed and one was not found in the wreckage.

Discussions with a member of the International Stinson Club (ISC) revealed that the front of the boot between the carburetor heat box and the cowl should have had a 2-piece clamp installed. The ISC member said that without the clamp installed it is possible for the boot to be sucked into the inlet of the carburetor heat box thereby restricting airflow, resulting in a rich mixture and reduction of engine power.

Pilot Information

Certificate:	Private	**Age:**	81
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 With waivers/limitations	**Last FAA Medical Exam:**	January 10, 2013
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:			

Aircraft and Owner/Operator Information

Aircraft Make:	Stinson	**Registration:**	N121CM
Model/Series:	108-3	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	108-4284
Landing Gear Type:	Tailwheel	**Seats:**	4
Date/Type of Last Inspection:	Annual	**Certified Max Gross Wt.:**	
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:		**Engine Manufacturer:**	FRANKLIN
ELT:	Installed, not activated	**Engine Model/Series:**	6A4165 SERIES
Registered Owner:	AIRCAPITAL NEVADA INC	**Rated Power:**	165 Horsepower
Operator:	AIRCAPITAL NEVADA INC	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	BMT,32 ft msl	**Distance from Accident Site:**	0 Nautical Miles
Observation Time:	11:35 Local	**Direction from Accident Site:**	0°
Lowest Cloud Condition:	Scattered / 2400 ft AGL	**Visibility**	10 miles
Lowest Ceiling:	Broken / 3000 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	8 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	190°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.03 inches Hg	**Temperature/Dew Point:**	29°C / 23°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Beaumont, TX (BMT)	**Type of Flight Plan Filed:**	Unknown
Destination:	College Station, TX (CLL)	**Type of Clearance:**	None
Departure Time:	12:00 Local	**Type of Airspace:**	

Airport Information

Airport:	Beaumont Municipal Airport BMT	**Runway Surface Type:**	
Airport Elevation:	32 ft msl	**Runway Surface Condition:**	
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:**	30.070278,-94.214996

Administrative Information

Investigator In Charge (IIC):	Brannen, John
Additional Participating Persons:	Raymond L McCall; FAA-Houston FSDO; Houston, TX
Original Publish Date:	February 10, 2014
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=87017