



Aviation Investigation Final Report

Location:	Willow Park, Texas	Accident Number:	CEN14LA118
Date & Time:	January 21, 2014, 15:00 Local	Registration:	N28578
Aircraft:	GRUMMAN AMERICAN AVN. CORP. AA 5B	Aircraft Damage:	Substantial
Defining Event:	Part(s) separation from AC	Injuries:	1 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot reported that he heard a loud noise during cruise flight and that the airplane then started losing altitude. He subsequently conducted a forced landing, which resulted in substantial damage to the airplane. A postaccident examination revealed that the propeller assembly had separated from the engine propeller flange. Four of the six propeller bolts were intact, consistent with the bolts backing out before the propeller separated. The remaining two bolts were unable to transfer the loads from the propeller, and they subsequently failed. The pilot reported that the propeller was removed during the most recent annual inspection, which was completed about 1 year before the accident. The airplane had accumulated about 14 hours flight time since the inspection. Although the airplane maintenance logbook entry for the inspection did not indicate that the propeller was removed or reinstalled, it is likely that the propeller assembly was improperly reinstalled at some point, which resulted in its subsequent in-flight separation.

Probable Cause and Findings

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

The improper reinstallation of the propeller assembly, which resulted in the subsequent in-flight separation of the propeller.

Findings

Aircraft	Propeller hub section - Failure
Aircraft	Propeller assembly - Incorrect service/maintenance

Factual Information

History of Flight

Enroute-cruise	Part(s) separation from AC (Defining event)
Emergency descent	Off-field or emergency landing
Landing	Collision with terr/obj (non-CFIT)
Landing	Landing gear collapse

On January 21, 2014, about 1500 central standard time, a Grumman American AA-5B airplane, N28578, was substantially damaged during a forced landing following an in-flight separation of the propeller near Willow Park, Texas. The pilot was not injured. The airplane was substantially damaged. The airplane was registered to a private individual and operated by the pilot under the provisions of 14 Code of Federal Regulations Part 91 as a personal flight. Visual meteorological conditions prevailed for the flight, which was not operated on a flight plan. The local flight originated from the Lake Whitney State Park Airport (F50), Whitney, Texas, about 1445.

The pilot reported that he heard a loud noise during cruise flight at 2,000 feet mean sea level. He was unable to maintain altitude and subsequently executed a forced landing to the infield of a horse racing track. The airplane encountered a drainage ditch during the landing, which caused the nose and right main landing gears to collapse.

A postaccident examination revealed that the two-blade, fixed-pitch propeller assembly had separated from the engine propeller flange. The propeller was recovered about three days later from a pasture located about 8 miles east-southeast of the accident site. The propeller bolts, which were retained by the spinner, were recovered. Four of the bolts were intact, with no apparent damage to either the bolt threads or the propeller flange insert threads. The remaining two bolts had failed with the threaded portion of the bolt retained by the propeller flange insert. The appearance of portions of the fracture surfaces appeared consistent with fatigue failure. Safety wire remnants were recovered with the bolts.

Airplane maintenance records indicated that an annual inspection was completed on January 14, 2013. The airframe and engine had accumulated about 32,055 hours total time, with about 14 hours since the annual inspection. The engine had accumulated about 412 hours since overhaul. The pilot informed Federal Aviation Administration inspectors that the propeller assembly had been removed and reinstalled during the most recent annual inspection. However, the maintenance logbook entry did not include a notation regarding the removal of the propeller.

Pilot Information

Certificate:	Private	Age:	79
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:	January 7, 2014
Occupational Pilot:	No	Last Flight Review or Equivalent:	October 24, 2012
Flight Time:	711 hours (Total, all aircraft), 711 hours (Total, this make and model), 711 hours (Pilot In Command, all aircraft), 1 hours (Last 90 days, all aircraft), 1 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	GRUMMAN AMERICAN AVN. CORP.	Registration:	N28578
Model/Series:	AA 5B	Aircraft Category:	Airplane
Year of Manufacture:	1978	Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	AA5B0693
Landing Gear Type:	Tricycle	Seats:	
Date/Type of Last Inspection:	January 14, 2014 Annual	Certified Max Gross Wt.:	2401 lbs
Time Since Last Inspection:	14 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	32055 Hrs as of last inspection	Engine Manufacturer:	LYCOMING
ELT:	Installed	Engine Model/Series:	O-360-A4K
Registered Owner:	Terry L Melton	Rated Power:	180 Horsepower
Operator:	Jack E Barnett	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	MWL,974 ft msl	Distance from Accident Site:	21 Nautical Miles
Observation Time:	14:53 Local	Direction from Accident Site:	270°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	7 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	260°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.29 inches Hg	Temperature/Dew Point:	11°C / -8°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Whitney, TX (F50)	Type of Flight Plan Filed:	None
Destination:	Whitney, TX (F50)	Type of Clearance:	None
Departure Time:	14:45 Local	Type of Airspace:	

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:	32.750785,-97.770935(est)

Administrative Information

Investigator In Charge (IIC):	Sorensen, Timothy
Additional Participating Persons:	Greg P Sheehan; FAA – North Texas Flight Standards; Irving, TX
Original Publish Date:	December 15, 2014
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=88703

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