



National Transportation Safety Board Aviation Accident Factual Report

Location:	Peachtree City, GA	Accident Number:	MIA03LA035
Date & Time:	01/01/2003, 1655 EST	Registration:	N559LJ
Aircraft:	Lonnie Johnson RV6A	Aircraft Damage:	Substantial
Defining Event:		Injuries:	1 Minor
Flight Conducted Under:	Part 91: General Aviation - Personal		

HISTORY OF FLIGHT

On January 1, 2003, about 1655 eastern standard time, a homebuilt RV6A, N559LJ, registered to a private individual, crashed approximately 715 feet south-southeast of the approach end of runway 31 at the Peachtree City Airport-Falcon Field, Peachtree City, Georgia. Visual meteorological conditions prevailed at the time and no flight plan was filed for the 14 CFR Part 91 personal flight from the Waycross-Ware County Airport, Waycross, Georgia, to the Peachtree City Airport-Falcon Field, Peachtree City, Georgia. The airplane was substantially damaged and the private-rated pilot, the sole occupant, sustained minor injuries. The flight originated about 1540 from the Waycross-Ware County Airport.

The pilot stated the fuel tanks were filled before departure; no fuel contamination was noted during the preflight. The flight departed and approximately 45 minutes into the flight, he repositioned the fuel selector to the right tank. The flight continued and approximately 15 minutes later, he noticed a slight rpm drop. He applied throttle input to compensate for the rpm decrease and switched to the UNICOM frequency. He elected to perform a practice localizer approach to runway 31 and after crossing the localizer, he turned on the auxiliary fuel pump, applied carburetor heat, then reduced power. At that time, the engine quit completely like a normal shutdown using the mixture control. He repositioned the fuel selector to the left tank which was unsuccessful in restoring engine power. He also turned off the auxiliary fuel pump, and turned it back on after engine power was not restored. Additionally, he removed and reapplied carburetor heat which was also unsuccessful in restoring engine power. Thereafter the propeller stopped and he established best glide airspeed of 75-80 miles-per-hour. After clearing a railroad embankment he turned left to avoid approach lights, and recognizing that he was unable to land on the runway, he lowered full flaps, and slowed to just above stall speed. The wheel pants of both main landing gears made contact with an elevated concrete sewer access, followed by ground contact approximately 20 feet later. The airplane came to rest inverted; the pilot evacuated the airplane by cutting a portion of the canopy with a survival tool.

A witness reported hearing the engine running rough and observed black smoke trailing the

airplane. The same witness reported that the engine stopped, ran for 5 seconds, then quit again. A second witness also heard the engine running rough, it then ran fine for a while, before it finally quit.

AIRCRAFT INFORMATION

The airplane was equipped with a Lycoming O-320-E2D engine, and a fixed pitch propeller. The airplane was not equipped with a primer, nor was it equipped with a carburetor temperature probe and/or gauge. The installed carburetor heat system consists of an approximate 5-inches long by two-inches diameter pipe listed in the Van's 2003 Accessory Catalog as "Carb Heat Muff" P/N "EA Carb Heat Muff", which is secured to the exhaust crossover pipe, a "Carb Heat Connector" P/N "Vent DL-07" which is attached forward of the air filter on the filtered air box, and a scat hose that connects the two. A control in the cockpit activates an alternate air door located on the filtered air box forward of the Carb Heat Muff inlet. With carburetor heat applied, air flows through the Carb Heat Muff into the filtered air box, through the air filter, then into the venturi of the carburetor.

METEOROLOGICAL INFORMATION

The temperature and dew point at 2,420 feet mean sea level for the Peachtree City Airport-Falcon Field area taken approximately 2 hours after the accident were each recorded to be 7 degrees Celsius, which equates to 44.6 degrees Fahrenheit.

Review of an icing probability chart revealed that at the above listed temperature and dew point, the conditions were favorable for serious icing at any power setting.

WRECKAGE AND IMPACT INFORMATION

Examination of the airplane by the FAA inspector revealed damage to the vertical and left horizontal stabilizer, rudder, nose gear, and bottom portion of the firewall. The fuel tank vent lines were checked and found to be clear of obstructions. Fuel was found in both wings; fuel was leaking from the right wing. Fuel samples taken from the right wing and the gascolator showed no contaminants. The fuel boost pump operated postaccident. The spark plugs and inside ends of both exhaust pipes were found sooted. The carburetor heat system was found operable post accident. The engine was started and operated only to idle power setting; vibration prevented operation at a higher power setting. The carburetor was removed for further examination.

TESTS AND RESEARCH

Bench testing of the carburetor at the manufacturer's facility with FAA oversight revealed the fuel flow rate at idle was .6 pounds-per-hour (pph) less than the specified amount, and at the four remaining test points, was flowing greater than the rich limit at all points. At the last test point which equates to full throttle, the carburetor was flowing 18.5 pph above the rich service

limit. Disassembly of the carburetor revealed a curved sliver of material adhering to the exterior surface of the fuel inlet screen. Additionally, the main metering nozzle was flow tested and found to be approximately 7 percent above the rich limit.

The pilot reported verbally that approximately 50 flight hours earlier, when he was taxiing to takeoff, the engine quit just like it did during the accident flight. The carburetor and engine driven fuel pump were replaced. The engine quit again in a similar fashion, and the auxiliary fuel pump and all fuel lines were replaced. Additionally, the fuel selector valve was disassembled and rebuilt.

Review of the engine logbook revealed that on September 8, 2002, an overhauled carburetor and a new engine driven fuel pump were installed. The engine had accumulated 54.5 hours since then at the time of the accident.

According to the General Manager of Van's Aircraft, Inc., "I checked with our engineering staff and we have never done any heat rise testing through any of the various [carburetor] heat systems that can be installed on an RV." He additionally stated "We currently offer an 8" sealed heat exchanger that can be used to supply heated intake air to the [carburetor]. We also offer a shorter [carburetor] heat exchanger that mounts on the crossover pipe directly above the alternate air door...It is about 5" in length."

Review of Section 11 of the builders manual titled, "Engine and Propeller Selection and Installation" revealed a subsection titled, "[Carburetor] and Cabin Heat Muffs." Review of that subsection revealed that each builder will have to evaluate his/her own installation based on the likelihood of carburetor ice in his/her intended operating environment.

Flight testing was performed with a RV6A airplane equipped with the same type of carburetor heat system as the accident airplane (approximate 5-inches long by 2-inches diameter pipe attached to the exhaust crossover pipe), same model carburetor as the accident airplane but with an installed temperature probe, and same model engine with slightly higher horsepower as the accident airplane. The testing revealed that at the flight test altitude of 5,500 feet with the engine operating at an estimated 75 percent power and carburetor heat applied, the temperature rose 1/2 degree Fahrenheit above the temperature with carburetor heat off.

ADDITIONAL INFORMATION

The airplane minus the retained carburetor was released to the airplane owner on November 13, 2003. The retained carburetor was released to the airplane owner on February 23, 2004.

Pilot Information

Certificate:	Private	Age:	70, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 3 Expired	Last FAA Medical Exam:	02/19/1999
Occupational Pilot:		Last Flight Review or Equivalent:	
Flight Time:	6565 hours (Total, all aircraft), 149 hours (Total, this make and model), 2 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Lonnie Johnson	Registration:	N559LJ
Model/Series:	RV6A	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	Yes
Airworthiness Certificate:	Experimental	Serial Number:	25559
Landing Gear Type:	Tricycle	Seats:	2
Date/Type of Last Inspection:	02/25/2002, Condition	Certified Max Gross Wt.:	1650 lbs
Time Since Last Inspection:	206.3 Hours	Engines:	1 Reciprocating
Airframe Total Time:	298.2 Hours at time of accident	Engine Manufacturer:	Lycoming
ELT:	Installed, activated, did not aid in locating accident	Engine Model/Series:	O-320-E2D
Registered Owner:	On file	Rated Power:	150 hp
Operator:	On file	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Dusk
Observation Facility, Elevation:	KFFC, 808 ft msl	Distance from Accident Site:	
Observation Time:	1653 EST	Direction from Accident Site:	
Lowest Cloud Condition:		Visibility	10 Miles
Lowest Ceiling:	Overcast / 2300 ft agl	Visibility (RVR):	
Wind Speed/Gusts:	5 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	270°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.82 inches Hg	Temperature/Dew Point:	11° C / 9° C
Precipitation and Obscuration:			
Departure Point:	Waycross, GA (KAYS)	Type of Flight Plan Filed:	None
Destination:	, GA (KFFC)	Type of Clearance:	None
Departure Time:	1540 EST	Type of Airspace:	Class G

Airport Information

Airport:	Peachtree City Airport (KFFC)	Runway Surface Type:	Unknown
Airport Elevation:	808 ft	Runway Surface Condition:	Unknown
Runway Used:		IFR Approach:	Localizer Only; Practice
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	Latitude, Longitude:	33.351111, -84.563889

Administrative Information

Investigator In Charge (IIC):	Timothy W Monville
Additional Participating Persons:	Thomas R Curran; FAA Flight Standards District Office; College Park, GA William D Shinn; FAA Flight Standards District Office; Renton, WA Peter Nielson; Precision Airmotive Corporation; Marysville, WA
Investigation Docket:	NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at pubinquiry@ntsb.gov , or at 800-877-6799. Dockets released after this date are available at http://dms.nts.gov/pubdms/ .