



National Transportation Safety Board

Aviation Accident Data Summary

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

Analysis

The flight departed with full fuel tanks from the Waycross-Ware County Airport, en route to the Peachtree City Airport. About 1 hour into the flight the pilot noticed a slight rpm drop, he applied throttle to compensate for the rpm decrease. The pilot started the pre-descent procedures; he turned the auxiliary fuel pump on, applied carburetor heat, then reduced power, at this time the engine quit completely. The pilot repositioned the fuel selector, switched the auxiliary fuel pump off and on, turned carburetor heat on and off, all actions were unsuccessful in restoring engine power. The pilot established best glide airspeed, lowered full flaps, and while descending, the airplane contacted a raised sewer access. The airplane then impacted the ground and came to rest inverted. A witness reported observing black smoke trailing the airplane and heard the engine running rough. Examination of the airplane following recovery by an FAA inspector revealed the fuel tank vent lines were clear of obstructions. There was fuel found in the left wing and the right fuel tank was leaking fuel, the fuel boost pump operated electrically post accident. Fuel samples from the right wing and gascolator showed no fuel contamination. All spark plugs and inside ends of both exhaust pipes were found sooted. The carburetor heat system which consists of a 5 inches long by 2 inches in diameter pipe secured to the exhaust crossover pipe, a "Carb Heat Connector" which is secured to the filtered air box forward of the air filter, and a scat hose that connects the two. Additionally, a control in the cockpit activates an alternate air door located on the filtered air box forward of the carb heat muff inlet. The carburetor heat was able to function post accident and the engine was run to idle power setting; damage precluded operation at a higher rpm setting. Bench testing of the carburetor by the manufacturer with FAA oversight revealed the carburetor was not within service limits, at comparable to idle power settings the fuel flow in terms of pounds-per-hour (pph) was 0.6 pph below service limits. At the remaining four test points the fuel flow in pph was greater than the established rich limits. At the last test point which equated to full throttle, the fuel flow was 18.5 pph above the established rich service 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. The overhauled carburetor had been operated 54.5 hours since installation at the time of the accident. The temperature and dew point at Peachtree city, two hours past the time of the accident, indicates serious carburetor icing at any power setting. Flight testing of a RV6A airplane equipped with the same carburetor heat system, same model engine, and same model carburetor as the accident airplane but with a temperature probe revealed that with the engine operating at 75 percent power and carburetor heat applied, the temperature rise was 1/2 degree Fahrenheit above the temperature with carburetor heat off. According to the general manager of Van's Aircraft, they offer 2 different types of carburetor heat systems, and they have not done any heat rise testing on any of the various carburetor heat systems that can be installed on RV type airplanes. With respect to carburetor heat muffs, a section of the builders manual states that each builder is responsible for evaluating his/her own installation based on the likelihood of carburetor ice in his/her

intended operating environment.

Probable Cause

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The failure of the pilot to activate carburetor heat control during cruise flight after experiencing a loss of engine rpm, inadequate carburetor heat system by the builder, and the unsuitable terrain encountered by the pilot-in-command during the forced landing following the total loss of engine power. A factor in the accident was the weather conditions (temperature and dew point) which were susceptible to carburetor icing during cruise flight and descent.

Findings

Occurrence #1: LOSS OF ENGINE POWER(PARTIAL) - NONMECHANICAL
Phase of Operation: CRUISE

Findings

1. (F) WEATHER CONDITION - CARBURETOR ICING CONDITIONS
 2. (C) CARBURETOR HEAT - NOT SELECTED - PILOT IN COMMAND
 3. THROTTLE/POWER CONTROL - ACTIVATED - PILOT IN COMMAND
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Occurrence #2: LOSS OF ENGINE POWER(TOTAL) - NONMECHANICAL
Phase of Operation: DESCENT - NORMAL

Findings

4. (F) WEATHER CONDITION - CARBURETOR ICING CONDITIONS
 5. CARBURETOR HEAT - ACTIVATED - PILOT IN COMMAND
 6. (C) AIRCRAFT/EQUIPMENT INADEQUATE - OWNER/BUILDER
 7. EMERGENCY PROCEDURE - PERFORMED - PILOT IN COMMAND
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Occurrence #3: FORCED LANDING
Phase of Operation: DESCENT - EMERGENCY

Occurrence #4: IN FLIGHT COLLISION WITH OBJECT
Phase of Operation: EMERGENCY DESCENT/LANDING

Findings

8. OBJECT - OTHER
 9. (C) UNSUITABLE TERRAIN OR TAKEOFF/LANDING/TAXI AREA - ENCOUNTERED - PILOT IN COMMAND
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Occurrence #5: NOSE OVER
Phase of Operation: EMERGENCY DESCENT/LANDING

Pilot Information

Certificate:	Private	Age:	70
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Instrument Rating(s):	Airplane
Other Aircraft Rating(s):	None	Instructor Rating(s):	None
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	Engines:	1 Reciprocating
Operator:	On file	Engine Manufacturer:	Lycoming
Operating Certificate(s) Held:	None	Engine Model/Series:	O-320-E2D
Flight Conducted Under:	Part 91: General Aviation - Personal		

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Dusk
Observation Facility, Elevation:	KFFC, 808 ft msl	Weather Information Source:	Weather Observation Facility
Lowest Ceiling:	Overcast / 2300 ft agl	Wind Speed/Gusts, Direction:	5 knots / , 270°
Temperature:	11 °C	Visibility	10 Miles
Precipitation and Obscuration:			
Departure Point:	Waycross, GA (KAYS)	Destination:	, GA (KFFC)

Airport Information

Airport:	Peachtree City Airport (KFFC)	Runway Surface Type:	Unknown
Runway Used:		Runway Surface Condition:	Unknown
Runway Length/Width:			

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
Latitude, Longitude:	33.351111, -84.563889		

Administrative Information

Investigator In Charge (IIC): Timothy W Monville

Adopted Date: 06/30/2004

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 pubinq@ntsb.gov, or at 800-877-6799. Dockets released after this date are available at <http://dms.nts.gov/pubdms/>.

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