		NTSB ID: ERA12FA561		Aircraft Registration Number: N517DG	
		Occurrence Date: 09/13/2012		Most Critical Injury: Fatal	
		Occurrence Type: Accident		Investigated By: NTSB	
Location/Time					
Nearest City/Place Cumming	State GA	Zip Code 30041	Local Time 1941	Time Zone EDT	
Airport Proximity: Off Airport/Airstrip		Distance From Landing Facility:			
Aircraft Information Summary					
Aircraft Manufacturer HALL DON H		Model/Series RV-7		Type of Aircraft Airplane	
Revenue Sightseeing Flight: No			Air Medical Transport Flight: No		
Narrative					
<p>Brief narrative statement of facts, conditions and circumstances pertinent to the accident/incident:</p> <p>*** Note: NTSB investigators either traveled in support of this investigation or conducted a significant amount of investigative work without any travel, and used data obtained from various sources to prepare this aircraft accident report. ***</p> <p>HISTORY OF FLIGHT</p> <p>On September 13, 2012, about 1941 eastern daylight time, a Vans RV-7, N517DG, was substantially damaged following a collision with terrain at Cumming, Georgia. The private pilot and one passenger were fatally injured. The airplane was registered to a corporation and was operated by the pilot under the provisions of 14 Code of Federal Regulations Part 91 as a personal flight. Day, visual meteorological conditions prevailed and no flight plan was filed. The local flight originated at Stoney Point Airfield (6GA0), Cumming, Georgia, about 1927.</p> <p>A review of recorded radar data revealed that the airplane departed 6GA0 and proceeded to the northwest. About three minutes into the flight, a "figure 8" pattern was flown as the airplane climbed to about 2,000 feet above mean sea level (msl). The airplane then proceeded in an east-southeasterly direction for about 9 nautical miles (nm) before crossing the shoreline of Lake Lanier. The airplane then turned south-southwest and proceeded about 6 nm before commencing a left turn to the north. The aircraft reached a peak altitude of about 4,200 feet msl about 7 miles south of the accident site. While continuing in a northerly direction, the airplane descended from 3,500 feet at 19:39:57 (HH:MM:SS) to 1,600 feet at 19:40:57 (the last recorded radar return).</p> <p>Witness observed the airplane maneuvering in the area prior to the accident. Several witnesses reported variations in engine noise shortly before the sound of the ground impact. Another witness reported that the pilot appeared to be performing an aerobatic maneuver prior to the crash. He also stated that the airplane "spun wing to wing down" and disappeared behind trees.</p> <p>PERSONNEL INFORMATION</p> <p>The pilot held a private pilot certificate with ratings for airplane single-engine land, airplane multiengine land, and instrument airplane. He reported a total flight experience of 730 hours on his latest third-class medical certificate application, dated January 5, 2011.</p> <p>A review of the pilot's most recent personal logbook revealed a total logged flight time of about 784 hours, including about 660 hours as pilot-in-command.</p> <p>AIRCRAFT INFORMATION</p> <p>The airplane was a single engine, low wing, fixed tail wheel airplane, serial number 72314. It was powered by an experimental Aero Sport Power Ltd.</p>					
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FACTUAL REPORT

AVIATION

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Narrative (Continued)

IO-360-B1B engine rated at 180 horsepower at 2,700 rpm. According to the aircraft maintenance records, the last condition inspection on the airframe and engine was performed on April 8, 2012, at a total aircraft time of 230.5 hours. The pilot was the listed builder of the airplane and was a certificated experimental aircraft builder.

METEOROLOGICAL INFORMATION

The 1953 surface weather observation for Dekalb-Peachtree Airport (PDK), Atlanta, Georgia, located about 23 miles southwest of the accident site, reported wind from 100 degrees at 3 knots, visibility 10 miles or better, sky clear, temperature 23 degrees C, dew point 14 degrees C, and altimeter setting 30.23 inches of mercury (inHg).

WRECKAGE AND IMPACT INFORMATION

The wreckage was found upright, on a heading of 360 degrees. All structural components of the airframe were accounted for at the accident site. There was no fire. Other than the area of initial ground impact, there was no linear ground scar. The engine propeller separated at the crankshaft and was partially embedded in the ground. One propeller blade exhibited blade twisting, a forward bend, leading edge damage, and chord-wise surface scratches.

Flight control continuity was established from the ailerons and rudder to the cockpit controls. Elevator continuity was established with the exception of an elevator control tie rod connection, which was fractured and exhibited signatures consistent with bending overload.

The engine mixture and propeller controls were found in the forward positions and the throttle was found in the retarded position. Both fuel tanks were breached and there was evidence of spilled fuel under the wreckage.

The engine was removed from the firewall and examined at the accident site. All rocker covers and spark plugs were removed. The spark plugs displayed an extended service life and a color consistent with normal combustion when compared to a Champion Spark Plug wear guide. The engine was manually rotated; suction and compression were observed on all cylinders. The valve rocker arms were observed rotating in a normal manner. The accessory gears were observed rotating. All cylinders were examined using a lighted bore scope; no defects were observed. The fuel injector nozzles were clear and unobstructed. Nothing was observed during the course of the examination that would have precluded the engine from making rated power prior to impact.

MEDICAL AND PATHOLOGICAL INFORMATION

A postmortem examination of the pilot was performed by the Georgia Bureau of Investigation, Division of Forensic Sciences, on September 14, 2012. The autopsy report noted the cause of death as "Blunt force trauma of head, torso, and extremities." The manner of death was "Accident."

Forensic toxicology testing was performed on specimens of the pilot by the Federal Aviation Administration (FAA) Bioaeronautical Sciences Research Laboratory (CAMI), Oklahoma City, Oklahoma. The CAMI toxicology report indicated negative for carbon monoxide, cyanide, and ethanol. Naproxen was detected in the urine. Naproxen (Naprosyn®, Anaprox®, Aleve®) is an over-the-counter Non Steroidal Anti-Inflammatory Drug (NSAID). It is used as an anti-inflammatory medication to treat aches and pains, as an antipyretic to reduce fever.

TESTS AND RESEARCH

The aircraft was equipped with an Advanced Flight Systems Inc. AF-3500EE multifunction display that presented the pilot with aircraft attitude, altitude, heading, navigation, moving map, airway and approach databases. The EE designation indicated that the unit also had engine monitoring and fuel status capabilities.

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Occurrence Type: Accident

Narrative (Continued)

The AS-3500EE could record dynamic flight information on an internal flash non-volatile memory at a pilot selectable interval. The unit recorded approximately 51 discrete data parameters to the internal non-volatile memory.

The unit was forwarded to the NTSB Vehicle Recorders Laboratory in Washington, DC for hardware inspection and data readout.

The time in the AF-3500EE was set by the operator, and maintained by an internal lithium-ion battery between power cycles. When connected to another Advanced Flight Systems Inc. device, discrete data parameters were shared and recorded, except for time.

Upon arrival at the Vehicle Recorder Laboratory, an exterior examination revealed the unit had sustained minor impact damage. An internal examination revealed no significant damage. External power was applied to the unit and information was extracted normally, without difficulty.

The unit contained 266 data points between September 5, 2012 and September 13, 2012. The date and time accuracy could not be verified since the clock was set by the operator.

The data revealed that the aircraft departed 6GA0 and followed a flight path consistent with the radar track described in the "History of Flight" section of this report. Times stated in the following paragraphs were estimated by comparing the AF-3500EE flight track to the ATC radar data. The times recorded on the AF-3500EE were about 26:48 (MM:SS) earlier than radar data.


At about 19:37:54, the manifold pressure decreased from 26 inHg to about 11 inHg, coincident with a reduction in fuel flow and reduction in airspeed. The altitude began to decrease at about 19:38:18, and continued to decrease until the end of the recording. About 19:39:09, the manifold pressure further reduced, and the oil pressure began to reduce from 72 psi to about 55 psi by about 1940.


About 23 seconds before the end of the recording, the manifold pressure, fuel flow, oil pressure, and airspeed increased. During this 23 second period, the altitude decreased from 3,030 feet to a last recorded value of 1,290 feet at 19:40:57.

Additional engine parameters showed that, about 19:38:06, exhaust gas temperature (EGT) values increased for about 1 minute. After 19:38:06, cylinder head temperature (CHT) decreased until 19:40:46, when CHT started to increase along with the manifold pressure and fuel flow until the end of the recording.

A review of recorded airspeed data revealed that, about 19:39:09, the airplane was at 101 knots at 3,760 feet indicated altitude. The airspeed then gradually decreased until 19:40:41, when the airplane was at 59 knots and 2,920 feet. Airspeed then increased, reaching 119 knots at 19:40:51. The airplane also descended to 1,990 feet at that time. The last recorded airspeed parameter was at 19:40:57, when the airplane was at 81 knots and 1,290 feet.

Updated on Jun 4 2013 12:04PM

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		Occurrence Date: 09/13/2012			
		Occurrence Type: Accident			
Landing Facility/Approach Information					
Airport Name	Airport ID:	Airport Elevation Ft. MSL	Runway Used N/A	Runway Length	Runway Width
Runway Surface Type:					
Runway Surface Condition:					
Approach/Arrival Flown: NONE					
VFR Approach/Landing: None					
Aircraft Information					
Aircraft Manufacturer HALL DON H		Model/Series RV-7		Serial Number 72314	
Airworthiness Certificate(s): Experimental (Special)					
Landing Gear Type: Tailwheel					
Amateur Built Acft? Yes	Number of Seats: 2	Certified Max Gross Wt. 1800 LBS	Number of Engines: 1		
Engine Type: Reciprocating	Engine Manufacturer: Aero Sport Power Ltd	Model/Series: IO-360-B1B	Rated Power: 180 HP		
- Aircraft Inspection Information					
Type of Last Inspection Conditional	Date of Last Inspection 04/2012	Time Since Last Inspection Hours	Airframe Total Time 230 Hours		
- Emergency Locator Transmitter (ELT) Information					
ELT Installed?/Type Yes / Unknown	ELT Operated? Yes	ELT Aided in Locating Accident Site? No			
Owner/Operator Information					
Registered Aircraft Owner DONKA.NET INC		Street Address 704 N KING ST STE 500			
		City WILMINGTON	State DE	Zip Code 19801-3535	
Operator of Aircraft Don H. Hall		Street Address			
		City Cumming	State GA	Zip Code 30040	
Operator Does Business As:			Operator Designator Code:		
- Type of U.S. Certificate(s) Held: None					
Air Carrier Operating Certificate(s):					
Operating Certificate:			Operator Certificate:		
Regulation Flight Conducted Under: Part 91: General Aviation					
Type of Flight Operation Conducted: Personal					

 <p>National Transportation Safety Board FACTUAL REPORT AVIATION</p>	NTSB ID: ERA12FA561
	Occurrence Date: 09/13/2012
	Occurrence Type: Accident

First Pilot Information

Name On File	City On File	State On File	Date of Birth On File	Age 45
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Sex: M	Seat Occupied: Left	Occupational Pilot? No	Certificate Number: On File
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Certificate(s): Private

Airplane Rating(s): Multi-engine Land; Single-engine Land

Rotorcraft/Glider/LTA: None

Instrument Rating(s): Airplane

Instructor Rating(s): None

Current Biennial Flight Review?

Medical Cert.: Class 3	Medical Cert. Status: Without Waivers/Limitations	Date of Last Medical Exam: 01/2011
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- Flight Time Matrix	All A/C	This Make and Model	Airplane Single Engine	Airplane Multi-Engine	Night	Instrument		Rotorcraft	Glider	Lighter Than Air
						Actual	Simulated			
Total Time	784									
Pilot In Command(PIC)	660									
Instructor										
Instruction Received										
Last 90 Days										
Last 30 Days										
Last 24 Hours										

Seatbelt Used? Yes	Shoulder Harness Used? Yes	Toxicology Performed? Yes	Second Pilot? No
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Flight Plan/Itinerary

Type of Flight Plan Filed: None

Departure Point Cumming	State GA	Airport Identifier 6GA0	Departure Time 1927	Time Zone EDT
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Destination Same as Accident/Incident Location	State	Airport Identifier	
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Type of Clearance: None

Type of Airspace:

Weather Information

UAT/CA Source of Wx Information:
Unknown

 <p>National Transportation Safety Board FACTUAL REPORT AVIATION</p>	NTSB ID: ERA12FA561
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Weather Information

WOF ID	Observation Time	Time Zone	WOF Elevation	WOF Distance From Accident Site	Direction From Accident Site
PDK	1753	EDT	1003 Ft. MSL	16 NM	210 Deg. Mag.
Sky/Lowest Cloud Condition: Clear			Ft. AGL	Condition of Light: Day	
Lowest Ceiling: None		Ft. AGL	Visibility: 10	SM	Altimeter: 30.23 "Hg
Temperature: 23 °C	Dew Point: 14 °C	Weather Conditions at Accident Site: Visual Conditions			
Wind Direction: 100	Wind Speed: 3	Wind Gusts:			
Visibility (RVR): Ft.	Visibility (RVV) SM				
Precip and/or Obscuration: No Obscuration; No Precipitation					

Accident Information

Aircraft Damage: Substantial	Aircraft Fire: None	Aircraft Explosion: None
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- Injury Summary Matrix	Fatal	Serious	Minor	None	TOTAL
First Pilot	1				1
Second Pilot					
Student Pilot					
Flight Instructor					
Check Pilot					
Flight Engineer					
Cabin Attendants					
Other Crew					
Passengers	1				1
- TOTAL ABOARD -	2				2
Other Ground					
- GRAND TOTAL -	2				2

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FACTUAL REPORT

AVIATION



NTSB ID: ERA12FA561

Occurrence Date: 09/13/2012

Occurrence Type: Accident

Administrative Information

Investigator-In-Charge (IIC)

Ralph E. Hicks

Additional Persons Participating in This Accident/Incident Investigation:

Scott Marshall
FAA/FSDO
Atlanta, GA

James Childers
Lycoming Engines
Williamsport, PA