National Transportation Safety Board
Aviation Accident Factual Report

Location:	Bon Aqua, TN	**Accident Number:**	ERA15FA336
Date & Time:	09/02/2015, 1545 CDT	**Registration:**	N216LA
Aircraft:	HENDERSON W A/JOHNSON W L RV 6A	**Aircraft Damage:**	Substantial
Defining Event:	Miscellaneous/other	**Injuries:**	1 Fatal
Flight Conducted Under:	Part 91: General Aviation - Personal		

On September 2, 2015, about 1545 central daylight time, an experimental amateur-built RV-6A, N216LA, was substantially damaged when it impacted wooded terrain near Bon Aqua, Tennessee. The commercial pilot was fatally injured. The airplane was registered to Chelsea Aviation Enterprises LLC and operated by the commercial pilot as a personal flight conducted under the provisions of 14 Code of Federal Regulations Part 91. Visual meteorological conditions prevailed and no flight plan was filed for the planned flight to Shelby County Airport (EET), Alabaster, Alabama. The flight originated from Bomar Field (SYI), Shelbyville, Tennessee, about 1400.

The airplane was fueled with 12 gallons of 100 low-lead aviation gasoline prior to departing from SYI. According to information from the Federal Aviation Administration (FAA), the pilot was receiving flight following services from air traffic control (ATC). About 20 minutes after departure, while the flight was in radio and radar contact with Huntsville Approach, the pilot stopped responding to ATC as the airplane reversed course, from south to north. The airplane continued north, climbed from 6,500 feet to 9,000 feet mean sea level and completed two left circuits, before descending rapidly into terrain.

Pilot Information

Certificate:	Commercial	**Age:**	66, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	Glider	**Restraint Used:**	4-point
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	Glider	**Toxicology Performed:**	Yes
Medical Certification:	Class 2 With Waivers/Limitations	**Last FAA Medical Exam:**	06/10/2015
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	04/24/2015
Flight Time:	1682 hours (Total, all aircraft), 100 hours (Total, this make and model), 7 hours (Last 90 days, all aircraft), 3 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

The pilot held a commercial pilot certificate, with ratings for airplane single-engine land, airplane multiengine land, instrument airplane and glider. He also held a flight instructor certificate with a rating for glider. His most recent FAA second-class medical certificate was issued on June 10, 2015. At that time, the pilot did not report any cardiac issues and according to his wife, the pilot was not aware of any issues. He reported a total flight experience of 1,672 hours at that time. Review of the pilot's logbook revealed that he had accumulated about 1,682 total flight hours at the time of the accident; of which, 7 hours and 3 hours were flown during the 90-day and 30-day periods preceding the accident, respectively.

Aircraft and Owner/Operator Information

Aircraft Make:	HENDERSON W A/JOHNSON W L	**Registration:**	N216LA
Model/Series:	RV 6A	**Aircraft Category:**	Airplane
Year of Manufacture:	2005	**Amateur Built:**	Yes
Airworthiness Certificate:	Experimental	**Serial Number:**	60527
Landing Gear Type:	Tricycle	**Seats:**	2
Date/Type of Last Inspection:	04/12/2015, Condition	**Certified Max Gross Wt.:**	1650 lbs
Time Since Last Inspection:	14 Hours	**Engines:**	1 Reciprocating
Airframe Total Time:	147 Hours as of last inspection	**Engine Manufacturer:**	Aero Sport Power Ltd
ELT:	C91A installed, not activated	**Engine Model/Series:**	O-360-A2A
Registered Owner:	CHELSEA AVIATION ENTERPRISES LLC	**Rated Power:**	180 hp
Operator:	On file	**Operating Certificate(s) Held:**	None

The two-seat, low-wing, fixed tricycle-gear airplane, was assembled from a kit and issued an experimental airworthiness certificate in 2005. It was powered by an Aero Sport Power O-360-A2A, 180-horsepower, experimental engine, equipped with a Sensenich two-blade, fixed-pitch propeller. Review of maintenance records revealed that the airplane's most recent condition inspection was completed on April 12, 2015. At that time, the airplane and engine had accumulated about 147 hours since new. The airplane flew approximately 14 hours from the time of the most recent inspection, until the accident.

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	**Condition of Light:**	Day
Observation Facility, Elevation:	MRC, 681 ft msl	**Distance from Accident Site:**	20 Nautical Miles
Observation Time:	1555 CDT	**Direction from Accident Site:**	170°
Lowest Cloud Condition:	Clear	**Visibility**	10 Miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	3 knots /	**Turbulence Type Forecast/Actual:**	/ None
Wind Direction:	190°	**Turbulence Severity Forecast/Actual:**	/ N/A
Altimeter Setting:	30.03 inches Hg	**Temperature/Dew Point:**	32°C / 21°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Shelbyville, TN (SYI)	**Type of Flight Plan Filed:**	None
Destination:	Alabaster, AL (EET)	**Type of Clearance:**	VFR Flight Following
Departure Time:	1400 CDT	**Type of Airspace:**	

Maury County Airport (MRC), Columbia, Tennessee, was located about 20 miles south of the accident site. The recorded weather at MRC, at 1555, included wind from 190 degrees at 3 knots, clear sky, and visibility 10 miles.

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Substantial
Passenger Injuries:	N/A	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Fatal	**Latitude, Longitude:**	35.935000, -87.252500

A debris path was observed, beginning with several freshly cut tree branches, extending on a magnetic course about 260 degrees for 110 feet to the main wreckage. Sections of the outboard right wing were located along the beginning of the debris path. The right flap and right aileron separated from the right wing, but the left flap and left aileron remained partially attached to the left wing. The left flap was extended beyond its full travel-point and the left aileron was hanging from one hinge. The empennage remained intact and exhibited less damage. Control continuity was confirmed from the elevator and rudder to the pilot's control stick and rudder pedals in the cockpit. Continuity was also confirmed from the pilot's control stick to the point of aileron separation on both wings. Additionally, the elevator trim cable remained attached from the elevator trim tab to the cockpit.

The cockpit was crushed, but the pilot's seat and four-point harness remained intact. The magneto switch remained in the both position and the fuel selector was positioned to the right main fuel tank. The throttle, mixture, and carburetor heat control levers were in the full forward position. The engine remained partially attached the fuselage. The two-blade propeller separated from the hub. Both propeller blades exhibited chordwise scratching. One blade was s-bent while the other was bent aft.

The engine was separated from the airframe for examination. The top spark plugs were removed; the electrodes were intact and light gray in color, except for the No. 3 top spark plug that was impact damaged. The valve covers were removed and oil was noted throughout the engine. The crankshaft was rotated via an accessory gear drive. Camshaft, crankshaft, and valve train continuity were confirmed and thumb compression was attained on all cylinders. The oil screen and oil filter was absent of contamination. The carburetor had separated from the engine during impact. Its floats and needle were intact and the valve was mid-range. Some fuel was recovered from the engine-driven fuel pump, consistent with 100 low-lead aviation gasoline. Both magnetos produced spark at all leads when rotated by hand.

Medical And Pathological Information

An autopsy was performed on the pilot on September 3, 2015, by the Hickman County Medical Examiner, Nashville, TN. The cause of death was multiple blunt force injuries and the manner of death was accident. Contributing to the death were hypertensive and atherosclerotic heart disease.

The autopsy also revealed that there was up to 90 percent stenosis in the right and left anterior descending coronary arteries with thrombi past the area of stenosis in both. The remainder of the coronary arteries were diffusely 40 percent stenosed. In addition, there were multiple white, fibrous plaques within the myocardium of the left ventricle and the interventricular septum indicating scarring from previous heart attacks. Finally, there were two areas of erythema and wall softening: on the medial-most aspect of the interventricular septum and on the inner aspect of the posterior aspect of the left ventricle. On the microscopic evaluation, there were dense areas of fibrosis and collagen deposition; hemorrhage into myocardium; wavy myocytes with enlarged, pyknotic nuclei; edema; and inflammatory infiltrates into the myocardium. These indicate previous scarring and recent damage from heart attacks.

Toxicological testing was performed on the pilot by the FAA Bioaeronautical Science Research Laboratory, Oklahoma City, Oklahoma. The results were negative for carbon monoxide, alcohol, and drugs.

Administrative Information

Investigator In Charge (IIC):	Robert J Gretz
Additional Participating Persons:	Rocky Davidson; FAA/FSDO; Nashville, TN James M Childers; Lycoming Engines; Williamsport, PA
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	http://dms.ntsb.gov/pubdms/search/dockList.cfm?mKey=91910