National Transportation Safety Board
Aviation Accident Factual Report

Location:	Sebring, FL	**Accident Number:**	ERA16FA297
Date & Time:	08/24/2016, 0630 EDT	**Registration:**	N379RV
Aircraft:	HEBERLEIN RONALD VANS RV 9A	**Aircraft Damage:**	Destroyed
Defining Event:	Controlled flight into terr/obj (CFIT)	**Injuries:**	1 Fatal
Flight Conducted Under:	Part 91: General Aviation - Personal		

On August 24, 2016, about 0630 eastern daylight time, an experimental amateur-built RV-9 airplane, N379RV, was destroyed when it collided with terrain near Sebring, Florida. The commercial pilot was fatally injured. The airplane was registered to Saflight LLC and operated by the pilot under the provisions of Title 14 *Code of Federal Regulations* Part 91. Visual meteorological conditions prevailed, and no flight plan was filed for the personal cross-country flight, which departed Sebring Municipal Airport (SEF), Sebring, Florida, at 0623 and was destined for Greater Portsmouth Regional Airport (PMH), Portsmouth, Ohio.

According to the pilot's spouse, the pilot was traveling to a class reunion in Portsmouth. A review of SEF airport security camera video showed an airplane departing at 0623 from runway 14. At the time of departure, it was dark, and the registration number of the airplane could not be confirmed. Shortly thereafter, a witness southeast of the airport heard a low flying airplane followed by a loud crashing sound. He subsequently contacted local authorities and advised them that he believed an airplane may have crashed somewhere near his farm. A search ensued, and the airplane was located about 4 nautical miles northeast of SEF.

Pilot Information

Certificate:	Commercial	**Age:**	76, Male
Airplane Rating(s):	Single-engine Land	**Seat Occupied:**	Unknown
Other Aircraft Rating(s):	None	**Restraint Used:**	3-point
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	Class 3 Without Waivers/Limitations	**Last FAA Medical Exam:**	05/04/2015
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	(Estimated) 920 hours (Total, all aircraft)		

The 76-year-old pilot held a commercial pilot certificate with ratings for airplane single-engine land and instrument airplane. On his FAA second-class medical certificate application, dated May 4, 2015, he reported a total flight experience of 920 hours, including 2 hours during the last 6 months. The medical certificate indicated no restrictions. The pilot's logbook was not available for review during the investigation.

Aircraft and Owner/Operator Information

Aircraft Make:	HEBERLEIN RONALD	**Registration:**	N379RV
Model/Series:	VANS RV 9A	**Aircraft Category:**	Airplane
Year of Manufacture:	2005	**Amateur Built:**	Yes
Airworthiness Certificate:	Experimental	**Serial Number:**	90965
Landing Gear Type:	Tricycle	**Seats:**	2
Date/Type of Last Inspection:	Condition	**Certified Max Gross Wt.:**	1750 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:		**Engine Manufacturer:**	Lycoming
ELT:	C91A installed, not activated	**Engine Model/Series:**	O-320-D2J
Registered Owner:	On file	**Rated Power:**	160 hp
Operator:	On file	**Operating Certificate(s) Held:**	None

The airplane was manufactured in 2005. It was powered by a 160-horsepower Lycoming O-320-D2J engine equipped with a Sensenich two-bladed fixed-pitch propeller. The most recent condition inspection was completed on April 1, 2016.

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	**Condition of Light:**	Dawn
Observation Facility, Elevation:	SEF, 61 ft msl	**Distance from Accident Site:**	4 Nautical Miles
Observation Time:	0559 EDT	**Direction from Accident Site:**	114°
Lowest Cloud Condition:	Scattered / 1700 ft agl	**Visibility**	7 Miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	Calm /	**Turbulence Type Forecast/Actual:**	/ None
Wind Direction:		**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.1 inches Hg	**Temperature/Dew Point:**	
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Sebring, FL (SEF)	**Type of Flight Plan Filed:**	None
Destination:	Portsmouth, OH (PMH)	**Type of Clearance:**	None
Departure Time:	0623 EDT	**Type of Airspace:**	Class G

The recorded weather at SEF, at 0559, included wind from 360° at 5 knots, 7 statute miles visibility, scattered clouds at 1,700 ft, and an altimeter setting of 30.10 inches of mercury. Temperature and dew point were not reported. According to U.S. Naval Observatory Sun and Moon Data, the beginning of local civil twilight was 0637 and local sunrise was at 0701.

Airport Information

Airport:	Sebring (SEF)	**Runway Surface Type:**	Asphalt
Airport Elevation:	61 ft	**Runway Surface Condition:**	Unknown
Runway Used:	N/A	**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	N/A	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Fatal	**Latitude, Longitude:**	27.486111, -81.283333 (est)

Examination of the accident site revealed a group of four ground scars that were consistent with impact of the three landing gear and the wing leading edge. The 250-ft-long wreckage path extended beyond the ground scars on a magnetic heading of 030°, continued through a shed, and ended at the main wreckage. Fragmented pieces of the airplane's wings, fuselage, and engine parts were distributed along the wreckage path. All flight control surfaces were accounted for at the accident site. Flight control cables and push-pull tubes were fragmented and found along the wreckage path. The instrument panel was destroyed. The cockpit, fuselage, empennage, and the inboard sections of the wings were crushed.

The engine was broken away from its mounts and displayed significant impact damage. The propeller was separated from the engine, and the crankshaft flange was bent. The forward portion of the oil sump was fragmented, and the oil sump cavity contained grass and dirt. A small amount of oil drained from the engine as it was disassembled. No debris was noted in the oil filter or the oil suction screen.

The carburetor and oil filter adapter were impact-separated from the engine and observed among the recovered wreckage. The starter and alternator were impact-separated and not observed. The intake and exhaust tubing were impact-damaged. The bent crankshaft flange allowed the engine to rotate only about 350° before the flange contacted the crankcase. Compression was observed from three cylinders, and valve action was observed from all valve rockers. The No. 1 and No. 3 cylinders were removed, and continuity of the crankshaft and camshaft was observed by visual inspection.

The engine-driven fuel pump remained attached to the engine and was removed for examination. When actuated by hand, the fuel pump produced pressure at the outlet port. The fuel pump was partially disassembled, and no damage was noted to the valves or rubber diaphragms. The airframe fuel strainer was partially disassembled, and no debris was noted in the fuel screen.
The engine ignition harness was destroyed. Both magnetos remained attached to the engine and produced spark from all electrode towers when removed and rotated by hand. The top sparkplugs were removed, and the electrodes exhibited gray coloration.

Examination of the propeller revealed that one propeller blade exhibited leading edge paint abrasion and slight torsional twisting toward the blade face. The other blade exhibited paint abrasion to the outboard portion of the blade, forward curving of the outboard portion of the blade, and torsional twisting.

During examination of the airframe and the engine, no anomalies were noted that would have precluded normal operation.

Medical And Pathological Information

The Office of the District Medical Examiner, Winter Haven, Florida, performed an autopsy on the pilot and determined that the cause of death was multiple blunt force traumatic injuries. The autopsy documented moderate-to-severe coronary artery disease; specifically, the left anterior descending coronary artery had severe narrowing with a focal pinpoint coronary lumen. No areas of hemorrhage, fibrosis, or hyperemia were identified in the cardiac muscle.

The Federal Aviation Administration's Bioaeronautical Sciences Research Laboratory, Oklahoma City, Oklahoma, performed forensic toxicology on specimens from the pilot with positive results for atorvastatin, chlorpheniramine, diphenhydramine, donepezil and terazosin. Due to limited specimens, blood drug levels were not available.

Atorvastatin is a cholesterol-lowering medicine that is generally not considered impairing. Terazosin is used to treat benign prostatic hyperplasia and high blood pressure; it is generally not considered impairing.

Chlorpheniramine is a sedating antihistamine available over the counter in many cold, cough, and allergy preparations. It carries the following warning: "May impair mental and/or physical ability required for the performance of potentially hazardous tasks (e.g., driving, operating heavy machinery)."

Diphenhydramine is a potentially impairing sedating antihistamine used to treat allergy symptoms and as a sleep aid. It carries the same warning as chlorpheniramine. Compared to other antihistamines, diphenhydramine causes marked sedation; it is also classed as a central nervous system depressant. Altered mood and impaired cognitive and psychomotor performance may also be observed.

Donepezil, also called Aricept, is prescribed for the treatment of dementia caused by Alzheimer's disease. The medication is generally not considered to be impairing. However, the cognitive decline associated with Alzheimer's disease is generally considered impairing, and an aviation medical examiner cannot certify an airman with this condition.

Review of the pilot's FAA medical records revealed that he had reported hypothyroid disease treated with levothyroxine, high blood pressure treated with losartan and hydrochlorothiazide; an enlarged prostate treated with terazosin; and gastric reflux disease treated with omeprazole and ranitidine to the FAA. Review of the pilot's personal medical records revealed that on June 7, 2016, he received a neurology evaluation for memory loss and visuospatial dysfunction, was diagnosed with early dementia of the Alzheimer's type, and was prescribed donepezil.

Administrative Information

Investigator In Charge (IIC):	Eric Alleyne
Additional Participating Persons:	Andrew W Crossman; FAA/FSDO; Orlando, FL Mike Childers; Lycoming; Williamsport, PA
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	http://dms.ntsb.gov/pubdms/search/dockList.cfm?mKey=93882