



Aviation Investigation Final Report

Location:	Tribune, Kansas	Accident Number:	CEN14LA148
Date & Time:	February 22, 2014, 18:06 Local	Registration:	N7872
Aircraft:	Vans RV-9A	Aircraft Damage:	Substantial
Defining Event:	Loss of control in flight	Injuries:	1 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

According to data recorded by the experimental, amateur-built airplane's multifunction displays, about 10 minutes after the airplane took off for the personal flight, it entered two sequential 360-degree left turns with gravitational accelerations (g) of 2.10 g and 2.80 g , respectively. The airplane then entered its final left turn with an acceleration of 3.20 g , passed through about 180 degrees, and subsequently descended into terrain. Examination of the airplane wreckage revealed no mechanical anomalies that would have precluded normal operation.

A review of the private pilot's primary care physician and neurologist records revealed that the pilot had a 10-month history of a rapidly progressive neurological disorder that affected his muscle movements. Three months before the accident, the primary care physician advised the pilot not to drive or fly due to his impaired response time. Four days before the accident, the neurologist noted that the pilot had asymmetric moderate rigidity in his arms and severely slowed movements generally. The postmortem neuropathology analysis identified widespread degenerative disease in multiple areas of the brain. It is likely that the pilot's neurologic disorder impaired his ability to safely operate the airplane.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

The pilot's failure to maintain airplane control while conducting high- g turns, which resulted in impact with terrain. Contributing to the accident was the pilot's improper decision to initiate the flight with a severe progressive neurological disorder that likely impaired his ability to safely operate the airplane.

Findings

Personnel issues	Aircraft control - Pilot
Aircraft	(general) - Not attained/maintained
Personnel issues	Decision making/judgment - Pilot
Personnel issues	Neurological - Pilot

Factual Information

History of Flight

Unknown	Loss of control in flight (Defining event)
Uncontrolled descent	Collision with terr/obj (non-CFIT)

On February 22, 2014, at 1806 mountain standard time, a Vans RV-9A, N7872, was found in a field about 11 miles west of Tribune, Kansas. The airplane sustained substantial damage. The private pilot was fatally injured. The airplane was owned and operated by the pilot under 14 CFR Part 91 as a personal flight that was not operating on a flight plan. Visual meteorological conditions prevailed on the day of the accident. The flight originated from Tribune Municipal Airport (5K2), Tribune, Kansas, about 1747.

A witness stated to the National Transportation Safety Board (NTSB) Investigator-In-Charge (IIC) that he "just pulled in" to the Tribune Municipal Airport and saw the pilot take off in his airplane. He said that he did not know where the pilot was headed but departed to the south. He said that he had not talked to pilot for a "quite a while" and heard that the pilot stopped going to work. The witness said that he did not see or hear anything wrong with the airplane. He said that the airplane sounded "great" during the run-up.

Federal Aviation Administration (FAA) Inspectors from the Wichita Flight Standards District Office travelled to and examined the accident site. The Inspectors stated that the debris field was approximately 200 yards west of County Road 5, extended from southwest to northeast, and was 296 feet in length. The initial impact was consistence with an impact by the left wing tip; red lens cover material was found in close vicinity of the initial impact area. About 67 feet further along the debris field, the propeller was found lodged in the center of a 10-inch deep, 3-foot wide by 8-foot long impact area. Both propeller tips were visible above the surface of the ground. Both propeller tips did not sustain rotational damage, and the damage to the propeller was limited to the aft bending of both blades. The top engine cowl and nose gear were 96 feet forward of the propeller/engine impact area. The right wingtip was approximately 120 feet forward of the propeller/engine impact area. The main fuselage and right wing came to rest 165 feet from the propeller/engine impact area. The left wing had departed the aircraft after impact and came to rest 24 feet from the fuselage. The engine came to rest 64 feet beyond the fuselage. Two multifunction displays (MFDs) were about 17 feet beyond the engine.

Upon inspection of the left wing, no evidence of fuel could be found. The left wing was flat on the ground lying upside down with the inboard end of the fuel tank area torn open. The fuel tank was empty with no evidence of fuel leakage on the ground. The right wing was partially attached to the fuselage and lying inverted. There was evidence of blue 100 low lead fuel seeping from the filler port. When the wing was moved, fuel could be heard sloshing inside. A local farmer used a loader tractor to upright the right wing and fuselage. An estimated 4 gallons of fuel flowed from the right fuel tank during and after the moving process. We were unable to capture any fuel as the wing was set upright. The engine fuel

injection servo to fuel injection spider fuel line contained fuel. The fuel selector valve was found in the "Right" tank position.

Engine controls were found in the following positions: mixture - full rich, throttle - full power, ignition switch - "Both" position, and propeller – high speed/RPM position.

Flight control continuity was confirmed for the rudder, elevator, and right aileron. The Inspectors were unable to determine the position of the flaps because neither the flap handle nor the flap position indicator were identifiable nor the position of the flaps due to impact damage. Left aileron continuity could not be confirmed due to the separation of the left wing from the fuselage.

The MFDs recorded memories were downloaded by the NTSB Vehicle Recorder Division. According to the Electronic Devices Factual Report, the recording began at 1747:14 at 5K2 and ended at 1805:44. The aircraft departed runway 17 at 5K2 about 4 minutes after the recording began. After climbing about 500 feet, the aircraft made a right turn and proceeded west-northwest. About 1800, the aircraft made a right turn and proceeded towards the east-southeast. Between about 1800:49 and 1803:06, the recorded track included two, left-hand 360 degree turns. In the last 21 seconds of the recording, the track turned left as the altitude decreased from 4,140 feet to a final recorded altitude of 3,920 feet.

During ground operations, the GPS altitude was about 3,640 feet and the highest recorded altitude during the flight was 4,830 feet. About 1801:14, the pitch attitude fluctuated, and the vertical acceleration recorded a value of +2.10 g (acceleration of gravity). About 1802:35, the vertical acceleration recorded a value of +2.80 g and a roll angle of about 60 degrees. As the aircraft descended through 4,010 feet near the end of the recording, the pitch once again fluctuated, the roll increased to about 75 degrees, and the vertical acceleration recorded a maximum value of +3.20 g.

According to the pilot's FAA medical certification file, the pilot was first issued a medical certificate in 1975. At his last exam on January 14, 2013 he was 63 years old, 74 inches tall, weighed 202 pounds, and had accrued 835 total flight hours. He reported high blood pressure treated with medication, and a past history that included kidney stones and an episode of pneumonia. His only reported medication was amlodipine. Amlodipine is a medication used to treat high blood pressure marketed under a number of different names including Norvasc 1. The Aviation Medical Examiner (AME) commented that the pilot's blood pressure was under good control, and he had no side effects from the medications. The AME issued the pilot a third class medical certificate with the following limitations: Must have available glasses for near vision.

According to the FAA Inspectors, the airport manager of 5K2 observed that the pilot would frequently have his wife accompany the pilot for flights. The pilot's wife would also assist in pushing the aircraft into the hangar. The manager stated to the NTSB IIC that he had been watching the pilot's flying and the pilot's flying abilities were not "diminished." The manager said that he would help the pilot with his airplane doing such activities as fueling and washing windows because he was weak. Mr. Aeschliman said that they watched him and his flying abilities. The manager said that the pilot did not have problems with his coordination and that he had a "general weakness" and his walk was "slowed." His speech was "raspy and labored" after he got sick in late September or early October.

The pilot/aircraft logbook had its first entry dated September 6, 2011. The last dated entry in the logbook was December 25, 2013 for a 0.7 hour flight in the accident airplane.

According to the pilot's private physician and neurology records, the pilot had a ten-month history of a rapidly progressive neurologic disorder that affected his muscle movements. Three months prior to the accident, the private physician advised the pilot not to drive or fly due to impaired response time. Four days prior to the accident, the neurologist noted asymmetric moderate rigidity in arms and severely slowed movements generally. The autopsy identified mild coronary artery atherosclerosis with up to 30% occlusion of the right coronary artery and neuropathology evaluation found widespread degenerative disease in multiple areas of the brain.

Pilot Information

Certificate:	Private	Age:	63,Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	Yes
Medical Certification:	Class 3 With waivers/limitations	Last FAA Medical Exam:	January 14, 2013
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:	835 hours (Total, all aircraft), 0 hours (Last 90 days, all aircraft), 0 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Vans	Registration:	N7872
Model/Series:	RV-9A	Aircraft Category:	Airplane
Year of Manufacture:	2008	Amateur Built:	Yes
Airworthiness Certificate:	Experimental (Special)	Serial Number:	91275
Landing Gear Type:	Tricycle	Seats:	
Date/Type of Last Inspection:	Unknown	Certified Max Gross Wt.:	1806 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:		Engine Manufacturer:	Superior
ELT:		Engine Model/Series:	IO-320-B1AC2
Registered Owner:	Pilot	Rated Power:	
Operator:	Pilot	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	LAA,3705 ft msl	Distance from Accident Site:	60 Nautical Miles
Observation Time:		Direction from Accident Site:	135°
Lowest Cloud Condition:		Visibility	
Lowest Ceiling:		Visibility (RVR):	
Wind Speed/Gusts:	/	Turbulence Type Forecast/Actual:	/ None
Wind Direction:		Turbulence Severity Forecast/Actual:	/ N/A
Altimeter Setting:		Temperature/Dew Point:	
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Tribune, KS (5K2)	Type of Flight Plan Filed:	None
Destination:	Tribune, KS (5K2)	Type of Clearance:	None
Departure Time:	17:47 Local	Type of Airspace:	

Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Substantial
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Fatal	Latitude, Longitude:	38.470973,-101.750526(est)

Administrative Information

Investigator In Charge (IIC):	Gallo, Mitchell
Additional Participating Persons:	Kevin Rowse; Federal Aviation Administration; Wichita FSDO; Wichita, KS
Original Publish Date:	February 3, 2016
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=88834

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The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).