Aviation Investigation Final Report

Location:	Kingston, Oklahoma	**Accident Number:**	CEN15FA127
Date & Time:	January 28, 2015, 11:00 Local	**Registration:**	N708JE
Aircraft:	EAGLESTON JOHN H VANS RV9A	**Aircraft Damage:**	Substantial
Defining Event:	Unknown or undetermined	**Injuries:**	1 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The student pilot contacted a friend who was in a fishing boat and told him he was going to fly over the lake. The friend then saw the airplane circle over his fishing boat, which was a prearranged signal by the student pilot to notify the friend to drive his fishing boat towards a better fishing spot. The airplane was flying in a descending left turn and impacted the water and sank. The airplane was located the following day and was recovered to the shore. Although damage was sustained during the recovery phase, an examination of the airframe did not find any preimpact anomalies. The circumstances of the accident are consistent with an accelerated stall while the airplane maneuvering at low altitude.

An examination of the engine found that continuity to the engine controls was established with the exception of the carburetor heat gate cable. An examination of the carburetor heat gate cable did not find any deformation consistent with the set screw being installed properly at the time of the impact. A family member reported that the pilot previously had the carburetor heat repaired, but no logbook entry could be found to tell when and by whom the carburetor heat was repaired.

A review of the carburetor icing probability chart found that, at the time of the accident, the airplane operated in an area with the potential for serious icing at glide power. During the circling maneuver, it is likely that the pilot was operating the airplane a reduced power setting, which resulted in the formation of carburetor icing and led to a loss of engine power. However, once power was lost, the pilot continued in a bank turn, which resulted in the accelerated stall, rather than maintaining level flight.

Probable Cause and Findings

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

The pilot's continuation of a banked turn following the loss of engine power, which resulted in his failure to maintain adequate airspeed and the airplane exceeding its critical angle of attack and entering an accelerated stall at low altitude. Contributing to the accident was the loss of engine power due to carburetor icing as a result of the airplane's degraded carburetor heat system.

Findings

Personnel issues	Situational awareness - Pilot
Environmental issues	Water - Awareness of condition
Aircraft	(general) - Damaged/degraded
Environmental issues	Conducive to carburetor icing - Ability to respond/compensate

Factual Information

History of Flight

Maneuvering-low-alt flying	Unknown or undetermined (Defining event)
Maneuvering-low-alt flying	Collision with terr/obj (non-CFIT)

On January 28, 2015, about 1100 central standard time, an experimental amateur-built Vans RV-9A airplane, N708JE, impacted Lake Texoma near Kingston, Oklahoma. The solo student pilot was fatally injured and the airplane was substantially damaged. The airplane was registered to and operated by a private individual under the provisions of 14 Code of Federal Regulations Part 91 as a personal flight. Visual meteorological conditions prevailed for the flight, which operated without a flight plan. The local flight departed the Durant Regional Airport (DUA), Durant, Oklahoma, at 0955.

A friend of the pilot witnessed a portion of the accident sequence. He reported that on the morning of the accident, he sent a text message to the accident pilot saying that he was going to be fishing on Lake Texoma. When he was on his fishing boat, the pilot called him to inform him that he was going to overfly the boat in the airplane. After flying over the boat, the airplane disappeared from his view and the friend moved the boat's location. Later, the airplane flew over the boat again, circled it once, and flew to the south. The witness began to move the boat to the south when he saw the airplane collide with the water and begin to sink. When the boat reached the airplane the friend and his boat passenger attempted to keep the airplane from sinking. They were unable to hold on to the airplane before it sank below the water's surface. When the pilot was not located, the witness contacted emergency services.

Student pilot Information

Certificate:	Student	**Age:**	51
Airplane Rating(s):	None	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	4-point
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	Class 3 Without waivers/limitations	**Last FAA Medical Exam:**	May 3, 2014
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	37.2 hours (Total, all aircraft), 22.2 hours (Total, this make and model), 21.7 hours (Pilot In Command, all aircraft), 6.6 hours (Last 90 days, all aircraft), 3.2 hours (Last 30 days, all aircraft), 0.6 hours (Last 24 hours, all aircraft)		

The pilot, age 51, held a combined student pilot and third class medical certificate, without limitations, issued on May 3, 2014. The pilot owned a Grumman AA-1B airplane and began instruction in that airplane on May 12, 2014, and soloed on May 26, 2014. In early July 2014,

the pilot purchased the accident airplane and received flight instruction in that airplane beginning on September 29, 2014. The pilot's last instructional flight occurred on October 15, 2014, which was a cross country flight in the accident airplane from DUA to Clarence E Page Municipal Airport (RCE), Oklahoma City, Oklahoma, and back to DUA with two landings logged. The pilot's log book endorsement pages contained an entry dated September 29, 2014 for the pilot's proficiency to practice solo takeoffs and landings at DUA. It also contained an endorsement for the pilot's proficiency to practice solo takeoffs and landings at Sundance Airport (HSD), Oklahoma City, Oklahoma (118.7 nm from DUA), Pauls Valley Municipal Airport (PVJ), Pauls Valley, Oklahoma (61.7 nm from DUA), and RCE (116.5 nm from DUA), dated October 19, 2014; that date was crossed out and the date of January 16, 2015, was written above the original date. On October 19, 2014, the pilot was also endorsed to perform solo cross-country flights in an RV-9A. At the time of the accident, the pilot had 37.3 total hours, with 22.2 hours logged in the accident airplane. The pilot had received 15.6 hours of dual instruction of which 5.7 hours were accrued in an RV-9A.

Aircraft and Owner/Operator Information

Aircraft Make:	EAGLESTON JOHN H	**Registration:**	N708JE
Model/Series:	VANS RV9A	**Aircraft Category:**	Airplane
Year of Manufacture:	2008	**Amateur Built:**	Yes
Airworthiness Certificate:	Experimental (Special)	**Serial Number:**	91405
Landing Gear Type:	Tricycle	**Seats:**	2
Date/Type of Last Inspection:	June 24, 2014 Annual	**Certified Max Gross Wt.:**	1750 lbs
Time Since Last Inspection:	35.1 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	85.1 Hrs at time of accident	**Engine Manufacturer:**	LYCOMING
ELT:	Not installed	**Engine Model/Series:**	O-320-D2B
Registered Owner:	ANGLE DEE	**Rated Power:**	160 Horsepower
Operator:	ANGLE DEE	**Operating Certificate(s) Held:**	None

The two-seat, low wing, fixed gear, kit built airplane, serial number 91405, was manufactured in 2008. It was powered by a 160-horsepower, normally aspirated, Lycoming O-320-D2B engine, serial number L 5331-39 that drove a two-bladed, metal, Sensenich fixed pitch propeller. The airplane's last inspection occurred on June 24, 2014, at a total airframe time of 50 hours and a tachometer time of 505.2 hours. That inspection entry was prior to the pilot purchasing the airplane, and was the last entry in the log book.

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	KDUA,699 ft msl	**Distance from Accident Site:**	9 Nautical Miles
Observation Time:	10:55 Local	**Direction from Accident Site:**	93°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	9 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	190°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.09 inches Hg	**Temperature/Dew Point:**	20°C / 8°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	DURANT, OK (DUA)	**Type of Flight Plan Filed:**	None
Destination:	DURANT, OK (DUA)	**Type of Clearance:**	None
Departure Time:	09:55 Local	**Type of Airspace:**	Class G

At 1055, an automated weather reporting facility at DUA, located 9 miles east of the accident site, reported wind from 190° at 9 knots, visibility 10 miles, a clear sky, temperature 68° Fahrenheit (F), dew point 46° F, and an altimeter setting of 30.09.

According to the chart contained in the Special Airworthiness Information Bulletin CE-09-25, Carburetor Icing Prevention, the airplane was operating in an area with the potential for serious icing at glide power.

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:**	33.958057,-96.589164

The airplane impacted the water and was recovered the day following the accident. According to divers from the Oklahoma Highway Patrol dive team, the airplane was intact with the exception of the left wing, which was located near the airplane wreckage. The airplane was floated to the surface through the use of airbags which resulted in distortion to the airplane wreckage. The airplane was towed to shore and removed from the water. Small portions of the airplane's engine cowl and cockpit items were located on a shoreline to the north of the impact area. All the items were collected and examined near the lake.

The left wing was impact separated at the wing root. The aileron bell crank to aileron pushrod was

fractured in overload near the bell crank and the stick to aileron bell crank pushrod was impact separated at the threaded rod end just outboard of the bell crank. The remaining stick to aileron bell crank rod remained attached to the control stick. Flight control continuity was confirmed from the right aileron to the control stick and the rudder to the rudder pedals. Impact damage was consistent with the flaps in the retracted position.

The altimeter displayed 1,900 ft with 30.09 set in the Kollsmans window. The tachometer read 540.29 hours. The airspeed indicator needle was broken and unreliable. The fuel selector was found pointing to the left tank. The engine controls had separated from their cockpit area mounts but remained attached to the engine via the control cables. The carburetor heat gate cable was found separated from its actuator arm. The propeller remained attached to the engine at the propeller flange. Both blades remained straight and were relatively undamaged.

The pilot's seat was equipped with an unidentified four point restraint system which was found unlatched. The pilot's restraints displayed signatures consistent with loading on the restraint webbing by the adjustment bars. When compared to each other, the lap belt webbing displayed heavier witness marks than the shoulder restraints. No anomalies were detected with the airframe.

A Garmin GPSMap296 was located in the wreckage and shipped to the NTSB laboratories in Washington, D.C. for examination.

The wreckage was relocated to a salvage yard where an engine examination was later conducted under the auspices of the Federal Aviation Administration (FAA). Screens and filters were found clear of debris. The carburetor was impact separated at the throttle plate. Disassembly of the carburetor found hydraulic deformation of the metal floats. The carburetor heat gate cable was found separated from the carburetor heat gate actuator arm. No set screw was found in the clamp that normally retains the cable end. Engine continuity and cylinder compression was confirmed. The carburetor heat gate cable was sent to the NTSB for further examination. No further anomalies were detected with the engine.

Medical and Pathological Information

An autopsy was conducted on the pilot by Oklahoma's Office of the Chief Medical Examiner. The cause of death was due to blunt force trauma and drowning.

Forensic toxicology was performed on specimens from the pilot by the FAA Bioaeronautical Sciences Research Laboratory, Oklahoma City, Oklahoma. Tests were negative for carbon monoxide and ethanol. Ibuprofen was detected in urine.

Additional Information

GPSMap 296

Data from the GPSMap296 was obtained through a download at the NTSB laboratories. The accident flight was captured in the device's memory and its information was extracted. On the day of the accident, flight data shows the airplane departing DUA at 0955 central standard time. The airplane tracked to the northwest cruising about 900 ft above ground level (agl). When the airplane reached the northeast corner of Lake Texoma, it tracked to the southwest and descended over the lake. It descended to 77 ft agl and then flew a climbing, left turn. It circled the same area 1.5 times about 285 ft agl.

The airplane then flew to the northwest corner of Lake Texoma near Madill, Oklahoma, and then turned to the south and cruised about 500-700 feet agl. The airplane maneuvered around the lake south of Lebanon, Oklahoma between 30-100 ft agl. The airplane followed a portion of the Red River until it approached I-35 where the airplane turned back towards Lake Texoma and cruised at higher altitudes, between 160-900 ft agl.

When the airplane approached Lake Texoma, it descended below 100 ft agl and then climbed to 1,300 ft agl as it flew over land and then descended to 285 ft agl. At 1056:35, the airplane flew to the north at 330 ft agl and about 115 knots ground speed. North of a railroad bridge the airplane performed a near level left turn about 440 ft agl and 125 knots. The airplane slowed in the turn to 75 knots and began a turn to the south where the airplane descended and the ground speed decayed. The last recorded point was at 1059:59 with the airplane in a left turn at 87 knots and 94 ft agl.

Carburetor Heat Gate Cable

The cable was placed under a microscope and examined by an NTSB Structural Engineer. The wire displayed an indention about the diameter of the set screw. There was no smearing of the metal in area of the indentation.

The son of the pilot reported that several months prior to the accident, the pilot noticed that the carburetor heat was not working properly. The son thought the airplane was repaired at PVJ. No entries in the log book tracked any recent maintenance performed on the carburetor heat gate or gate cable. It could not be determined when or by whom any corrective actions may have been performed on the carburetor heat gate.

Airplane's Maneuvers Over the Water

The accident pilot was a fishing guide. He expressed his desire to use his airplane to find where fish were on the lake for his fishing guide friends. His instructor pilot warned him to only do so from a safe altitude. The witness/friend of the pilot explained that in the airplane, the accident pilot could spot flocks of birds that were eating schools of smaller fish which likely meant that larger fish were also nearby. The pilot and the friend had arranged a signal that the airplane would circle once over him and then fly towards where the pilot had spotted a potential fishing spot.

Administrative Information

Investigator In Charge (IIC):	Aguilera, Jason
Additional Participating Persons:	Jeff Jennings; FAA FSDO; Oklahoma City, OK John Butler; Lycoming Engines; Williamsport, PA
Original Publish Date:	May 2, 2016
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=90663