

Aviation Investigation Preliminary Report

Location:	Corona, CA	Accident Number:	WPR24FA056
Date & Time:	December 16, 2023, 11:50 Local	Registration:	N6948L
Aircraft:	DAVID B LUNN VANS RV8	Injuries:	1 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

On December 16, 2023, about 1150 Pacific standard time, a Vans RV-8, N6948L, was substantially damaged when it was involved in an accident near Corona, California. The pilot and passenger were fatally injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

The pilot had flown the airplane to Corona on November 13, 2023, for the purpose of having it painted there. The accident flight was the first flight after it was painted. The paint shop required the pilot to disassemble and reassemble the airplane before and after the painting because it was a homebuilt airplane. The pilot intentionally chose to leave the left fuel tank empty because it was drained from being repaired prior to flying the airplane to Corona. The pilot did not refuel the airplane after it was painted.

Witnesses reported hearing the airplane during the takeoff and remarked that the engine sounded as if was "missing" and producing partial power.

A review of the recorded security camera footage at the airport revealed that the airplane came into the frame at 11:49:23 when it was midway down runway 07, (passing by the fuel tanks) showing the wheels had not yet lifted from the surface. The airplane continued down the runway and rotated about 4 seconds later. Based on the distance and time, the airplane's speed was calculated to be 71 kts at the time of rotation and a sound spectrum analysis revealed that the engine rpm was about 2,500 at that time. The airplane climbed slightly, just passing over a berm at the airport's perimeter reaching a maximum altitude of about 95 ft above the runway. The estimated ground speed was 58 kts. Thereafter, the airplane descended and made a left turn, disappearing from the frame (see Figure 1 below).



Figure 1: Showing the Flight Path with Video Excerpts Showing Takeoff

The accident site was located in soft dirt about 3,650 feet from the departure end of runway 25. In character, the terrain was located in a water-runoff and populated with large bushes, trees, tumbleweeds, and discarded trash. The main wreckage, consisting of the engine and remains of the fuselage, came to rest upright under a tree and had burned the terrain in the surrounding 5 to 10 feet.

The wreckage was consumed by post-impact fire and a majority of the fuselage, wings and skin panels were charred, with areas of ash and resolidified puddled aluminum. The directional path of the airplanes fuselage was on a magnetic bearing of about 055 degrees (see Figure 2 below). The entire airplane was located at the accident site with the exception of portions of the wheel pants and outboard left wing, which was all found in the debris path.



Figure 2: Main Wreckage

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The first identified points of contact consisted of disrupted concrete and paint transfers on the west side of the flat paved road, making up the far west end of the debris field. The initial impact mark was located between to powerline poles spaced 275 ft apart with numerous powerlines strung between about 30 ft above the ground. The first impact was a groove in the edge of the concreate wall making the lip of the road. There was paint transfers and a pile of paint chips adjacent to the divot, consistent with the left-wing tip (see Figure 3 below). Pieces of grey and white paint chips were scattered in the area as well as large portions of curved plexiglass that were similar in convex and hardware pattern to that of the wingtip-light housing.



Figure 3: Debris Field Prior to Main Wreckage

About 85 inches south of the divot was a black smudge transfer on the road's surface, which continued toward the wreckage and made a left track. The debris path continued with grooves and indentations on the road making a parallel right track. There was a black residue over the right track as it continued toward the main wreckage. About 12 feet from the road's western lip were two 18 in gouges in the concrete that was oriented perpendicular and in between the two parallel tracks, consistent with propeller slashes.

The dimensions and orientation of the witness marks were consistent with the left wing impacting the road first followed by the left wheel and then the right wheel (see Figure 4 below).

Partial control continuity was established onsite. The control cables were continuous to molten bellcranks and portions of the airframe. The cockpit was completely thermally consumed. The main landing gear remained with the airframe and were folded aft. The left and right rotors on the wheels were shaved down with flat areas consistent with movement against the pavement. The canopy appeared to be in the unlocked and open position.

The fuel system sustained major thermal damage and the fuel tanks were consumed. From the wings, the fuel lines were intact to the fuel selector valve, located on the left side of the cockpit. The selector handle was resting in a presumed "LEFT" or midway selection but was not attached to the stem and freely swung around with any movement. Trace amounts of liquid exited from the valve when manipulated; when subjected to water-detecting paste, the liquid tested positive for water, which is consistent with fire suppression efforts.

From the fuel selector valve, fuel was plumbed to a fuel filter; the outlet fitting was loose, and the entire fitting assembly could be moved in and out of the filter body. The fuel line continued to the electric (boost) pump, which was mounted on the floor, aft of the firewall. The pump and connected return line system, remained affixed in the brackets. After passing through the firewall, the fuel line was routed to a cylindrical filter (with accordioned pleats) that was burned but remained attached to the firewall.

The fuel line continued to the engine-drive fuel pump and then was routed forward under cylinder Nos. 4 and 2. After passing under the cylinders, there was an elbow inward where the line connected to a transducer. The transducer was not mounted, nor were the surrounding fuel lines (see Figure 5 below). The transducer and surrounding fittings lightly burned with their distinctive red and blue coloration predominant. There was evidence of a white material on the inboard threads of the fittings. The inboard fitting on the union from the transducer to the servo (throttle body) was loose and could be manipulated by hand. The mixture arm was in the idle position. The fuel distributor (spider) was disassembled revealing the diaphragm seal was present; there was no liquid contained in the body.



Figure 5: Transducer

The external examination of the Lycoming IO-360-CIC revealed no evidence of a catastrophic failure. Removal of the dipstick gave a reading that the engine contained over 6 quarts of clean oil. The right magneto appeared to be a Slick conventional ignition system and the left ignition pad was an electronic unit. The propeller was rotated 360° to achieve manual rotation of the crankshaft which was indicative of drivetrain continuity.

The wreckage was recovered for a more detailed examination at a future date.

Aircraft and Owner/Operator Information

Aircraft Make:	DAVID B LUNN	Registration:	N6948L	
Model/Series:	VANS RV8	Aircraft Category:	Airplane	
Amateur Built:	Yes			
Operator:	On file	Operating Certificate(s) Held:	None	
Operator Designator Code:				
Meteorological Information and Flight Plan				
Conditions at Accident Site:	VMC	Condition of Light:	Day	
Observation Facility, Elevation:	KAJO,533 ft msl	Observation Time:	11:56 Local	
Distance from Accident Site:	0 Nautical Miles	Temperature/Dew Point	:: 26°C /-3°C	
Lowest Cloud Condition:	Clear	Wind Speed/Gusts, Dire	ction: 4 knots / None, 60°	
Lowest Ceiling:	None	Visibility:	10 miles	
Altimeter Setting:	30.06 inches Hg	Type of Flight Plan Filed	I: NONE	
Departure Point:	Corona, CA	Destination:	Corona, CA	
Wreckage and Impact Information				
Crew Injuries:	1 Fatal	Aircraft Damage: S	Substantial	
Passenger Injuries:	N/A	Aircraft Fire: 0	in-ground	
Ground Injuries:		Aircraft Explosion: N	lone	
Total Injuries:	1 Fatal	Latitude, Longitude: 3	3.897327,-117.5852 (est)	

Administrative Information

Investigator In Charge (IIC):	Keliher, Zoe
Additional Participating Persons:	Robert Michaelson; Federal Aviation Administration; Riverside, CA Mark Platt; Lycoming Engines
Investigation Class:	Class 3
Note:	