



Aviation Investigation Final Report

Location:	Ramona, California	Accident Number:	WPR19LA023
Date & Time:	November 10, 2018, 07:52 Local	Registration:	N5433T
Aircraft:	Vans RV7A	Aircraft Damage:	Destroyed
Defining Event:	Loss of engine power (partial)	Injuries:	2 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

During takeoff on the first flight since the airplane was built, the engine began to lose power. The passenger conducted a series of troubleshooting steps while the pilot flew the airplane. Unable to restore engine power, the pilot landed in a rock-covered field. The airplane came to rest upright; a postimpact fire ensued and consumed most of the airplane. Postaccident examination of the engine revealed no evidence of any preexisting mechanical malfunctions that would have precluded normal operation. The airplane was equipped with an electric constant speed propeller, which was controlled by an electric propeller controller. Due to the postimpact fire damage sustained to the airplane, functional testing of the propeller control unit could not be performed. Due to the lack of available information, the reason for the partial loss of engine power could not be determined.

Probable Cause and Findings

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

The partial loss of engine power for reasons that could not be determined based on the available information.

Findings

Not determined	(general) - Unknown/Not determined
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Factual Information

History of Flight

Initial climb	Loss of engine power (partial) (Defining event)
Emergency descent	Off-field or emergency landing
Landing-landing roll	Collision with terr/obj (non-CFIT)

On November 10, 2018, about 0752 Pacific standard time, an experimental amateur-built Vans RV-7A airplane, N5433T, was destroyed when it was involved in an accident in Ramona, California. The private pilot (flying pilot) and pilot-rated passenger were not injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

The passenger reported that they had just completed the build of the airplane, and that the pilot flying was going to conduct the initial flight due to the amount of flight time he had accumulated in the make and model of the airplane. They performed an engine runup at the hold-short line for runway 27 and noted nothing abnormal. The passenger stated that the flying pilot advanced the throttle for takeoff, and the engine had plenty of power during the takeoff roll. During climb out, about 500 ft above the ground, the engine began to gradually lose power.

The passenger started to troubleshoot the loss of power; he verified the fuel pumps and ignition were on, the fullest fuel tank was selected, fuel pressure and air/fuel ratio gauges indicated “in the green,” the propeller rpm was 2,700, and the propeller was in auto mode. As the passenger conducted a second check, he motioned for the pilot to take the propeller controller out of auto and put it in manual mode. During the landing roll, the right main landing gear separated after it struck a rock. As the airplane came to rest upright, a postimpact fire ensued, which consumed the inboard sections of both wings and the fuselage.

The airplane was recovered to a secure location for further examination.

The airplane was equipped with a 6-cylinder Subaru engine and gear reduction unit, which powered an electric, constant-speed MT propeller through an electric propeller control unit. The postaccident engine and gearbox examination was performed by one of the co-builders of the airplane under the supervision of a Federal Aviation Administration inspector. The engine exhibited varying degrees of thermal damage. No scoring on the cylinder walls or piston damage was observed. The oil filler cap was destroyed by fire, and the internal positions of the engine and cylinders exhibited corrosion. The reduction gearbox rotated freely and exhibited evidence of a lubricant leak at the rear input shaft seal. The gearbox was disassembled, and no evidence of any internal failure was observed.

The electric propeller control unit was destroyed by fire, which precluded functional testing of the unit.

Pilot Information

Certificate:	Private	Age:	68,Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	3-point
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 3 None	Last FAA Medical Exam:	September 4, 2018
Occupational Pilot:	No	Last Flight Review or Equivalent:	December 5, 2016
Flight Time:	2040 hours (Total, all aircraft), 721 hours (Total, this make and model), 1971 hours (Pilot In Command, all aircraft), 25 hours (Last 90 days, all aircraft), 5 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Vans	Registration:	N5433T
Model/Series:	RV7A	Aircraft Category:	Airplane
Year of Manufacture:	2018	Amateur Built:	Yes
Airworthiness Certificate:	Experimental (Special)	Serial Number:	70675
Landing Gear Type:	Tricycle	Seats:	2
Date/Type of Last Inspection:	October 3, 2018 Condition	Certified Max Gross Wt.:	
Time Since Last Inspection:	0 Hrs	Engines:	Reciprocating
Airframe Total Time:	0 Hrs	Engine Manufacturer:	Subaru
ELT:	C126 installed, activated, did not aid in locating accident	Engine Model/Series:	H6
Registered Owner:		Rated Power:	180 Horsepower
Operator:	On file	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	KRNM,1393 ft msl	Distance from Accident Site:	1 Nautical Miles
Observation Time:	15:53 Local	Direction from Accident Site:	109°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	/	Turbulence Type Forecast/Actual:	/
Wind Direction:		Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.01 inches Hg	Temperature/Dew Point:	14°C / -7°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Ramona, CA (RNM)	Type of Flight Plan Filed:	None
Destination:	Ramona, CA (RNM)	Type of Clearance:	None
Departure Time:	07:52 Local	Type of Airspace:	Class G

Airport Information

Airport:	RAMONA RNM	Runway Surface Type:	Asphalt
Airport Elevation:	1394 ft msl	Runway Surface Condition:	Dry
Runway Used:	27	IFR Approach:	None
Runway Length/Width:	5001 ft / 150 ft	VFR Approach/Landing:	Forced landing

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Destroyed
Passenger Injuries:	1 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 None	Latitude, Longitude:	33.040832,-116.925552(est)

Administrative Information

Investigator In Charge (IIC):	Cawthra, Joshua		
Additional Participating Persons:	Roger Messick; Federal Aviation Administration; San Diego, CA		
Original Publish Date:	March 30, 2022	Investigation Class:	3
Note:	The NTSB did not travel to the scene of this accident.		
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=98630		

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The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).