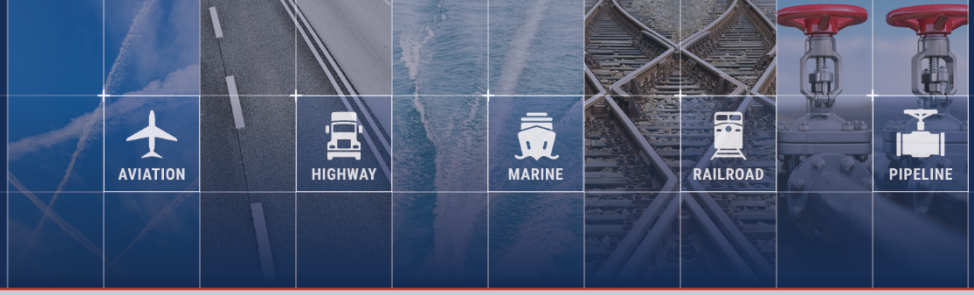

Aviation Investigation Final Report

Location:	Oregon City, Oregon	**Accident Number:**	WPR10LA366
Date & Time:	July 23, 2010, 13:30 Local	**Registration:**	N70720
Aircraft:	Clark RV-9A	**Aircraft Damage:**	Substantial
Defining Event:	Loss of engine power (total)	**Injuries:**	1 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The engine had recently been operating erratically and the day before the accident it lost power while the pilot was taxiing. Following numerous failed attempts to restart the engine, it eventually started and began to emit flames from the inlet port and a fire extinguisher was used to suppress the fire. The day of the accident, and after cleaning the residue left from the extinguishing agent, the pilot started the engine, performed a runup and then departed to fly the airplane back to his home airport. A short time after takeoff, the airplane was observed by witnesses to be maneuvering at a low altitude adjacent to a highway as if attempting to land on the road. The engine experienced a loss of engine power and the airplane collided with trees and powerlines during a forced landing; the airplane came to rest inverted and was partially consumed by a post crash fire. A postaccident inspection revealed that the extensive fire damage precluded testing the integrity of the fuel system. Numerous fittings and controls on the engine were loose or very low torque, most likely due to thermal damage from the post crash fire. The examination did not show any evidence of preimpact mechanical malfunction or abnormalities, although the damage was too extensive to definitively determine the reason for the loss of power.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's decision to depart with known mechanical anomalies and the loss of engine power for undetermined reasons.

Findings

Personnel issues	Decision making/judgment - Pilot
Not determined	(general) - Unknown/Not determined
Aircraft	Return to service - Not inspected

Factual Information

History of Flight

Prior to flight	Aircraft inspection event
Enroute-cruise	Loss of engine power (total) (Defining event)
Enroute-cruise	Collision with terr/obj (non-CFIT)

HISTORY OF FLIGHT

On July 23, 2010, about 1330 Pacific daylight time, a Clark Vans RV-9A, N70720, experienced a loss of power and collided with power lines that were adjacent to Highway 213 in Oregon City, Oregon. The pilot/owner was operating the airplane under the provisions of 14 Code of Federal Regulations Part 91. The private pilot, the sole occupant, was killed. The airplane sustained substantial damage. The local personal flight originated from Aurora State Airport, Aurora, Oregon, with a planned destination of Fairways Airport in Oregon City. Visual meteorological conditions prevailed, and a flight plan had not been filed.

Numerous witnesses observed the airplane maneuvering at a low altitude adjacent to Highway 213 traveling north. Several of the witnesses thought that the engine did not appear to be producing power. The airplane collided with trees and subsequently flew into powerlines; the airplane came to rest inverted and was partially consumed by fire.

During a conversation with a Safety Board investigator, a certified flight instructor (CFI) stated that the pilot had scheduled to take his biennial flight review with him in February 2010, about 2 years since he had given him his last review. At the time the engine was undergoing maintenance and the review had to be postponed. The pilot rescheduled and the CFI flew with him on the day prior to the accident. As part of the review, the pilot flew from Fairways en route to Aurora, where he landed and taxied clear of the runway. As the airplane approached the ramp area, the engine experienced a loss of power and quit. Following numerous failed attempts to restart the engine, the pilot had airport personnel jump start the battery. The engine started and began to emit flames from the inlet port; a fire extinguisher was used to eradicate the fire and the review was canceled.

The day of the accident, the pilot and his friend went to Aurora to further investigate the damage incurred the previous day. After cleaning the residue left from the extinguishing agent, the pilot started the engine. The engine appeared to be operating normally and the pilot told his friend that he would do a series of high speed taxis and possibly fly the airplane back to Fairways, where his hangar was located. The pilot performed a run-up inspection and departed, rocking the airplane's wings at 300 feet above ground level (agl), an indication that he would meet his friend back at Fairways.

PERSONNEL INFORMATION

According to Federal Aviation Administration (FAA) Airman and Medical records files, the pilot held a private pilot certificate with a rating for single-engine land airplane. He additionally held a repairman experimental aircraft builder certificate. The pilot was issued a third-class medical certificate in April 2010 with the limitation that he must wear corrective lenses for near and distant vision.

No personal flight records were recovered for the pilot. On the application for his last medical certificate the pilot stated that his total flight experience was 510 hours.

AIRCRAFT INFORMATION

The RV-9A single engine kit airplane, serial number 90513, was completed in 2003 by the accident pilot. The FAA records indicated the engine was a four cylinder Aerosport Power IO-320-D1A (serial number L38687-27A) equipped with a Whirlwind 150 propeller (serial number 150-124B). The airplane's logbooks were not located.

The FAA records indicated that the pilot had successfully accomplished both Phase One and Phase Two of the experimental operating limitations, with the later completed on April 23, 2003.

MEDICAL AND PATHOLOGICAL

The Clackamas County Office of the Medical Examiner performed an autopsy on the pilot; the FAA Toxicology Accident Research Laboratory, Oklahoma City, Oklahoma, performed toxicological testing.

TESTS AND RESEARCH

An FAA certified Airframe and Powerplant mechanic with Inspection Authorization examined the wreckage following recovery. He stated that the fire damage precluded him from testing the integrity of the fuel system. The fuel injection system linkage and hoses were consumed by fire. He noted that numerous fittings and controls on the engine were loose or had very low torque, which he attributed to thermal exposure and damage from the post crash fire. The magneto and electronic system was destroyed.

The engine's cylinders did not show any evidence of mechanical malfunction or abnormalities. The spark plugs appeared in new condition. The No. 2 cylinder plugs were oil soaked, which the mechanic thought was consistent with the engine's position on a trailer during the examination. One propeller blade was intact and the other two were destroyed by impact and fire.

Pilot Information

Certificate:	Private	**Age:**	81,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Unknown
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	Class 3 With waivers/limitations	**Last FAA Medical Exam:**	April 20, 2010
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	(Estimated) 510 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Clark	**Registration:**	N70720
Model/Series:	RV-9A	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	Yes
Airworthiness Certificate:	Experimental (Special)	**Serial Number:**	90513
Landing Gear Type:	Tricycle	**Seats:**	2
Date/Type of Last Inspection:		**Certified Max Gross Wt.:**	1600 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:		**Engine Manufacturer:**	AMA/EXPR
ELT:	Installed, not activated	**Engine Model/Series:**	IO-320-1DA
Registered Owner:	On file	**Rated Power:**	100 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:	UAO,200 ft msl	**Distance from Accident Site:**	
Observation Time:	13:53 Local	**Direction from Accident Site:**	
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	3 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:		**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.06 inches Hg	**Temperature/Dew Point:**	23°C / 13°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Aurora, CA (UAO)	**Type of Flight Plan Filed:**	None
Destination:	Oregon City, OR (OG20)	**Type of Clearance:**	None
Departure Time:	13:00 Local	**Type of Airspace:**	

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	On-ground
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Fatal	**Latitude, Longitude:**	45.275276,-122.568611(est)

Administrative Information

Investigator In Charge (IIC):	Keliher, Zoe
Additional Participating Persons:	Paul Lehman; Federal Aviation Administration; Hillsboro, OR
Original Publish Date:	September 19, 2011
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=76759