Aviation Investigation Final Report

Location:	Napa, California	**Accident Number:**	WPR22LA099
Date & Time:	February 8, 2022, 08:45 Local	**Registration:**	N9500E
Aircraft:	Aeronca 11AC	**Aircraft Damage:**	Substantial
Defining Event:	Unknown or undetermined	**Injuries:**	1 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot was flying the airplane to an airport about 48 miles from the departure airport when, 30 minutes after departure while in cruise flight, the engine lost all power. The pilot then verified engine controls were at their correct positions and adjusted the carburetor heat setting. There was no change in engine power, so he made a mayday call and landed the airplane in an open field, during which the airplane sustained substantial damage to the lower fuselage.

A postaccident examination of the engine revealed that both magnetos produced a weak spark on all ignition leads when the propeller was rotated by hand. The left magneto was found to be in poor condition and did not function within the manufacturer's specifications. Internal examination of the left magneto revealed that the distributor axle bearing had failed, and the distributor gear was missing about half of its gear teeth. The right magneto was found in poor overall condition and was missing about 6 distributor gear teeth; however, it did function within the manufacturer's specifications. A review of maintenance records revealed no indication that the left and right magnetos were serviced, to include inspections or overhauls, since the engine's last overhaul 15 years (or about 400 hours) before the accident.

While the left magneto was not functioning within the manufacturers specifications, and the right magneto functioned within the manufacturers specifications, it would not result a total loss of engine power. The reason for the total 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 loss of engine power for undetermined reasons, which resulted in an off-airport landing on unimproved terrain.

Findings

Aircraft	Magneto/distributor - Not serviced/maintained
Personnel issues	Scheduled/routine maintenance - Owner/builder
Personnel issues	Scheduled/routine inspection - Owner/builder
Aircraft	(general) - Unknown/Not determined

Factual Information

History of Flight

Unknown	Unknown or undetermined (Defining event)
Enroute-change of cruise level	Loss of engine power (total)
Emergency descent	Collision with terr/obj (non-CFIT)

On February 8, 2022, about 0845 pacific standard time, an Aeronca 11AC Chief, N9500E, was substantially damaged when it was involved in an accident near Napa, California. The pilot was not injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

The pilot reported that he departed University Airport (EDU), Davis, California, and was enroute to Sonoma County Airport (STS), Santa Rosa, California. At approximately 30 minutes into the flight, about 20 nm north of Napa, California, the engine lost all power. The pilot stated that the engine "got quiet," the "tach[ometer] dropped," and the airplane could not maintain altitude. He immediately verified the throttle was full forward and then pulled the carburetor heat to the OPEN position. However, the airplane continued to descend. The pilot made mayday calls and performed a forced landing to a field, during which the airplane sustained substantial damage to the fuselage tubular frame.

A postaccident examination of the airframe did not reveal any preimpact mechanical anomalies. Examination of the engine cylinders and case did not reveal any indications of catastrophic engine failure. Mechanical continuity was established throughout the rotating group, valvetrain, and accessory section as the crankshaft was manually rotated at the propeller by hand. Thumb compression was achieved at all four cylinders and the valves displayed normal lift when the crankshaft was rotated. When the propeller was rotated by hand, spark was produced on all ignition leads, however, was "extremely weak." Both magnetos were removed for further examination.

The mechanic who completed a postaccident examination of the right magneto stated that the magneto was unmaintained and in poor overall condition. The point cover screws were both stripped and cross threaded but still had the safety wire in place. The distributor axle set screw and bushing was worn and loose. The distributor gear had six gear teeth damaged and partially missing. The right magneto functioned within manufacturer standards during its bench test.

The left magneto was also unmaintained and in poor overall condition. The axle set screw was displaced and found at the bottom of the magneto housing. The distributor gear had over half

of its teeth worn or missing. The distributor axle bushing was loose and worn, and the distributor axle bearing had failed. The left magneto functioned outside manufacturer standards during its bench test.

A review of the engine logbook revealed that the engine was last overhauled in 2007, about 400.7 hours prior to the accident. Subsequent log entries did not reveal that either magneto was overhauled or inspected more recently.

Pilot Information

Certificate:	Private	**Age:**	22,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	Lap only
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	
Medical Certification:	Class 3 Without waivers/limitations	**Last FAA Medical Exam:**	October 6, 2020
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	April 29, 2021
Flight Time:	(Estimated) 226 hours (Total, all aircraft), 40 hours (Total, this make and model), 167 hours (Pilot In Command, all aircraft), 50 hours (Last 90 days, all aircraft), 28.3 hours (Last 30 days, all aircraft), 1.8 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Aeronca	**Registration:**	N9500E
Model/Series:	11AC NO SERIES	**Aircraft Category:**	Airplane
Year of Manufacture:	1946	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	11AC-1135
Landing Gear Type:	Tailwheel	**Seats:**	2
Date/Type of Last Inspection:	August 17, 2021 Annual	**Certified Max Gross Wt.:**	1250 lbs
Time Since Last Inspection:	54 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	2174 Hrs at time of accident	**Engine Manufacturer:**	Continental
ELT:	C91 installed, not activated	**Engine Model/Series:**	A-65-8
Registered Owner:	On file	**Rated Power:**	65 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:	KAPC,14 ft msl	**Distance from Accident Site:**	15 Nautical Miles
Observation Time:	08:54 Local	**Direction from Accident Site:**	192°
Lowest Cloud Condition:	Clear	**Visibility**	6 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	/	**Turbulence Type Forecast/Actual:**	None / None
Wind Direction:		**Turbulence Severity Forecast/Actual:**	N/A / N/A
Altimeter Setting:	30.32 inches Hg	**Temperature/Dew Point:**	7°C / 6°C
Precipitation and Obscuration:	Moderate - None - Mist		
Departure Point:	Davis, CA (KEDU)	**Type of Flight Plan Filed:**	VFR
Destination:	Santa Rosa, CA (KSTS)	**Type of Clearance:**	Special VFR
Departure Time:	08:15 Local	**Type of Airspace:**	Class G

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	N/A	**Aircraft Fire:**	None
Ground Injuries:		**Aircraft Explosion:**	None
Total Injuries:	1 None	**Latitude, Longitude:**	38.462184,-122.2149(est)

Administrative Information

Investigator In Charge (IIC):	Nepomuceno, Eleazar
Additional Participating Persons:	Josh Michael; FAA; Sacramento, CA
Original Publish Date:	March 28, 2024
Last Revision Date:	
Investigation Class:	Class 3
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=104651