



U.S. Department
of Transportation
**Federal Aviation
Administration**

Aviation Safety
Flight Standards Service
General Aviation Safety Assurance

Milwaukee Flight Standards District Office
[REDACTED]
Milwaukee, WI 53207

August 19, 2022

Michael Hodges NTSB

Mr. Hodges

On July 22, 2022 at approximately 16:45 local time, aircraft N4400K, a RV10 experimental amateur built aircraft, on a part 91 VFR flight landed in a soccer field on 100 block of Commercial Road, Beaver Dam, WI. The aircraft landed in the east direction. The pilot made the following statement, "While flying level at 1800 Ft, we all heard a very loud pop in the engine area, immediately we had smoke fill the cockpit. I noticed a soccer field just to my left and instantly turned toward it. I made a decision to be committed to landing in that field. I made pitch adjustments to assure enough distance to the high tension power lines without stalling. After landing successfully, I struck a soccer goal with my right wing. The goal post pulled us violently to the right and pulled us in the direction of a Port-a-John and a street light. After striking the light pole we came to a stop with the Port-a-John under the left wing."

Evidence of ground scars in the soccer field indicate the aircraft landing and striking the goal post, light pole and Porta-John. The aircraft had damage on the left and right wing and fuselage consistent with striking the items on landing.

The aircraft had damaged on the left side of the aircraft. The damage was sustained where the engine cradle meets the firewall, bending both the engine mount and the firewall. One blade was broken off the prop at the hub. This damage was consistent with the damage to the light pole.

Damage was also sustained on the right wing 2/3rds out from the wing root for about 20 inches wide and from the leading edge to the spar of the wing. The right wing tip was also damaged. This damage was consistent with the damage to the soccer goal. The left wing leading edge and upper and lower skins were wrinkled from the wing root to approximately 1/2 way out the wing. This damage was consistent with the damage to the Port-a-john.

An inspection of the aircraft showed approximately 15 gallons of fuel in each wing. The fuel was Blue in color, clear with no water noted.

Inspection of the engine found the number 6 cylinder lower plug wire not connected to the number 6 spark plug, and the rubber boot hanging down resting against the exhaust tubes below the number 6 cylinder. Two burn marks were found on the spark plug boot.

The engine propeller was pulled through 2 rotations opposite of normal rotation for a quick check of compression. No discrepancies noted.

The pilot noted in verbal conversation that he did not check his gauges for anomalies, and did not verify if he had engine power to maintain flight. He said he did not know.

The wind was SW at 9 mph and VFR conditions prevailed at the time.

On 08/16/2022 an inspection of the aircraft engine YIO-540-D S/N EL-37455-48E installed on N4400K was conducted by myself, David Wincell MKE FSDO and Ryan Enders Supervisor of Safety Lycoming Engines Co. The engine installed is a non-certificated experimental version of the IO-540. The engine has 217 hours flight hours since new.

The engine ignition system was inspected. The engine had 2 electronic type mags installed. The plug wires were of an automotive style wire and boot system that did not thread to the plug like a certified engine.

Initial inspection of the engine showed the lower spark plug wire (on the No. 6 cylinder) boot not connected to the spark plug. The boot had signs of the rubber boot burned or melted away on the outside of the 90 degree bend of the plug boot, and at the end of the boot, where the boot made contact with the exhaust pipe it was resting on. The boot was melted or burned away enough so the electrode was able to make contact with the exhaust pipe.

No other discrepancies were noted on the visual inspection.

Inspection of the wiring in the engine compartment had no indications of burning. Inspection of the wiring in the cockpit, behind and under the instrument panel had no indications of burning. Inspection of the remaining interior did not show any indication of burning.

The spark plugs were removed, visual inspection indicated the plugs were not new. All the plugs had carbon on them. None of the spark plugs had signs of fouling. The plug gaps were similar with no bridging. The no.6 cylinder lower plug had a more white color on the base and porcelain than the other plugs.

Inspection of the electronic magneto timing showed the mags were set at 25 degrees that was within installation tolerance.

The fuel injection system was inspected, the servo, fuel pumps, and distributor all contained fuel and had pressure. No contamination was found in the nozzles, distributor or servo. The gaskets were intact. No other discrepancies noted.

The oil system was inspected. No discrepancies were found in the filter or screen. There was 6 plus quarts in the engine. The oil was not clean and not excessively dirty.

The engine was pulled through several cycles. The cylinders had an even amount of compression. The valve train moved smooth through the cycles with the valve rockers on all cylinders working normally with no sign of valve stick, crank shaft or valve train damage. No other discrepancies noted.

An engine control continuity check was performed. The Fuel mixture, throttle opposition and prop governor controls operated smoothly. The alternate air source valve on the air scoop was bent from the accident but operated smoothly when straightened.

The engine service record showed the last engine oil change and compression check on 3/22/2022 with 121.9 hours on the engine.

The engine had an individual cylinder head temperature gauge, an exhaust gas temp gauge and fuel flow. Dual Garmin GDU460 units were installed in the aircraft. The external memory cards that for recording all the parameters had dummy plastic SD cards installed with no memory capability at the time of the accident. The pilots GDU460 was removed from the aircraft and sent to the NTSB for data analysis.

I received Addition information from the pilot on 08/18/2022. He stated the aircraft did not fill the cockpit to where he could not see. Then the smoke cleared from the initial amount. He selected flaps down and landed in the soccer field.

The pilot also stated in the interview he added power to clear the power lines on his approach.

The pilot further stated that the engine was running, but he did not check gauges or attempt to maintain level flight.

If you have any questions, please feel free to contact me at [REDACTED].

Sincerely,

[REDACTED]
Michael J. Dziengel
Aviation Safety Inspector

From: [REDACTED]
To: [REDACTED]
Cc: [REDACTED]
Subject: RE: N4400K RV10 Beaver Dam WI Accident
Date: Monday, August 22, 2022 07:15:35

[CAUTION] This email originated from outside of the organization. Do not click any links or open attachments unless you recognize the sender and know the content is safe.

Hello Michael,

Yes that is correct. "He stated the aircraft did not fill with smoke to where he could not see."

Michael Dziengel
Aviation Safety Inspector
Milwaukee FSDO
[REDACTED] Milwaukee, WI 53207

P
C

From: Hodges Michael [REDACTED]
Sent: Friday, August 19, 2022 6:28 PM
To: Dziengel, Michael (FAA) [REDACTED]
Cc: Holmes, Nicholas J (FAA) [REDACTED]
Subject: RE: N4400K RV10 Beaver Dam WI Accident

Hi sir,

It looks great, thank you so much for this and for all of the help with this case.

Just one small correction request please, on page 2:

I received Addition information from the pilot on 08/18/2022. He stated the aircraft did not fill the cockpit to where he could not see. Then the smoke cleared from the initial amount. He selected flaps down and landed in the soccer field.

I assume you mean the aircraft did not fill with smoke?

Thank you.

Mike

Mike J. Hodges, MS, CHP
Air Safety Investigator
National Transportation Safety Board

4760 Oakland Street, Suite 500
Denver, Colorado 80239-2793
United States of America

Cellular/SMS: [REDACTED]
Facsimile: [REDACTED]
Response Operations Center (24/7): 1-844-373-9922
Work Hours: Monday-Friday, 0900-1730 Mountain Time

"Don't let yesterday use up too much of today." – Will Rogers

From: Dziengel, Michael (FAA) [REDACTED]
Sent: Friday, August 19, 2022 4:53 PM
To: Hodges Michael [REDACTED]
Cc: Holmes, Nicholas J (FAA) [REDACTED]
Subject: N4400K RV10 Beaver Dam WI Accident

[CAUTION] This email originated from outside of the organization. Do not click any links or open attachments unless you recognize the sender and know the content is safe.

Hello Michael,

See attached inspectors statement. Let me know if you want me to add anything to it.

Michael Dziengel
Aviation Safety Inspector
Milwaukee FSDO
[REDACTED] Milwaukee, WI 53207

P
C

CONFIDENTIALITY NOTICE - THIS E-MAIL TRANSMISSION MAY CONTAIN INFORMATION THAT IS PRIVILEGED, CONFIDENTIAL, PROPRIETARY, SUBJECT TO COPYRIGHT, AND/OR EXEMPT FROM DISCLOSURE UNDER APPLICABLE LAW. IT IS FOR THE USE OF INTENDED RECIPIENTS ONLY. If you are not an intended recipient of this message, please notify the original sender immediately by forwarding what you received and then delete all copies of the correspondence and attachments from your computer system. Any use, distribution, or disclosure of this message by unintended recipients is not authorized and may be unlawful.