

08/23/2021

## **CEN21FA377 – N1472E Examination Report**

Onsite examination present: Mike Hodges (NTSB – investigator-in-charge) and Thomas Good (FAA North Texas FSDO – aviation safety inspector, operations).

Follow-up examination present: Mike Hodges (NTSB – investigator-in-charge) and Charles Cook (Flying Oaks Airport, 2TE2, owner and manager).

### **Airframe (N1472E, Aeronca 7AC, Serial Number 7AC-5035)**

- The airframe was examined at the accident site on 08/22/2021.
- The airplane came to rest about 1,100 ft southeast of the departure end of runway 15 at 2TE2. The heading was 079° at an elevation of about 860 ft above mean sea level. The accident site is located on private property.
- The wreckage was on a concrete driveway and on the grass next to the driveway. The driveway was 12.5 ft wide. The airplane came to rest next to a metal horse pasture fence, 5 ft high. There was no damage to the home on the property. There were no ground injuries.
- There was no evidence of a fire occurring.
- All the major structural components were found at the accident site.
- The right wing was cut off by first responders on the day of the accident to facilitate the removal of the two bodies in the cockpit. The aileron cables for the right wing were also cut by first responders during the body removal process.
- The fuel tank (the only fuel tank in the airplane), located between the cockpit and the firewall, was breached from the impact sequence. The FAA aviation safety inspector, who was onsite the day of the accident, reported a strong odor consistent with fuel at the accident site. The airport manager reported that the airplane got its fuel from at the departure airport. He reported there were no other reported issues with the fuel from the other various airport tenants who flew airplanes. The fuel tank cap was found dislodged from the tank in the wreckage debris. There were no signs of a fuel leak on the airframe. Vegetation blighting was observed in the grass where the front of the airplane came to rest by the driveway.
- The airplane sustained substantial damage to the fuselage and both wings. The cockpit was crushed from the impact damage. The left wing impacted a metal fence. The rear fuselage was twisted with the empennage elevated up (like a scorpion tail).
- Flight control continuity was established for the ailerons, the rudder, the elevator, the throttle, the control stick, and the pedals. This was done for both cockpit stations. No issues were noted. The airplane does not have flaps. The two throttle wood knobs were dislodged and were found inside the cockpit debris.

- Both lap belts for the two seats were cut by first responders to facilitate removal of the two bodies. The two seats sustained impact damage.
- The fuel cutoff level was found in the off position. The carburetor heat was found in the off position. The ELT was found in the on position, with the forward accelerator knob pushed forward to the on position.
- The RPM indicator showed zero. The hours on the RPM indicator showed 1,275.46.
- The altitude indicator showed about 250 ft and the Kollsman window showed 29.90.
- The oil temperature gauge showed 100.
- The oil pressure gauge showed 10.
- The primer and mixture were both in. Both throttles appeared to be full forward.
- The turn slip indicator was damaged, and the ball was not showing.
- The airspeed indicator showed 105 mph. The indicator was dislodged from the dashboard and found in the debris in the cockpit.
- The tailwheel appeared intact and attached while the main landing gear sustained crushing damage from the impact.
- There were no onboard recording devices found in the wreckage.
- A stall warning system or an angle of attack indicator was not installed, nor was it required to be.
- There were no large bags or cases found in the wreckage.
- After examining the airframe at the accident site, the wreckage was recovered by local volunteers under the supervision of the NTSB investigator-in-charge, back to the departure airport. The wreckage was laid out inside of a hangar.
- No signs of preimpact mechanical malfunction or failure were noted with the airframe.

### **Engine (Continental Motors A65-8, Serial Number 4521-468)**

- The engine was examined at the departure airport on 08/23/2021.
- Airframe to engine control continuity was established.
- The engine mount sustained impact damage.
- The firewall was crushed.
- The engine case and cylinders appeared intact.
- All 8 spark plugs were removed and examined. All sparkplugs showed signs consistent with the “normal-worn” signatures as shown on the Champion Aerospace Aviation-Check-A-Plug chart.
- Thumb compression was obtained for all cylinders when the propeller was rotated. Equal intake and exhaust valve rocker arm movement was established in the correct firing order.
- The carburetor was found detached due to impact damage. It was removed and disassembled. The float was undamaged, and no debris was noticed. A small amount of fuel was released from the carburetor during the disassembly.
- The two magnetos were attached to the engine, sustained impact damage, and were crushed from the engine in the front and from the fuel tank from behind. It was attempted to produce spark at all leads, with no success.
- The engine fuel lines appeared to be intact.
- The oil filter/screen was not examined, due to it being encapsulated from crushing from behind the engine and the firewall/fuel tank area.

- The oil tank appeared intact but did sustain crushing impact damage.
- There were no signs of fluid leaks in the engine compartment.
- The exhaust tubing sustained impact damage.
- The induction system sustained impact damage and was full of dirt and grass debris from the accident site.
- No signs of preimpact mechanical malfunction or failure were noted with the engine.

### **Propeller (McCauley CM 7142, Serial Number 50728)**

- The propeller was examined at the departure airport on 08/23/2021.
- The propeller showed chordwise scratching on blade 2. Blade 1 was bent rear, about 90 degrees.
- The propeller was removed, and an exemplar propeller was mounted on the crankshaft flange. The propeller was rotated freely by hand, and the impulse coupling was heard, while rotating the exemplar propeller.
- A spinner was not observed in the wreckage.
- No signs of preimpact mechanical malfunction or failure were noted with the propeller.

### **Maintenance Records**

- The maintenance records were examined at the departure airport on 08/23/2021.
- An examination of the airplane's maintenance records revealed no evidence of uncorrected mechanical discrepancies with the airframe, the propeller, or the engine.