

**NATIONAL TRANSPORTATIONS SAFETY BOARD  
Office of Aviation Safety  
Washington, DC 20594**

**EXAMINATION SUMMARY**

**-- CEN21LA001 --**

**A. ACCIDENT**

Location: Cedaredge, Colorado  
Date: October 4, 2020  
Time: 1150 CDT  
Aircraft: Cessna 210B, N9568X

**B. PARTICIPANTS**

Dan Baker  
Senior ASI  
National Transportation Safety Board  
Denver, Colorado

Henry Soderlund  
Chief ASI  
Textron Aviation  
Wichita, Kansas

**C. DETAILS OF ENGINE EXAMINATION**

A post-recovery engine and airframe examination was conducted at Beegles Aircraft, Greely, Colorado, on February 18, 2021.

**D. SUMMARY OF ENGINE EXAMINATION**

**Airframe** – Cessna 210B

**Engine** – Continental Motors IO-470-S-1 s/n 102033-1-S

On 1/15/2020: ACTT 3,103.6 / Tach 942.6 / ETT 3,098.6 / ETT SMOH 1,693.6

AIRFRAME - The airframe was partially consumed by the pos-impact fire

Flight controls

- All flight controls attached
- Inboard portions of both flaps damaged by fire
- Cables connected at each flight control bellcrank and at cockpit controls

- Rudder/elevator/elevator trim cables cut during aircraft recovery just forward of horizontal stabilizer
- Direct aileron cables (control yoke to wing bellcrank) had been cut
- Aileron interconnect cable tension overload
- All cables visually examined along their entire length
- Elevator trim actuator measurement: 1.7" - ~5 degrees tab trailing edge up
- Both hydraulic flap actuators in the fully retracted position
  - Hydraulic lines to actuators fire damaged so actuators would be free to move

#### Wings

- Fire damage to both wings
- Fuel caps in place with fire damage

#### Cabin

- Both front seats and rear bench seat separated from cabin floor
  - Bench seat back separated
  - Front seat frames intact, but bent
- Almost all of cabin consumed by fire
- Left main gear retracted (so probably all gear retracted)
- No instruments/switches left

#### Empennage

- Leading edge damage to outboard portion of left horizontal stab
- Leading edge damage to inboard portion of right horizontal stab
- Some bending damage to left elevator
- No damage to vertical stab or rudder

#### Fuel system

- Fuel caps attached
- Airframe fuel strainer not observed
- Both fuel sender units damaged by fire
- Fuel selector handle missing
- Fuel selector valve intact
  - Confirmed left tank by blowing air through valve
    - Air from left tank inlet to engine outlet
    - No air from right tank inlet to engine outlet

ENGINE – The engine sustained significant thermal damage from the post-impact fire.

- Heat and fire damage is visible on entire engine. Valve covers on all cylinders are melted.
- Right engine front mount is present. Right aft and both Left engine mounts broken off near engine casing.
- Crankshaft rotation attempted using the propeller. Rotation limited to 10 degrees. Rotation was observed at the fuel pump coupling...confirmed continuity to accessories
- Unable to verify piston movement.
- Unable to verify rocker arm movement.
- Propeller governor shaft was manually rotated; moved freely
- All accessories on back of engine are present. Heat damage is evident on all accessories.
- Removed accessories and still unable to rotate

- Removed oil pan and confirmed camshaft intact. Oil and fuel lines mostly consumed by fire.
- Oil pump seized – did not see signs of foreign object passage, but there was a lot of rust
- Oil filter heat damaged and not examined
- Unable to verify engine oil level due to fire damage. Oil pan consumed by fire.
- Engine fuel lines from fuel flow divider/spider to each cylinder present and secured at divider and each cylinder.
- Fuel pump deformed from heat/fire
- Throttle body heat damage and filter partially melted. Throttle body fuel lines from fuel pump to fuel divider mostly consumed by fire.
- Throttle plate not able to move due to thermal damage.
- Throttle and mixture arms unable to move due to thermal damage
- Flow divider heat damaged, screen clean
- Fuel injectors clear
- Both Magnetos removed and manual rotation was attempted. Left mag limited to about 45 degrees rotation and the impulse coupling would not fire. Right mag was rotated, but no spark was produced.
- Both Magnetos were retained for further examination.
- All ignition leads on the ignition harnesses were brittle and heat damaged.
- Top spark plugs appeared normal. Spark plug electrodes damaged from fire/heat exposure. Unable to verify continuity from mag to spark plugs.
- Unable to cockpit engine controls verify due to fire damage. Controls not present.
- All cylinders examined visually with borescope. All cylinders had rust visible on the cylinder walls and normal burn patterns visible of top of each cylinder. No other anomalies noted
- Unable to disassemble wet vacuum pump, drive shaft intact
- Air intake tubes and air filter screen not present
- Propeller blade A-Blade present for about 24 inches from hub and outboard 10 inches of blade tip were present. The middle portion of the blade was missing, consumed by fire. The tip exhibited aft curvature. The blade was set in the hub in a partially feathered position. Blade was unevenly set in the propeller hub and retention rings?? were loose.
- Propeller blade B – Blade B was complete and silver in color. Some leading edge gouging and twisting of the blade was present. The blade was set in the hub in a partially feathered position. Blade was unevenly set in the propeller hub and retention rings were loose.
- Propeller blade C – Had separated from the propeller hub. Black in color (painted) with red and white tip. Both chordwise and longitudinal scratches were present. Leading edge gouging was present.
- Propeller hub Assembly – Portions of the spinner were present and showed impact damage. The hub was broken where the “C” blade broke free.
- McCauley S/N 02247?(3?), Model D3A36C435-A

Additional magneto examination by NTSB IIC on 7/12/21.

- The magnetos were disassembled, and the internal components were found melted and disintegrated from the post-crash fire. A functional test of each magneto was not possible.

----- end of summary -----