

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

SUMMARY OF ENGINE/AIRFRAME EXAMINATION

-- CEN20LA186 --

A. ACCIDENT

Location: Center, Texas
Date: May 20, 2020
Time: 1640 CDT
Aircraft: N51610, Cessna T206H

B. PARTICIPANTS

Craig Hatch
Aerospace Engineer
National Transportation Safety Board
Denver, Colorado

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Aviation Accident Investigator
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C. DETAILS OF ENGINE EXAMINATION

A post-recovery engine/airframe examination was conducted at Air Salvage of Dallas, Lancaster, Texas, on April 28, 2021. The airplane sustained significant impact damage and was destroyed.

D. SUMMARY OF ENGINE EXAMINATION

Airframe – N51610, Cessna T206, s/n T20608338
Engine – Lycoming TIO-540-AJ1A

Engine

- Engine was impact separated from the airframe
- The propeller hub was broken and part of the hub remained attached to the crankshaft. There was significant impact damage and some components were impact separated.
- Cylinders 1 and 2 impact damaged and fractured open and had significant damage
- All cylinder caked and filled with mud/dirt
- Valve covers removed and rockers/springs were in place in impact damaged
- Top fuel/induction system was damaged and/or missing
- Several push rods impact damaged/displaced, and some missing
- Several spark plugs missing. The rest were impact damaged and caked with dirt
- Several fuel injectors missing. The rest were impact damaged and caked with dirt
- Fuel flow divider remained attached, gasket in place and contained oil when it was opened
- Fuel lines mangled and/or missing
- Turbo and exhaust system impact separated
- Turbo was seized. Turbo blades don't have much damage. Compressor blades broken and bent over.
- Fuel servo impact separated and fragmented
- Rear accessory section with significant impact damage.
- Both magentos in place but fragmented
- Accessory gearbox removed and was partially filled with dirt/mud. Gears were in place and condition was ok
- Oil pump was in place. When attempted to rotate it was very difficult
- Stripped the engine of accessories and airframe parts for disassembly and inspection
- Fuel pump removed and the drive shaft spline was intact and the pump was manually rotated
- Cam shaft seized. Crankshaft seized
- Oil sump impact separated and fragmented. Filled with mud/dirt
- Propeller blades were impact separated. All 3 blades tips were fractured off. 2 blades relatively straight with a slight forward bend. Last blade was bent back about 90 deg

Airframe

- Significant impact damage, fragmentation and accordion
- Aileron interconnect cables in cockpit exhibited heavy impact damage and were connected
- All control cables from aileron, elevator, and rudder were separated in tension overload in the forward cabin floorboard area
- Both left and right aileron wing bell cranks were observed with the direct cable in place
- The aileron balance cable was not connected to the wing bell cranks
- A small section of the aileron balance cable was separated in tension overload
- Impact related damage to both aileron wing bell cranks
- The entire right aileron was observed.
- The left aileron outboard 12" was observed in the wreckage. The remaining aileron section was not found.
- Cockpit elevator torque tube was found with one cable attached
- Elevator control cables remained attached to the aft elevator bell crank
- The elevator push pull tube from the aft bell crank remained attached to the elevators
- Elevator trim tab cables were separated in tension overload
- Elevator trim tab measured at 1.35 inches which corresponds to 5 deg tab down
- Cockpit rudder cables were connected to the rudder torque tubes

- Rudder cables were connected to the rudder horn in the aft empennage
- Flaps were in the retracted position
- Flap actuator in the retracted position
- Flap handle was in the UP/retracted position
- Flap indicator was not found
- Fuel strainer screen not found
- Fuel strainer bowl was impact damaged, no internal corrosion
- Fuel selector handle not found
- Position of the fuel selector valve was not determined due to impact damage
- Seat belts were 3-point and their use could not be determined
- Both wings exhibited accordion crushing to the leading edges
- Elevator and rudder exhibited accordion crushing to the leading edges
- The rudder cables were connected to the rudder
- No evidence of a post-impact fire
- All seats were impact separated from the seat tracks

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