

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

SUMMARY OF ENGINE/AIRFRAME EXAMINATION

-- CEN20LA380 --

A. ACCIDENT

Aircraft: N4636D, Beech 35

B. PARTICIPANTS

Craig Hatch
Aerospace Engineer
National Transportation Safety Board
Denver, Colorado

Andrew Hall
Aviation Safety Inspector
Textron Aviation
Wichita, Kansas

C. DETAILS OF ENGINE EXAMINATION

A post-recovery engine examination was conducted at Air Salvage of Dallas, Lancaster, Texas, on Nov 4, 2021. The airplane wings, and tail section were off the fuselage. The fuselage was cut aft of the rear seats (for transport), and the engine had been removed. The fuselage was placed on a stands for the examination.

D. SUMMARY OF ENGINE EXAMINATION

Engine – Continental IO-470C, 250 hp

- A visual inspection of the engine did not discover any preimpact anomalies
- Fuselage took heavy impact damage to the front, during the accident
- Prior to the exam, and after the accident, the wreckage set outside in the yard;
 - Evidence of water was found in the fuel system strainer, along with the remotely mounted engine oil filter adapter
- A JPI engine monitor was removed, for potential download later
- The top set of sparkplugs were removed and appeared, normal and light grey in color
- The fuel manifold and fuel injectors (6) were clear of debris
- The throttle body fuel screen, had a small of debris on it
- The fuselage fuel screen, had water drain from it and had evidence of water contamination
- The engine oil filter was cut open; no evidence of metal contamination was noted
 - Water with the oil in the oil filter and fuel system was likely from outside storage in rain.



Fuselage on stands

- Throttle and mixture controls were connected to the throttle body
- The engine driven fuel pump was removed; the shear shaft was intact and the pump rotated by hand
- The fuel selector was on the left fuel tank and was seized; impact damage from the underside was suspected
- Elevator trim – neutral
- Flaps & landing gear – Up position
- 2 wing tip fuel tanks, 2 wing tanks, and left side 'aux' tank – right wing tip tank cap missing
- Engine rotated by hand
 - Continuity thru the valve train to the accessory section noted
 - Magnetos impulse couplings heard
 - A thumb suction and compression test – good
- Spark was observed on top set of sparkplugs
- A reason for the loss of engine power was not found



Engine, separated from fuselage and ready for examination

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