

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

SUMMARY OF AIRPLANE EXAMINATION

-- CEN22LA039 --

A. ACCIDENT

Aircraft: Beech A36TC, N1805D

B. PARTICIPANTS

Craig Hatch
Aerospace Engineer
National Transportation Safety Board
Denver, Colorado

Rick Roper
Director of Operations
Ram Aircraft, LP
Waco, Texas

C. ACCIDENT SUMMARY

See factual report

D. DETAILS OF ENGINE EXAMINATION

A post-recovery examination was conducted at Air Salvage of Dallas, Lancaster, Texas, on December 16, 2021.

E. SUMMARY OF ENGINE EXAMINATION

Airframe – Beech A36TC

Engine – Continental TSIO-520 UB

Propeller – 3 Bladed, constant speed Hartzell

- During the accident the aircraft had been submerged in water: An engine test run was not able to be performed.
 - The fuselage (with engine) was placed on stands; the wings which had been moved for transport, were set next to the fuselage.
- The 3-bladed propeller remained attached to the engine crankshaft flange. All three blades had similar appearance: gentle/slight bent aft.
- An initial inspection of the engine did not reveal any obvious pre-impact abnormalities.
- The engine driven fuel pump was removed; Residual liquid consistent with avgas was drained from the pump. The drive spline was intact, and the pump rotated freely by hand
- The top set of sparkplugs were removed; normal wear was observed,

Summary of Engine Examination

- The engine was equipped with one electric ignition and one traditional magneto. The P-lead were disconnected from the magnetos. The magneto was turned, and spark was not observed on the top set of ignition leads. It was noted that the magneto showed evidence of corrosion due to water immersion.
 - The electric ignition system was not field tested.
- The engine was manually rotated via the propeller. The engine was initially hard to rotate, however, the engine “freed up” after several revolutions. Continuity thru the valve train and accessory drive was confirmed, including magneto impulse coupling.
- The engine oil dip stick was observed; the oil filter was removed, neither showed evidence of water or metal contamination.
- The mixture and throttle controls remained attached to their respective throttle body/fuel pump.
- The fuel selector was in the left main position, air was blown into the right and left fuselage fuel pickup points. Air/fuel was noted at the engine driven fuel pump, when air was applied on the left side. The test was repeated with the fuel selector on the right main side and air was again noted at the fuel line leading to the fuel pump, when air was applied to the right fuselage side only:
- Shop air was applied to the right-wing fuel line, near at the wing root. Air was noted venting from the fuel cap. The test was repeated on the left wing and air was also noted venting from the left fuel cap.
 - Both left and right fuel caps had similar appearance; evidence of water corrosion/the large O-rings appeared dry and pliable.
- No preimpact anomalies were noted during the airplane examination.



Airframe on stands, ready for exam

Summary of Engine Examination



Fuel pump – drive spline intact



Right magneto and left electronic ignition

Summary of Engine Examination



Top set of sparkplugs



Fuel caps

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