

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

**SUMMARY OF ENGINE/AIRFRAME EXAMINATION**

-- CEN21LA293 --

**A. ACCIDENT**

Aircraft: N4216J, Piper PA28

**B. PARTICIPANTS**

Craig Hatch  
Aerospace Engineer  
National Transportation Safety Board  
Denver, Colorado

**C. DETAILS OF ENGINE EXAMINATION**

A post-recovery engine examination was conducted at Air Salvage of Dallas, Lancaster, Texas, on Nov 10, 2021. The airplane wings and horizontal stab had been removed from the fuselage. The fuselage was placed on a stands for the examination.

**D. SUMMARY OF ENGINE EXAMINATION**

**Engine** – Lycoming O-320-E2A, 140/150 hp

- A visual inspection of the engine did not discover any preimpact anomalies
- Airplane took heavy impact damage to the front, during the accident. The engine was “titled” down, and the carburetor, was partially, broken from the sump, due to impact.
- Two bladed-fixed pitch propeller; one blade had a gentle bent aft
- The top set of sparkplugs were removed and appeared, normal and dark grey in color
- The gasolator was damaged and was open due to the accident; had a small amount of debris present
- Engine driven fuel pump was removed, and actuated by hand; pump appeared to operate



Fuselage on stands

- Throttle and mixture controls were connected to the carburetor
- Engine rotated by hand
  - Continuity thru the valve train to the accessory section noted
  - Left Magneto impulse coupling, very faint
    - Impulse coupling "loose"
  - A cylinder thumb suction and compression test – good
- Spark was observed on top set of sparkplugs
- Timing was 25 degrees right mag, and about 20 degrees left mag BTC
- Scat tubing on engine's induction feed
  - Tubing crushed during accident – unable to determine if tubing was collapsing before accident



Scat house, running to the carburetor

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