

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

SUMMARY OF ENGINE/AIRFRAME EXAMINATION

-- CEN20LA305

A. ACCIDENT

Location: San Antonio, TX
Date: July 25, 2020
Time: 1430 CDT
Aircraft: PA-28-140

B. PARTICIPANTS

Craig Hatch
Aerospace Engineer
National Transportation Safety Board
Denver, Colorado

Mark Platt
Sr Air Safety Investigator
Lycoming Engines

Jon Hirsch
Air Safety Investigator
Piper Aircraft

C. DETAILS OF ENGINE EXAMINATION

A post-recovery engine examination was conducted at Air Salvage of Dallas, Lancaster, Texas, on May 4, 2021. The engine sustained significant fire/thermal damage.

D. SUMMARY OF ENGINE EXAMINATION

Airframe – PA-28, N716RL

Engine – Lycoming O-320

Engine

- Engine with attached engine mount was placed on a table for the examination.
- The 2 bladed fixed-pitch propeller remained attached to the crankshaft. The blades had minor damage (see photos).
- The engine had fire/thermal damage with no obvious pre-impact abnormalities.
- Valve covers removed and rockers/springs were in place
- Top set of spark plugs were removed: two of the spark plugs were oil soaked
- The 2 bladed propeller was removed;
- Carburetor remained in place; controls appeared connected.
- Both magnetos were in place and fire/thermal damage. Magnetos were removed; however, due to thermal damage, neither unit would rotate
- Accessory gearbox was observed; Gears were in place and condition was ok
- Continuity was established thru the valve train, rear accessory section, when engine was rotated by hand.
- The carburetor was removed from the engine and opened: thermal damage was noted with the plastic floats melted.
- The fuel inlet screen for the carburetor was absent debris/contamination.
- The engine driven fuel pump, was removed and opened, thermal damage was noted.
- A thumb suction and compression test was performed on each cylinder, no abnormalities noted.
- The engine cylinders were borescoped with no abnormalities noted.
- The oil filter canister was cut open, the filter element was dry and had thermal damage: minor silver flakes were noted in the element.

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