



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Western Pacific Region

February 3, 2022

AIRFRAME AND ENGINE EXAMINATION SUMMARY

WPR21FA048

This document contains 2 embedded photos.

A. ACCIDENT

Location:	Whiteman Airport, California
Date:	November 12, 2020
Aircraft:	N939CP, Cessna 182T
NTSB IIC	Albert Nixon

B. PARTICIPANTS

Albert Nixon
Senior Aviation Accident Investigator
Western Pacific Region
Federal Way, WA

Mark Platt
Senior Air Safety Investigator
Lycoming Engines
Williamsport, PA

Peter Basile
Senior Air Safety Investigator
Textron Aviation
Wichita, KS

Michael Nunemaker
Chief of Safety
Civil Air Patrol/U.S. Air Force Auxiliary
Maxwell AFB, AL

C. SUMMARY

Examination of the wreckage was conducted at the facilities of Air Transport at Phoenix, Arizona. The postaccident examination of the airframe and engine revealed that the throttle linkage lever control rod end was found separated from the throttle plate control arm of the fuel control servo.

No additional preimpact anomalies or malfunctions that would prelude normal operation of the airplane were noted.

D. DETAILS OF THE INVESTIGATION

1.0 Airframe Examination

The airframe sustained impact damage and significant thermal damage to the fuselage and cabin area. The left outboard portion of the wing was separated from the fuselage and sustained impact and thermal damage. The empennage was relatively intact, thermal damaged and the rudder was attached. The left horizontal stabilizer was cut near the root and the right horizontal stabilizer and elevator were attached.

Flight control continuity was unable to be established due to the thermal damaged sustained, but all the cables and hardware were present. The rudder was attached at all its respective attach points. The elevator trim indicator was about neutral.

A small portion of the right aileron skin was located that was about 15 inches by 2 inches. The flaps were not located.

In the cabin the instruments were consumed by fire and destroyed. A few gauges that sustained thermal damage were located. The Altimeter, Airspeed, and ADI. Engine controls were located but sustained substantial damage and were destroyed. The fuel selector valve was determined to be selected to the LEFT fuel tank position.

The flaps were determined to be extended 30° from the flap indicator.

The fuel strainer was not located. The fuel filter screens in each fuel tank were located and were clear of debris.

The autopilot servos were located, identified, and the respective cables were attached.

A GoPro and G1000 MFD were secured for future examination.

2.0 Engine Examination

The engine was separated from the fuselage and the engine mount assembly remained partially attached to engine, and sustained impact and thermal damage. No catastrophic damage was noted. The rocker covers were removed and there was evidence of heat distress on the right-side cylinders, and on the left side, the valves were appropriately lubricated. Rotational continuity of the engine was established through hand rotation of the propeller and proper valve movement and valve train rotation was observed. The top spark plugs were removed, and the electrodes were undamaged and exhibited coloration consistent with normal wear in accordance with Champion Check-A-Plug Chart.

The fuel injection servo was securely attached to its mounting pad. The idle mixture adjustment linkage was attached to the respective control arm of the fuel servo and sustained thermal damage. The throttle linkage lever control rod end was found separated from the throttle plate control arm of the fuel control servo. The attachment hardware was not found (AN bolt, flat washer, castellated nut, and cotter pin). No evidence of impact or other damage was noted in the control arm and control rod end. Additionally, soot was present on the entire assembly, including the bolt opening where it attached. When cleaned of soot, observation of the control arm and control rod end revealed no damage or deformation.



Figure 1: The throttle linkage control lever rod end disconnected to the control arm of the fuel servo.



Figure 2: The throttle linkage control lever rod end and control arm with soot cleaned off.

The accessory case was removed. The crankshaft gear dowel pin was sheared. The gear rotated about 5 degrees after being sheared. Both magnetos were secured on mounting pad and were destroyed from thermal damage. The fuel pump and oil filter were thermally damaged. The starter was attached and intact.

The Fuel flow distributor was attached to top of engine. All fuel line b-nuts were secured. The fuel flow distributor was removed and examined. Examination revealed that the diaphragm was thermally damaged. The fuel nozzles were secured with b-nuts and sustained varying degrees of thermal damage. One nozzle was unable to be removed and was destroyed by thermal damage. Examination of the 5 remaining nozzles revealed that all the nozzles were clear of contaminants or obstructions to flow.

The bottom rear of the oil sump was destroyed by fire and exposed a large area.

The vacuum pump drive was secured on its mounting pad with thermal damage.

The spinner exhibited impact and thermal damage. The three bladed constant speed propeller remained attached to the crankshaft flange. The spinner and remained attached. All three blades remained attached to the propeller hub. The blades exhibited leading edge damage, torsional twisting, chordwise striations, and thermal damage.

Submitted by Albert Nixon