



Federal Aviation Administration

San Antonio Flight Standards District Office

10100 Reunion Place, Suite 200

San Antonio, TX 78216

Wreckage Examination Summary

NTSB Accident No:	CEN19LA087
Accident Date:	February 27, 2019
Location:	Devine, Texas
Airplane Make/Model:	Warner Aerocraft Space Walker II
Airplane Serial Number:	TB006
Airplane Registration:	N1778
Engine Make/Model:	Lycoming O-235-C1
Engine Serial Number:	1552-15
Examination Date:	March 20, 2019
Examination Location:	Castroville Municipal Airport, Castroville, Texas
Participants:	Jeffery W. Burns – FAA, Aviation Safety Inspector Jake White – Airframe & Powerplant Mechanic / IA

On March 20, 2019, at 0800, Mr. Jake White and I met at Castroville Municipal Airport at the hanger where the wreckage had been recovered to following the accident. The airplane had been recovered from the accident site with the wings and engine removed for transportation. The engine had been removed by cutting the engine mount tubes. Flight control continuity for the elevator and rudder were confirmed with no anomalies observed. Aileron flight control continuity from the control sticks to the wing roots was confirmed with no anomalies observed; the push-pull control tubes to the ailerons had been cut to facilitate wreckage recovery. Aileron flight control continuity from each wing root to the ailerons were confirmed with no anomalies observed. The airplane was not equipped with wing flaps.

A substance consistent with aviation fuel was observed inside the fuel filter assembly. The fuel filter screen contained a minor amount of particulate. The fuel supply line from the fuel filter assembly to the carburetor had been removed during wreckage recovery. The carburetor was disassembled and no anomalies were observed. The throttle valve

moved in conjunction with the throttle arm. Full range of motion was observed with both the throttle and mixture control arms. The fuel inlet finger screen was clean. The carburetor bowl did not contain any visible sediment or fuel. It is likely that any fuel in the carburetor had evaporated or drained from the carburetor after the accident. The carburetor was equipped with metal floats. The metal floats were intact with no fuel penetration inside of floats. Movement of the floats resulted in a coinciding movement of the inlet needle valve.

A visual examination of the engine crankcase did not reveal any holes, cracks, or oil leaks. The engine crankshaft rotated smoothly with no binding observed. Internal engine and valve train continuity was confirmed as the engine crankshaft was rotated. Compression and suction were noted on all cylinders in conjunction with crankshaft rotation. The exhaust and intake valves all functioned normally with crankshaft rotation. There were no anomalies to the rear accessory gears, which rotated freely in conjunction with crankshaft rotation. The spark plugs were removed and exhibited features consistent with normal engine operation. Both magnetos provided spark on all leads when rotated with an electric drill motor.

A cold compression check was performed with the following results:

Cylinder #1	32 psi / 80 psi (exhaust leak)
Cylinder #2	68 psi / 80 psi (intake leak)
Cylinder #3	40 psi / 80 psi (exhaust leak)
Cylinder #4	52 psi / 80 psi (exhaust leak)

A partial disassembly of the engine did not reveal any internal component failures. No anomalies were observed with the four cylinders. There were no anomalies with the connecting rods or pistons, or their respective bearings. The piston pins exhibited normal wear features. The piston domes exhibited normal combustion deposits. The oil sump was removed which revealed adequate oil present, with no metal or debris observed. Adequate lubrication was observed throughout the engine and there was no evidence of oil starvation or excessive heat. The camshaft lobes were bright and shiny, with no excessive wear or corrosion observed. There were no anomalies to the rear accessory gears, and all gears remained adequately lubricated and rotated freely. The internal timing from the crankshaft to camshaft was correct. The oil pump was disassembled, which revealed adequate oil inside with no galling, scarring or corrosion observed on the oil pump gearing.

The engine examination did not reveal any anomalies that would have precluded normal operation during the accident flight.

Respectfully,

Jeffrey W. Burns
Aviation Safety Inspector