



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Western Pacific Region

October 24, 2019

ACCIDENT SITE / AIRFRAME / ENGINE EXAMINATION SUMMARY

WPR19FA146

This document contains 4 embedded photos.

A. ACCIDENT

Location: Santa Ynez, California
Date: May 15, 2019
Aircraft: Aviat Aircraft Inc., A1-B, N236AM
NTSB Investigator-in-Charge: Joshua Cawthra

B. DETAILS OF THE INVESTIGATION

1.0 Accident Site Examination

Examination of the accident site revealed that the airplane impacted steep rising mountainous terrain at an elevation of about 2,700 ft msl, and an approximate heading of 284° magnetic. The main wreckage came to rest upright about 30 ft below the initial impact point and was mostly consumed by fire. All major structural components of the airplane were observed at the accident site. The wreckage was recovered to a secure facility for further examination.



Figure 1: Aerial view of the accident site.



Figure 2: Aerial view of the accident site.

2.0 Recovered Airframe Examination

The recovered wreckage exhibited severe thermal fire damage. With the exception of the outboard left horizontal stabilizer, all of the fabric covering was burned and/or melted away from the wing and fuselage structure. The right wing remained attached to the airframe, and was bent upward and aft. The left wing was separated from the airframe.



Figure 3: Recovered airframe.

The fuselage was bent about 60 to 70 degrees, just aft of the rear seat.

The empennage was intact. The rudder, elevators, and horizontal stabilizers remained attached via their mount.

Both the left and right wings were severely fire damaged and bent/buckled throughout their span. Portions of aileron remained attached to both wings with the control cables still attached. Both fuel tanks were observed and exhibited impact and fire damage. Throttle, mixture, and propeller controls were observed within the wreckage, and exhibited thermal/fire damage.

Cockpit instrumentation was separated from the airframe. One gyro, which was separated from the instrument housing was observed. The gimble was removed and exhibited rotational scoring.

Flight control continuity was established throughout the airframe to all primary flight control surfaces. Multiple separations in the control cables were observed, consistent with tension overload or being cut by wreckage recovery personnel. The forward and rear control column interconnect was intact and fire damaged. The torque tube remained attached to the elevator control surfaces and extended forward to the rear area of the cockpit.

3.0 Recovered Engine Examination

The engine was separated from the airframe, however remained attached to the engine mount structure and exhibited thermal/fire damage. The right magneto was separated and remains of the left magneto remained attached to the accessory housing. The rear accessory housing was mostly burnt away, exposing internal components. The dowel pin was intact. The alternator was separated. The starter remained attached. The propeller governor remained attached. The propeller hub remained attached to the crankshaft. Both wooden propeller blades were separated at the blade root and not located.



Figure 4: Recovered Engine

The upper spark plugs were removed. No. 1 contained dirt debris within the electrode area, No. 2 exhibited black discoloration and appeared to be oil soaked, No. 3 exhibited gray coloration within the electrode area, and No. 4 exhibited dust/corrosion within the electrode area. All spark plugs exhibited normal operational signatures.

The rocker box covers were removed. All of the cylinder intake and exhaust rocker arms exhibited thermal discoloration.

The left magneto was destroyed by fire.

The right magneto was not located.

The exhaust was impact damaged.

The carburetor was separated from the engine and remained attached to the airbox structure. The throttle plate was in the "closed" position and the carburetor exhibited thermal/fire damage.

The propeller governor was removed and exhibited impact damage. The controls were intact. The screen was clear. The drive shaft rotated by hand.

The crankshaft would not rotate when using a hand tool attached to the crankshaft. Holes were drilled into the upper portion of the crankcase. Using a borescope, the internal areas of the crankcase and cylinders were examined. Evidence of heavy corrosion (rust) was observed throughout the internal areas of the engine and cylinders. All connecting rods, pistons, and valves were intact. No evidence of any catastrophic failure was observed. The intake and exhaust valves exhibited normal operational signatures.

The carburetor was disassembled. The throttle arm would not move and was in the idle position. The mixture arm moved stop to stop. The venturi was mostly melted and deformed. The floats were destroyed. The float bowl contained no evidence of debris. The fuel inlet screen was free of debris.

Submitted by: Joshua Cawthra