



## **NATIONAL TRANSPORTATION SAFETY BOARD**

Office of Aviation Safety  
Western Pacific Region

July 2013

# **AIRFRAME AND ENGINE EXAMINATION**

**WPR13LA317**

This document contains zero embedded photos.

## **A. ACCIDENT**

Location: Hesperia, California  
Date: July 8, 2014  
Aircraft: Cessna 182H, N2062X  
NTSB IIC: WPR13LA317

## **B. EXAMINATION PARTICIPANTS:**

Aviation Accident Investigator  
National Transportation Safety Board  
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## **C. SUMMARY**

Examination of the recovered airframe and engine was conducted on July 10, 2013 at Hesperia Airport, and then July 24, 2013 at the facilities of ARS, Pearblossom, California.

## **D. DETAILS OF THE INVESTIGATION**

### **1.0 Airframe Examination**

The fuselage was intact, nose landing gear folded aft at the firewall. Wrinkles to skin just aft of the main landing gear mounting points. Right main landing gear tire flat, with fairing distorted and partially separated. The right door was partially opened, and had become impinged against the lower wing panel.

The vertical and horizontal stabilizer remained intact, with downward bending to the trailing edge of the right elevator and trim tab.

The left wing remained attached to the cabin at the root, with its lift strut intact. Wing sustained crush damage to the outboard leading edge. Left tank did not appear to contain fuel, with no breaches noted. The fuel vent was clear.

The right wing remained partially attached at the root, and was bending about 10 degrees down. Lift strut separated from its attaching point on the lower fuselage structure.

The Garmin panel mounted GPS (796) was not present, having been removed by the pilot following the accident. All engine controls were in the full forward position. The fuel selector valve was in the OFF position (turned off by Deputy Sheriff following the accident). The selector was moved through all positions, and audibly clicked within its detents. The carburetor heat control had separated from its associated cable at the swage point within the cabin. Examination of the corresponding cable at the carburetor heat box revealed that the cable had experienced tensile stretching damage against the failed landing gear mount. Throttle, and propeller controls were moved by hand; they remained attached to their associated engine controls, and were free and smooth to operate.

## **2.0 Engine Examination**

The engine appeared undamaged, with crush damage noted to the induction air system, specifically the air filter and carburetor heat box which separated from the carburetor. The heat box had become separated from the carburetor inlet. The air induction system was free of obstruction, and all scot tubes were intact and erect. The butterfly valve within the carburetor throttle body was in the full open position. And movement of the throttle control arm resulted in fuel being issued from within the body.

The gascolator was full with fuel clear, blue-colored fuel, and all fuel lines between the gascolator and the carburetor inlet were intact, with tight fittings. The carburetor drain plug was then removed, and clear blue-colored fuel flowed from the bowl.

The engine mixture control inner cable remained attached to the mixture control arm, however the outer spiral sleeve had become detached from its clamp on the carburetor body. The clamp was about 1/2 inch wide, however the spiral sleeve exhibited wall thinning, and polishing to its surface about 1 inch from the sleeve end, consistent with prior movement. Movement of the mixture control within the cabin resulted in unpredictable movement of the mixture control arm due to bowing of the cable.

Both magnetos remained firmly affixed to their associated pads. The top plugs were removed, and all displayed light-gray deposits and worn out-normal wear signatures when compared to the Champion AV-27 Check-A-Plug chart. The engine cylinder chambers were examined using a borescope. No catastrophic damage was noted, with light-gray deposits noted on the combustion surfaces and concentric heat signatures on the exhaust valve heads. The exhaust pipe exhibited light-grey deposits to its inner surfaces. The engine contained about 9 quarts of light-colored translucent oil when viewed at the dipstick. The forward induction interconnect clamp was loose at the front left cylinder, the induction interconnect tube remained tight.

Removed the carburetor, and rotated the throttle lever, which resulted in squirts of fuel issuing from the accelerator pump. Opened the unit and the bowl was full with fuel, and the bowl area was free of debris. The inlet and accelerator pump screen were clear. The floats were of the brass type, and did not contain any leaks. The float valve seat was pliable and appeared undamaged.

The metering valve and sleeve were intact, and the assembly rotated appropriately with movement of the mixture arm. The mixture metering sleeve, valve, idle air vent, nozzle well and outlet were examined and were free of debris and contamination.

Submitted by: Elliott Simpson