



## **NATIONAL TRANSPORTATION SAFETY BOARD**

Office of Aviation Safety  
Western Pacific Region

January 19, 2016

# **AIRFRAME AND ENGINE EXAMINATION**

**WPR16FA036**

This document contains 3 embedded photos

## **A. ACCIDENT**

Location: Hurricane, Utah  
Date: December 10, 2015  
Aircraft: Amateur Built – Experimental Barnett Allen RV7,  
N307AB, Serial #: 73395  
NTSB IIC: Albert Nixon

## **B. EXAMINATION PARTICIPANTS:**

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## **C. SUMMARY**

Examination of the recovered airframe and engine was conducted on January 19, 2016, at the facilities of Air Transport, in Phoenix, Arizona.

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

### **1.0 Airframe Examination**

Examination of the airframe revealed the wings were removed for recovery. The fuselage was crushed from the top. The left wing was separated about mid-span and wrinkling and deformation was observed on most of the wing. The right wing was mostly intact and wrinkling was observed throughout the wing. The main gear struts remained attached and the right landing gear strut was bent aft. On the empennage section, the horizontal stabilizers were bent downwards. Flight control continuity was established through the cables.



**Figure 1: View of empennage section.**

The following devices were removed and shipped to the NTSB for further examinations: A GoPro Hero 4 camera, Two personal electronic devices, Grand Rapid Technologies Horizon HX EFIS 331/325, Apollo Displays Optrex, Avidyne TAS600, and an IOGEAR GBU521 Bluetooth USB Device.

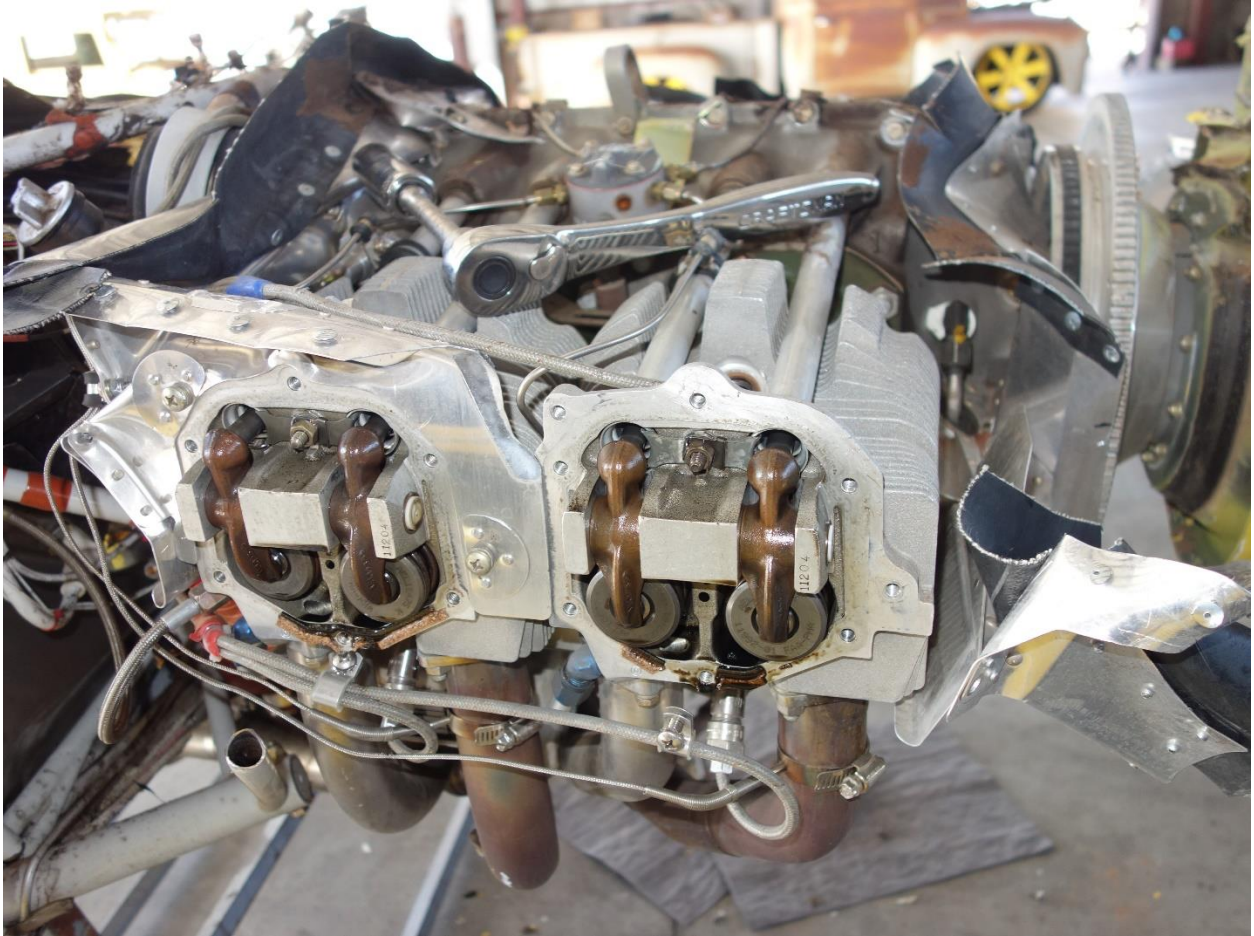


**Figure 2: View of the right wing.**

## **2.0 Engine and Components Examination**

Examination of the ECI/Titan IO-360 engine, serial number 09-70 revealed that it remained attached to the airframe by the engine mounts. The engine accessories remained attached to the engine via their respective mounts. All rocker covers were removed and the cylinder overhead areas were lubricated and unremarkable. The oil quantity stick read about 3 gallons. The crankshaft was unable to be rotated by hand utilizing the propeller due to impact damage to the top of the engine. A borescope inspection of the cylinders revealed evidence of normal operational conditions.





**Figure 3: View of engine from the right side.**

The sparkplugs were removed and all sparkplug electrodes exhibited normal wear signatures when compared to the Champion Check-A-Plug comparison chart.

The two-bladed propeller remained attached to the crankshaft flange. One blade remained attached and the other blade had separated at about the blade root. The spinner remained attached to the propeller and exhibited impact damage to the front half.

### **3.0 CONCLUSION**

The examination of the engine revealed no evidence of mechanical malfunctions or failures that would have precluded normal operation. No additional anomalies were observed on the airframe, than those that were noted at the accident site.

Submitted by: Albert Nixon