NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Western Pacific Region

September 5, 2013

AIRFRAME EXAMINATION

WPR13LA351

A. ACCIDENT

Location:	San Manuel, AZ
Date:	July 31, 2013
Aircraft:	Stribling RV-4, Registration Number: N70AC, Serial No: # JS01
NTSB IIC:	Albert Nixon

B. EXAMINATION PARTICIPANTS:

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C. SUMMARY

Examination of the recovered airframe and engine was conducted on September 5, 2013, at the facilities of Air Transport, located in Phoenix, Arizona. No evidence of preimpact mechanical malfunction was noted during the examination of the recovered airframe.

D. DETAILS OF THE INVESTIGATION

1.0 Airframe Examination

Examination of the airframe revealed buckling and crushing damage to the cockpit area and fuselage. In the tail section, all the respective control surfaces were attached at their respective mounts. The rudder was bent to the right at the top portion and about mid span. Both stabilizers were partially attached to the fuselage. The right stabilizer was bent upwards and the right elevator was sliced about mid span. The elevator trim was about 1 inch up. The aft portion of the fuselage was bent 30 degrees to the left, about 2 feet forward of the tail section. The wings were separated at the fuselage due to recovery. The ailerons and flaps were attached on all the respective mounts on both wings. The left wing was mostly intact with the exception of leading edge damage about six inches from the outboard portion. The right wing was crushed and wrinkled from the outer portion to midspan. The right aileron inner half and right flap were crushed.

The right main landing strut was folded aft. The tailwheel assembly and tailwheel were intact. The tailwheel assembly was disassembled and was fully functional with no anomalies noted. The main tires were unremarkable. Braking continuity was established with the cockpit.

Flight control continuity from the cabin area to the elevator, rudder control surfaces was obtained. The aileron continuity was established from the cockpit to the control tube and then from the control tube in the wings to the ailerons. The elevator trim operated normally from the cockpit controls.

2.0 Engine Examination

The propeller assembly was separated from the crankshaft propeller flange. One propeller blade was bent aft at about midspan. The blade had 45 degrees scratches on the blade chord.

The propeller spinner had impact damage and only a portion remained attached to the propeller assembly. The engine remained partially attached to the engine mounting assembly and firewall was wrinkled. The mounting assembly had impact damage. All engine controls had continuity with the cockpit. All engine accessories remained attached to the engine via their respective mounts. The crankshaft was unable to be rotated by hand due to impact damage to the crankshaft propeller flange. The right forward rocker arm was bent. The rocker panels were removed and all respective areas were lubricated. The magnetos were removed and spark was produced from each respective lead. The top spark plugs were removed and exhibited normal wear signatures when compared to the Champion Check-A-Plug comparison chart. The no. 2 and no. 4 spark plug electrode areas were oil soaked. The muffler was crushed.

Examination of the airframe and engine revealed no evidence of mechanical anomaly or failures that would have precluded normal operation.

Submitted by: Albert Nixon