



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Western Pacific Region

May 1, 2018

AIRFRAME EXAMINATION

WPR18LA094

A. ACCIDENT

Location: Elko, NV
Date: February 21, 2018
Aircraft: Soko Galeb G-2, Registration Number: N90SR
NTSB IIC: Albert Nixon

B. EXAMINATION PARTICIPANT:

Albert Nixon
Senior Aviation Accident Investigator
National Transportation Safety Board
Federal Way, WA 98003

C. SUMMARY

Examination of the airplane's airframe was conducted on May 1, 2018, in a private hanger, at the Boise Air Terminal/Gowen Field, Boise, Idaho. A certified airframe and powerplant mechanic (A&P) that had experience working on this type of airplane, examined the airplane under the supervision of the NTSB investigator-in-charge. A brake cylinder was observed in the left brake assembly that was not properly installed. No additional anomalies or evidence of preimpact mechanical failure were noted during the examination of the recovered airframe.

The A&P mechanic stated that he was present during the recovery of the airplane and with prior approval, he checked the continuity of the brakes before the wings were removed. Independent depression of both brake pedals resulted in hydraulic fluid running out of the severed hydraulic line on the left side that connected to the left brake (line not intact due to the left main landing gear strut separating during the accident sequence). Additionally, the hydraulic reservoir located on the left side of the front cockpit indicated normal quantity. The fluid indication in the quantity window indicated between the max and min level. No hydraulic fluid leaks were noted in the cockpit area or on the interior or exterior of the left wing. Hydraulic fluid was noted on the left main landing wheel area. The fluid was clear red in color and appeared fresh. Additionally, three separated brake pucks were located, in the left main landing gear wheel area.

D. DETAILS OF THE INVESTIGATION

1.0 Airframe Examination

Examination of the airplane revealed that the engine remained attached to the main fuselage. The wings were removed for recovery. Wrinkling and impact damage on the right side of the fuselage was observed.

The cockpit cabin area and instrument panel were intact. In the rear cockpit the G-meter indicated about 9.5 positive Gs and 5 negative Gs. The front cockpit G-meter was reset. The altimeter indicated 4,240 ft elevation.

The empennage was relatively intact. The rudder remained attached to its respective vertical stabilizer. The elevators were intact and remained attached to their respective horizontal stabilizer.

2.0 Brake System Examination

The nose gear strut and left main landing gear strut had separated from the airplane. The left main landing gear strut was separated about at the mid-point of the strut. Examination and disassembly of the left brake assembly revealed that the hydraulic line separated end was still secured and appropriately safety wired to the brake assembly. 2 brakes rotors were extremely loose, and the No. 2 brake cylinder (2nd lowest to the ground of the 4 cylinders) worn pin indicator was recessed. The other 3 brake cylinder's wear pins were observed in the normal position.

Further examination of the No. 2 brake cylinder revealed that it was not properly installed and allowed movement of the brake pucks. The movement of the brake pucks, resulted in 3 of them separating from the brake assembly. Separation of the brake pucks would result in the No. 2 cylinder piston to move to the full-scale inward position. The full-scale deflection of the No. 2 cylinder would result in a hydraulic fluid leak and cause insufficient hydraulic pressure to be provided to the other brake cylinders, rendering the brake ineffective.



Figure 1: Left brake cylinders.

Submitted by: Albert Nixon