

Examination Summary

N255 WPR18LA215

Event Date: 8/8/18

Location: Lewiston Perce Nez Airport (LWS) Lewiston, Idaho.

Examination Dates: 8/8, 8/14

Examination Agencies: FAA, USFS, Northern Air

The airplane came to rest near the runway 30 centerline, about 100 ft prior to taxiway F. All three landing gear were retracted in their wells, but the landing gear doors were in varying positions of transit. All airframe damage was confined to the airplane belly skins and structure, and the landing gear doors. The tips of the rear propeller blades displayed minor grinding damage consistent with runway contact with the engine operating.

The airplane was lifted, 'stood' on its gear, and towed to a maintenance ramp/facility for additional examination. When the airplane was lifted, examination revealed that the runway slide had ground through several of the lower skin panels and structural members, substantially damaging the airplane.

Examination of the landing gear system revealed that the same failure had occurred in both the left and right main landing gear door actuators. In each case, the single internal snap ring that functioned as the travel stop and retaining device for the actuator rod in each actuator cylinder had been liberated from its retention groove in the cylinder, but remained captive on the actuator rod. Liberation of the snap ring enabled hyper-extension (overtravel) of the actuator rod, which permitted most or all of the hydraulic fluid to exit the hydraulic system via the actuator.

The landing gear hydraulic system was not equipped with any hydraulic fuses, and the reservoir was found to be empty. No damage to the snap rings or the actuator cylinders from either door was observed.

Both main doors were found open about 90°, so that their inboard free edges, which were closest to the airplane centerline when the doors were closed, had translated outboard and down. These door edges contacted the runway on touchdown. The inboard edge of the right door was only slightly damaged by runway contact, whereas the left door was missing about 3-4 inches of material along its inboard edge (due to abrasion by runway contact).

Subsequent to the examination, the actuator rods and internal snap rings were re-inserted into their respective actuators, and the hydraulic system was replenished with fluid. The landing gear system was operationally tested while the airplane was supported by jacks.

The system performed normally; the landing gear was able to be retracted and extended multiple times with no anomalies or failures. No leaks were observed. No other mechanical deficiencies with the landing gear system were detected.