**INCIDENT**

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| **Aircraft Type and Registration:** | Jabiru UL, G-BZEN |
| **No & Type of Engines:** | 1 Jabiru Aircraft Pty 2200A piston engine |
| **Year of Manufacture:** | 2000 (Serial no: PFA 274A-13272) |
| **Date & Time (UTC):** | 2 May 2013 at 1800 hrs |
| **Location:** | Wickenby Aerodrome, Lincolnshire |
| **Type of Flight:** | Training |
| **Persons on Board:** | Crew - 1 Passengers - 1 |
| **Injuries:** | Crew - None Passengers - None |
| **Nature of Damage:** | Left landing gear partially detached and scuffed elevator |
| **Commander's Licence:** | Private Pilot's Licence |
| **Commander's Age:** | 27 years |
| **Commander's Flying Experience:** | 873 hours (of which 30 were on type)<br>Last 90 days - 24 hours<br>Last 28 days - 11 hours |
| **Information Source:** | Aircraft Accident Report Form submitted by the pilot and additional enquiries by the AAIB and LAA |

**Synopsis**

As the aircraft touched down after completing a training flight the left landing gear leg collapsed and, despite the pilot's attempts to maintain heading, the aircraft veered off the runway onto the grass. It came to rest with its left landing cantilever spring leg partially detached from the surrounding structure, twisted forwards and underneath the fuselage. This was caused by the failure of its three mounting bolts. It was found that the aircraft was fitted with the original design 5/16 inch diameter landing gear mounting bolts rather than the recommended 3/8 inch diameter bolts detailed in Jabiru Service Bulletin (JSB) 008-1.

**History of the flight**

As the aircraft touched down after a training flight the pilot heard a loud bang and felt the left wing drop. Assuming a tyre had burst the pilot applied right stick to lift the weight off the suspect left mainwheel tyre. The nose of the aircraft began to pitch upwards and the left wing dropped. The pilot then realised this to be more than just a tyre burst and made various control inputs in an effort to maintain directional control of the aircraft. As the airspeed decayed the wing began to drop again and, so as not to damage the propeller and shock-load the engine, he shut the engine down. He was unable to maintain heading and the aircraft veered off the runway and gradually came to stop. The pilot and passenger were uninjured and vacated the aircraft. The aircraft had

come to rest canted over to the left with its nose and right wheel in contact with the ground. The left landing gear leg had collapsed and twisted forward underneath the fuselage.

**Aircraft description**

The Jabiru UL-430 is a high-wing two-seat microlight aircraft equipped with a fixed tricycle landing gear. The nose landing gear is mounted onto the fibreglass structure bolted to the engine bulkhead. The Main Landing Gear (MLG) consists of separate left and right cantilever spring legs each of which is secured to the underside of the fuselage by one inboard and two outboard attachment bolts.

**Engineering findings and corrective action**

An examination of the collapsed landing gear found that all three $^{5}/_{16}$ inch diameter (AN5[1]) mounting bolts of the left cantilever spring leg had failed. The inner bolt had bent whilst the outer bolts had fractured and bent. As well as the damage sustained at the point of failure, the remains of all three bolts were in a generally worn and distressed condition. It is probable that one of the outboard bolts failed first resulting in overload and distortion of the remaining two bolts.

Jabiru had responded to previous incidents of a similar nature by issuing Service Bulletin 008-1 on 31 March 2005. This recommended the introduction of larger diameter landing gear mounting bolts, 3/8 inch (AN6) rather than the 5/16 inch (AN5) originally specified, using a proprietary Jabiru modification kit. In addition, on 7 May 2009, Jabiru issued Service Bulletin 052-2 which advised the introduction of a 500-hour life for the 3/8 inch landing gear bolts. It appears that G-BZEN had not had JSB 008-1 or JSB 052-5 applied. It was noted that these JSBs were not mandatory at the time of the incident. As result of this and a recent previous incident (See AAIB Bulletin 3/2013) action is now being taken by the Light Aircraft Association to mandate both JSBs with the publication of an Airworthiness Information Leaflet.

**Footnote**

[1] Prefix to designation codes of US military hardware denoting "Army-Navy"; now rare, although the codes remain in use for aircraft general spares. For example; a bolt designated AN5-20 is one of $^{5}/_{16}$ inch diameter and $2^{3}/_{32}$ inches long.