



# Airworthiness Bulletin

## AWB 27-021 Issue 1 - 10 February 2021

### Jabiru Control Surface Hinges and Aileron Control Tube - Inspection

An Airworthiness Bulletin is an advisory document that alerts, educates and makes recommendations about airworthiness matters. Recommendations in this bulletin are not mandatory.

#### 1. Effectivity

All Avtech (Jabiru Aircraft) models.

#### 2. Purpose

The purpose of this AWB is to:

- a. alert maintainers and operators of the potential failure of the control surface hinges which may result in the loss or severe impairment of control surfaces, and to recommend compliance with Jabiru Service Bulletin (JSB) JSB 044-1. This SB outlines an inspection procedure to detect cracks or corrosion on the control hinges.

*Note: PAD/JABIRU/4 was released to ensure compliance of JSB 044-1 for all type certificated Jabiru aircraft. This AWB aims to inform operators and maintainers of Jabiru aircraft that are not type certificated, and hence is applicable to ALL Jabiru aircraft models.*

- b. alert maintainers and operators of the potential failure of the aileron control tube which may result in primary lateral and pitch controls, and to recommend compliance with Jabiru Service Bulletin JSB 042-1. This SB outlines an inspection procedure to detect cracks in the control tube.

*Note: PAD/JABIRU/3 was released to ensure compliance of JSB 042-1 for all type certificated Jabiru aircraft. This AWB aims to inform operators and maintainers of Jabiru aircraft that are not type certificated, and hence is applicable to ALL Jabiru aircraft models.*

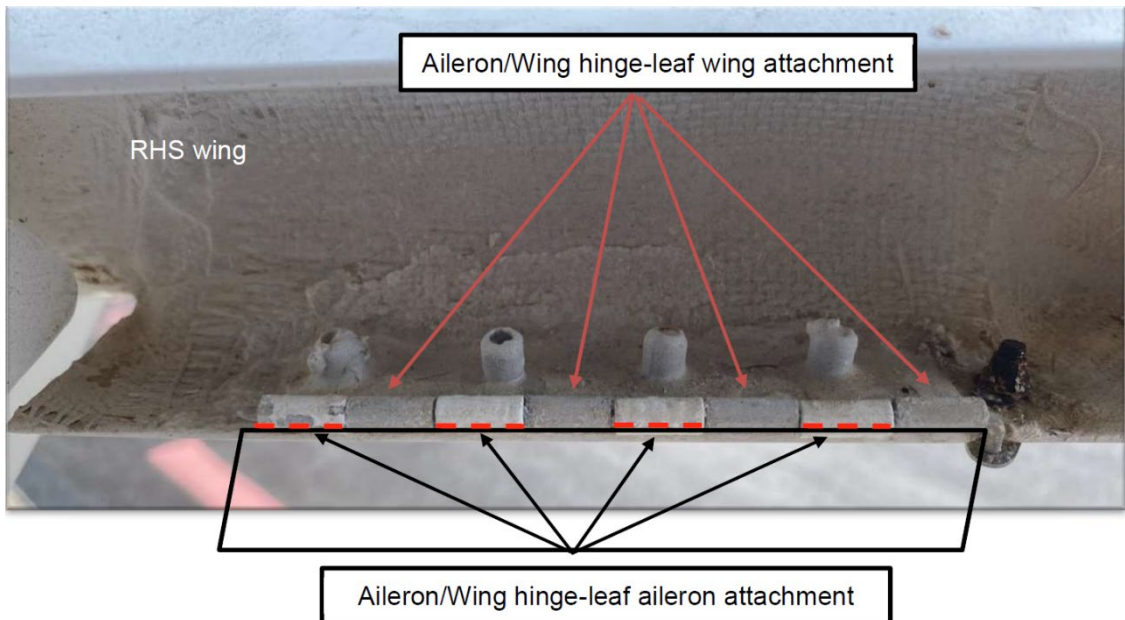


### 3. Background

#### a. Control Surface Hinges

The Jabiru Service Bulletin JSB 044-1 referenced in this AWB was released on 8 January 2021 (effective 15 January 2021), in response to the detection of an aileron hinge failure which was found during a pre-flight controls check on a 20-year-old Jabiru SP4 aircraft. With no connection, the leading edge of

the aileron was able to droop down. If this had occurred inflight, aileron control could have been lost or severely impaired. Figure 1 shows the failed aileron hinge, showing where the failure occurred. Note that the hinge pin securing screw and other hardware of the aircraft had visual signs of corrosion.



**Figure 1:** Failed hinge (leaf on wing detached from leaf on aileron)

Photo Reference: JSB 044-1

Jabiru Aircraft use piano hinge type hinges on the control surfaces. The hinge pin has a right-angle bend at one end that is secured with a tab and a screw that prevents the hinge pin from working out of the hinge leaves. On ailerons and rudder most aircraft have aluminium hinge leaves with a plated steel pin. Elevator hinges are stainless steel with a stainless-steel pin.

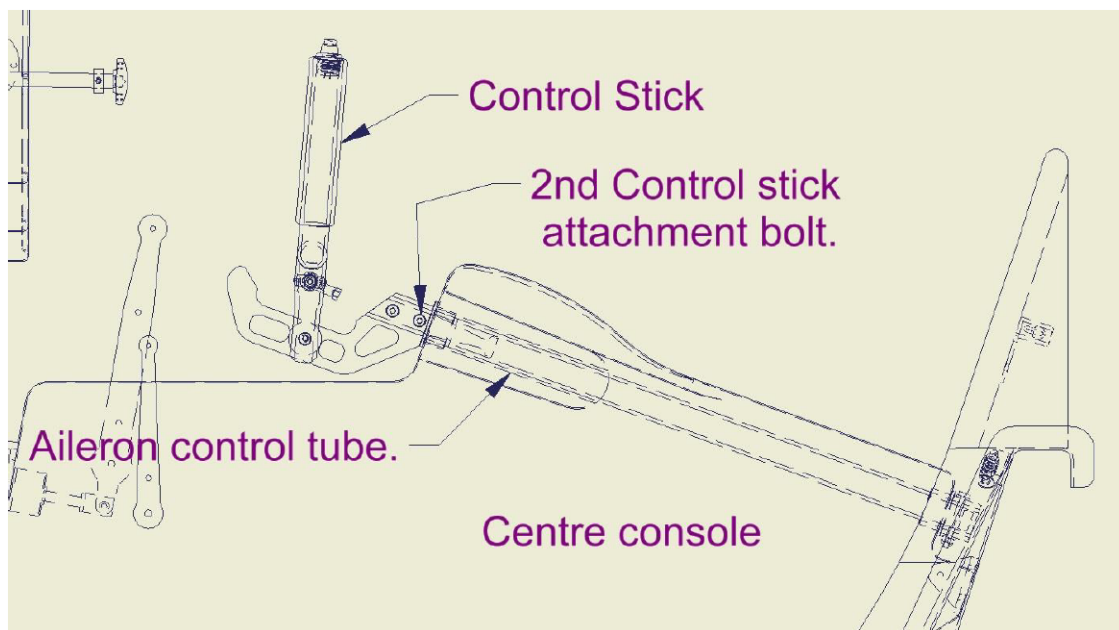
The purpose of the Service Bulletin is to inform Jabiru aircraft operators and maintainers of this potential condition and prescribes an inspection to check that all control surface hinges are in serviceable condition. If any corrosion or cracking is detected during the prescribed inspections, contact Jabiru for repair instructions.



b. Aileron Control Tube

Jabiru Service Bulletin JSB 042-1 was released on 16 May 2019 to address a fracture failure of an aileron control tube that occurred during the landing roll of a Jabiru 160C training aircraft that was being flown by a student pilot.

The Jabiru Aileron Control Tube is a machined aluminium tube that runs from the control stick assembly through the centre console to the aileron cable bell-crank, as seen in Figure 2. A complete failure of an aileron torque tube may result in loss of the pilot's primary lateral and pitch controls.



**Figure 2:** Elevator cable layout example

(Photo Reference: JSB 042-1)

A failure of an aileron control tube over 8500 hours total time in service (TTIS) was reported to Jabiru Aircraft whereby the aileron control tube failed in fatigue at the second control stick attachment bolt. With no connection, aileron and elevator control could have been lost. Figure 3 shows the failed aileron control tube, showing where the failure occurred.



**Figure 3:** Failed aileron control tube

(Photo Reference: JSB 042-1)

JSB 042-1 requires an inspection of the aileron control torque tube where it connects to the control stick pivot plate for cracking at each of four quadrants. Analysis of the failed part showed that one quadrant had been cracked through for some time before complete failure occurred.

#### 4. Recommendations

CASA strongly recommends that operators and maintainers:

- a. inspect all control surface hinges in accordance with the technical requirements of Jabiru Service Bulletin (JSB) JSB044-1 Section 4 - 'Inspection Procedure' and repeat the inspection at each routine service interval thereafter.

*NOTE: To remove control surfaces from the aircraft for inspection and then reinstall, refer to Jabiru Aircraft Technical Manual JTM001-9 Sections 6.53.2 'Aileron Removal', 6.53.5 'Aileron Installation', 6.65.2 'Elevator Removal & Installation' and 6.72.2 'Rudder Removal & Installation'.*

- b. inspect the aileron control tube in accordance with the technical requirements of Jabiru Service Bulletin (JSB) JSB042-1 Section 4 - 'Inspection Procedure' and repeat the inspection at each routine service interval thereafter.



## 5. Reporting

CASA encourages reporting the results of the control surface hinges and control tube inspections via the [Defect Report Service](#).

## 6. Enquiries

Enquiries with regard to the content of this Airworthiness Bulletin should be made via the direct link email address:

[AirworthinessBulletin@casa.gov.au](mailto:AirworthinessBulletin@casa.gov.au)

or in writing, to:

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