



Jabiru Engines – Flywheel Attachment Screws **AWB** 61-006 **Issue :** 1
Date : 29 January 2007

1. Applicability

All operators and maintainers of aircraft fitted with Jabiru 2200 / 3300 series engines.

2. Purpose

This AWB discusses the mechanics of fatigue fracture of the flywheel attachment screws, recommends inspections and seeks input from the industry in the form of Service Difficulty Reports.

3. Background

There have been incidents on Jabiru engines and propellers in New Zealand related to the fatigue fracture or loosening of engine flywheel attachment screws.

The Jabiru Engine flywheels are retained to the crankshaft by six cap screws (in early 2200 engines these screws were ¼", while later engines and all 3300 engines use 5/16" screws).

The main cause of damage to the retaining screws is increased level of engine vibrations, which in turn is affected by the condition and installation of the propeller. The wooden propeller is vital in absorbing engine vibrations and if the connection between the engine and propeller deteriorates or if the propeller runs less smoothly for any reason, the resulting increase in vibration can cause damage to the flywheel screws. Some of the contributory factors affecting the connection between the engine and the propeller may be:

- Propeller strike;
- Abrupt engine stoppage;
- Propeller bolt tension;
- Propeller condition and balance;
- Propeller drive bushes;
- Incorrect installation of propeller flange extensions or installation of unapproved extensions; and
- Installation of incompatible propellers.

Fracture of retaining screws may allow the flywheel to partially or fully separate from the crankshaft, resulting in loss of ignition timing, damage to the alternator and ignition coils and a stoppage of the engine / loss of power.

Jabiru has issued Jabiru Service Bulletin (JSB) JSB 012-1 (Jabiru Engine Flywheel Attachment) to address the identified problem. The other two documents of interest are JSB 014-1 (Propeller installation and maintenance) and JSB 009-1 (Alternate Propeller Mount System).



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4. Recommendation

- a) Ensure your aircraft is installed with an engine / propeller combination approved by Jabiru. If in doubt, CASA recommends contacting Jabiru Aircraft for technical advice.
- b) CASA recommends inspection of flywheel attachment screws in accordance with the instructions of Jabiru Service Bulletin JSB012-1. If any screws are found loose or broken, replace all six screws. If your engine is not fitted with dowels and 5/16" screws, then an upgrade of flywheel attachment to 5/16" screws is recommended.
- c) Unless already accomplished, CASA recommends compliance with Jabiru JSB 009-1 and JSB 014-1.
- d) If broken or loose screws are found during inspection in accordance with JSB012-1, a detailed Service Difficulty Report (SDR) should be submitted using SDR system available on CASA website
<http://www.casa.gov.au/airworth/sdr/index.htm>

SDR should contain failure description along with the location of broken or loose screw, relative to the position of propeller or crankshaft.

5. Enquiries

Enquiries with regard to the content of this Airworthiness Bulletin should be made via the direct link e-mail address: AirworthinessBulletin@casa.gov.au

Or in writing, to:

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