

AUSTRALIAN SPORT ROTORCRAFT ASSOCIATION INC

AIRWORTHINESS DIRECTIVE



ABN 53 412 417 012

No. 02/2004
Date: Thursday, 21 October 2004
Subject: Larkin Hub-bars

Background.

Two recent incidents with Larkin hub-bars have necessitated this advice to all ASRA members.

The first accident involved the in-flight failure of a hub-bar, which resulted in the death of a member. This rotor system had been in service for in excess of 1000 hours.

The other incident involves a hub-bar from the same manufacturer, which exhibited signs of surface corrosion after 25 hours in service. The corrosion could not be effectively removed with wet or dry paper, and was bead blasted to remove the corrosion. The hub-bar still exhibited signs of pitting along its length. When the rotor system was manipulated such that a blade contacted a teeter stop, visible lateral movement of the hub-bar was observed between the hub-bar and the teeter (pillar) block at the corners that are not bolted. Additionally, when WD 40 was used in this area in an attempt to inhibit the corrosion, the continual "weeping" of a black substance from the area between the teeter block and hub-bar was apparent **indicating movement between mating surfaces**. The hub-bar was removed from the teeter block, and there were shiny areas confirming movement between the two surfaces. At this stage the time in service was 120 hours.

Larkin hub-bars are manufactured from aircraft grade 2024 T3 aluminium which, although stronger than 6061 T6 is more brittle and is affected by corrosion to a greater degree. They may be identified by serial numbers that have a format similar to "123 + 8L". A photograph is attached to assist with identification.

Directive.

All gyroplanes registered with or operated by ASRA members that are fitted with Larkin blades are grounded forthwith.

These gyroplanes must not be flown until the Larkin hub-bar is replaced and the modification is inspected and approved by a suitably qualified ASRA Technical Adviser.

Bolts that are used in any part of the rotor system must be aircraft grade AN bolts.

Adrian Stoffels
Technical Manager

Allan Wardill
Operations Manager

