



AIRWORTHINESS BULLETIN

AWB 62-006 Issue 1 – 23 December 2016

Alert – R22 Main Rotor Blade cracking

1. Effectivity

All R22 Operators

2. Purpose

The purpose of the AWB is to inform operators of a significant Main Rotor blade cracking event recently reported on an R22 Beta II helicopter fitted with A016-6 main rotor blades. This AWB is also published to gather more information on the extent of this issue.

3. Background

During low level operations at slow airspeed the pilot of a Robinson R22 Beta II helicopter experienced an unusual increase in vibration levels and commenced a landing. Shortly before making a successful landing and whilst in the hover the pilot reported an increase in vertical vibration levels and a decrease in power available. Subsequent inspection revealed a crack approximately 160 mm in length emanating from the trailing edge and running chord wise toward the D section spar; refer to figure 1.



Figure 1 – Location of crack

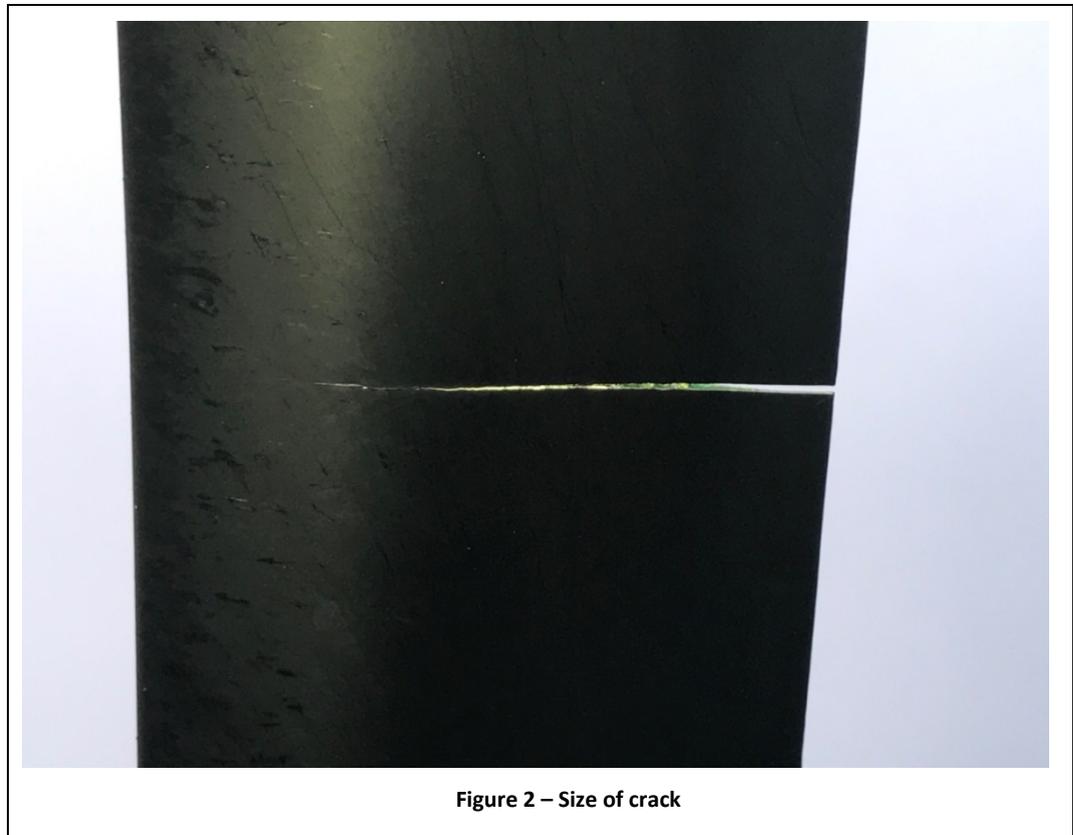


The crack location is in the vicinity of blade station RS61 which, measured from the blade tip (with tip cap removed) is approximately 2285mm inboard of the blade end.

Evidence of very minor corrosion was observed on the trailing edge in the vicinity of the crack. The operator reported that the total time in service of this blade was 1782.7 hours, the manufacturer stipulates a life limit of 2200 hours or 12 years for part number A016-6 Main Rotor blades.

Robinson Helicopter Company will soon be issuing a Safety Alert on the reported findings to date.

The blade is currently being investigated by the ATSB however at this stage details are limited with the root cause yet to be determined.



4. Recommendations

CASA can only make preliminary recommendations at this time as the cracking mechanism/s are unknown.

CASA highly recommends that when carrying out the MR blade inspection required as part of the Daily or Preflight checks contained in the Robinson R22 Pilot's Operating Handbook (POH) particular attention should be directed to the MR blade trailing edges.

This inspection may provide more reliable results by conducting the inspection on the white upper surface of the blades due to colour contrast.



Note 1: This would require the use of a ladder or other means to enable access to the upper surface.

Note 2: As per the caution in the R 22 POH “Do not pull rotor blades down as damage may occur. To lower one blade, push opposite blade up.”

CASA also advises that following sudden and increased vibration levels that the pilot of the aircraft land immediately to investigate the cause. Increased vibration levels should be reason to initially suspect a cracked blade. CASA cautions against the practice of rebalancing the blade to enable return to service unless a thorough inspection of the blade has been carried out. Refer Robinson Safety Notice SN-39, titled - unusual vibrations issued July 2003. <https://robinsonheli.com/robinson-safety-notice/>

5. Reporting

Any defects found should be reported to CASA via the Defect Reporting Service which may assist with the identification of causal factors related to the blade cracking mechanism/s. Defects include corrosion, dents and chips and any marks on the blade which may have been present at blade manufacture.

CASA continue to monitor the R22 blade cracks through Airworthiness direction processes and service difficulty reporting for the purpose of updating the appropriate airworthiness response to this issue.

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

or in writing, to:

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Civil Aviation Safety Authority
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