Australian Government
Civil Aviation Safety Authority

AIRWORTHINESS BULLETIN

AWB 67-005 Issue 2 - 20 June 2019

Robinson Helicopter Flight Controls - Independent Inspections

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 Robinson Helicopter Company (RHC) R22, R44 and R66 rotorcraft.

2. Purpose

To advise all operators and maintainers regarding the replacement of MS2104 hardware during removal or replacement of such hardware and the requirement to complete an independent inspection of each stage of maintenance on the primary flight controls in accordance with (IAW) Regulation 42G of the Civil Aviation Safety Regulations (CAR) 1988.

3. Background

Investigations completed by the Australian Transport Safety Bureau (ATSB) and the Civil Aviation Safety Authority (CASA) have highlighted a level of complacency regarding the replacement of MS21042L or NAS1291 series nuts with D210-series hardware as described by Robinson Service Letter (SL) R22 (64) R44 (50) R66 (09).

Whilst completing their investigations CASA also noted that the “2000/2200 hour Maintenance and Inspection” major rebuilds being carried out on the Robinson helicopters were followed up with only a single independent inspection for all flight controls.

Given the complexity and level of disassembly of the Robinson Helicopter required by the 2000/2200hour Maintenance and Inspection, it would be expected that the independent inspections required IAW Regulation 42G of the CAR 1988 would encompass all three flight controls systems: Cyclic, Collective, and Tail rotor being conducted as individual inspections.

Furthermore, these independent inspections should be recorded consecutively with each adjustment made during rotor tracking and balancing.

4. Recommendations

It is strongly recommended that:

a) Maintainers and operators review the applicable Robinson service letters for the replacement of suspect hardware.

b) That particular emphasis on the rigour of company independent inspections be adopted during the Robinson Helicopter Maintenance and Inspection and post dynamic balancing and adjusting, noting that a single independent certification for the entire rebuild inspection and post adjustments is considered inadequate. Engineers should adopt a system where each flight control system is independently inspected and certified for post any maintenance action.

c) Highly recommend that all Australian Robinson Helicopter Service centres develop a Post Maintenance and Inspection checklist to include all the critical elements involved within each in inspection.

d) Approved Maintenance Repair Organisation managers consider the human factors behind detailed independent inspections with the following table of key elements impacting inspection performance.

Lighting	Work Pressure
Noise	Temperature
Fatigue	Visual Acuity
Experience	Management Support
Instructions of the process	Multiple Inspections

Table 1. Human Factors Impacting Inspection Performance.

e) Pilots use extra caution during post maintenance flights. (SN-43)

Note: Robinson Helicopter Company SN-43 states:

"*..any work completed on the flight control system deserves special attention because a flight control disconnect is almost always catastrophic*".

5. Reporting

Report all known defects related to this issue to the CASA Defect Reporting System (DRS).

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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