Civil Aviation Authority

SAFETY NOTICE

Number: SN–2025/001

Issued: 6 February 2025

Robinson Helicopters Time-Controlled Components and Service Life Limited Components

This Safety Notice contains recommendations regarding operational safety.

Recipients must ensure that this Notice is copied to all members of their staff who need to take appropriate action or who may have an interest in the information (including any 'in-house' or contracted maintenance organisations and relevant outside contractors).

Applicability:	
Aerodromes:	Not primarily affected
Air Traffic:	Not primarily affected
Airspace:	Not primarily affected
Airworthiness:	Part-CAMO/Part-M, Part-CAO, Part-ML, aircraft owners, licenced aircraft engineers
Flight Operations:	Not primarily affected
Licensed/Unlicensed Personnel:	Not primarily affected
Affected Products/TCDS's	UK adopted EASA.IM.R.120 Issue 5 UK adopted EASA.IM.R.121 Issue 6 UK.RC.R.00078 Issue 1

1 Introduction

1.1 The UK CAA have become aware that the Robinson Helicopter's Instructions for Continued Airworthiness (ICA) for Robinson R22, R44 and R66 Helicopters may be misinterpreted, particularly in respect of the correct control and tracking of time-controlled components, as required by Part-M in M.A.503(a), also referred to as service life limited components in Part-ML in ML.A.503(a)(2). These commonly occur following updates to the ICA requiring retrospective actions resulting from the amended life limit or service life limit.

Failing to adhere to the requirements of the ICA could potentially lead to an unsafe flight condition due to installed components being installed for a longer period than originally intended in accordance with the approved maintenance data.

2 Action to be Taken

2.1 Owners, operators, licenced engineers and contracted Part-CAMO and Part-CAO organisations are reminded of their responsibilities, as required by M.A.302(d)(b), M.A.305(d)(2), ML.A.302(c)(2) and ML.A.305(d)(4), to control these components.

With immediate effect from the publishing date of this Safety Notice, owners, operators, licenced engineers and contracted Part-CAMO and Part-CAO organisations are requested to review their maintenance programmes to ensure components are being managed correctly.

Where an incorrect management of any components is identified, all necessary steps should be taken to achieve compliance with the Robinson Helicopter ICA. Should a helicopter be flying with components identified as beyond their recommended limitation, the subject helicopter should be immediately grounded, a Mandatory Occurrence Report raised together with a notification to the CAA, in order to co-ordinate a recovery plan. If any repositioning is required to return a helicopter to a place where maintenance can be carried out, then a Permit to Fly request should be made to the CAA. A supporting letter from the Type Certificate Holder, Robinson Helicopters, detailing the components beyond their limitation should be included.

3 Queries

3.1 Any queries or requests for further guidance as a result of this communication should be addressed to **airworthiness@caa.co.uk** or where applicable, an organisation assigned CAA Airworthiness Surveyor.

4 Cancellation

4.1 This Safety Notice will remain in force until withdrawn.

5 Definitions

5.1 GM M.A.305

"(e) The term 'time-controlled components' embraces any component for which the maintenance schedule of the aircraft maintenance programme requires periodically the removal for maintenance to be performed in an appropriate approved organisation for maintenance in components (workshop) to return the component to a specified standard, the replacement of sub-components of the assembly by new ones, or the inspection or test of component's performance, after a service period controlled at component level in accordance with the specified airworthiness limitation defined in accordance with UK Regulation (EU) No. 784/2012, in any of the applicable parameters."

5.2 ML.A.503

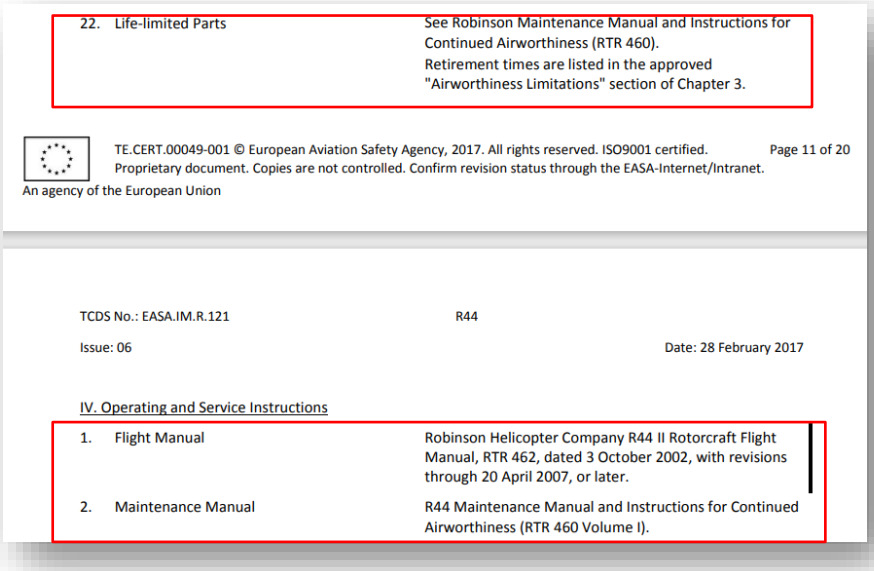
"(a) The term 'service life-limited components' contains the following components:

(1) components subject to a certified life limit after which the components should be retired, and;

(2) components subject to a service life limit after which the components shall undergo maintenance to restore their serviceability."

Appendix 1 Clarification on Requirements for Life Tracking

The type certificate data sheet (TCDS) sets out the requirement to satisfy the ICA, as required by the Certification Basis for the product. In this example, for the Robinson R44, the UK adopted EASA TCDS, IM.R.121:



22.	Life-limited Parts	See Robinson Maintenance Manual and Instructions for Continued Airworthiness (RTR 460). Retirement times are listed in the approved "Airworthiness Limitations" section of Chapter 3.

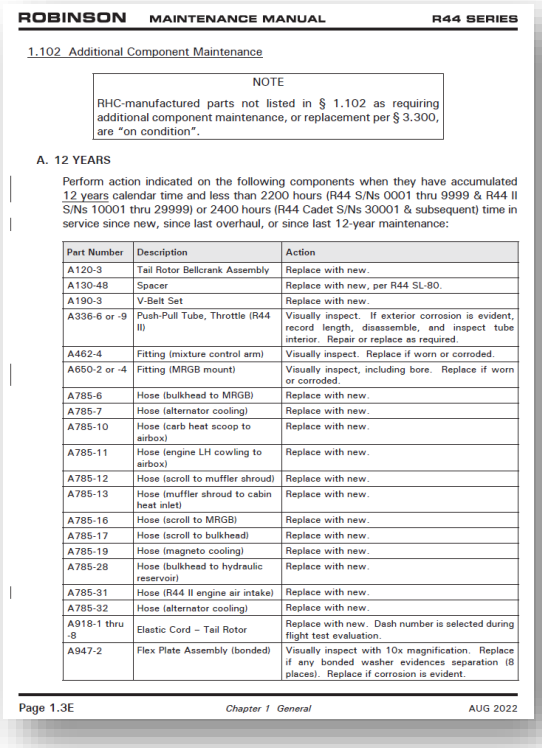
TCDS No.: EASA.IM.R.121 R44

Issue: 06 Date: 28 February 2017

IV. Operating and Service Instructions

1.	Flight Manual	Robinson Helicopter Company R44 II Rotorcraft Flight Manual, RTR 462, dated 3 October 2002, with revisions through 20 April 2007, or later.
2.	Maintenance Manual	R44 Maintenance Manual and Instructions for Continued Airworthiness (RTR 460 Volume I).

Several sections of the Maintenance Manual detail the requirement for tracking components. Section 1.102 of the Robinson R44 Maintenance Manual details components to be inspected and/or replaced at either 12 years or 2200 hrs, whichever occurs first:



ROBINSON MAINTENANCE MANUAL R44 SERIES

1.102 Additional Component Maintenance

NOTE

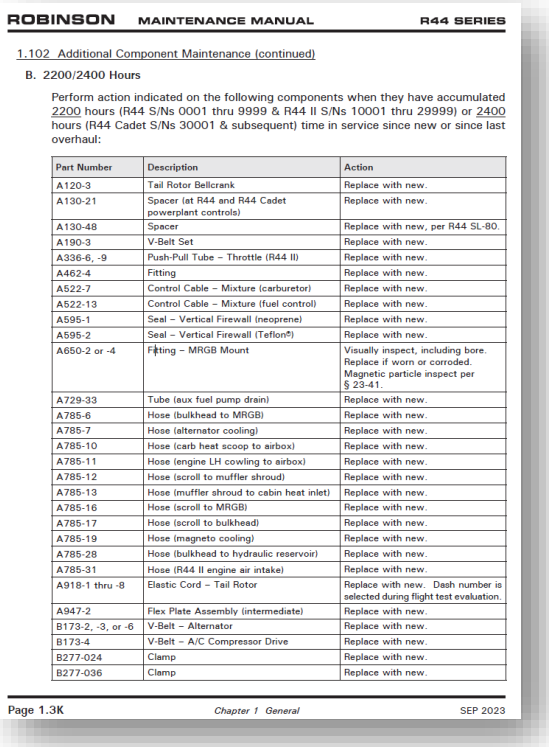
RHC-manufactured parts not listed in § 1.102 as requiring additional component maintenance, or replacement per § 3.300, are "on condition".

A. 12 YEARS

Perform action indicated on the following components when they have accumulated 12 years calendar time and less than 2200 hours (R44 S/Ns 0001 thru 9999 & R44 II S/Ns 10001 thru 29999) or 2400 hours (R44 Cadet S/Ns 30001 & subsequent) time in service since new, since last overhaul, or since last 12-year maintenance:

Part Number	Description	Action
A120-3	Tail Rotor Bellcrank Assembly	Replace with new.
A130-48	Spacer	Replace with new, per R44 SL-80.
A190-3	V-Belt Set	Replace with new.
A336-6 or -9	Push-Pull Tube, Throttle (R44 II)	Visually inspect. If exterior corrosion is evident, record length, disassemble, and inspect tube interior. Repair or replace as required.
A462-4	Fitting (mixture control arm)	Visually inspect. Replace if worn or corroded.
A650-2 or -4	Fitting (MRGB mount)	Visually inspect, including bore. Replace if worn or corroded.
A785-6	Hose (bulkhead to MRGB)	Replace with new.
A785-7	Hose (alternator cooling)	Replace with new.
A785-10	Hose (carb heat scoop to airbox)	Replace with new.
A785-11	Hose (engine LH cowling to airbox)	Replace with new.
A785-12	Hose (scroll to muffler shroud)	Replace with new.
A785-13	Hose (muffler shroud to cabin heat inlet)	Replace with new.
A785-16	Hose (scroll to MRGB)	Replace with new.
A785-17	Hose (scroll to bulkhead)	Replace with new.
A785-19	Hose (magneto cooling)	Replace with new.
A785-28	Hose (bulkhead to hydraulic reservoir)	Replace with new.
A785-31	Hose (R44 II engine air intake)	Replace with new.
A785-32	Hose (alternator cooling)	Replace with new.
A918-1 thru -8	Elastic Cord – Tail Rotor	Replace with new. Dash number is selected during flight test evaluation.
A947-2	Flex Plate Assembly (bonded)	Visually inspect with 10x magnification. Replace if any bonded washer evidences separation (8 places). Replace if corrosion is evident.

Page 1.3E Chapter 1 General AUG 2022



ROBINSON MAINTENANCE MANUAL R44 SERIES

1.102 Additional Component Maintenance (continued)

B. 2200/2400 Hours

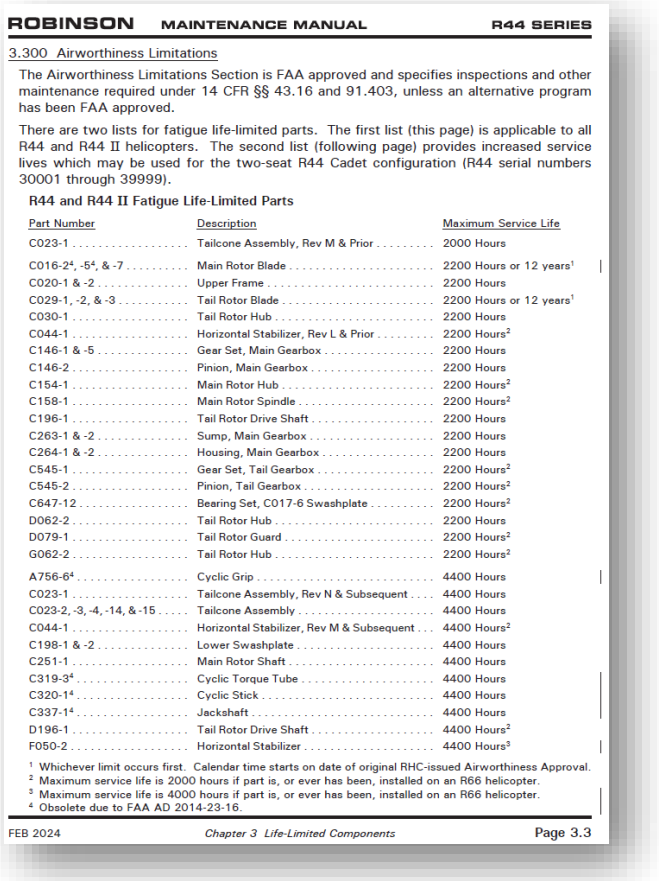
Perform action indicated on the following components when they have accumulated 2200 hours (R44 S/Ns 0001 thru 9999 & R44 II S/Ns 10001 thru 29999) or 2400 hours (R44 Cadet S/Ns 30001 & subsequent) time in service since new or since last overhaul:

Part Number	Description	Action
A120-3	Tail Rotor Bellcrank	Replace with new.
A130-21	Spacer (at R44 and R44 Cadet powerplant controls)	Replace with new.
A130-48	Spacer	Replace with new, per R44 SL-80.
A190-3	V-Belt Set	Replace with new.
A336-6, -9	Push-Pull Tube – Throttle (R44 II)	Replace with new.
A462-4	Fitting	Replace with new.
A522-7	Control Cable – Mixture (carburetor)	Replace with new.
A522-13	Control Cable – Mixture (fuel control)	Replace with new.
A595-1	Seal – Vertical Firewall (neoprene)	Replace with new.
A595-2	Seal – Vertical Firewall (Teflon®)	Replace with new.
A650-2 or -4	Fitting – MRGB Mount	Visually inspect, including bore. Replace if worn or corroded. Magnetic particle inspect per § 23-41.
A729-33	Tube (aux fuel pump drain)	Replace with new.
A785-6	Hose (bulkhead to MRGB)	Replace with new.
A785-7	Hose (alternator cooling)	Replace with new.
A785-10	Hose (carb heat scoop to airbox)	Replace with new.
A785-11	Hose (engine LH cowling to airbox)	Replace with new.
A785-12	Hose (scroll to muffler shroud)	Replace with new.
A785-13	Hose (muffler shroud to cabin heat inlet)	Replace with new.
A785-16	Hose (scroll to MRGB)	Replace with new.
A785-17	Hose (scroll to bulkhead)	Replace with new.
A785-19	Hose (magneto cooling)	Replace with new.
A785-28	Hose (bulkhead to hydraulic reservoir)	Replace with new.
A785-31	Hose (R44 II engine air intake)	Replace with new.
A918-1 thru -8	Elastic Cord – Tail Rotor	Replace with new. Dash number is selected during flight test evaluation.
A947-2	Flex Plate Assembly (intermediate)	Replace with new.
B173-2, -3, or -6	V-Belt – Alternator	Replace with new.
B173-4	V-Belt – A/C Compressor Drive	Replace with new.
B277-024	Clamp	Replace with new.
B277-036	Clamp	Replace with new.

Page 1.3K Chapter 1 General SEP 2023

NOTE
If a component or an inspection is scheduled for hourly and calendar intervals, comply with whichever requirement comes first, then reset interval unless otherwise specified.

The table in section 1.102 for the 12 year or 2200-hour inspection includes additional components that are not listed within the Chapter 3 of the Maintenance Manual:



ROBINSON MAINTENANCE MANUAL R44 SERIES

3.300 Airworthiness Limitations

The Airworthiness Limitations Section is FAA approved and specifies inspections and other maintenance required under 14 CFR §§ 43.16 and 91.403, unless an alternative program has been FAA approved.

There are two lists for fatigue life-limited parts. The first list (this page) is applicable to all R44 and R44 II helicopters. The second list (following page) provides increased service lives which may be used for the two-seat R44 Cadet configuration (R44 serial numbers 30001 through 39999).

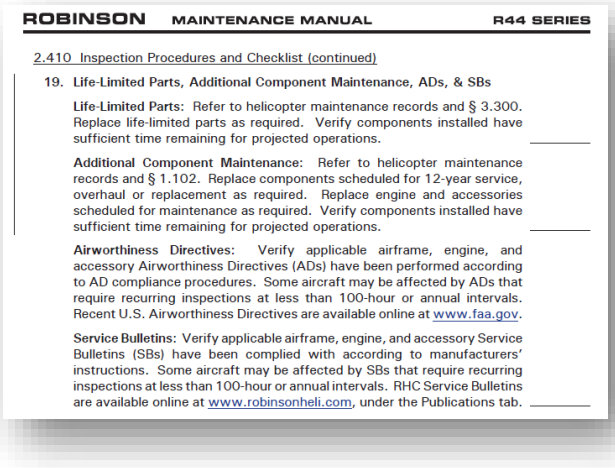
R44 and R44 II Fatigue Life-Limited Parts

Part Number	Description	Maximum Service Life
C023-1	Tailcone Assembly, Rev M & Prior	2000 Hours
C016-2[4], -5[4], & -7	Main Rotor Blade	2200 Hours or 12 years[1]
C020-1 & -2	Upper Frame	2200 Hours
C029-1, -2, & -3	Tail Rotor Blade	2200 Hours or 12 years[1]
C030-1	Tail Rotor Hub	2200 Hours
C044-1	Horizontal Stabilizer, Rev L & Prior	2200 Hours[2]
C146-1 & -5	Gear Set, Main Gearbox	2200 Hours
C146-2	Pinion, Main Gearbox	2200 Hours
C154-1	Main Rotor Hub	2200 Hours[2]
C158-1	Main Rotor Spindle	2200 Hours[2]
C196-1	Tail Rotor Drive Shaft	2200 Hours
C263-1 & -2	Sump, Main Gearbox	2200 Hours
C264-1 & -2	Housing, Main Gearbox	2200 Hours
C545-1	Gear Set, Tail Gearbox	2200 Hours[2]
C545-2	Pinion, Tail Gearbox	2200 Hours[2]
C647-12	Bearing Set, C017-6 Swashplate	2200 Hours[2]
D062-2	Tail Rotor Hub	2200 Hours
D079-1	Tail Rotor Guard	2200 Hours[2]
G062-2	Tail Rotor Hub	2200 Hours[2]
A756-6[4]	Cyclic Grip	4400 Hours
C023-1	Tailcone Assembly, Rev N & Subsequent	4400 Hours
C023-2, -3, -4, -14, & -15	Tailcone Assembly	4400 Hours
C044-1	Horizontal Stabilizer, Rev M & Subsequent	4400 Hours[2]
C198-1 & -2	Lower Swashplate	4400 Hours
C251-1	Main Rotor Shaft	4400 Hours
C319-3[4]	Cyclic Torque Tube	4400 Hours
C320-1[4]	Cyclic Stick	4400 Hours
C337-1[4]	Jackshaft	4400 Hours
D196-1	Tail Rotor Drive Shaft	4400 Hours[2]
F050-2	Horizontal Stabilizer	4400 Hours[3]

[1] Whichever limit occurs first. Calendar time starts on date of original RHC-issued Airworthiness Approval.
[2] Maximum service life is 2000 hours if part is, or ever has been, installed on an R66 helicopter.
[3] Maximum service life is 4000 hours if part is, or ever has been, installed on an R66 helicopter.
[4] Obsolete due to FAA AD 2014-23-16.

FEB 2024 *Chapter 3 Life-Limited Components* Page 3.3

Specifically, within the 100-hr (Annual) Scheduled Inspection, there is a requirement for the verification of component status, including verification that the installed components have sufficient life remaining in line with Table 1.102:



ROBINSON MAINTENANCE MANUAL R44 SERIES

2.410 Inspection Procedures and Checklist (continued)

19. **Life-Limited Parts, Additional Component Maintenance, ADs, & SBs**

Life-Limited Parts: Refer to helicopter maintenance records and § 3.300. Replace life-limited parts as required. Verify components installed have sufficient time remaining for projected operations. _____

Additional Component Maintenance: Refer to helicopter maintenance records and § 1.102. Replace components scheduled for 12-year service, overhaul or replacement as required. Replace engine and accessories scheduled for maintenance as required. Verify components installed have sufficient time remaining for projected operations. _____

Airworthiness Directives: Verify applicable airframe, engine, and accessory Airworthiness Directives (ADs) have been performed according to AD compliance procedures. Some aircraft may be affected by ADs that require recurring inspections at less than 100-hour or annual intervals. Recent U.S. Airworthiness Directives are available online at www.faa.gov.

Service Bulletins: Verify applicable airframe, engine, and accessory Service Bulletins (SBs) have been complied with according to manufacturers' instructions. Some aircraft may be affected by SBs that require recurring inspections at less than 100-hour or annual intervals. RHC Service Bulletins are available online at www.robinsonheli.com, under the Publications tab. _____

It should be noted that Table 1.102 is a stand-alone requirement for the Additional Component Maintenance independent of any other scheduled check.