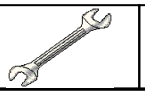
EMERGENCY
ALERT SERVICE BULLETIN

PROTECTIVE MEASURE

TIME LIMITS - MAINTENANCE CHECKS - Tail Rotor Hub
Check of the tail rotor hub body
ATA 64

For the attention of	
	

HELICOPTER CONCERNED	NUMBER	Version(s)	
		Civil	Military
EC120	05A020	B	

Revision No.	Date of issue
Revision 0	2019-10-29
Revision 1	2019-11-08
Revision 2	2021-02-08

Summary:

During an inspection, Airbus Helicopters was informed of a case of loss of tightening torque on several attachment bolts of the tail rotor hub body.
Following analysis, Airbus Helicopters came to the conclusion that a non-detected case of loss of tightening torque can cause the development of cracks and lead to the loss of the tail rotor drive, which results in the loss of control of the helicopter.
Consequently, Airbus Helicopters makes it mandatory to periodically check for cracks on the tail rotor hub body and to replace components of the hub body / splined flange link every 1000 hours (+100-hour margin) to avoid checking the tightening torque during this period.

Reason for last Revision:

The purpose of revision 2 is to:
- inform that Task 64-21-00, 6-5 (AMM) that must be complied with is the one with date code 2020.10.15 or any later date code,
- update the procedure of Task 64-21-00, 6-5 (AMM) to be complied with at intervals of 1000 flight hours (+100-hour margin) (during replacement of the bolts, washers and nuts),
- specify that a100-hour margin is applicable to the 1000-hour inspection.

Compliance:

Compliance with this ALERT SERVICE BULLETIN is mandatory.

ASB EC120-05A020

1. PLANNING INFORMATION

1.A. EFFECTIVITY

1.A.1. Helicopters/installed equipment or parts

All EC120 helicopters.

1.A.2. Non-installed equipment or parts

Tail rotor hub body P/N C642A0100103.

1.B. ASSOCIATED REQUIREMENTS

Not applicable.

1.C. REASON

Revision 0:

During an inspection, Airbus Helicopters was informed of a case of loss of tightening torque on several attachment bolts of the tail rotor hub body.
Following analysis, Airbus Helicopters came to the conclusion that a non-detected case of loss of tightening torque can cause the development of cracks and lead to the loss of the tail rotor drive, which results in the loss of control of the helicopter.
Consequently, Airbus Helicopters makes it mandatory to periodically check for cracks on the tail rotor hub body and to replace components of the hub body / splined flange link every 1000 hours (+100-hour margin) to avoid checking the tightening torque during this period.

Revision 1:

The purpose of revision 1 is to change the periodic check for cracks on the tail rotor hub body from every 15 FH without exceeding 7 days to every 15 FH.
Revision 1 of this ALERT SERVICE BULLETIN does not affect compliance with revision 0 of this ALERT SERVICE BULLETIN.

Revision 2:

The purpose of revision 2 is to:
- inform that Task 64-21-00, 6-5 (AMM) that must be complied with is the one with date code 2020.10.15 or any later date code,
- update the procedure of Task 64-21-00, 6-5 (AMM) to be complied with at intervals of 1000 flight hours (+100-hour margin) (during replacement of the bolts, washers and nuts),
- specify that a100-hour margin is applicable to the 1000-hour inspection.

Revision 2 of this ALERT SERVICE BULLETIN does not affect compliance with the previous revisions of this ALERT SERVICE BULLETIN.

1.D. DESCRIPTION

This ALERT SERVICE BULLETIN consists in:
- performing a check for cracks on the tail rotor hub body, in the zones defined in Figure 1,
- replacing the attachment bolts, washers and nuts of the tail rotor hub body,
- performing a check of the interface between the splined flange and the tail rotor hub body.

1.E. COMPLIANCE

1.E.1. Compliance at H/C manufacturer level

Not applicable.

1.E.2. Compliance in service

The work on the helicopter and on non-installed equipment must be performed by the operator.

Helicopters/installed equipment or parts:

Comply with paragraphs 3.B.1. and 3.B.2. of this ALERT SERVICE BULLETIN **within 15 flight hours (FH) without exceeding 7 days** from receipt of revision 0 of this ALERT SERVICE BULLETIN issued on October 29, 2019.

And, interpret the results:

a) For helicopters with strictly less than 9000 FH

1) If no cracks are found:

- Continue flights, then,
- Comply with paragraphs 3.B.1. and 3.B.2. of this ALERT SERVICE BULLETIN **at intervals that do not exceed 15 FH.**

And,
- **during the next 1000-hour (+100-hour margin) inspection** (detailed check after disassembly of the torsion spider assembly) **without exceeding 9000 FH**:
  . replace the bolts, washers and nuts as per Task 64-21-00, 6-8 (AMM),
  . perform the detailed check of the splined flange at the interface between the splined flange and the tail rotor hub body as per Task 64-21-00, 6-5 (AMM) and, if necessary, replace the splined flange as per paragraph 3.B.4.,

Then,
- **during each 1000-hour (+100-hour margin) inspection** (detailed check after disassembly of the torsion spider assembly) :
  . replace the bolts, washers and nuts as per Task 64-21-00, 6-8 (AMM),
  . perform the detailed check of the splined flange at the interface between the splined flange and the tail rotor hub body as per Task 64-21-00, 6-5 (AMM) and, if necessary, replace the splined flange as per paragraph 3.B.4.

2) If a crack is found:

CAUTION

DURING REPLACEMENT OF THE TAIL ROTOR HUB BODY OR DURING THE DETAILED CHECK AFTER DISASSEMBLY OF THE TORSION SPIDER ASSEMBLY, THE BOLTS, WASHERS AND NUTS OF THE TAIL ROTOR HUB BODY MUST BE REPLACED WITH NEW BOLTS, WASHERS AND NUTS.

- replace the tail rotor hub body and the bolts, washers and nuts as per paragraph 3.B.3.,
- perform the detailed check of the splined flange at the interface between the splined flange and the tail rotor hub body as per Task 64-21-00, 6-5 (AMM) and, if necessary, replace the splined flange as per paragraph 3.B.4.,
  Then,
- comply with paragraphs 3.B.1. and 3.B.2. of this ALERT SERVICE BULLETIN **at intervals that do not exceed 15 FH.**

And,
- **during each 1000-hour (+100-hour margin) inspection** (detailed check after disassembly of the torsion spider assembly):
  . replace the bolts, washers and nuts as per Task 64-21-00, 6-8 (AMM),
  . perform the detailed check of the splined flange at the interface between the splined flange and the tail rotor hub body as per Task 64-21-00, 6-5 (AMM) and, if necessary, replace the splined flange as per paragraph 3.B.4.

b) For helicopters with 9000 FH or more

1) If no cracks are found:

If you know the number of flight hours of the attachment bolts (b) of the Tail Rotor Hub

If the bolts (b) have strictly less than 9000 FH

- **during the next 1000-hour (+100-hour margin) inspection** (detailed check after disassembly of the torsion spider assembly) **without exceeding 9000 FH**:
  . replace the bolts, washers and nuts as per Task 64-21-00, 6-8 (AMM),
  . perform the detailed check of the splined flange at the interface between the splined flange and the tail rotor hub body as per Task 64-21-00, 6-5 (AMM) and, if necessary, replace the splined flange as per paragraph 3.B.4.,

Then,
- Comply with paragraphs 3.B.1. and 3.B.2. of this ALERT SERVICE BULLETIN **at intervals that do not exceed 15 FH.**

And,
- **at intervals that do not exceed 1000 FH (+100-hour margin):**
  . replace the bolts, washers and nuts as per Task 64-21-00, 6-8 (AMM),
  . perform the detailed check of the splined flange at the interface between the splined flange and the tail rotor hub body as per Task 64-21-00, 6-5 (AMM) and, if necessary, replace the splined flange as per paragraph 3.B.4.

If you do not know the number of flight hours of the attachment bolts (b) of the TRH **or if the bolts (b) have 9000 FH or more**

- Replace the attachment bolts, washers and nuts of the tail rotor hub body **within 15 flight hours (FH) without exceeding 7 days** from receipt of revision 0 of this ALERT SERVICE BULLETIN issued on October 29, 2019.

Then,
- Comply with paragraphs 3.B.1. and 3.B.2. of this ALERT SERVICE BULLETIN **at intervals that do not exceed 15 FH.**

And,
- **at intervals that do not exceed 1000 FH (+100-hour margin)** from the first replacement of the bolts, washers and nuts:
  . replace the bolts, washers and nuts as per Task 64-21-00, 6-8 (AMM),
  . perform the detailed check of the splined flange at the interface between the splined flange and the tail rotor hub body as per Task 64-21-00, 6-5 (AMM) and, if necessary, replace the splined flange as per paragraph 3.B.4.

2) If a crack is found:

CAUTION

DURING REPLACEMENT OF THE TAIL ROTOR HUB BODY OR DURING THE DETAILED CHECK AFTER DISASSEMBLY OF THE TORSION SPIDER ASSEMBLY, THE BOLTS, WASHERS AND NUTS OF THE TAIL ROTOR HUB BODY MUST BE REPLACED WITH NEW BOLTS, WASHERS AND NUTS.

- replace the tail rotor hub body and the bolts, washers and nuts as per paragraph 3.B.3.,
- perform the detailed check of the splined flange at the interface between the splined flange and the tail rotor hub body as per Task 64-21-00, 6-5 (AMM) and, if necessary, replace the splined flange as per paragraph 3.B.4.,
  Then,
- comply with paragraphs 3.B.1. and 3.B.2. of this ALERT SERVICE BULLETIN **at intervals that do not exceed 15 FH.**

And,
- **at intervals that do not exceed 1000 FH (+100-hour margin):**
  . replace the bolts, washers and nuts as per Task 64-21-00, 6-8 (AMM),
  . perform the detailed check of the splined flange at the interface between the splined flange and the tail rotor hub body as per Task 64-21-00, 6-5 (AMM) and, if necessary, replace the splined flange as per paragraph 3.B.4.

Non-installed equipment or parts:

Comply with paragraph 3.B.2. at the latest before installation on the helicopter.

1.F. APPROVAL

Approval of modifications:

Not applicable.

Approval of this document:

The technical information contained in this ALERT SERVICE BULLETIN No. 05A020 Revision 0 was approved on October 29, 2019 under the authority of EASA Design Organization Approval No. 21J.700 for civil version helicopters subject to an Airworthiness Certificate.

The technical information contained in this ALERT SERVICE BULLETIN No. 05A020 Revision 1 was approved on November 08, 2019 under the authority of EASA Design Organization Approval No. 21J.700 for civil version helicopters subject to an Airworthiness Certificate.

The technical information contained in this ALERT SERVICE BULLETIN revision 2 was approved on February 04, 2021 under the authority of EASA Design Organization Approval No. 21J.700 for civil version helicopters subject to an Airworthiness Certificate.

1.G. MANPOWER

For compliance with this ALERT SERVICE BULLETIN, Airbus Helicopters recommends the following staff qualifications:

Qualification: - 1 Mechanical Technician.
Or
- 1 Pilot appropriately trained and certified as per the local regulations in force.

The Estimated Man-hours are indicated for reference purposes only and based on a standard helicopter configuration.

Estimated Man-hours: approximately 15 minutes to perform a visual check for cracks.

1.H. WEIGHT AND BALANCE

Not applicable.

1.I. POWER CONSUMPTION

Not applicable.

1.J. SOFTWARE UPGRADES/UPDATES

Not applicable.

1.K. REFERENCES

The following documents are required for compliance with this ALERT SERVICE BULLETIN.

Aircraft Maintenance Manual (AMM):

AMM: 64-21-00, 4-3: Tail Rotor Hub - Disassembly - Tail Rotor Hub
AMM: 64-21-00, 4-4: Tail Rotor Hub - Assembly - Tail Rotor Hub
AMM: 64-21-00, 6-4: Tail Rotor Hub - Detailed Check - Hub Body Assembly
AMM: 64-21-00, 6-8: Tail Rotor Hub - Detailed Check - Torsion Spider Assembly

Aircraft Maintenance Manual (AMM) issued with date code 2020.10.15 or any later date code:

AMM: 64-21-00, 6-5: Tail Rotor Hub - Detailed Check - Splined Flange

Information Notice (IN):

IN No. 3447-I-00: Introduction of the digital Service Bulletin reporting service R-TEX
IN No. 3481-I-00: The Marketplace: an AirbusWorld eOrdering service

1.L. OTHER AFFECTED PUBLICATIONS

Not applicable.

1.M. PART INTERCHANGEABILITY OR MIXABILITY

Not applicable.

2. EQUIPMENT OR PARTS INFORMATION

2.A. EQUIPMENT OR PARTS: PRICE - AVAILABILITY - PROCUREMENT

Price
For any information on the price of modification kits and/or components or for assistance, contact the Airbus Helicopters Network Sales and Customer Relations Department.

Availability
Delivery lead times will be indicated by the Sales and Customer Relations Department on the operator's request.

Procurement
Order the required quantity from the Airbus Helicopters Network Sales and Customer Relations Department:

Airbus Helicopters
Etablissement de Marignane
Direction Ventes et Relations Client
13725 MARIGNANE CEDEX
France

NOTE 1

On the purchase order, please specify the mode of transport, the destination and the serial numbers of the helicopters to be modified.

NOTE 2

For ALERT SERVICE BULLETINS, order by:
Telex: HELICOP 410 969F
Fax: +33 (0)4.42.85.99.96.

2.B. LOGISTIC INFORMATION

Not applicable.

2.C. EQUIPMENT OR PARTS REQUIRED PER HELICOPTER/COMPONENT

Kits to be ordered for one helicopter or one assembly:

Designation	Qty	New P/N	Item	Old P/N →	Instruction
Hub body	A/R	C642A0100103	1	C642A0100103	/
Splined flange	A/R	C642A0104202	2	C642A0104202	/

Equipment or parts to be ordered separately:

Designation	Qty	New P/N	Item	Old P/N →	Instruction
Hexagonal head bolt	A/R	22201BE060008L	3	22201BE060008L	/
Washer	A/R	ASNA0265-060	4	ASNA0265-060	/
Washer	A/R	EN2138-06005	5	EN2138-06005	/
Nut	A/R	ASN52320BH060N	6	ASN52320BH060N	/

Consumables to be ordered separately:

As per the Tasks indicated in this ALERT SERVICE BULLETIN.

You can order the consumables from the AirbusWorld Marketplace through e-ordering (IN No. 3481-I-00). If you can't get access to e-ordering, please contact your Logistic Focal Point.

Special tools:

Designation	Qty	Tool P/N or equivalent	Item
Mirror	A/R	Commercial	zz

2.D. EQUIPMENT OR PARTS TO BE RETURNED

Not applicable.

3. ACCOMPLISHMENT INSTRUCTIONS

3.A. GENERAL

Not applicable.

3.B. WORK STEPS

3.B.1. Preliminary steps

- Remove the fairing plug (h).
- Remove the fairing (g) (Detail A, Figure 1).
- If necessary, release the rotor brake.

3.B.2. Inspection of the hub body (a), (Figure 1)

- Perform a visual inspection of the hub body (a), (Figure 1).
  . Using a light source and, if necessary, a mirror (zz) (e.g. dentist's mirror), make sure that there are no cracks in the hub body, in the inspection area defined as per Figure 1.
- Turn the tail rotor by hand to check the entire inspection area defined as per Figure 1.
- Interpret the results as per paragraph 1.E.2.

3.B.3. Replacement of the hub body (a), (Figure 1)

- Remove and discard the hub body (a), (Figure 1) as per Task 64-21-00, 4-3 (AMM).
- Discard the bolts (b), the washers (c) and (d) and the nuts (e).
- Install the hub body (1) as per Task 64-21-00, 4-4 (AMM) with bolts (3), washers (4) and (5) and nuts (6).

3.B.4. Replacement of the splined flange (f) (Figure 1)

- Remove the splined flange (f) (Figure 1) as per Task 64-21-00, 4-3 (AMM).
- Install the splined flange (2) as per Task 64-21-00, 4-4 (AMM).

3.B.5. Final steps

- Install the fairing (g).
- Install the fairing plug (h).
- If necessary, apply the rotor brake.

3.C. RECORD OF COMPLIANCE

Compliance with this document:

Record full compliance with this ALERT SERVICE BULLETIN, with the revision number, in the helicopter documents.

- Please confirm compliance with this ALERT SERVICE BULLETIN as per Information Notice No. 3447-I-00: QR-Code or hypertext link

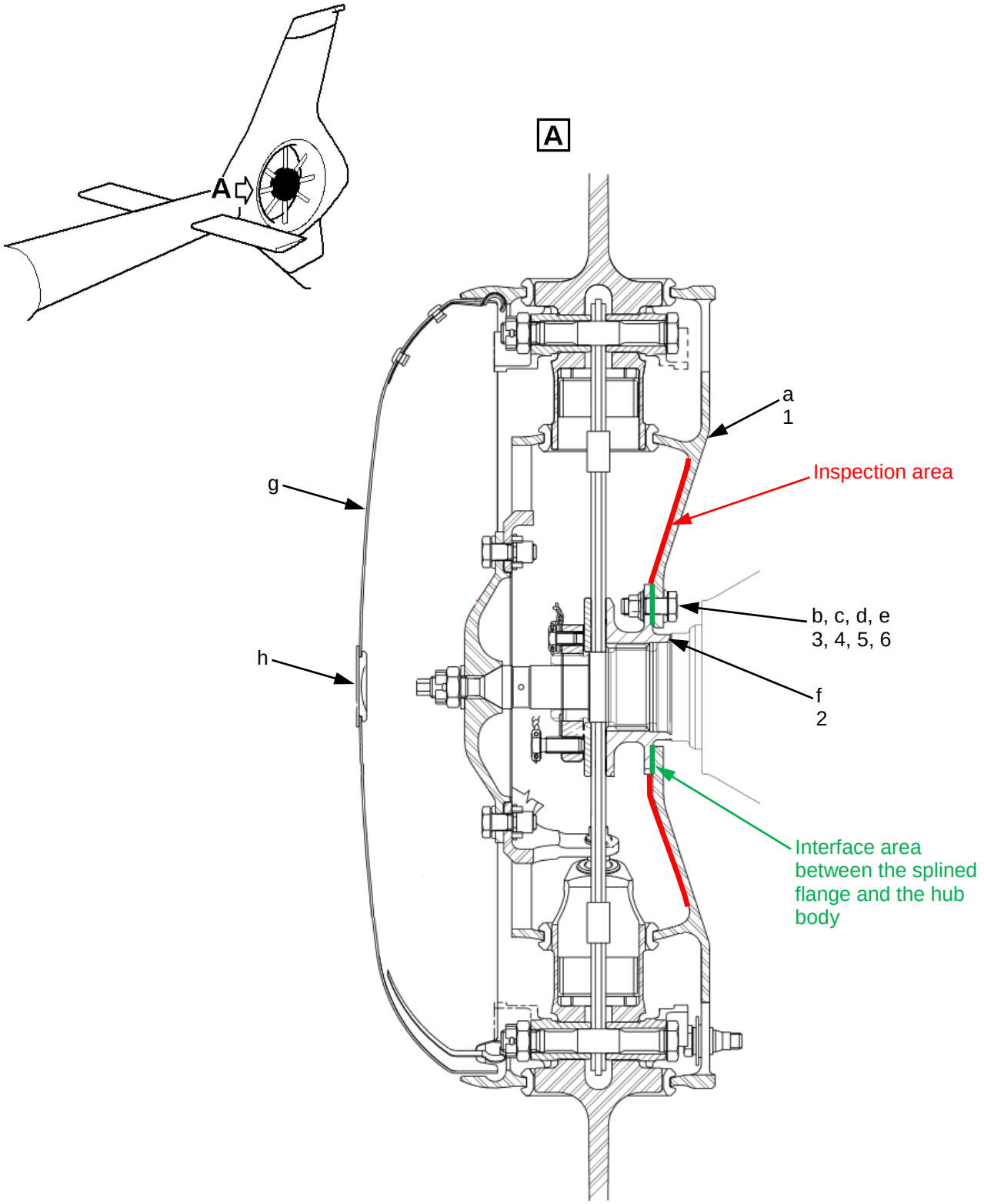
NOTE

The recording of compliance with ALERT SERVICE BULLETINS in the R-Tex tool does not replace the recording in the helicopter documents.

ASB EC120-05A020

3.D. OPERATING AND MAINTENANCE INSTRUCTIONS

Not applicable.



Return to paragraph 3.B.2.
Return to paragraph 3.B.3.
Return to paragraph 3.B.4.

Figure 1