



# Notification of a Proposal to issue an Airworthiness Directive

**PAD No.:** 21-029

**Issued:** 23 February 2021

Note: This Proposed Airworthiness Directive (PAD) is issued by EASA, acting in accordance with Regulation (EU) 2018/1139 on behalf of the European Union, its Member States and of the European third countries that participate in the activities of EASA under Article 129 of that Regulation.

In accordance with the EASA Continuing Airworthiness Procedures, the Executive Director is proposing the issuance of an EASA Airworthiness Directive (AD), applicable to the aeronautical product(s) identified below.

All interested persons may send their comments, referencing the PAD Number above, to the e-mail address specified in the 'Remarks' section, prior to the consultation date indicated.

**Design Approval Holder's Name:**

AIRBUS HELICOPTERS

**Type/Model designation(s):**

EC 120 B helicopters

**Effective Date:** [TBD - standard: 14 days after AD issue date]

**TCDS Number(s):** EASA.R.508

**Foreign AD:** Not applicable

**Supersedure:** This AD supersedes EASA AD 2019-0272R1 dated 18 November 2019.

## ATA 64 – Tail Rotor – Hub Body – Inspection / Replacement

### Manufacturer(s):

Airbus Helicopters (AH), formerly Eurocopter, Eurocopter France

### Applicability:

EC 120 B helicopters, all serial numbers.

### Definitions:

For the purpose of this AD, the following definitions apply:

**Affected part:** Tail rotor (TR) hub body, Part Number (P/N) C642A0100103.

**Serviceable part:** A TR hub body or splined flange that is new (not previously installed on any helicopter), or that has passed (no crack or fretting detected) an inspection in accordance with the instructions of the ASB.

**The ASB:** AH EC 120 Emergency Alert Service Bulletin (ASB) 05A020 Revision 2.



**Reason:**

An occurrence was reported where, during an inspection of a TR hub body, a recurrent case of loss of tightening torque on several attachment bolts was found. Following analysis, it was concluded that loss of tightening torque can cause the development of cracks.

This condition, if not detected and corrected, can lead to loss of the TR drive, possibly resulting in the loss of yaw control of the helicopter.

To address this potential unsafe condition, AH issued EC120 ASB 05A020 (original issue), providing inspection and replacement instructions. Consequently, EASA issued Emergency AD 2019-0272-E (later revised) to require repetitive inspections of the affected parts and, depending on findings, accomplishment of applicable corrective action(s). That AD also required repetitive replacement of the associated attachment bolts, washers, and nuts.

Since EASA AD 2019-0272R1 was issued, further detailed analysis showed that a loss of tightening torque in the interface between TR hub body and splined flange creates the risk of crack initiation from a fretting area on the TR hub and/or splined flange and/or TR hub/flange bolts.

To address that potential unsafe condition, AH issued the ASB, as defined in this AD, to introduce repetitive detailed inspections (DET) of the interface between the TR hub body and the splined flange, P/N C642A0104202, to detect fretting and to provide consequent replacement instructions.

For the reasons described above, this AD retains the requirements of EASA AD 2019-0272R1, which is superseded, and requires additional repetitive DET of the interface between the affected part and the splined flange, and, depending on findings, accomplishment of applicable corrective action(s).

**Required Action(s) and Compliance Time(s):**

Required as indicated, unless accomplished previously:

**Inspection(s):**

- (1) Within 15 flight hours (FH) or 7 days, whichever occurs first after 01 November 2019 [the effective date of the original issue of EASA AD 2019-0272-E], and, thereafter, at intervals not to exceed 15 FH, inspect each affected part in accordance with the instructions of section 3.B.2 of the ASB.
- (2) Concurrently within the next replacement of bolts, washers and nuts with new parts after the effective date of this AD, as required by paragraph (5) of this AD, and, thereafter, at intervals not to exceed 1 000 FH (see Note 1 of this AD), accomplish a DET of the interface between the affected part and the TR splined flange in accordance with the instructions of paragraph 1.E.2 of the ASB.

Note 1: A non-cumulative tolerance of 100 FH may be applied to allow synchronization of the required inspections with other maintenance tasks, for which a noncumulative tolerance is already granted in the applicable Maintenance Manual.



**Corrective Action(s):**

- (3) If, during any inspection as required by paragraph (1) of this AD, any crack is found, before next flight, replace the TR hub body with a serviceable part (as defined in this AD) and replace the bolts, washers and nuts with new parts, in accordance with the instructions of section 3.B.3 of the ASB, and accomplish a DET of the TR splined flange in accordance with the instructions of section 1.E.2 of the ASB.
- (4) If, during any DET of the TR splined flange as required by paragraph (2) or (3) of this AD, as applicable, fretting is detected, or the part condition exceeds the criteria as specified in the applicable Work Card, before next flight, replace the TR splined flange with a serviceable part in accordance with the instructions of section 3.B.4 of the ASB.

**Replacement:**

- (5) Within the compliance time as specified in Table 1 of this AD, as applicable, and, thereafter, at intervals not exceeding 1 000 FH (see Note 1 of this AD), replace the bolts, washers and nuts with new parts in accordance with the instructions of the ASB.

Table 1 – Initial Replacement of Bolts, Washers and Nuts (see Notes 1 and 2 of this AD)

FH Accumulated	Compliance Time
Less than 9 000 FH	During the next scheduled 1 000 FH (see Note 1 of this AD) inspection after the first inspection as required by paragraph (1) of this AD, without exceeding 9 000 FH
9 000 FH or more, or FH unknown	Within 15 FH or 7 days, whichever occurs first after 01 November 2019 [the effective date of the original issue of EASA AD 2019-0272-E]

Note 2: Unless indicated otherwise, the FH specified in Table 1 of this AD are those accumulated by the bolts since new (first installation on a helicopter).

**Credit:**

- (6) Inspection(s), replacements and corrective action(s) on a helicopter, accomplished before the effective date of this AD in accordance with the instructions of EC120 ASB 05A020 at original issue or Revision 1, are acceptable to comply with the initial requirements of this AD for that helicopter.

**Part(s) Installation:**

- (7) From the effective date of this AD, it is allowed to install on any helicopter an affected part or a TR splined flange, as applicable, provided it is a serviceable part, as defined in this AD.

**Terminating Action:**

- (8) None.

**Ref. Publications:**

AH Emergency ASB EC120-05A020 original issue dated 29 October 2019, or Revision 1 dated 08 November 2019, and Revision 2 dated 08 February 2021.



The use of later approved revisions of the above-mentioned document is acceptable for compliance with the requirements of this AD.

**Remarks:**

1. This Proposed AD will be closed for consultation on 09 March 2021.
2. Enquiries regarding this PAD should be referred to the EASA Safety Information Section, Certification Directorate. E-mail: [ADs@easa.europa.eu](mailto:ADs@easa.europa.eu).
3. Information about any failures, malfunctions, defects or other occurrences, which may be similar to the unsafe condition addressed by this PAD, and which may occur, or have occurred on a product, part or appliance not affected by this PAD, can be reported to the [EU aviation safety reporting system](#). This may include reporting on the same or similar components, other than those covered by the design to which this PAD applies, if the same unsafe condition can exist or may develop on an aircraft with those components installed. Such components may be installed under an FAA Parts Manufacturer Approval (PMA), Supplemental Type Certificate (STC) or other modification.
4. For any question concerning the technical content of the requirements in this PAD, please contact: [Approval holder address details]: Airbus Helicopters – Aéroport de Marseille Provence, 13725 Marignane CEDEX, France  
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