



Notification of a Proposal to issue an Airworthiness Directive

PAD No.: 22-110

Issued: 16 August 2022

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):

SA 330 J helicopters

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

TCDS Number(s): EASA.R.002

Foreign AD: Not applicable

Supersedure: This AD supersedes EASA AD 2020-0171 dated 28 July 2020.

ATA 65 – Rotors – Main Gearbox Oil Cooling Fan – Inspection / Replacement / Modification

Manufacturer(s):

Eurocopter, Eurocopter France, Aérospatiale

Applicability:

SA 330 J helicopters, all serial numbers.

Definitions:

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

Affected bearing: Main gearbox (MGB) oil cooling fan rotor shaft bearings (both rear and front), having Part Number (P/N) 704A33651114 (manufacturer P/N (MP/N) 205FFTX74K6-G33).

Serviceable bearing: MGB oil cooling fan rotor shaft bearings (both rear and front), having P/N 704A33651268 (MP/N 594918).

Affected MGB fan bearing assembly: MGB fan bearing assemblies, having P/N 330A34-1160-XX, where XX represents any number, P/N 330A34-1190-00, P/N 330A34-1190-01,



P/N 330A34-1190-02, P/N 330A34-1190-03, P/N 330A34-1190-04, P/N 330A34-1190-05, P/N 330A34-1190-06 or P/N 330A34-1190-07.

Improved MGB fan bearing assembly: MGB fan bearing assemblies, having P/N 330A34-1190-09 or P/N 330A34-1190-11.

The inspection ASB: Airbus Helicopters (AH) SA330 Emergency Alert Service Bulletin (ASB) 05.96 Revision 2.

The replacement SB: AH Service Bulletin (SB) SA330-65.127.

The modification ASB: AH ASB SA330-65.137.

Groups: Group 1 helicopters are those that have an affected MGB fan bearing assembly installed. Group 2 helicopters are those that do not have an affected MGB fan bearing assembly installed.

Reason:

Occurrences were reported of MGB oil cooling fan assembly rotor burst on SA 330 helicopters. Subsequent investigation determined that some MGB oil cooling fan rotor blades interfered with the upper area of the guide vane bearing housing of the MGB oil cooling fan assembly. The blades detached from the rotor, impacting the MGB compartment area and causing puncture holes in the transmission deck. This interference was due to internal degradation of the MGB oil cooling fan rotor shaft bearings.

This condition, if not detected and corrected, could lead to MGB oil cooling fan assembly rotor burst and consequent damage to hydraulic pipes and flight controls located near the MGB oil cooling fan, possibly resulting in reduced control of the helicopter.

To address this potential unsafe condition, Eurocopter issued SA 330 Emergency ASB No. 05.96 (original issue) to provide inspection instructions, and EASA issued Emergency AD 2010-0147-E to require repetitive inspections to determine the play between MGB oil cooling fan blades and the upper section of the guide vane bearing housing of the MGB oil cooling fan and, depending on findings, accomplishment of a corrective action.

After that AD was issued, AH developed an improved MGB oil cooling fan rotor shaft bearing design and issued SA 330 Emergency ASB 05.96 Revision 1 and the replacement SB, as defined in this AD. Consequently, EASA issued AD 2020-0171, retaining the requirements of EASA AD 2010-0147-E which was superseded, and additionally requiring replacement of each affected bearing with a serviceable bearing, as defined in this AD. That AD also required repetitive inspections of the serviceable bearings.

Since that AD was issued, AH developed modifications (mod) 0776102 and mod 0776104, introducing a new Kevlar protection on the fan bearing rectifier and a new flexible duct. Additionally, AH issued the modification ASB to provide in-service modification instructions.



For the reasons described above, this AD retains the requirements of EASA AD 2020-0171, which is superseded, and additionally requires installation of an improved MGB fan bearing assembly, which constitutes terminating action for the repetitive inspections as required by this AD.

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

Required as indicated, unless accomplished previously:

Inspection(s):

- (1) For Group 1 helicopters: Within 10 flight hours (FH) after 11 August 2020 [the effective date of EASA AD 2020-0171] and, thereafter, at intervals not to exceed 10 FH, accomplish an inspection to determine the play between each MGB oil cooler fan rotor blade and the upper section of the guide vane bearing housing of the affected MGB fan bearing assembly in accordance with the instructions of the inspection ASB.

Corrective Action(s):

- (2) If, during any inspection as required by paragraph (1) of this AD, the play measured over the entire width of the fan blade is less than 0.2 mm, before next flight, replace the MGB oil cooling fan rotor shaft bearings (affected or serviceable bearings, as applicable) with serviceable bearings in accordance with the instructions of the inspection ASB.

Replacement:

- (3) Unless accomplished as required by paragraph (2) of this AD, within the compliance time defined in Table 1 of this AD, or within 39 months after the effective date of this AD, whichever occurs first, replace each affected bearing with a serviceable bearing in accordance with the instructions of the replacement SB.

Table 1 – Affected Bearing Replacement (see Note 1 of this AD)

Affected Part, FH	Compliance Time
200 FH or less	Before exceeding 300 FH
More than 200 FH	Within 100 FH after 11 August 2020 [the effective date of EASA AD 2020-0171]

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

Modification:

- (4) For Group 1 helicopters: within 39 months after the effective date of this AD, modify the helicopter by installing an improved MGB fan bearing assembly in accordance with the instructions of the modification ASB.

Terminating Action:

- (5) Replacement of each affected bearing on a helicopter, as specified in paragraph (2) of this AD, or as required by paragraph (3) of this AD, as applicable, does not constitute terminating action for the repetitive inspections as required by paragraph (1) of this AD for that helicopter.



- (6) Modification of a helicopter as required by paragraph (4) of this AD constitutes terminating action for the repetitive inspections as required by paragraph (1) of this AD for that helicopter.

Credit:

- (7) Inspection(s) and corrective action(s), accomplished on a helicopter before the effective date of this AD in accordance with the instructions of AH SA 330 Emergency ASB 05.96 at Revision 1, is an acceptable method to comply with the requirements of paragraphs (1) and (2) of this AD for that helicopter.

Parts Installation:

- (8) From 11 August 2020 [the effective date of EASA AD 2020-0171] it is allowed to install on any helicopter MGB oil cooling fan rotor shaft bearings, provided that they are serviceable bearings, as defined in this AD.
- (9) It is allowed to install on any helicopter an MGB fan bearing assembly, provided that it is an improved MGB fan bearing assembly, as defined in this AD, as required by paragraph (9.1) or (9.2) of this AD, as applicable.
- (9.1) For Group 1 helicopters: After modification of the helicopter as required by paragraph (4) of this AD.
- (9.2) For Group 2 helicopters: From the effective date of this AD.

Ref. Publications:

AH SA 330 Emergency ASB 05.96 Revision 1 dated 24 July 2020, or Revision 2 dated 25 July 2022.

AH SB SA 330-65.127 original issue dated 25 June 2018.

AH ASB SA 330-65.137 original issue dated 25 July 2022.

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

Remarks:

1. This Proposed AD will be closed for consultation on 13 September 2022.
2. Enquiries regarding this PAD should be referred to the EASA Safety Information Section, Certification Directorate. E-mail: 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: Airbus Helicopters (Technical Support), Aéroport de Marseille Provence, 13725 Marignane Cedex, France, Telephone +33 (0)4 42 85 97 97, Fax +33 (0)4 42 85 99 66
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