Airworthiness Directive

AD No.: 2024-0205

Issued: 22 October 2024

Note: This Airworthiness Directive (AD) 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.

This AD is issued in accordance with Regulation (EU) 748/2012, Part 21.A.3B. In accordance with Regulation (EU) 1321/2014 Annex I Part M.A.301, or Annex Vb Part ML.A.301, as applicable, the continuing airworthiness of an aircraft shall be ensured by accomplishing any applicable ADs. Consequently, no person may operate an aircraft to which an AD applies, except in accordance with the requirements of that AD, unless otherwise specified by the Agency [Regulation (EU) 1321/2014 Annex I Part M.A.303, or Annex Vb Part ML.A.303, as applicable] or agreed with the Authority of the State of Registry [Regulation (EU) 2018/1139, Article 71 exemption].

Design Approval Holder's Name:
AIRBUS HELICOPTERS

Type/Model designation(s):
EC 225 LP helicopters

Effective Date: 05 November 2024

TCDS Number(s): EASA.R.002

Foreign AD: Not applicable

Supersedure: This AD supersedes EASA AD 2023-0042 dated 23 February 2023.

ATA 62 – Main Rotor – Rotating Swashplate Yokes – Inspection / Restoration / Service Life Limit

Manufacturer(s):
Airbus Helicopters (AH), formerly Eurocopter, Eurocopter France

Applicability:
EC 225 LP helicopters, all manufacturer serial numbers (s/n).

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

The ASB: EC225 Emergency Alert Service Bulletin (ASB) 05A051 Revision 7.

Affected part: Main rotor (M/R) rotating swashplate Part Number (P/N) 332A31-3074-00 or P/N 332A31-3074-01, all s/n.

Serviceable part:
- An affected part that has accumulated less than 5 years since the date of manufacturing; or
- An affected part that has accumulated 5 years or more, but less than 13 years since the date of manufacturing, and that, before installation, has passed an inspection (no defects found) in accordance with the instructions of the ASB, and has had the protective paint restored, as applicable, in accordance with the instructions of the ASB.

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Note: The date of manufacturing of an affected part is available from AH upon request. For affected parts having s/n up to MA138193 inclusive, it is provided in the ASB. The date of manufacturing of an affected part having a s/n above MA138193 is on 22 Sept 2024 or later, and it will be provided by AH in a future update of the ASB.

Reason:

It had been identified that the control rod attachment yokes of the M/R rotating swashplate are susceptible to crack development, due to ageing phenomenon (environmental assisted cracking).

This condition, if not detected and corrected, could lead to structural failure of a control rod attachment yoke of the M/R rotating swashplate, possibly resulting in loss of control of the helicopter.

To address this potential unsafe condition, AH issued EC225 Emergency ASB 05A051 to provide inspection instructions and EASA issued Emergency AD 2017-0191-E (later revised) to require repetitive visual inspections of the M/R rotating swashplate yokes and, depending on findings, accomplishment of applicable corrective action(s).

After EASA AD 2017-0191R2 was issued, additional analysis determined that it was necessary to introduce a Service Life Limit (SLL) for the affected parts to ensure their serviceability. Consequently, AH issued Revision 2 of EC225 Emergency ASB 05A051 to introduce an SLL applicable to the affected parts and provide reporting instructions. Afterwards, EASA issued AD 2019-0074 (later revised) retaining the requirements of EASA AD 2017-0191R2, which was superseded, and requiring implementation of the applicable SLL, after which the affected part had to be removed from service, and requesting reporting.

After EASA AD 2019-0074R1 was issued, additional investigation, focusing on environmental assisted cracking phenomenon of light alloys, determined the need to reduce the inspection threshold of yokes and yoke areas of each affected part and AH issued accordingly the ASB 05A051 Revision 6. Consequently, EASA issued AD 2023-0042 retaining the requirements of EASA AD 2019-0074R1, which was superseded, and requiring accomplishment of the initial visual inspection of the yokes and the yoke areas of each affected part within reduced compliance times.

After that AD was issued, a linear indication (crack) was identified at one of AH's facilities on one of the yokes of an affected part, during a non-destructive testing (NDT) inspection of a swashplate that had reached its calendar limitation (13 years) in accordance with the ASB. The found NDT indication (location and characteristics) differed however from previous findings, addressed by ASB 05A051, and therefore AH published ASB EC225-62-32-0001, requiring a one-time eddy current inspection for each affected part, and giving instructions for rework or replacement, depending on the found linear indications. Consequently, EASA issued AD 2024-0125 requiring accomplishment of an additional one-time detailed inspection of the yoke areas of each affected part, on top of the requirements of EASA AD 2023-0042, and reporting of the inspection results to AH for further investigation.

Since AD 2023-0042 was issued, it was determined that certain areas of the swashplate, that were stripped and protected with varnish for compliance with previous revisions of the ASB 05A051, are subject to increased risk of corrosion, therefore protective paint coating needs to be restored.

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At the same time, results of the inspections required by EASA AD 2024-0125 showed that visual inspection is not a sufficient method for cracks detection and that requirement needs to be replaced with repetitive eddy current inspections.

For the reasons described above, this AD partially retains requirements of EASA AD 2023-0042, which is superseded, requiring accomplishment of repetitive detailed inspection of the yoke areas of each affected part and restoration of protective paint coating.

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

Required as indicated by this AD, unless the action(s) required by this AD have been already accomplished:

Inspection(s):

(1) Within the compliance time defined in Table 1 and thereafter, at intervals not to exceed 110 flight hours (FH) or 2 months (whichever occurs first) accomplish a detailed inspection of the affected part in accordance with the instructions of the section 3.B.4. of the ASB.

Table 1 – M/R Swashplate Yoke Initial Inspection

Time Accumulated (on the effective date of this AD)	**Initial Inspection Compliance Time**
Less than 5 years	Within 110 FH or 2 months, whichever occurs first after accumulating 5 years since date of manufacturing.
5 years or more	Within 110 FH or 2 months, whichever occurs first after the effective date of this AD.

(2) If, before the effective date of this AD, any yoke of the affected part of an helicopter was stripped and varnished in accordance with the instructions of previous revisions of the ASB 05A051, within 55 FH or 1 month after the effective date of this AD, whichever occurs first, accomplish a visual inspection of that affected part in accordance with the instructions of section 3.B.2 of the ASB, followed by, during the same maintenance visit, a detailed inspection of that affected part in accordance with the instructions of section 3.B.3 of the ASB.

(3) Accomplishment of the visual inspection and the detailed inspection of an affected part of a helicopter, as required by paragraph (2) of this AD, is acceptable to comply with the initial inspection requirement of paragraph (1) of this AD for that helicopter.
Subsequent detailed inspections of that affected part must be accomplished as required by paragraph (1) of this AD.

Protective Paint Restoration:

(4) If, during any detailed inspection, as required by paragraph (2) of this AD, no linear indication (crack) is detected, before next flight after accomplishment of the inspections as required by paragraph (2) of this AD, restore the protective paint coating of the affected part in accordance with the instructions of paragraph 3.B.3.h. of the ASB.

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Corrective Action(s):

(5) If, during the visual inspection as required by paragraph (2) of this AD, any corrosion pits, as described in the ASB, are detected, before the detailed inspection as required by paragraph (2) of this AD, remove the corrosion pits at the affected yoke area(s) of the affected part in accordance with the instructions of paragraph 3.B.2 of the ASB.

(6) If, during any detailed inspection as required by paragraph (1) or (2) of this AD, as applicable, any linear indication (crack) is detected, within the compliance time as defined in section 3.B.3.h. or 3.B.4.h. of the ASB, as applicable, depending on the finding, accomplish the applicable corrective actions in accordance with the instructions of the ASB.

Part Replacement / SLL Implementation:

(7) From the effective date of this AD, before an affected part exceeds 13 years since date of manufacturing, replace that affected part with a serviceable part. This can be accomplished in accordance with the instructions of the applicable Aircraft Maintenance Manual.

Credit:

(8) Inspection(s) and corrective action(s) accomplished on a helicopter, before the effective date of this AD, in accordance with the instructions of AH ASB EC225-62-32-0001 are acceptable to comply with the initial inspection requirement of paragraph (1) of this AD for that helicopter. Subsequent detailed inspections of that affected part must be accomplished as required by paragraph (1) of this AD.

Reporting:

(9) If, during any inspection, as required by paragraph (1) or (2) of this AD, as applicable, any linear indication (crack) is detected, within 7 days after that inspection, or within 7 days after the effective date of this AD, whichever occurs later, report the inspection results to AH. Using the ASB Response Form (Appendix 4.B of the ASB) is an acceptable method to comply with this requirement.

Terminating Action:

(10) None.

Part(s) Installation:

(11) From the effective date of this AD, installation of an affected part on a helicopter is allowed, provided that the part is a serviceable part, as defined in this AD, and that, following installation, the swashplate yoke is inspected and/or replaced as required by this AD.

Additional Maintenance Requirement(s):

(12) From the effective date of this AD, do not strip any yoke of an affected part in accordance with the instruction of previous revisions of the ASB 05A051.

Ref. Publications:

AH EC225 Emergency ASB 05A051 Revision 7 dated 08 October 2024.

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

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Remarks:

1. If requested and appropriately substantiated, EASA can approve Alternative Methods of Compliance for this AD.

2. Based on the required actions and the compliance time, EASA have decided to issue a Final AD with Request for Comments, postponing the public consultation process until after publication. All interested persons may send their comments, referencing the AD Number, to the E-mail address specified in below Remark 3, prior to 19 November 2024. Only if any comment is received during the consultation period, a Comment Response Document will be published in the EASA Safety Publications Tool, in a compressed ('zipped') file, attached to the record for this AD.

3. Enquiries regarding this AD should be referred to the EASA Safety Information Section, Certification Directorate. E-mail: ADs@easa.europa.eu.

4. Information about any failures, malfunctions, defects or other occurrences, which may be similar to the unsafe condition addressed by this AD, and which may occur, or have occurred on a product, part or appliance not affected by this AD, 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 AD 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.

5. For any question concerning the technical content of the requirements in this AD, 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, Web portal: https://keycopter.airbushelicopters.com > Technical Requests Management, E-mail: TechnicalSupport.Helicopters@airbus.com.

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