European Union Aviation Safety Agency

Airworthiness Directive

AD No.: 2023-0042

Issued: 23 February 2023

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: 09 March 2023

TCDS Number(s): EASA.R.002

Foreign AD: Not applicable

Supersedure: This AD supersedes EASA AD 2019-0074R1 dated 08 March 2022.

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

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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 6, which contains information about the date of manufacture of affected parts.

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 new (since the date of manufacturing); or an affected part that has accumulated 5 years or more, but less than 13 years since new (since the date of manufacturing), and that, before installation, has passed an inspection (no defects found), or has been reworked in each yoke area, in accordance with the instructions of Section 3.B of the ASB.

Groups: Group 1 affected parts are those which on 27 September 2017 [the effective date of EASA AD 2017-0191 at original issue] accumulated 7 years or more since new (since the date of manufacturing). Group 2 affected parts are those which are not Group 1 affected parts.

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 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.

Since 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. Consequently, AH issued the ASB, as defined in this AD, to reflect this development.

For the reasons described above, this AD retains the requirements of EASA AD 2019-0074R1, which is superseded, and requires accomplishment of the initial inspection of the yokes and the yoke areas of each affected part within reduced compliance times. Further on, the definition of a serviceable part has been amended accordingly, and Groups have been introduced for affected parts.

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

Required as indicated, unless accomplished previously:

Inspection(s):

(1) For Group 1 affected parts: Within 15 flight hours (FH) or 7 days after 27 September 2017 [the effective date of EASA AD 2017-0191 at original issue], whichever occurs first, and, thereafter, at intervals not to exceed 15 FH or 7 days, whichever occurs first, inspect each yoke of the affected part in accordance with the instructions of Section 3.B of the ASB.

(2) For Group 2 affected parts: Within the compliance time defined in Table 1 of this AD, and, thereafter, at intervals not to exceed 15 FH or 7 days, whichever occurs first, inspect each yoke of the affected part in accordance with the instructions of Section 3.B of the ASB.

Table 1 – M/R Swashplate Yoke Inspection (see Note 1 of this AD)

Time Accumulated	Compliance Time
Less than 5 years	Within 15 FH or 7 days, whichever occurs first, after accumulating 5 years since new (since date of manufacturing)
5 years or more	Within 15 FH or 7 days, whichever occurs first after the effective date of this AD

Note 1: The time specified in Table 1 or Table 2 of this AD is the time accumulated on the effective date of this AD by the affected part since new (date of manufacturing).

(3) For Group 1 affected parts: Before exceeding 100 FH after 27 September 2017 [the effective date of EASA AD 2017-0191 at original issue], strip and inspect each yoke area of each affected part as defined in, and in accordance with, the instructions of Section 3.B of the ASB.

(4) For Group 2 affected parts: Within the compliance time defined in Table 2 of this AD, strip and inspect each yoke area of each affected part as defined in, and in accordance with, the instructions of Section 3.B of the ASB.

Table 2 – M/R Swashplate Yoke Strip Inspection (see Note 1 of this AD)

Time Accumulated	Compliance Time
Less than 5 years	Before exceeding 100 FH after accumulating 5 years since new (since date of manufacturing)
5 years or more	Before exceeding 100 FH after the effective date of this AD

Corrective Action(s):

(5) If, during any inspection as required by paragraph (1), (2), (3) or (4) of this AD, any corrosion is detected, before next flight, rework the affected yoke area(s) of the affected part in accordance with the instructions of Section 3.B of the ASB.

(6) If, during any inspection as required by paragraph (1), (2), (3) or (4) of this AD, any crack is detected, before next flight, replace the affected part with a serviceable part in accordance with the instructions of the ASB.

Part Replacement / SLL Implementation:

(7) Within the compliance time defined in Table 3 of this AD and, thereafter, before an affected part exceeds 13 years since new (since date of manufacturing), replace that affected part with a serviceable part in accordance with the instructions of Section 3.B of the ASB.

Table 3 – M/R Swashplate Replacement (see Note 2 of this AD)

Time Accumulated	Compliance Time
Less than 12 years and 9 months	Before exceeding 13 years
12 years and 9 months or more	Within 3 months after 11 April 2019 [the effective date of EASA AD 2019-0074 at original issue]

Note 2: The accumulated time specified in Table 3 of this AD is the time accumulated by the affected part on 11 April 2019 [the effective date of EASA AD 2019-0074 at original issue] since new (since the date of manufacturing).

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 EC225 Emergency ASB 05A051 original issue, Revision 1, Revision 2, Revision 3, Revision 4 or Revision 5 are acceptable to comply with the initial requirements of paragraphs (1), (2), (3), (4), (5), (6) and (7), as applicable, of this AD for that helicopter.

Reporting:

(9) If, during the initial inspection, as required by paragraphs (1), (2), (3) and (4) of this AD, no damage is detected, or during any inspection as required by paragraphs (1), (2), (3) and (4) of this AD, any damage is detected, within 30 days after that inspection, or within 30 days after the effective date of this AD whichever occurs later, report the inspection results to AH. This can be done in accordance with the instructions of Appendix 4.B of the ASB.

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.

Ref. Publications:

AH EC225 Emergency ASB 05A051 original issue dated 22 September 2017, or Revision 1 dated 16 November 2017, or Revision 2 dated 26 February 2019, or Revision 3 dated 07 December 2021, or Revision 4 dated 28 February 2022, or Revision 5 dated 02 February 2023, or Revision 6 dated 10 February 2023.

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

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.

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: support.technical-dyncomp.ah@airbus.com, and TechnicalSupport.Helicopters@airbus.com.