Notification of a Proposal to issue an Airworthiness Directive

PAD No.: 21-126R1

Issued: 10 January 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):
AS 332 L2 and EC 225 LP 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 2017-0189 dated 22 September 2017.

ATA 05 – Time Limits / Maintenance Checks – Main Gearbox Suspension Bar Pins / Fittings – Re-calculation of Life Limits / Replacement / Modification

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

Applicability:
AS 332 L2 and EC 225 LP helicopters, all manufacturer serial numbers.

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

Affected pin(s): Front attachment fitting pin(s) of Main Gearbox (MGB) suspension bars, having Part Number (P/N) 332A22-1613-20 or P/N 332A22-1613-21, and rear attachment fitting pin(s) of MGB suspension bars, having P/N 332A22-1614-20.

Affected fitting(s): Front attachment fitting(s) of MGB suspension bars, having P/N 332A22-1623-01, right rear attachment fitting(s) of MGB suspension bars, having P/N 332A22-1624-02 or P/N 332A22-1624-04, and left rear attachment fitting(s) of MGB suspension bars, having P/N 332A22-1624-03 or P/N 332A22-1624-05 or P/N 332A38-3049-00.

Affected plate(s): Plate under right aft MGB fitting (for AS 332 L2 helicopters), having P/N 332A22-3337-20, and plate under front MGB fitting (for EC 225 LP helicopters), having P/N 332A22-1667-23 or P/N 332A08-1729-63.

Improved pin(s): Front attachment fitting pin(s) of MGB suspension bars, having P/N 332A22-3643-20 and rear attachment fitting pin(s) of MGB suspension bars, having P/N 332A22-3644-20.

Serviceable pre-modification ASB pin(s): An affected pin that has not exceeded the applicable service life limit (SLL) as defined in the AS 332 L2 or EC 225 LP Airworthiness Limitations Section (ALS).

Serviceable post-modification ASB pin(s): An improved pin that has not exceeded the applicable SLL as defined in Appendix 4.C. of the modification ASB, as defined in this AD.

Serviceable fitting(s): An affected fitting that has not exceeded the applicable SLL as defined in the AS 332 L2 or EC 225 LP ALS, or a left rear attachment fitting P/N 332A38-3049-00 of MGB suspension bars (for EC 225 LP helicopters) that has not exceeded the applicable SLL defined in Appendix 4.C. of the modification ASB.

Serviceable plate(s): An affected plate that has not exceeded the applicable SLL as defined in Appendix 4.C. of the modification ASB.

The ASB: AH AS332 Emergency Alert Service Bulletin (ASB) 01.00.86 Revision 1 or EC225 Emergency ASB 04A013, as applicable.

The modification ASB: AH ASB AS332-53.02.03 Revision 1 or ASB EC225-53-065 Revision 1, as applicable.

Groups: Group 1 helicopters are those in pre-modification ASB configuration. Group 2 helicopters are those in post-modification ASB configuration. Helicopters having AH modification (mod) 0728521, mod 0728904, mod 0728496 and mod 0729044 concurrently embodied in production are Group 2 helicopters provided that they remain in that configuration.

Reason:

Following the review of data reported after accomplishing actions as required by EASA Emergency AD 2016-0089-E, applicable to EC 225 LP helicopters, it was determined that the installation of MGB upper deck fittings of the three MGB suspension bars could lead to tightening torque loss on the affected pin(s) and fitting(s), as defined in this AD. Due to design similarity, AS 332 L2 helicopters could also be affected by the same installation condition. Investigation identified that the current SLL values for the affected pin(s) and/or fitting(s), as published in the applicable ALS, were still valid provided that an add-on penalty factor is applied to the life accumulated by the affected pin(s) and fitting(s) in service.

This condition, if not corrected, could lead to structural failure of the affected pin(s) and fitting(s).

To address this potentially unsafe condition, AH published the original issue of AS332 Emergency ASB 01.00.86 and EC225 Emergency ASB 04A013 to provide life re-calculation methods and replacement instructions. Consequently, EASA issued AD 2017-0133 to require implementation of an add-on penalty factor to the flight hours (FH) accumulated by the affected pin(s) and fitting(s) and, before exceeding the applicable SLL, replacement. Subsequently, it was discovered that the original issue of AS332 Emergency ASB 01.00.86 contained an error, possibly resulting in installation of pins or fittings using incorrect tightening torque values. Prompted by that finding, AH issued AS332 Emergency ASB 01.00.86 Revision 1 and EASA issued AD 2017-0189, retaining the requirements of EASA AD 2017-0133, which was superseded, but requiring use of the revised ASB for AS 332 L2 helicopters. That AD also required, for AS 332 L2 helicopters, replacement of any affected pin(s) where incorrect tightening torque values were applied and reporting the details to the design approval holder.

Since AD 2017-0189 was issued, AH developed a design improvement, installing new links on the attachment fittings of the MGB suspension bars through mods 0728521, 0728904, 0728496 and 0729044, and issued Service Bulletin (SB) AS332-53.02.03 and SB EC225-53-065 providing in-service modification instructions. Prompted by this design development, EASA issued PAD 21-126 and, following the public consultation, no comment was received.

However, since PAD 21-126 was issued, additional review accomplished by AH led to the issuance of the modification ASB (derived directly from the previously issued SB AS332-53.02.03 and SB EC225-53-065), which introduced new SLL for post-modification ASB pin(s), for the affected plate(s) and, specifically, for the left rear attachment fitting P/N 332A38-3049-00 of EC 225 LP helicopters. Additionally, as a consequence of the design improvement introduced via the modification ASB, a new tightening torque check has been added for the improved pin(s).

For the reasons described above, this AD retains the requirements of EASA AD 2017-0189, which is superseded, and additionally requires modification.

For the reasons described above this PAD is republished for additional consultation.

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

Required as indicated, unless accomplished previously:

Service Life Re-calculation(s):

(1) For Group 1 helicopters: Within 30 FH after 03 August 2017 [the effective date of EASA AD 2017-0133], and, thereafter, after each flight, re-calculate the life accumulated by each affected pin (for AS 332 L2 and EC 225 LP) and each affected fitting (for AS 332 L2 only) by applying the add-on factor, as applicable, in accordance with instructions of the ASB.

Corrective Action(s):

(2) For Group 1 helicopters: Before the re-calculated life of an affected pin, determined as required by paragraph (1) of this AD, exceeds the applicable SLL as defined in the AS 332 L2 or EC 225 LP ALS, as applicable, replace that affected pin with a serviceable pre-modification ASB pin in accordance with the instructions of the ASB.

(3) For AS 332 L2 Group 1 helicopters: Before the re-calculated life of an affected fitting, determined as required by paragraph (1) of this AD, exceeds the applicable SLL as defined in the AS 332 L2 ALS, replace that affected fitting with a serviceable fitting in accordance with the instructions of the ASB.

(4) As an alternative to the replacement as required by paragraph (3) of this AD, inspect the affected fitting in accordance with the instructions of the ASB.

(5) If, during the inspection as specified in paragraph (4) of this AD, no crack is detected, within 150 FH after that inspection, replace the affected fitting with a serviceable fitting in accordance with the instructions of the ASB. No further accumulated life re-calculations (see paragraph (1) of this AD) are required, until the fitting is replaced.

(6) If, during the inspection as specified in paragraph (4) of this AD, any crack is detected, before next flight, replace the affected fitting with a serviceable fitting in accordance with the instructions of the ASB.

MGB Suspension Bar Fitting Pin Replacement:

(7) For AS 332 L2 Group 1 helicopters on which, before 06 October 2017 [the effective date of EASA AD 2017-0189], a replacement pin was installed and an incorrect tightening torque value was applied, within 150 FH (without applying an add-on factor) after that pin was installed, replace the affected pin with a serviceable pre-modification ASB pin in accordance with the instructions of Revision 1 of AH AS332 Emergency ASB 01.00.86.

Modification:

(8) For Group 1 helicopters: Within 825 FH, or within the applicable calendar compliance time as specified in Table 1 of this AD, whichever occurs first after the effective date of this AD, modify the helicopter in accordance with the instructions of the modification ASB. Following modification, a helicopter effectively becomes a Group 2 helicopter.

Table 1 – Modification

Model	Calendar Compliance Time
AS 332 L2	27 months
EC 225 LP	40 months

Parts Installation:

(9) For Group 1 helicopters: From 06 October 2017 [the effective date of EASA AD 2017-0189], it is allowed to install an affected pin or an affected fitting on a helicopter, provided the part is a serviceable pre-modification ASB pin or serviceable fitting, as applicable and as defined in this AD, and that, following installation, the life of the part is re-calculated as required by paragraph (1) of this AD.

(10) For Group 2 helicopters: From the effective date of this AD, do not install on a helicopter any pre-modification ASB pin.

Replacement of Life Limited Parts:

(11) For Group 2 helicopters: Before exceeding the applicable SLL as defined in Appendix 4.C. of the modification ASB, replace each improved pin, each affected plate and the left rear attachment fitting P/N 332A38-3049-00 of MGB suspension bars (for EC 225 LP helicopters) with a serviceable post-modification ASB pin, a serviceable plate, or a serviceable fitting in accordance with approved maintenance instructions.

Repetitive Tightening Torque Check:

(12) For Group 2 helicopters: Within the compliance time and, thereafter, at intervals as defined in Table 2 of this AD, as applicable to helicopter model, accomplish a tightening torque check of each improved pin in accordance with the instructions of Appendix 4.E of the modification ASB; and, depending on findings, accomplish all the applicable corrective actions in accordance with the instructions of Appendix 4.E of the modification ASB.

Table 2 – Repetitive Tightening Torque Checks

Helicopter Model	**Compliance Time** (See Note 1 of this AD)	**Interval**
AS 332 L2	825 FH	825 FH
EC 225 LP	1 320 FH	1 320 FH

Note 1: The FH defined in the 'Compliance Time' column are those accumulated by the improved pin since first installation on a helicopter.

Terminating Action:

(13) For Group 1 helicopters: Replacement of an affected fitting or an affected pin on a helicopter, as required by paragraph (2), (3), (5) or (6) of this AD, as applicable, does not constitute terminating action for the repetitive service life re-calculation(s) as required by paragraph (1) of this AD for that helicopter.

(14) Modification of a helicopter as required by paragraph (8) of this AD constitutes terminating action for repetitive service life re-calculation(s) as required paragraph (1) of this AD for that helicopter.

Credit:

(15) For AS 332 L2 Group 1 helicopters: Re-calculation(s) and inspection(s) of affected pin(s) or fitting(s) and replacement of affected fitting(s), accomplished before 06 October 2017 [the effective date of EASA AD 2017-0189] in accordance with the instructions of the original issue of AH AS332 Emergency ASB 01.00.86, are acceptable to comply with the initial requirements of this AD for that helicopter.

(16) For AS 332 L2 Group 1 helicopters: Replacement of an affected pin, accomplished before 06 October 2017 [the effective date of EASA AD 2017-0189] in accordance with the instructions of the original issue of AH AS332 Emergency ASB 01.00.86, is acceptable to comply with the initial requirements of this AD for that helicopter, provided that the tightening torque values

applied to the affected pin(s) of the MGB suspension bar fittings were those referenced in the ASB.

(17) For all Group 1 helicopters: Modification of a helicopter in accordance with the instructions of AH SB AS332-53.02.03 or SB EC225-53-065, both at original issue, is an acceptable method to comply with the requirements of paragraph (8) of this AD for that helicopter.

Reporting:

(18) For AS 332 L2 helicopters affected by paragraph (7) of this AD, within 30 days after 06 October 2017 [the effective date of EASA AD 2017-0189], report all information related to the affected pin(s) to AH in accordance with the instructions of Revision 1 of AH AS332 Emergency ASB 01.00.86.

Ref. Publications:

AH AS332 Emergency ASB 01.00.86 original issue dated 27 July 2017, or Revision 1 dated 25 August 2017, or Revision 2 dated 02 March 2020, or Revision 3 dated 19 August 2021, or Revision 4 dated 06 January 2022.

AH EC225 Emergency ASB 04A013 original issue dated 27 July 2017, or Revision 1 dated 25 August 2017, or Revision 2 dated 02 March 2020, or Revision 3 dated 19 August 2021, or Revision 4 dated 06 January 2022.

AH SB AS332-53.02.03 original issue dated 19 August 2021, or AH ASB AS332-53.02.03 Revision 1 dated 06 January 2022.

AH SB EC225-53-065 original issue dated 19 August 2021, or AH ASB EC225-53065 Revision 1 dated 06 January 2022.

AH AS332 L2 ALS Revision 009 dated 02 June 2021.

AH EC 225 LP ALS Revision 013 dated 08 March 2021.

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 31 January 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, Airbus World: Technical Request Management: https://airbusworld.helicopters.airbus.com, E-mail: support.technical-dyncomp.ah@airbus.com, and TechnicalSupport.Helicopters@airbus.com.