Notification of a Proposal to issue an Airworthiness Directive

PAD No.: 22-005

Issued: 24 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:

LEONARDO S.p.A.

Type/Model designation(s):

A109E, A109LUH, A109S, AW109SP, A119 and AW119MKII helicopters

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

TCDS Number(s): EASA.R.005

Foreign AD: Not applicable

Supersedure: None

ATA 62 – Main Rotor System – Main Rotor Rotating Scissor Assembly – Inspection

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Manufacturer(s):

Leonardo S.p.A Helicopters (Leonardo), formerly Finmeccanica S.p.A. Helicopter Division, AgustaWestland S.p.A., Agusta S.p.A.

Applicability:

A109E, A109LUH, A109S, AW109SP, A119 and AW119MKII helicopters, all serial numbers (s/n).

Definitions:

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

The ASB: Leonardo Alert Service Bulletin (ASB) 109EP-177, 109L-117, 109S-105, 109SP-149 and 119-111, as applicable.

Affected part: A component of the 'main rotor (MR) rotating scissor assembly (assy)': 'scissor bracket flange assy', 'rotary scissor sleeves', 'lower scissor lever assy' and 'upper scissor lever assy', having a Part Number (P/N) as identified in the ASB.

Serviceable part: An affected part that has individually passed (no non-conformity found) a dimensional check inspection in accordance with the instructions of Part I of the ASB and that, following assembly, has passed a maximum torque force check in accordance with the instructions of Part I of the ASB; or a 'MR rotating scissor assy' that has passed a maximum torque force check in accordance with the instructions of Part I of the ASB.

Groups:
Group 1 are:
- all A109E helicopters
- all A109LUH helicopters
- A109S helicopters up to s/n 22740 inclusive, except s/n 22719, 22725, 22727, 22730, 22738 and 22739
- AW109SP helicopters up to s/n 22432 inclusive, except s/n 22413
- A119 and AW119MKII helicopters up to s/n 15009 inclusive, except s/n 15008, and s/n 15801, 15802, 15803 and 15804
- A109S, AW109SP, A119 and AW119MKII helicopters, all s/n, on which, before the effective date of this AD, at least one affected part has been replaced since new.

Group 2 are all A109S, AW109SP, A119 and AW119MKII helicopters which are not Group 1.

Reason:

Occurrences of excessive axial play have been reported on the ball bearing of the lower half of the MR rotating scissor assy. In some cases, this resulted in the dislodgement of the ball bearing from its seat, without jeopardizing the functionality of the scissor assy.

This condition, if not detected and corrected, could lead to loss of control of the helicopter, possibly resulting in damage to the helicopter and/or injury to occupants.

To address this potential unsafe condition, Leonardo published the ASB, as defined in this AD, providing instructions for a one-time inspection of the affected parts to detect non-conformities and for an axial play check inspection.

For the reason described above, this AD requires a one-time inspection of the affected parts, the accomplishment, depending on findings, of corrective actions and, thereafter, accomplishment of repetitive axial play check inspections.

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

Required as indicated, unless accomplished previously:

One-time Inspection:

(1) For Group 1 helicopters: Within 25 flight hours (FH) or 3 months, whichever occurs first after the effective date of this AD, accomplish a scissor coupling check and an axial play check of the affected parts and interpret the results (PASSED or FAILED) in accordance with the instructions of PART I of the ASB.

Repetitive Axial Play Checks:

(2) For Group 1 and Group 2 helicopters: Within the compliance time as specified in Table 1 of this AD, as applicable, and, thereafter, at intervals not exceeding 50 FH, accomplish a qualitative axial play check in accordance with the instructions of PART IV of the ASB.

Table 1 – Qualitative Axial Play Checks

Group	Results of Paragraph (1) Inspection		Compliance Time
	Scissor Coupling Check	Axial Play Check	
1	PASSED	PASSED	Within 50 FH after the inspection as required by paragraph (1) of this AD
	FAILED	PASSED	Within 50 FH after replacement as required by paragraph (4.2) of this AD
	PASSED OR FAILED	FAILED ≤ 0.75 mm	Within 50 FH after replacement as required by paragraph (5.2) of this AD
	PASSED	FAILED > 0.75 mm, or ball bearing dislodged	Within 50 FH after replacement as required by paragraph (6) of this AD, as applicable
	FAILED	FAILED > 0.75 mm, or ball bearing dislodged	Within 50 FH after replacement as required by paragraph (6) or (4.2) of this AD, as applicable (see Note 1)
2	N/A	N/A	Within 50 FH after the effective date of this AD

Note 1: After replacement of the last non-conforming affected part per paragraph (1) inspection.

(3) For Group 1 and Group 2 helicopters: Within the compliance time as specified in Table 2 of this AD, as applicable, and, thereafter, at intervals not exceeding 200 FH, accomplish a quantitative axial play check in accordance with the instructions of PART V of the ASB.

Table 2 – Quantitative Axial Play Checks

Group	Results of Paragraph (1) Inspection		Compliance Time
	Scissor Coupling Check	Axial Play Check	
1	PASSED	PASSED	Within 200 FH after the inspection as required by paragraph (1) of this AD
	FAILED	PASSED	Within 200 FH after replacement as required by paragraph (4.2) of this AD
	PASSED OR FAILED	FAILED ≤ 0.75 mm	Within 200 FH after replacement as required by paragraph (5.2) of this AD
	PASSED	FAILED > 0.75 mm, or ball bearing dislodged	Within 200 FH after replacement as required by paragraph (6) of this AD, as applicable
	FAILED	FAILED > 0.75 mm, or ball bearing dislodged	Within 200 FH after replacement as required by paragraph (6) or (4.2) of this AD, as applicable (see Note 1)
2	N/A	N/A	Within 200 FH after the effective date of this AD

Corrective Action(s):

(4) If, during the inspection as required by paragraph (1) of this AD, the scissor coupling check FAILED, accomplish the actions as required by paragraphs (4.1) and (4.2) of this AD:

(4.1) Within 25 FH after that inspection and, thereafter, at intervals not exceeding 25 FH, perform an axial play check measurement in accordance with the instructions of PART II of the ASB.

(4.2) Within 400 FH or 2 years, whichever occurs first after the inspection as required by paragraph (1) of this AD, replace each affected part that failed the dimensional check, or replace the bushings of that part, as applicable, in accordance with the instructions of PART III of the ASB.

(5) If, during any inspection as required by paragraph (1), (2) or (3) of this AD, the axial play check FAILED with a measurement result lower than, or equal to, 0.75 mm, accomplish the actions as required by paragraphs (5.1) and (5.2) of this AD:

(5.1) Within 25 FH after that inspection and, thereafter, at intervals not exceeding 25 FH, perform an axial play check measurement in accordance with the instructions of PART II of the ASB.

(5.2) Within 400 FH or 2 years, whichever occurs first after that inspection (first detection), replace the lower scissor lever assy in accordance with the instructions of PART III of the ASB.

(6) If, during any inspection as required by paragraph (1), (2), (3), (4.1) or (5.1) of this AD, the axial play check FAILED with a measurement result greater than 0.75 mm, or the ball bearing of the lower scissor lever assy is found dislodged from its seat, before next flight, replace the lower scissor lever assy with a serviceable part in accordance with the instructions of PART III of the ASB. In case the ball bearing is found dislodged, the retaining bolt P/N NAS1306-28D and washer P/N 109-0130-49-1 must also be replaced.

Terminating Action:

(7) Replacement of each affected part on a helicopter, as specified in paragraph (4.2) or (5.2) of this AD, as applicable, constitutes terminating action for the repetitive 25 FH-inspections as required by paragraph (4.1) or (5.1) of this AD for that helicopter.

(8) Replacement of each affected part on a helicopter, as specified in paragraph (4.2), (5.2), or (6) of this AD, does not constitute terminating action for the repetitive qualitative and quantitative axial play checks as required by paragraphs (2) and (3) of this AD for that helicopter.

Parts Installation:

(9) From the effective date of this AD, it is allowed to install an affected part on any helicopter, provided it is a serviceable part, as defined in this AD, and that, following installation, the part is inspected and/or replaced, as applicable, as required by this AD.

Reporting:

(10) Within 30 days after the one-time inspection as required by paragraph (1) of this AD, or after the effective date of this AD, whichever occurs later, report the inspection results (including no findings) to Leonardo. Using the Detailed Compliance Form in Annex E of the ASB is an acceptable method to comply with this requirement.

Ref. Publications:

Leonardo ASB 109EP-177 original issue dated 11 January 2022.

Leonardo ASB 109L-117 original issue dated 11 January 2022.

Leonardo ASB 109S-105 original issue dated 11 January 2022.

Leonardo ASB 109SP-149 original issue dated 11 January 2022.

Leonardo ASB 119-111 original issue dated 11 January 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 21 February 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: Leonardo S.p.A. Helicopters, Customer Support & Services, Product Support Engineering & Licenses DPT, Via Giovanni Agusta 520, 21017 Cascina Costa di Samarate (VA) – Italy, Tel.: +39 0331 711429, Fax: +39 0331 915145,
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