



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2023-1894; Project Identifier MCAI-2022-00334-R; Amendment 39-22635; AD 2023-25-08]

RIN 2120-AA64

Airworthiness Directives; Leonardo S.p.a. Helicopters

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for all Leonardo S.p.a. Model A109E, A109S, AW109SP, A119, and AW119 MKII helicopters. This AD was prompted by multiple reports of excessive axial play on the ball bearing of the lower half of the main rotor (MR) rotating scissor assembly. This AD requires one-time scissor coupling and axial play inspections and repetitive quantitative axial play inspections and, depending on the results, additional inspections and replacing certain parts. This AD also requires reporting information and prohibits installing certain parts unless certain inspections have been accomplished. These requirements are specified in a European Union Aviation Safety Agency (EASA) AD, which is incorporated by reference. The FAA is issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES:

AD Docket: You may examine the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2023-1894; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, the mandatory continuing airworthiness information, any comments received, and other information. The address for Docket Operations is U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

Material Incorporated by Reference:

- For EASA material identified in this final rule, contact EASA, Konrad-Adenauer-Ufer 3, 50668 Cologne, Germany; telephone +49 221 8999 000; email ADs@easa.europa.eu; internet easa.europa.eu. You may find the EASA material on the EASA website at ad.easa.europa.eu.

- You may view this service information at the FAA, Office of the Regional Counsel, Southwest Region, 10101 Hillwood Pkwy., Room 6N-321, Fort Worth, TX 76177. For information on the availability of this material at the FAA, call (817) 222-5110. It is also available in the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2023-1894.

Other Related Service Information: For Leonardo Helicopters service information identified in this final rule, contact Leonardo S.p.A Helicopters, Emanuele Bufano, Head of Airworthiness, Viale G. Agusta 520, 21017 C. Costa di Samarate (Va) Italy; telephone (+39) 0331-225074; fax (+39) 0031-229046; or at customerportal.leonardocompany.com/en-US. You may also view this service information at the FAA contact information under *Material Incorporated by Reference*

above.

FOR FURTHER INFORMATION CONTACT: Jared Hyman, Aviation Safety Engineer, FAA, 1600 Stewart Ave., Suite 410, Westbury, NY 11590; telephone (781) 238-7799; email 9-AVS-AIR-BACO-COS@faa.gov.

SUPPLEMENTARY INFORMATION:

Background

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to all Leonardo S.p.a. Model A109E, A109S, AW109SP, A119, and AW119 MKII helicopters. The NPRM published in the *Federal Register* on October 3, 2023 (88 FR 67999). The NPRM was prompted by EASA AD 2022-0037, dated March 7, 2022; corrected March 15, 2022 (EASA AD 2022-0037), issued by EASA, which is the Technical Agent for the Member States of the European Union. EASA AD 2022-0037 states that there have been multiple reports of excessive axial play on the ball bearing of the lower half of the MR rotating scissor assembly. In some cases, this resulted in dislodgement of the ball bearing from its seat.

In the NPRM, the FAA proposed to require one-time MR rotating scissor coupling and axial play inspections and repetitive quantitative axial play inspections and, depending on the results, additional inspections and replacing certain parts. The NPRM also proposed to require reporting information and prohibit installing certain parts unless certain inspections have been accomplished. The FAA is issuing this AD to detect and address any excessive axial play of the MR rotating scissor assembly. The unsafe condition, if not addressed, could result in failure of the MR rotating scissor assembly, loss of control of the helicopter, and subsequent damage to the helicopter and injury to occupants. See EASA AD 2022-0037 for additional background information.

You may examine EASA AD 2022-0037 in the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2023-1894.

Discussion of Final Airworthiness Directive

Comments

The FAA received no comments on the NPRM or on the determination of the costs.

Conclusion

These products have been approved by the aviation authority of another country and are approved for operation in the United States. Pursuant to the FAA's bilateral agreement with this State of Design Authority, it has notified the FAA of the unsafe condition described in its AD referenced above. The FAA reviewed the relevant data and determined that air safety requires adopting this AD as proposed. Accordingly, the FAA is issuing this AD to address the unsafe condition on these products.

Related Service Information under 1 CFR Part 51

The FAA reviewed EASA AD 2022-0037 which requires, for certain applicable model helicopters, accomplishing one-time MR rotating scissor coupling and axial play checks. Depending on the results, EASA AD 2022-0037 requires repetitively measuring the axial play or replacing certain parts. For all applicable model helicopters, EASA AD 2022-0037 requires accomplishing repetitive qualitative and quantitative axial play checks and, depending on the results, repetitively measuring the axial play or replacing certain parts. Furthermore, EASA AD 2022-0037 requires reporting certain information to the manufacturer and prohibits installing certain parts on any helicopter unless the part has passed required inspections.

This material is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in ADDRESSES.

Other Related Service Information

The FAA reviewed Leonardo Helicopters Alert Service Bulletin (ASB) No. 109EP-177, Leonardo Helicopters ASB No. 109S-105, Leonardo Helicopters ASB

No. 109SP-149, and Leonardo Helicopters ASB No. 119-111, each Revision A and dated March 3, 2022. This service information specifies procedures for inspecting the MR rotating scissor coupling and axial play, measuring the axial play, inspecting the qualitative axial play, inspecting the quantitative axial play, and replacing components of the MR rotating scissor assembly (scissor bracket flange assembly, rotary scissor sleeve, lower scissor lever assembly, and upper scissor lever assembly) and bushings.

Differences Between this AD and the EASA AD

EASA AD 2022-0037 applies to Model A109LUH helicopters, whereas this AD does not because that model is not FAA-type certificated. EASA AD 2022-0037 refers to several actions as a “check,” whereas this AD refers to those actions as an “inspection” instead because those actions must be accomplished by persons authorized under 14 CFR 43.3. EASA AD 2022-0037 requires discarding certain parts, whereas this AD requires removing those parts from service instead.

Service information referenced in EASA AD 2022-0037 specifies to contact Leonardo Helicopters for instructions as a result of certain MR rotating scissor maximum torque force check (inspection) results, whereas this AD requires accomplishing corrective action in accordance with a method approved by the FAA, EASA, or Leonardo S.p.a. Helicopters’ EASA Design Organization Approval. EASA AD 2022-0037 requires interpreting the MR rotating scissor coupling and axial play inspection results (PASSED or FAILED) by using its required service information, whereas this AD requires interpreting those results by using tables in the body of this AD and recorded results of certain inspections. Furthermore, if the scissor coupling inspection result is an “UNCERTAIN RESULT,” the service information referenced in EASA AD 2022-0037 specifies contacting Leonardo Helicopters, whereas this AD considers an “UNCERTAIN RESULT” as “FAILED.”

EASA AD 2022-0037 requires accomplishing repetitive qualitative axial play checks, whereas this AD does not. EASA AD 2022-0037 requires quantitative axial play checks within intervals not to exceed 200 flight hours, whereas this AD requires quantitative axial play inspections within intervals not to exceed 55 hours time-in-service. The service information referenced in EASA AD 2022-0037 cautions that only approved personnel are permitted to perform the bushing replacement, whereas this AD does not include that caution.

Costs of Compliance

The FAA estimates that this AD affects 204 helicopters of U.S. Registry. Labor rates are estimated at \$85 per work-hour. Based on these numbers, the FAA estimates the following costs to comply with this AD.

The one-time MR rotating scissor coupling and axial play inspections will take approximately 2 work-hours for an estimated cost of \$170 per helicopter and up to \$34,680 for the U.S. fleet.

A quantitative axial play inspection will take approximately 1 work-hour for an estimated cost of \$85 per helicopter and \$17,340 for the U.S. fleet per inspection cycle.

Measuring the axial play will take approximately 1 work-hour for an estimated cost of \$85 per helicopter and \$17,340 for the U.S. fleet per inspection cycle.

Certain corrective action that may be needed as a result of an inspection can vary significantly from helicopter to helicopter. The FAA has no data to determine the costs to accomplish the corrective action or the number of helicopters that may require corrective action.

Replacing the scissor bracket flange assembly will take approximately 4 work-hours and parts will cost approximately \$8,099-11,574 (depending on part number) for an estimated cost of \$8,439-11,914 per replacement. Alternatively, replacing its bushings

will take approximately 2 work-hours and parts will cost approximately \$225 for an estimated cost of \$395 per replacement.

Replacing each rotary scissor sleeve will take approximately 2 work-hours and parts will cost approximately \$565 for an estimated cost of \$735 per replacement.

Replacing the lower scissor lever assembly (including the washer and retaining bolt) will take 2 work-hours and parts will cost approximately \$3,308-3,385 (depending on part number) for an estimated cost of \$3,478-3,555 per replacement. Alternatively, replacing its bushings will take approximately 2 work-hours and parts will cost approximately \$225 for an estimated cost of \$395 per replacement.

Replacing the upper scissor lever assembly will take approximately 2 work-hours and parts will cost approximately \$2,219-3,015 (depending on part number) for an estimated cost of \$2,389-3,185 per replacement. Alternatively, replacing its bushings will take approximately 2 work-hours and parts will cost approximately \$225 for an estimated cost of \$395 per replacement.

Reporting the inspection results to the manufacturer will take approximately 1 work-hour for an estimated cost of \$85 per report.

The FAA has included all known costs in its cost estimate. According to the manufacturer, however, some of the costs of this AD may be covered under warranty, thereby reducing the cost impact on affected operators.

Paperwork Reduction Act

A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a current valid OMB Control Number. The OMB Control Number for this information collection is 2120-0056. Public reporting for this collection of information is estimated to take approximately 1 hour per response,

including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. All responses to this collection of information are mandatory. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to: Information Collection Clearance Officer, Federal Aviation Administration, 10101 Hillwood Parkway, Fort Worth, TX 76177-1524.

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

(1) Is not a "significant regulatory action" under Executive Order 12866,

(2) Will not affect intrastate aviation in Alaska, and

(3) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by adding the following new airworthiness directive:

2023-25-08 Leonardo S.p.a.: Amendment 39-22635; Docket No. FAA-2023-1894;
Project Identifier MCAI-2022-00334-R.

(a) Effective Date

This airworthiness directive (AD) is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to all Leonardo S.p.a. Model A109E, A109S, AW109SP, A119, and AW119 MKII helicopters, certificated in any category.

(d) Subject

Joint Aircraft Service Component (JASC) Code: 6200, Main Rotor System.

(e) Unsafe Condition

This AD was prompted by multiple reports of excessive axial play on the ball bearing of the lower half of the main rotor rotating scissor assembly. The FAA is issuing this AD to detect and address any excessive axial play of the main rotor rotating scissor assembly. The unsafe condition, if not addressed, could result in failure of the main rotor rotating scissor assembly, loss of control of the helicopter, and subsequent damage to the helicopter and injury to occupants.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Requirements

Except as specified in paragraph (h) of this AD: Comply with all required actions and compliance times specified in, and in accordance with, European Union Aviation Safety Agency AD 2022-0037, dated March 7, 2022; corrected March 15, 2022 (EASA AD 2022-0037).

(h) Exceptions to EASA AD 2022-0037

(1) Where EASA AD 2022-0037 defines Affected part “as identified in the ASB;” for this AD, replace that text with “as identified in Table 2 of Leonardo Helicopters Alert Service Bulletin (ASB) No. 109EP-177, Leonardo Helicopters ASB No. 109S-105, Leonardo Helicopters ASB No. 109SP-149, or Leonardo Helicopters ASB No. 119-111, each Revision A and dated March 3, 2022, and as applicable to your model helicopter.”

(2) Where EASA AD 2022-0037 requires compliance in terms of flight hours, this AD requires using hours time-in-service.

(3) Where EASA AD 2022-0037 refers to its effective date, this AD requires using the effective date of this AD.

(4) Where EASA AD 2022-0037 refers to a torque force check, this AD requires a torque force inspection. Where EASA AD 2022-0037 refers to a scissor coupling check, this AD requires a scissor coupling inspection. Where EASA AD 2022-0037 refers to an axial play check, this AD requires an axial play inspection. Where EASA AD 2022-0037 refers to a quantitative axial play check, this AD requires a quantitative axial play inspection. Where EASA AD 2022-0037 refers to a dimensional check, this AD requires a dimensional inspection.

(5) Where the service information referenced in EASA AD 2022-0037 specifies to use tooling, this AD allows the use of equivalent tooling.

(6) Where the service information referenced in EASA AD 2022-0037 specifies discarding parts, this AD requires removing those parts from service.

(7) Where the service information referenced in paragraphs (1), (4.2), (5.2), and (6) of EASA AD 2022-0037 specifies to contact Leonardo Helicopters for instructions as a result of the M/R rotating scissor maximum torque force check, this AD requires corrective action done in accordance with a method approved by the Manager, International Validation Branch, FAA; or EASA; or Leonardo S.p.a. Helicopters' EASA Design Organization Approval (DOA). If approved by the DOA, the approval must include the DOA-authorized signature.

(8) Where paragraph (1) of EASA AD 2022-0037 specifies to “interpret the results (PASSED or FAILED) in accordance with the instructions of PART I of the ASB;” for this AD, replace that text with, “interpret the results by using Tables 1 and 2 to paragraph (h)(8) of this AD and the inspection results recorded in Annex E of the service information referenced in EASA AD 2022-0037.”

Table 1 to Paragraph (h)(8) – Scissor Coupling Inspection Interpretation

MAXIMUM TORQUE FORCE CHECK	DIMENSIONAL CHECK	2 nd MAXIMUM TORQUE FORCE CHECK	SCISSOR COUPLING CHECK OUTCOME
PASSED	N/A	N/A	PASSED
FAILED	PASSED	PASSED	PASSED
FAILED	FAILED	N/A	FAILED
FAILED	PASSED	FAILED	FAILED

Table 2 to Paragraph (h)(8) – Axial Play Inspection Interpretation

Axial play value is 0.25 mm or less.	PASSED
Axial play value is more than 0.25 mm or the ball bearing is dislodged.	FAILED

(9) This AD does not require compliance with paragraph (2) of EASA AD 2022-0037. This AD also does not include Note 1 of EASA AD 2022-0037.

(10) Where paragraph (3) of EASA AD 2022-0037 specifies compliance times of “200 FH;” for this AD, replace each instance of that text with, “55 hours time-in-service.” This AD does not include Note 3 of EASA AD 2022-0037.

(11) Where the service information referenced in EASA AD 2022-0037 cautions that only approved personnel (Leonardo Helicopters facilities, Leonardo authorized component repair centers within the approved capabilities or customers trained by Leonardo Helicopters for specific activities) are permitted to perform the bushing replacement; this AD does not include those cautions.

(12) Where paragraph (10) of EASA AD 2022-0037 specifies reporting inspection results (including the inspection results of no findings) to Leonardo within 30 days, this AD requires reporting inspection results at the applicable time in paragraph (h)(12)(i) or (ii) of this AD.

(i) If the inspection was done on or after the effective date of this AD: Submit the report within 30 days after the inspection.

(ii) If the inspection was done before the effective date of this AD: Submit the report within 30 days after the effective date of this AD.

(13) This AD does not adopt the “Remarks” section of EASA AD 2022-0037.

(i) Special Flight Permits

Special flight permits are prohibited.

(j) Alternative Methods of Compliance (AMOCs)

(1) The Manager, International Validation Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the International Validation Branch, send it to the attention of the person identified in paragraph (k) of this AD. Information may be emailed to: 9-AVS-AIR-730-AMOC@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(k) Additional Information

For more information about this AD, contact Jared Hyman, Aviation Safety Engineer, FAA, 1600 Stewart Ave., Suite 410, Westbury, NY 11590; telephone (781) 238-7799; email 9-AVS-AIR-BACO-COS@faa.gov.

(l) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless this AD specifies otherwise.

(i) European Union Aviation Safety Agency (EASA) AD 2022-0037, dated March 7, 2022; corrected March 15, 2022.

(ii) [Reserved]

(3) For EASA AD 2022-0037, contact EASA, Konrad-Adenauer-Ufer 3, 50668 Cologne, Germany; telephone +49 221 8999 000; email ADs@easa.europa.eu; internet

easa.europa.eu. You may find the EASA material on the EASA website at
ad.easa.europa.eu.

(4) You may view this service information at the FAA, Office of the Regional Counsel, Southwest Region, 10101 Hillwood Pkwy., Room 6N-321, Fort Worth, TX 76177. For information on the availability of this material at the FAA, call (817) 222-5110.

(5) You may view this material at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, visit www.archives.gov/federal-register/cfr/ibr-locations or email fr.inspection@nara.gov.

Issued on December 14, 2023.

Victor Wicklund,
Deputy Director, Compliance & Airworthiness Division,
Aircraft Certification Service.

[FR Doc. 2023-28773 Filed: 12/28/2023 8:45 am; Publication Date: 12/29/2023]