



## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

#### 14 CFR Part 39

[Docket No. FAA-2021-0304; Project Identifier 2017-SW-108-AD]

RIN 2120-AA64

#### **Airworthiness Directives; Leonardo S.p.a. (Type Certificates Previously Held by Agusta S.p.A. and AgustaWestland S.p.A.) Helicopters**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Notice of proposed rulemaking (NPRM).

**SUMMARY:** The FAA proposes to adopt a new airworthiness directive (AD) for Leonardo S.p.a. (Type Certificate previously held by Agusta S.p.A.) Model AB139 and AW139 helicopters and Leonardo S.p.a. (Type Certificate previously held by AgustaWestland S.p.A.) Model AW189 helicopters. This proposed AD was prompted by reports of missing lock wire and loose fasteners. This proposed AD would require a one-time inspection of the main rotor (M/R) slip ring and depending on the outcome, removing the M/R slip ring from service, removing screws and washers from service, applying torque, installing lock wire, and re-identifying the M/R slip ring. This proposed AD would also prohibit the installation of certain M/R slip rings. The FAA is proposing this AD to address the unsafe condition on these products.

**DATES:** The FAA must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <https://www.regulations.gov>. Follow the instructions for submitting comments.

- Fax: (202) 493-2251.
- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.
- Hand Delivery: Deliver to Mail address between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For Leonardo Helicopters and Moog service information identified in this NPRM, 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 +39-0331-229046; or at <https://www.leonardocompany.com/en/home>. 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.

### **Examining the AD Docket**

You may examine the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-0304; 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 NPRM, the European Aviation Safety Agency (now European Union Aviation Safety Agency) (EASA) ADs, any comments received, and other information. The street address for Docket Operations is listed above.

**FOR FURTHER INFORMATION CONTACT:** Steven Warwick, Aerospace Engineer, Certification Section, Fort Worth ACO Branch, Compliance & Airworthiness Division, 10101 Hillwood Pkwy., Fort Worth, TX 76177; telephone (817) 222-5225; email [steven.r.warwick@faa.gov](mailto:steven.r.warwick@faa.gov).

### **SUPPLEMENTARY INFORMATION:**

## **Comments Invited**

The FAA invites you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under ADDRESSES. Include “Docket No. FAA-2021-0304; Project Identifier 2017-SW-108-AD” at the beginning of your comments. The most helpful comments reference a specific portion of the proposal, explain the reason for any recommended change, and include supporting data. The FAA will consider all comments received by the closing date and may amend this proposal because of those comments.

Except for Confidential Business Information (CBI) as described in the following paragraph, and other information as described in 14 CFR 11.35, the FAA will post all comments received, without change, to <https://www.regulations.gov>, including any personal information you provide. The agency will also post a report summarizing each substantive verbal contact received about this NPRM.

## **Confidential Business Information**

CBI is commercial or financial information that is both customarily and actually treated as private by its owner. Under the Freedom of Information Act (FOIA) (5 U.S.C. 552), CBI is exempt from public disclosure. If your comments responsive to this NPRM contain commercial or financial information that is customarily treated as private, that you actually treat as private, and that is relevant or responsive to this NPRM, it is important that you clearly designate the submitted comments as CBI. Please mark each page of your submission containing CBI as “PROPIN.” The FAA will treat such marked submissions as confidential under the FOIA, and they will not be placed in the public docket of this NPRM. Submissions containing CBI should be sent to Steven Warwick, Aerospace Engineer, Certification Section, Fort Worth ACO Branch, Compliance & Airworthiness Division, 10101 Hillwood Pkwy., Fort Worth, TX 76177; telephone (817) 222-5225; email [steven.r.warwick@faa.gov](mailto:steven.r.warwick@faa.gov). Any commentary that the FAA receives

which is not specifically designated as CBI will be placed in the public docket for this rulemaking.

## **Background**

EASA, which is the Technical Agent for the Member States of the European Union, has issued EASA AD 2017-0083, dated May 10, 2017 (EASA AD 2017-0083), to correct an unsafe condition for Leonardo S.p.A. (formerly Finmeccanica S.p.A, AgustaWestland S.p.A., Agusta S.p.A), AgustaWestland Philadelphia Corporation (formerly Agusta Aerospace Corporation) Model AB139 and AW139 helicopters, and EASA AD 2017-0087, dated May 12, 2017 (EASA AD 2017-0087), to correct the same unsafe condition for Leonardo S.p.A. Helicopters (formerly Finmeccanica S.p.A, AgustaWestland S.p.A.) Model AW189 helicopters. EASA advises of reports of missing lock wire and loose fasteners found during inspections of the M/R slip ring of Model AW139 helicopters. EASA also advises that the same part-numbered M/R slip ring may also be installed on Model AW189 helicopters. Model AB139 helicopters may also be affected by this unsafe condition due to having the same type design as Model AW139 helicopters. EASA ADs 2017-0083 and 2017-0087 require a one-time visual inspection of the M/R slip ring fastener installation, and depending on the outcome, replacing the M/R slip ring, replacing fasteners, applying torque, installing lock wire, and re-identifying the M/R slip ring. EASA ADs 2017-0083 and 2017-0087 also prohibit installation of an affected M/R slip ring. EASA states, this condition, if not detected and corrected, could lead to failure of the M/R slip ring bearing inner race, possibly resulting in damage to drive system components and subsequent reduced control of the helicopter.

## **FAA's Determination**

These helicopters have been approved by EASA and are approved for operation in the United States. Pursuant to the FAA's bilateral agreement with the European Union, EASA has notified the FAA of the unsafe condition described in its ADs. The FAA is

proposing this AD after evaluating all known relevant information and determining that an unsafe condition is likely to exist or develop on other products of the same type designs.

### **Related Service Information Under 1 CFR Part 51**

The FAA reviewed Leonardo Helicopters Alert Service Bulletin (ASB) No. 139-472, dated May 9, 2017 (ASB 139-472), for Model AB139 and AW139 helicopters, and Leonardo Helicopters ASB No. 189-138, dated May 12, 2017 (ASB 189-138), for Model AW189 helicopters. ASB 139-472 and ASB 189-138 specify inspecting the M/R slip ring by following the procedures in Moog Service Bulletin No. SB 16-01, Revision 5, undated (SB 16-01), which is attached as Annex A to both ASB 139-472 and ASB 189-138. ASB 139-472 and ASB 189-138 are proposed for incorporation by reference in this proposed AD. SB 16-01 is not proposed for incorporation by reference in this proposed AD.

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

### **Other Related Service Information**

The FAA also reviewed SB 16-01, which specifies procedures to visually inspect the M/R slip ring upper (connector) end and lower (pigtail or standpipe) end fastener screws and double-twist lock wire.

### **Proposed AD Requirements in this NPRM**

This proposed AD would require, with the M/R slip ring removed, inspecting each screw and double-twist lock wire of the upper (connector) end and lower (pigtail or standpipe) end fasteners of the M/R slip ring. Depending on the outcome, this proposed AD would require:

- Marking the M/R slip ring;
- Removing the M/R slip ring from service; or

- Removing screws and washers, lock wire, and ferrule ended safety cable from service; installing new screws and washers; applying torque; installing double-twist lock wire; and marking the M/R slip ring.

This proposed AD would also prohibit the installation of an affected M/R slip ring unless the proposed requirements have been completed.

### **Differences between this Proposed AD and the EASA ADs**

EASA ADs 2017-0083 and 2017-0087 include the compliance time of at the next M/R slip ring removal, whereas this proposed AD does not because it could be difficult to track. This proposed AD has a shorter compliance time for all affected M/R slip rings that have accumulated 900 or more total hours time-in-service, whereas EASA AD 2017-0087 allows a longer compliance time for these affected M/R slip rings that are installed on Model AW189 helicopters. EASA ADs 2017-0083 and 2017-0087 specify inspecting for the proper lock wire installed, while this proposed AD specifies inspecting for correct installation of lock wire 0.20 CRES NAS 33540 part number MS20995C20 (double-twist lock wire) and any missing double-twist lock wire. If a screw is missing from the inner diameter (the connector flange) of the upper end of the M/R slip ring, EASA ADs 2017-0083 and 2017-0087 specify replacing the M/R slip ring with a serviceable part, whereas this proposed AD would require removing the M/R slip ring from service instead. If a screw is missing from the outer diameter of the upper end, from the inner diameter of the lower end (shaft extension attachment area), or from the outer diameter of the lower end, this proposed AD would require installing a new screw and washer, applying torque, and installing lock wire, whereas corrective action for this condition is not specified in EASA AD 2017-0083 or 2017-0087.

### **Costs of Compliance**

The FAA estimates that this proposed AD affects 134 helicopters of U.S. Registry. The FAA estimates that operators may incur the following costs in order to comply with this proposed AD. Labor costs are estimated at \$85 per work-hour.

Inspecting an M/R slip ring would take about 10 work-hours for an estimated cost of \$850 per helicopter and \$113,900 for the U.S. fleet. Marking an M/R slip ring would take a minimal amount of time and parts would cost a nominal amount. Replacing an M/R slip ring would take about 3 work-hours and parts would cost about \$65,000 for an estimated cost of \$65,255 per helicopter. Removing any ferrule ended safety cable; replacing screws and washers; applying torque; and installing lock wire would take about 1 work-hour and parts would cost a nominal amount for an estimated cost of \$85 per helicopter.

#### **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**

The FAA determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would 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, I certify this proposed regulation:

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

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

(3) Would 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 Proposed Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 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:

**Leonardo S.p.a. (Type Certificates Previously Held by Agusta S.p.A. and AgustaWestland S.p.A.):** Docket No. FAA-2021-0304; Project Identifier 2017-SW-108-AD.

### **(a) Comments Due Date**

The FAA must receive comments on this airworthiness directive (AD) by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE Federal Register].

### **(b) Affected ADs**



None.

**(c) Applicability**

This AD applies to Leonardo S.p.a. (Type Certificate previously held by Agusta S.p.A.) Model AB139 and AW139 helicopters and Leonardo S.p.a. (Type Certificate previously held by AgustaWestland S.p.A.) Model AW189 helicopters, certificated in any category, with a main rotor (M/R) slip ring part number (P/N) 4G6220V00151 with a serial (S/N) number up to and including S/N 0141, except those marked with an “L” following the S/N, installed.

**(d) Subject**

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

**(e) Unsafe Condition**

This AD was prompted by reports of missing lock wire and loose fasteners. The FAA is issuing this AD to address failure of an M/R slip ring fastener. The unsafe condition, if not addressed, could result in failure of the M/R slip ring bearing inner race, reduced M/R control, and subsequent loss of control of the helicopter.

**(f) Compliance**

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

**(g) Required Actions**

(1) For an M/R slip ring that has accumulated 900 or more total hours time-in-service (TIS), within 50 hours TIS after the effective date of this AD; and for an M/R slip ring that has accumulated less than 900 total hours TIS, within 300 hours TIS after the effective date of this AD or before accumulating 950 total hours TIS, whichever occurs first:

(i) With the M/R slip ring removed, visually inspect for the presence of each screw, the presence of any ferrule ended safety cable, the correct installation of lock wire 0.20 CRES NAS 33540 P/N MS20995C20 (double-twist lock wire), and any missing

double-twist lock wire for each set of upper (connector) end and lower (pigtail or standpipe) end fasteners of the M/R slip ring as depicted in Figures 1 and 2 of Annex A to Leonardo Helicopters Alert Service Bulletin (ASB) No. 139-472, dated May 9, 2017 (ASB 139-472), or Leonardo Helicopters ASB No. 189-138, dated May 12, 2017 (ASB 189-138), as applicable to your model helicopter. Figures 2 and 3 of Annex A to ASB 139-472 and ASB 189-138 also show examples of a ferrule ended safety cable installed that are not approved.

Note 1 to paragraph (g)(1)(i): Annex A to ASB 139-472 and ASB 189-138 is Moog Service Bulletin No. SB 16-01, Revision 5, undated.

(ii) If all of the screws are present, there is not any ferrule ended safety cable installed, the double-twist lock wire is correctly installed, and none of the double-twist lock wire is missing on each set of upper end and lower end fasteners of the M/R slip ring, before further flight, mark the letter “L” following the S/N on the identification label by following the Compliance Instructions, paragraph 3) of Annex A to ASB 139-472 or ASB 189-138, as applicable to your model helicopter.

(iii) If a screw is missing from the inner diameter (the connector flange) of the upper end of the M/R slip ring, before further flight, remove the M/R slip ring from service.

(iv) If a screw is missing from the outer diameter of the upper end, from the inner diameter of the lower end (shaft extension attachment area), or from the outer diameter of the lower end, before further flight, install a new screw and washer, apply a torque to 1-1.25 Nm, and install double-twist lock wire by following the Compliance Instructions, paragraphs 9)a) through g) of Annex A to ASB 139-472 or ASB 189-138, as applicable to your model helicopter.

(v) If any double-twist lock wire is not correctly installed, is missing, or if there is a ferrule ended safety cable installed on any set of upper end or lower end fasters of the

M/R slip ring, before further flight, remove the incorrectly installed lock wire or ferrule ended safety cable from service, as applicable, and inspect the fastener torque by applying 1-1.25 Nm of torque.

(A) If the torque of a screw installed in the inner diameter (the connector flange) of the upper end of the M/R slip ring is below 1 Nm of torque, do not remove or replace the screw, before further flight, apply a torque of 1-1.25 Nm.

(B) If the torque of a screw installed in the outer diameter of the upper end, in the inner diameter of the lower end (shaft extension attachment area), or in the outer diameter of the lower end is below 1 Nm of torque, before further flight, remove the affected screw and washer from service, install a new screw and washer, and apply a torque of 1-1.25 Nm.

(C) Install double-twist lock wire by following the Compliance Instructions, paragraphs 9)a) through g) of Annex A to ASB 139-472 or ASB 189-138, as applicable to your model helicopter.

(vi) Mark the letter “L” following the S/N on the identification label by following the Compliance Instructions, paragraph 3) of Annex A to ASB 139-472 or ASB 189-138, as applicable to your model helicopter.

(2) As of the effective date of this AD, do not install an M/R slip ring identified in paragraph (c) of this AD unless the requirements of paragraph (g)(1) have been accomplished.

#### **(h) Special Flight Permits**

Special flight permits are prohibited.

#### **(i) 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 (j)(1) 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.

**(j) Related Information**

(1) For more information about this AD, contact Steven Warwick, Aerospace Engineer, Certification Section, Fort Worth ACO Branch, Compliance & Airworthiness Division, 10101 Hillwood Pkwy., Fort Worth, TX 76177; telephone (817) 222-5225; email [steven.r.warwick@faa.gov](mailto:steven.r.warwick@faa.gov).

(2) Moog Service Bulletin No. SB 16-01, Revision 5, undated, is attached as Annex A to both ASB 139-472 and ASB 189-138. For Leonardo Helicopters and Moog service information identified in this AD, 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 +39-0331-229046; or at <https://www.leonardocompany.com/en/home>. You may view the referenced 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.

(3) The subject of this AD is addressed in European Aviation Safety Agency (now European Union Aviation Safety Agency) (EASA) AD 2017-0083, dated May 10, 2017, and EASA AD 2017-0087, dated May 12, 2017. You may view the EASA ADs on the Internet at <https://www.regulations.gov> in the AD Docket.

Issued on April 8, 2021.

Lance T. Gant, Director,  
Compliance & Airworthiness Division,  
Aircraft Certification Service.

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