



## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

#### 14 CFR Part 39

[Docket No. FAA-2021-0304; Project Identifier 2017-SW-108-AD; Amendment 39-21606; AD 2021-13-01]

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:** Final rule.

**SUMMARY:** The FAA is adopting 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 AD was prompted by reports of missing lock wire and loose fasteners. This AD requires 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 AD also prohibits the installation of certain M/R slip rings. 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 certain documents listed in this AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** For Leonardo Helicopters and Moog 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 +39-0331-229046; 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. Service information that is incorporated by reference is also available at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-0304.

### **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 final rule, 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 U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

**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:**

#### **Background**

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply 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 with an M/R slip ring part number (P/N) 4G6220V00151 with a serial number (S/N) up to and including S/N 0141, except those marked with an “L” following the S/N, installed. The NPRM published in the *Federal Register* on April 19, 2021 (86 FR 20338). In the NPRM, the FAA proposed to 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, the NPRM proposed to 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. The NPRM also proposed to prohibit the installation of an affected M/R slip ring unless the proposed requirements have been completed. The NPRM was prompted by 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, each issued by EASA, which is the Technical Agent for the Member States of the European Union. 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.

## **Discussion of Final Airworthiness Directive**

### **Comments**

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

### **Conclusion**

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 about the unsafe condition described in its ADs. 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 helicopters. Except for minor editorial changes, this AD is adopted as proposed in the NPRM.

### **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 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 incorporated by reference in this AD. SB 16-01 is not incorporated by reference in this 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.

### **Differences Between this 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 AD does not because it could be difficult to track. This 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 AD specifies inspecting for correct installation of lock wire 0.20 CRES NAS 33540 P/N 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 AD requires 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 AD requires 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 AD affects 134 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.

Inspecting an M/R slip ring takes 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 takes a minimal amount of time and parts cost a nominal amount. Replacing an M/R slip ring takes about 3 work-hours and parts 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 takes about 1 work-hour and parts 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 helicopters

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:

**2021-13-01 Leonardo S.p.a. (Type Certificates Previously Held by Agusta S.p.A. and AgustaWestland S.p.A.):** Amendment 39-21606; Docket No. FAA-2021-0304; Project Identifier 2017-SW-108-AD.

### **(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 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 number (S/N) 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 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) of this AD 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 SB 16-01, Revision 5, undated, is attached as Annex A to both ASB 139-472 and ASB 189-138. As the design approval holder for the products

identified in paragraph (c) of this AD, contact Leonardo Helicopters for the Moog service information at the contact information specified in paragraph (k)(3) of this AD. It is also available at the contact information specified in paragraph (k)(4) of this AD.

(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 at <https://www.regulations.gov> in Docket No. FAA-2021-0304.

**(k) 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 the AD specifies otherwise.

(i) Leonardo Helicopters Alert Service Bulletin (ASB) No. 139-472, dated May 9, 2017.

(ii) Leonardo Helicopters ASB No. 189-138, dated May 12, 2017.

(3) For Leonardo Helicopters 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>.

(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 service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email: [fedreg.legal@nara.gov](mailto:fedreg.legal@nara.gov), or go to: <https://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued on June 8, 2021.

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

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