



## Airworthiness Directive

**AD No.:** 2017-0164

**Issued:** 04 September 2017

Note: This Airworthiness Directive (AD) is issued by EASA, acting in accordance with Regulation (EC) 216/2008 on behalf of the European Union, its Member States and of the European third countries that participate in the activities of EASA under Article 66 of that Regulation.

This AD is issued in accordance with Regulation (EU) 748/2012, Part 21.A.3B. In accordance with Regulation (EU) 1321/2014 Annex I, Part M.A.301, the continuing airworthiness of an aircraft shall be ensured by accomplishing any applicable ADs. Consequently, no person may operate an aircraft to which an AD applies, except in accordance with the requirements of that AD, unless otherwise specified by the Agency [Regulation (EU) 1321/2014 Annex I, Part M.A.303] or agreed with the Authority of the State of Registry [Regulation (EC) 216/2008, Article 14(4) exemption].

**Design Approval Holder's Name:**

LEONARDO S.p.A.

**Type/Model designation(s):**

AW169 helicopters

**Effective Date:** 18 September 2017

**TCDS Number(s):** EASA.R.509

**Foreign AD:** Not applicable

**Supersedure:** This AD supersedes EASA AD 2017-0110 dated 23 June 2017.

### ATA 32 – Landing Gear – Retraction Actuators – Installation / Replacement

**Manufacturer(s):**

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

**Applicability:**

AW169 helicopters, serial number (s/n) 69007, 69009, 69011, 69013, 69014, 69015, 69017, 69018, 69020, 69021, 69022, 69023, 69024, 69025, 69027, 69028, 69031, 69032, 69041, 69042, 69043, 69044, 69049 and 69051, and AW169 helicopters, all s/n equipped with retractable landing gear (LG) system Part Number (P/N) 6F3200F00311 or P/N 6F3200F00411.

**Reason:**

Several occurrences were reported of failed nose landing gear (NLG) retraction actuators of AW169 helicopters during the acceptance test procedures on ground on the final assembly line. The NLG got stuck at approximately 45° angle (half of the full stroke) regardless of the selected extension mode (normal or emergency). Investigation revealed that excessive friction inside the NLG retraction actuator caused internal damage, resulting in mechanical jam of the actuator rotary shaft. Due to similarity of design, the same failure mode can affect the main landing gear (MLG) retraction actuators.

This condition, if not corrected, could lead to a partially locked or unlocked NLG or MLG upon landing, possibly resulting in damage to the helicopter and injury to the occupants.



As an interim measure to address this potential unsafe condition, Leonardo designed a modification to inhibit the LG retraction for helicopters equipped with affected retraction actuators, and issued Bollettino Tecnico 169-005, providing instructions to install that modification on in-service helicopters. Leonardo also designed a modification to remove affected retraction actuators, allowing delivery of helicopters still on the production line. Subsequently, Leonardo developed improved LG retraction actuators that allow restoring the LG intended function, and issued Mandatory Bollettino Tecnico 169-018, providing instructions to install those actuators on in-service helicopters. Leonardo issued Alert Service Bulletin (ASB) 169-023, providing additional instructions to install improved control box and proximity switches, and to protect repetitively the plungers of the NLG and MLG up down lock actuators against corrosion.

Consequently, EASA issued AD 2017-0110 to require modification of helicopters by removing all affected LG retraction actuators from service, installing the improved LG retraction actuators, control box and proximity switches, and a one-time application of corrosion inhibitor on the plungers of the NLG and MLG up down lock actuators. Leonardo ASB 169-023 provides instructions for repetitive application of corrosion inhibitor. Since this is considered as standard practice maintenance, those actions were not required by that AD.

Since EASA AD 2017-0110 was published, Leonardo issued ASB 169-023 Revision A (hereafter referred to as 'the ASB' in this AD) to provide instructions for a check of the NLG support buffers and the replacement of the adhesive fixing of the NLG and MLG support buffers.

For the reasons described above, this AD retains the requirements of EASA AD 2017-0110, which is superseded, and requires an additional NLG check and use of an improved adhesive.

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

Required as indicated, unless accomplished previously:

Note 1: For the purpose of this AD, Group 1 helicopters are those that, on 30 June 2017 [the effective date of EASA AD 2017-0110], were not equipped with retro-mod Kit P/N 6F3200F00411 (enhanced NLG retracting actuator P/N 6F3230V00532 and enhanced MLG retracting actuators P/N 6F3230V00832 and P/N 6F3230V01032). Group 2 helicopters are those equipped with both Kit P/N 6F3200F00311 and Kit P/N 6F3200F00411.

Note 2: The ASB defines the helicopters by s/n for which the actions listed in each Part of the instructions of the ASB are required.

#### **Modification:**

- (1) For Group 1 helicopters: Within 200 flight hours (FH) or 6 months after 30 June 2017 [the effective date of EASA AD 2017-0110], whichever occurs first, modify the helicopter in accordance with the instructions of Part I or Part II or Part III of the ASB, as applicable to helicopter s/n, and of Parts IV and V of the ASB.
- (2) For Group 2 helicopters: Within 200 FH or 6 months, whichever occurs first after 30 June 2017 [the effective date of EASA AD 2017-0110], accomplish the installation checks in accordance with the instructions of Part VI of the ASB, and the modification in accordance with the instructions of Parts IV and/or V of the ASB, as applicable.



**Inspection:**

- (3) For Group 1 helicopters: Concurrently with the modification as required by paragraph (1) of this AD, inspect the plungers of the NLG and MLG up down lock actuators in accordance with the instructions of Part VII of the ASB.
- (4) For Group 2 helicopters: Within 50 FH or 30 days, whichever occurs first after 30 June 2017 [the effective date of EASA AD 2017-0110], inspect the plungers of the NLG and MLG up down lock actuators in accordance with the instructions of Part VII of the ASB.

**Corrective Action(s):**

- (5) If, during the modification and/or the installation checks as required by paragraph (1) or (2) of this AD, as applicable, any discrepancy is detected, before next flight, accomplish the applicable corrective action(s) in accordance with the instructions of the ASB, or contact Leonardo for approved corrective action instructions and accomplish those instructions accordingly.
- (6) If, during the inspection as required by paragraph (3) or (4) of this AD, as applicable, corrosion is detected, before next flight, accomplish the applicable corrective action(s) and apply corrosion inhibitor on the plungers of the NLG and MLG up down lock actuators in accordance with the instructions of Part VII of the ASB.
- (7) If, during the inspection as required by paragraph (3) or (4) of this AD, as applicable, no corrosion is detected, before next flight, apply corrosion inhibitor on the plungers of the NLG and MLG up down lock actuators in accordance with the instructions of Part VII of the ASB.

**Modification:**

- (8) For helicopters on which, before the effective date of this AD, Part V of Leonardo ASB 169-023 at original issue was already accomplished, within 3 months after the effective date of this AD, replace the adhesive fixing of the NLG and MLG support buffers in accordance with steps 1, 2, 8.3, 8.4., 18 and 20 of Part V of the ASB.

**Credit:**

- (9) Modification, inspections and corrective actions, accomplished on a helicopter before the effective date of this AD in accordance with the instructions of Leonardo ASB 169-023 at original issue, are acceptable to comply with the initial requirements of paragraphs (1) to (7) of this AD for that helicopter, except as specified in paragraph (8) of this AD.

**Ref. Publications:**

Leonardo S.p.A. Helicopters ASB 169-023 original issue dated 31 May 2017, and Revision A dated 01 September 2017.

The use of later approved revisions of this document is acceptable for compliance with the requirements of this AD.

**Remarks:**

- 1. If requested and appropriately substantiated, EASA can approve Alternative Methods of Compliance for this AD.



2. Based on the required actions and the compliance time, EASA have decided to issue a Final AD with Request for Comments, postponing the public consultation process until after publication.
3. Enquiries regarding this AD should be referred to the EASA Safety Information Section, Certification Directorate. E-mail: [ADs@easa.europa.eu](mailto:ADs@easa.europa.eu).
4. For any question concerning the technical content of the requirements in this AD, 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  
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