Airworthiness Directive

AD No.: 2017-0011

Issued: 25 January 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):

AW139 helicopters

Effective Date: 01 February 2017

TCDS Number(s): EASA.R.006

Foreign AD: Not applicable

Supersedure: None

ATA 65 – Tail Rotor – Tail Rotor Drive Shaft – Inspection / Modification

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Manufacturer(s):

Leonardo S.p.A. Helicopters (formerly Finmeccanica S.p.A, AgustaWestland S.p.A., Agusta S.p.A.), AgustaWestland Philadelphia Corporation (formerly Agusta Aerospace Corporation).

Applicability:

AW139 helicopters, serial number (s/n) 31499, 31504, 31507, 31509, 31512, 31518, 31519, 31524, 31529, 31533, 31535 to 31564 inclusive, 31567, 31569, 31570, 31589, 41363, 41368 to 41370 inclusive, 41372 to 41375 inclusive, 41378, 41381, and 41384.

Reason:

Some cases of scratches on the number 1 drive shaft Part Number (P/N) 3G6510A01132 have been reported on AW139 helicopters. The subsequent investigations revealed that these scratches were limited to helicopters equipped with the rear exhaust module assembly P/N 3G7810A00431 and tunnel assembly P/N 3G7130A13431 and were caused by the interference in operation between these parts and the number 1 drive shaft P/N 3G6510A01132, due to insufficient clearance.

This condition, if not detected and corrected, could lead to premature cracks in the number 1 drive shaft P/N 3G6510A01132, possibly resulting in failure of the tail rotor drive system and consequent reduced control of the helicopter.

To address this potential unsafe condition, Leonardo published Mandatory Bollettino Tecnico (BT) 139-465, providing inspection instructions. BT 139-465 also provides instructions to modify the rear exhaust module and the tunnel assembly in order to increase the clearance between these components and the tail rotor drive shaft. This BT was later revised to clarify the instructions for the rework of the affected area of the drive shaft.

For the reasons described above, this AD requires repetitive inspections of the tail rotor drive shaft and, depending on findings, rework or replacement. This AD also requires a modification of the exhaust module and tunnel assembly.

Required Action(s) and Compliance Time(s):
Required as indicated, unless accomplished previously:

Note 1: Leonardo BT 139-465 Revision A is hereafter referred to as 'the BT' in this AD.

Repetitive Inspections:
(1) Within 30 flight hours (FH) after the effective date of this AD and, thereafter, at intervals not to exceed 100 FH, visually inspect the tube shaft P/N 3G6510A00832 (part of the number 1 drive shaft P/N 3G6510A01132) for evidence of scratches and indentations in the area indicated in Figure 1 of the BT, in accordance with the instructions of the BT.

Corrective Action(s):
(2) If, during any inspection as required by paragraph (1) of this AD, scratches or indentations are detected, before next flight, rework the affected area of the tube shaft in accordance with the instructions of Part I of the BT.

(3) Before next flight after the rework, as required by paragraph (2) of this AD, accomplish a depth check of the reworked area in accordance with the instructions of Part I of the BT.

(4) If, during the depth check as required by paragraph (3) of this AD, the measured depth of the reworked area exceeds 0.2 millimeter (mm), before next flight, replace the number 1 drive shaft P/N 3G6510A01132 with a serviceable part and modify the rear exhaust module P/N 3G7810A00431 and the tunnel assembly P/N 3G7130A13431 in accordance with the instructions of Part II of the BT.

(5) If, during the depth check as required by paragraph (3) of this AD, the measured depth of the reworked area is 0.2 mm or less, before next flight, accomplish an eddy current inspection of the reworked area in accordance with the instructions of ANNEX A of the BT.

(6) If, during the eddy current inspection as required by paragraph (5) of this AD, cracks are detected, before next flight, replace the number 1 drive shaft P/N 3G6510A01132 with a serviceable part and modify the rear exhaust module P/N 3G7810A00431 and the tunnel assembly P/N 3G7130A13431 in accordance with the instructions of Part II of the BT.

Modification:
(7) Unless already accomplished, as required by paragraphs (4) or (6) of this AD, as applicable, within 300 FH after the effective date of this AD, modify the rear exhaust module

P/N 3G7810A00431 and the tunnel assembly P/N 3G7130A13431 in accordance with the instructions of Part II of the BT.

Credit:

(8) Inspection, corrective action(s) and modification on a helicopter, accomplished before the effective date of this AD in accordance with Leonardo BT 139-465 at original issue, are acceptable to comply with the requirements of this AD for that helicopter.

Terminating Action:

(9) Modification of a helicopter as required by paragraph (4), (6) or (7) of this AD, as applicable, constitutes terminating action for the repetitive inspections as required by paragraph (1) of this AD for that helicopter.

Ref. Publications:

Leonardo S.p.A. Helicopters BT 139-465 original issue, dated 23 December 2016, or Revision A dated 25 January 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.

4. For any question concerning the technical content of the requirements in this AD, please contact Leonardo S.p.A. Helicopters, E-mail: CSE.AW139.AW@leonardocompany.com.