European Union Aviation Safety Agency

Airworthiness Directive

AD No.: 2019-0060

Issued: 20 March 2019

Note: This Airworthiness Directive (AD) is issued by EASA, acting in accordance with Regulation (EU) 2018/1139 on behalf of the European Union, its Member States and of the European third countries that participate in the activities of EASA under Article 129 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 (EU) 2018/1139, Article 71 exemption].

Design Approval Holder's Name:
AIRBUS HELICOPTERS

Type/Model designation(s):
AS 350 and AS 355 helicopters

Effective Date: 03 April 2019

TCDS Number(s): EASA.R.008 and EASA.R.146

Foreign AD: Not applicable

Supersedure: This AD supersedes EASA AD 2018-0287 dated 20 December 2018.

ATA 67 – Rotors Flight Control – Tail Rotor Gearbox Actuating Rod – Inspection

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Manufacturer(s):
Airbus Helicopters (AH), formerly Eurocopter, Eurocopter France, Aerospatiale

Applicability:
AS 350 B, AS 350 BA, AS 350 BB, AS 350 B1, AS 350 B2, AS 350 B3 and AS 350 D helicopters, all serial numbers (s/n); and
AS 355 E, AS 355 F, AS 355 F1, AS 355 F2, AS 355 N and AS 355 NP helicopters, all s/n.

Definitions:
For the purpose of this AD, the following definitions apply:

Affected part: Tail rotor gearbox (TGB) actuating rods, as identified in Table 1 of this AD; and TGB actuating rods where the Part Number (P/N) and/or s/n cannot be identified.

Serviceable part: Affected parts that have passed (no cracks detected) a dye penetrant inspection in accordance with the instructions of the applicable ASB; and TGB actuating rods that are not affected parts.

The applicable ASB: AH Alert Service Bulletin (ASB) AS350-67.00.76 and ASB AS355-67.00.46, as applicable, both at Revision 1.

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Reason:

An occurrence was reported where, during approach for landing phase, the pilot of an AS 350 helicopter experienced loss of efficiency in tail rotor (TR) control and had to perform a run on landing. Post-flight inspection revealed that the steel sleeve had separated from the aluminium tube of the TGB actuating rod. Investigation performed so far has highlighted two factors that likely contributed to the structural failure of the rod, (1) material internal structure non conformity, and (2) presence of micro cracks in the cold rework area, where the steel sleeve is fitted into the aluminium tube. Due to design similarity, this could also affect AS 355 helicopters.

This condition, if not detected and corrected, can lead to loss of yaw control of the helicopter.

Prompted by this finding, AH developed an inspection and published ASB AS350-67.00.76 and ASB AS355-67.00.46 to provide inspection instructions for the affected parts. Consequently, EASA issued AD 2018-0287 to require a one-time inspection of the affected parts and, depending on findings, accomplishment of applicable corrective action(s).

Since that AD was issued, AH identified other TGB rods (P/N 350A27191000 and P/N 350A27192000) as affected parts and established new procedures to mark the application of the one-time inspection on the part, ensuring durability of part marking on all TGB rods over time. Prompted by these developments, AH issued Revision 1 of ASB AS350-67.00.76 and ASB AS355-67.00.46 (the applicable ASB).

For the reasons described above, this AD retains the requirements of EASA AD 2018-0287, which is superseded, adds affected parts and introduces a new requirement to mark the affected parts. This AD is still considered an interim action and further AD action may follow.

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

Required as indicated, unless accomplished previously:

Identification / Inspection(s):

(1) Within 165 flight hours or 13 months, whichever occurs first after 03 January 2019 [the effective date of EASA AD 2018-0287], accomplish a dye penetrant inspection of each affected part in accordance with the instructions of section 3 of the applicable ASB.

Table 1 – Dye Penetrant Inspection

For Helicopter Configuration	P/N	Manufacturing Date
Not equipped with load compensator	350A27191000, 350A27191001, 350A27191002	All
	350A27191003	Up to CW20/2012 inclusive
Equipped with load compensator	350A27191004	All
	350A2719100401	Up to CW25/2011 inclusive
	350A27192000	Up to CW26/2012 inclusive

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(2) Within 10 months after the effective date of this AD, mark each affected part (all rods, regardless of the status with respect to the dye penetrant inspection) and each TGB rod having P/N 350A2719100402, in accordance with the instructions of section 3 of the applicable ASB.

Corrective Action(s):

(3) If, during the dye penetrant inspection as required by paragraph (1) of this AD, cracks are detected, before next flight, replace the affected part with a serviceable part in accordance with the instructions of section 3 of the applicable ASB.

Concurrent requirement:

(4) If, during the replacement as required by paragraph (3) of this AD, any TGB actuating rods P/N 350A27191001 or P/N 350A27191002 (pre-MOD 070823, with Teflon tape at bearings sections) are replaced with TGB actuating rod P/N 350A27191003 (post-MOD 070823, with heat shrinkable sheath at bearings section), concurrently with the replacement action, accomplish additional actions to ensure correct interface between rod and bearings in accordance with the instructions of AH AS350 SB No. 67.10 Revision 1, or AS355 SB No. 67.09 Revision 2, as applicable.

Credit:

(5) Inspection(s) and corrective action(s) on a helicopter, accomplished before the effective date of this AD in accordance with the instructions of the original issue of AH ASB AS350-67.00.76 or ASB AS355-67.00.46, as applicable, is acceptable to comply with the requirements of paragraphs (1), (3) and (4) of this AD, except for action(s) on the additional (P/N 350A27191000 and P/N 350A27192000) affected parts.

Parts Installation:

(6) From the effective date of this AD, it is allowed to install on any helicopter an affected part, provided it is a serviceable part, as defined in this AD.

Reporting:

(7) Within 30 days after the dye penetrant inspection as required by paragraph (1) of this AD, report results (including no findings) to AH. This can be accomplished by using the instructions of section 3.B.4 of the applicable ASB.

Ref. Publications:

AH AS350 ASB 67.00.76 original issue dated 17 December 2018, and Revision 1 dated 11 March 2019.

AH AS355 ASB 67.00.46 original issue dated 17 December 2018, and Revision 1 dated 11 March 2019.

AH AS350 SB No. 67.10 Revision 1 dated 28 March 1989.

AH AS355 SB No. 67.09 Revision 2 dated 28 March 1989.

The use of later approved revisions of the above-mentioned documents is acceptable for compliance with the requirements of this AD.

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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. Information about any failures, malfunctions, defects or other occurrences, which may be similar to the unsafe condition addressed by this AD, and which may occur, or have occurred on a product, part or appliance not affected by this AD, can be reported to the EU aviation safety reporting system.

5. For any question concerning the technical content of the requirements in this AD, please contact: Airbus Helicopters, Aéroport de Marseille Provence, 13725 Marignane Cedex, France, Telephone: +33 (4) 42 85 97 97, E-mail: support.technical-hydraulics.ah@airbus.com, Web portal: https://keycopter.airbushelicopters.com > Technical Requests Management.

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