



Airworthiness Directive

AD No.: 2016-0021

Issued: 20 January 2016

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:

AIRBUS HELICOPTERS

Type/Model designation(s):

AS 350 and AS 355 helicopters

Effective Date: 03 February 2016

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

Foreign AD: Not applicable

Supersedure: None

ATA 63 – Rotor Drive – Main Gearbox Bottom Casing – Inspection / Replacement

Manufacturer(s):

Airbus Helicopters, (formerly Eurocopter, Eurocopter France, Aerospatiale)

Applicability:

AS 350 B1, B2 and AS 355 E, F, F1, F2, N helicopters, all serial numbers, if equipped with main gearbox (MGB) bottom Casing (sump) P/N 350A32-3119-03 or P/N 350A32-3119-05.

Reason:

The application of an optimized stress calculation by Airbus Helicopters (AH) to the MGB bottom casing (Sump) as installed on AS 350 B1, B2 and AS 355 E, F, F1, F2, N helicopters, revealed critical areas not previously identified in these components.

This condition, if not detected and corrected, could lead to cracks propagating in the MGB housing or in the mounting pad, possibly resulting in failure of the mounting pad and consequent loss of the helicopter.

To address this potential unsafe condition, Airbus Helicopters (AH) issued Alert Service Bulletin (ASB) AS355-01.00.56 and AS350-01.00.69, as applicable, to provide inspection instructions.



For the reason described above, this AD requires repetitive inspections of the MGB bottom casing for cracks and, depending on findings, accomplishment of applicable corrective action(s). This AD also requires the reporting of all inspection results (including no findings) to the design approval holder.

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

Required as indicated, unless accomplished previously:

- (1) Within 165 flight hours (FH) or 6 months, whichever occurs first after the effective date of this AD, determine the total service life in number of FH and torque cycles (TC) accumulated by the MGB bottom casing, in accordance with the instructions of paragraph 1.E.2 of the ASB AS355-01.00.56 or AS350-01.00.69, as applicable.
- (2) If the total service life of the MGB bottom casing, determined as required by paragraph (1) of this AD, was estimated by conversion of FH into TC, before next flight after the determination of the service life as required by paragraph (1) of this AD, mark a "V" after the Serial Number of the concerned casing in accordance with the instructions of paragraph 1.E.2 of the ASB AS355-01.00.56 or AS350-01.00.69, as applicable.
- (3) If the total service life, determined as required by paragraph (1) of this AD, was calculated through the cycle follow-up carried out for other MGB components, before exceeding 93 700 TC total service life, or within 1 000 TC after the determination as required by paragraph (1) of this AD, whichever occurs later, inspect each attachment lug of the MGB casing in accordance with the instructions of paragraph 3.B.2 of the ASB AS355-01.00.56 or AS350-01.00.69, as applicable.
- (4) If the total service life, determined as required by paragraph (1) of this AD, was estimated by conversion of FH into TC, within 1 000 TC after the determination in paragraph (1) of this AD, and, thereafter, at intervals not to exceed 27 000 TC, inspect each attachment lug of the MGB bottom casing in accordance with the instructions of paragraph 3.B.2 of the ASB AS355-01.00.56 or AS350-01.00.69, as applicable.
- (5) If, during any inspection as required by paragraph (3) or (4) of this AD, as applicable, any crack is detected, before next flight, replace the MGB bottom casing in accordance with the instructions of the ASB AS355-01.00.56 or AS350-01.00.69, as applicable.
- (6) Unless already accomplished, as required by paragraph (5) of this AD, during the next Repair or scheduled Overhaul of the MGB main module, whichever occurs first, but not later than 27 000 TC after the inspection as required by paragraph (3) of this AD, or, if the total service life determined as required by paragraph (1) of this AD was estimated by conversion of FH into TC, during the next Repair or scheduled Overhaul of the MGB main module, whichever occurs first after having reached 93 700 TC, and not exceeding 120 000 TC, replace the casing in accordance with the instructions of the ASB AS355-01.00.56 or AS350-01.00.69, as applicable.



- (7) Replacement of a MGB bottom casing on a helicopter, as required by this AD, does not constitute terminating action for the repetitive inspections, as required by paragraph (4) of this AD, for that helicopter.
- (8) Within 30 days after each inspection, as required by this AD, report the result (including no findings) to AH, in accordance with the instructions of the ASB AS355-01.00.56 or AS350-01.00.69, as applicable.

Ref. Publications:

AH ASB AS355-01.00.56 Revision 3, dated 07 January 2016

AH ASB AS350-01.00.69 Revision 3, dated 07 January 2016

The use of later approved revisions of these documents 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. This AD was posted on 03 August 2015 as PAD 15-105 for consultation until 31 August 2015. No comments were received during the consultation period.
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:
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