



## Airworthiness Directive

**AD No.:** 2016-0022

**Issued:** 22 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 355 NP helicopters

**Effective Date:** 05 February 2016

**TCDS Number(s):** EASA.R.146

**Foreign AD:** Not applicable

**Supersedure:** None

### ATA 63 – Rotor Drive – Main Gearbox Main and Bottom Casings – Inspection / Replacement

#### Manufacturer(s):

Airbus Helicopters (formerly Eurocopter)

#### Applicability:

AS 355 NP helicopters, all serial numbers, if equipped with main gearbox (MGB) main casing Part Number (P/N) 350A32-3121-07, or equipped with 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 main casing and the MGB bottom casing (Sump) as installed on AS355 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) AS355-01.00.55 (hereafter referred to as 'the ASB' in this AD) to provide inspection instructions.

For the reason described above, this AD requires repetitive inspections of the MGB main casing and bottom casing for oil leakage and 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 main casing and bottom casing, in accordance with the instructions of paragraph 1.E.2 of the ASB.
- (2) If the total service life of the MGB main casing or 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.

**For the MGB Main Casing:**

- (3) If the total service life of the MGB main casing determined as required by paragraph (1) of this AD was calculated through the cycle follow-up carried out for other MGB components, within 10 FH after the total service life of the MGB main casing is found to have reached 65 400 TC, and thereafter at intervals not to exceed 10 FH, inspect the MGB main casing in accordance with the instructions of paragraph 1.E.2 of the ASB.
- (4) If the total service life determined as required by paragraph (1) of this AD was estimated by conversion of FH into TC, within 10 FH after the determination as required by paragraph (1) of this AD, and thereafter at intervals not to exceed 10 FH, inspect the MGB main casing in accordance with the instructions of paragraph 1.E.2 of the ASB.
- (5) If, during any inspection as required by paragraph (3) and (4) of this AD, any oil leakage is detected, before next flight, replace the MGB main casing with a serviceable part in accordance with the instructions of the ASB.
- (6) Unless already accomplished as required by paragraph (5) of this AD, during the next repair or next scheduled overhaul of the MGB main module, whichever occurs first, after it is found to have reached 65 400 TC, but not exceeding 88 200 TC total service life, replace the MGB main casing with a serviceable part in accordance with the instructions of the ASB.



**For the MGB Bottom Casing (Sump):**

- (7) If the total service life determined in paragraph (1) of this AD was calculated through the cycle follow-up carried out for other MGB components, within 1000 TC after accumulating 75 800 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 bottom casing in accordance with the instructions of paragraph 3.B.2 of the ASB.
- (8) If the total service life, determined as required by paragraph (1) of this AD, was estimated by conversion of FH into TC, within 1000 TC after the determination in paragraph (1) of this AD, and, thereafter, at intervals not to exceed 22 800 TC, inspect each attachment lug of the MGB bottom casing in accordance with the instructions of paragraph 3.B.2 of the ASB.
- (9) If, during any inspection as required by paragraph (7) or (8) 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.
- (10) Unless already accomplished as required by paragraph (9) of this AD, during the next Repair or scheduled Overhaul of the MGB main module, whichever occurs first, but not later than 22 800 TC after the inspection as required by paragraph (7) of this AD or after having reached 76 800 TC if the total service life determined as required by paragraph (1) of this AD was estimated by conversion of FH into TC, and not exceeding 99 600 TC total service life, replace the MGB bottom casing in accordance with the instructions of the ASB.
- (11) Replacement of a MGB main casing or 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 (3), (4) or (8) of this AD, as applicable, for that helicopter.
- (12) 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.

**Ref. Publications:**

AH ASB AS355-01.00.55 Revision 4 dated 07 January 2016.

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. This AD was posted on 03 August 2015 as PAD 15-106 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](mailto:ADs@easa.europa.eu).



4. For any question concerning the technical content of the requirements in this AD, please contact:

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