



## Airworthiness Directive

**AD No.:** 2017-0125

**Issued:** 21 July 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:

AIRBUS HELICOPTERS

### Type/Model designation(s):

SA 365, AS 365, SA 366 and EC 155 helicopters

**Effective Date:** 28 July 2017

**TCDS Number(s):** EASA.R.105

**Foreign AD:** Not applicable

**Supersedure:** This AD supersedes EASA AD 2017-0007 dated 13 January 2017.

## ATA 65 – Tail Rotor – Pitch Control Rod Bearing – Inspection / Replacement

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### Manufacturer(s):

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

### Applicability:

SA 365 N1, AS 365 N2, AS 365 N3, SA 366 G1, EC 155 B and EC 155 B1 helicopters, all serial numbers.

### Reason:

An occurrence was reported of a helicopter losing tail rotor pitch control during a landing phase. Investigation determined that the event had been caused by significant damage to the tail gearbox (TGB) control rod double bearing.

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

To address this unsafe condition, EASA issued AD 2012-0170 (later revised) to require various repetitive and one-time inspections and depending on finding(s), corrective action(s). That AD also required a modification, depending on the helicopter configuration. After EASA AD 2012-0170R2 was issued, during technical investigation of an AS 365 N3 accident, a damaged TGB control rod double bearing was detected. The affected control rod was subject to repetitive inspections as required by EASA AD 2012-0170R2.



Prompted by these findings, Airbus Helicopters (AH) issued Alert Service Bulletin (ASB) AS365-01.00.67, ASB SA366-01.29 and ASB EC155-04A014, and EASA issued Emergency AD 2016-0097-E (later revised), superseding EASA AD 2012-0170R2, to require repetitive inspections of the TGB oil level and magnetic chip detector and, depending on findings, the accomplishment of applicable corrective action(s). That AD also required replacement of the double bearing with an improved part and prohibited (re)installation of certain double bearings.

After EASA AD 2016-0097R1 was issued, AH revised the applicable inspection ASBs, specifying that a pre-condition for the inspections and replacements is AH modification (mod) 07 65B56 or mod 07 65B58. Mod 07 65B58 (per Eurocopter AS365 Service Bulletin (SB) 65.00.17, SA366 SB 65.04, or EC155 SB 65-006) was previously required by EASA AD 2012-0170R2, which led AH not to retain this mod in Revision 1 of the modification ASB. However, considering the possibility that, although remote, helicopters may not have mod 07 65B56 or mod 07 65B58 embodied when AD 2016-0097-E was issued, still existed. Consequently, EASA issued AD 2017-0007, retaining the requirements of EASA AD 2016-0097R1, which was superseded, reinstating a previous modification requirement.

Since EASA AD 2017-0007 was issued, based on further investigation results, AH revised the applicable inspection ASBs, introducing additional repetitive inspections for the magnetic plug, providing amended corrective action instructions and adding a time limit for installation of a Part Number (P/N) 365A33-6005-09 TGB (mod 07 65B63).

For the reason described above, this AD retains the requirements of EASA AD 2017-0007, which is superseded, adds repetitive inspections of the magnetic plug after double bearing replacement, requires the use of the revised (at Revision 3) ASB instructions, and requires replacement of the TGB with a modified unit, which terminates the repetitive inspections required by this AD.

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

Required as indicated, unless accomplished previously:

Note 1: AH ASB AS365-01.00.67, ASB SA366-01.29 and ASB EC155-04A014, currently at Revision 3, are hereafter collectively referred to as 'the applicable inspection ASB' in this AD. Eurocopter AS365 SB 65.00.17, SA366 SB 65.04 and EC155 SB 65-006 (introducing AH mod 0765B58), currently at Revision 1, are hereafter collectively referred to as 'the applicable modification SB' in this AD.

Note 2: For the purpose of this AD, Group 1 helicopters are those equipped with a TGB having P/N 365A33-6005-08 (pre-mod 07 65B63). Group 2 helicopters are those equipped with a TGB having P/N 365A33-6005-09 (mod 07 65B63).

#### Modification:

- (1) For Group 1 helicopters, except those that embody Eurocopter/AH mod 07 65B58 or mod 07 65B56 (which includes mod 07 65B58) in production: Within 3 calendar months or 300 flight hours (FH), whichever occurs first after 04 June 2011 [the effective date of EASA AD 2011-0105), modify the helicopter in accordance with the instructions of the applicable modification SB.



**Repetitive Inspections for Group 1 Helicopters:**

- (2) Within the compliance times, and, thereafter, at intervals not to exceed the values, as defined in Table 1 of this AD, as applicable to helicopter model, inspect the TGB oil level in accordance with the instructions of Paragraph 3.B.1 of the applicable inspection ASB (see Note 1 of this AD).

Table 1 – Initial and Repetitive TGB Oil Level Inspections

Helicopter Model(s)	Compliance Time	
	Initial Inspection (see Note 2 of this AD)	Repetitive Inspection Interval (after the last inspection)
SA 365 N1, AS 365 N2 and AS 365 N3	Within 10 FH	10 FH
SA 366 G1	During the next check after the last flight of the day (ALF)	During each ALF check
EC 155 B and EC 155 B1	Within 15 FH or 7 days, whichever occurs first	15 FH or 7 days, whichever occurs first

Note 2: The compliance time for the initial inspection is after 25 May 2016 [the effective date of EASA AD 2016-0097R1] or since the last inspection as previously required by EASA AD 2016-0097R1, as applicable.

- (3) Before first replacement of the double bearing, as required by paragraph (7) of this AD: During the next ALF inspection after 25 May 2016 [the effective date of EASA AD 2016-0097R1], and, thereafter, during each ALF check, inspect the TGB magnetic plug in accordance with the instructions of paragraph 3.B.2 of the applicable inspection ASB.
- (4) After first replacement of the double bearing, as required by paragraph (7) of this AD: Within 25 FH after the effective date of this AD, but not exceeding 100 FH since the last inspection of the magnetic plug in accordance with the applicable maintenance manual (MET, AMM), MET Work Card 12.00.00.601 (for AS/SA365 and SA366) or AMM Task 12-00-00-211 (for EC155), as applicable, and, thereafter, at intervals not to exceed 25 FH, inspect the magnetic plug in accordance with the instructions of paragraph 3.B.2 of the applicable inspection ASB.

**Corrective Action(s):**

- (5) If, during any TGB oil level inspection as required by paragraph (2) of this AD, any discrepancy is detected, as defined in the applicable inspection ASB, before next flight, accomplish the applicable corrective action(s) in accordance with the instructions of Paragraph 3.B.1 of the applicable inspection ASB.
- (6) If, during any TGB magnetic plug inspection as required by paragraph (3) or (4) of this AD, as applicable, any discrepancy is detected, before next flight, accomplish the applicable corrective action(s) in accordance with the instructions of paragraph 3.B.2 of the applicable inspection ASB.



**Double Bearing Replacement for Group 1 Helicopters:**

- (7) Within the compliance time defined in Table 2 or Table 3 of this AD, as applicable to helicopter configuration, and, thereafter, at intervals not to exceed 500 FH accumulated by the double bearing, replace the double bearing with a serviceable part, P/N 704A33-651-245 or P/N 704A33-651-246, in accordance with the instructions of paragraph 1.E.2.a.3 a) or 1.E.2.a.3 b), as applicable, of the applicable inspection ASB.

Table 2 – Double Bearing Replacement on pre-mod 07 65B57 helicopters  
(equipped with double bearing with P/N 704A33 651-093 or P/N 704A33-651-104)

<b>FH accumulated by the Double Bearing</b> [on 25 May 2016, the effective date of EASA AD 2016-0097R1]	<b>Compliance Time</b>
335 FH or more	Within 15 FH after 25 May 2016 [the effective date of EASA AD 2016-0097R1]
Less than 335 FH	Before exceeding 350 FH

Table 3 – Double Bearing Replacement on post-mod 07 65B57 helicopters  
(equipped with double bearing with P/N 704A33 651-245 or P/N 704A33-651-246)

<b>FH accumulated by the Double Bearing</b> [on 25 May 2016, the effective date of EASA AD 2016-0097R1]	<b>Compliance Time</b>
485 FH or more	Within 15 FH after 25 May 2016 [the effective date of EASA AD 2016-0097R1]
Less than 485 FH	Before exceeding 500 FH

- (8) For helicopters in pre-mod 07 65B57 configuration: As an alternative to the replacement requirement of paragraph (7) of this AD, for helicopters equipped with a double bearing which, on 25 May 2016 [the effective date of EASA AD 2016-0097R1], had already accumulated 335 FH or more, within 15 FH after 25 May 2016 [the effective date of EASA AD 2016-0097R1], and, thereafter, at intervals not to exceed 55 FH, inspect the double bearing of the TGB control shaft in accordance with the instructions of paragraph 3.B.3 of the applicable inspection ASB. These inspections allow the bearing replacement, as required by paragraph (7) of this AD, to be deferred until 110 FH after 25 May 2016 [the effective date of EASA AD 2016-0097R1]. If, during any of these inspections, any defects are found, before next flight, accomplish the applicable corrective action(s) in accordance with the instructions of paragraph 3.B.3 of the applicable inspection ASB.
- (9) For helicopters in post-mod 07 65B57 configuration: As an alternative to the **initial** replacement as required by paragraph (7) of this AD, for helicopters equipped with a double bearing which, on 25 May 2016 [the effective date of EASA AD 2016-0097R1], had already accumulated 485 FH or more, within 15 FH after 25 May 2016 [the effective date of EASA AD 2016-0097R1], inspect the double bearing of the TGB control shaft in accordance with the instructions of paragraph 3.B.3 of as the applicable inspection ASB. This inspection allows the initial bearing replacement, as required by paragraph (7) of this AD, to be deferred until



110 FH after 25 May 2016 [the effective date of EASA AD 2016-0097R1]. If, during any of this inspection, any defects are found, before next flight, accomplish the applicable corrective action(s) in accordance with the instructions of paragraph 3.B.3 of the applicable inspection ASB.

**Credit:**

- (10) Inspections and corrective actions, accomplished on a helicopter before the effective date of this AD in accordance with the instructions of the original issue, or Revision 1, or Revision 2 of the applicable inspection ASB, are acceptable to comply with the initial requirements of paragraphs (2) through (9) of this AD.

**Modification of Group 1 Helicopters:**

- (11) Within 78 months after the effective date of this AD, modify the helicopter by replacing the pre-mod 07 65B63 TGB with a TGB P/N 365A33-6005-09 (to be recorded as mod 07 65B63). Replacement of a TGB in accordance with the instructions of MET task 64-20-01-402 (for AS/SA365), MET task 64-21-01-402 (for SA366), or AMM Task 65-20-01-061 (for EC155) is an acceptable method to comply with this requirement.

**Terminating Action:**

- (12) Accomplishment of corrective action(s) on a helicopter, as required by paragraph (5) or (6) of this AD, as applicable, does not constitute terminating action for the repetitive inspections as required by paragraph (2) and (3) of this AD for that helicopter.
- (13) Modification of a helicopter by replacing the TGB double bearing, as required by paragraph (7) of this AD, as applicable, constitutes terminating action for the repetitive TGB magnetic plug ALF inspections as required by paragraph (3) of this AD for that helicopter.
- (14) Modification of a helicopter as required by paragraph (11) of this AD constitutes terminating action for the repetitive magnetic plug inspections as required by paragraph (4) of this AD, and the repetitive double bearing replacement as required by paragraph (7) of this AD, for that helicopter.

**Parts Installation:**

- (15) For Group 1 helicopters: From 25 May 2016 [the effective date of EASA AD 2016-0097R1], do not install on any helicopter a pre-mod 07 65B57 double bearing P/N 704A33-651-093 or P/N 704A33-651-104.
- (16) Do not install (see Note 3 of this AD) any P/N 365A33-6005-08 (pre-mod 07 65B63) TGB on a helicopter, as required by paragraph (16.1) or (16.2) of this AD, as applicable.
- (16.1) For Group 1 helicopters: After modification of that helicopter as required by paragraph (11) of this AD.
- (16.2) For Group 2 helicopters: From the effective date of this AD.

Note 3: For the purpose of this AD, removing a TGB for maintenance and then re-installing that TGB on the same helicopter does not constitute "installation".



**Ref. Publications:**

Eurocopter AS365 SB 65.00.17 Revision 1 dated 23 February 2011.

Eurocopter SA366 SB 65.04 Revision 1 dated 23 February 2011.

Eurocopter EC155 SB 65-006 Revision 1 dated 23 February 2011.

Airbus Helicopters ASB AS365-01.00.67 original issue dated 04 May 2016, or Revision 1 dated 03 June 2016, or Revision 2 dated 28 October 2016, or Revision 3 dated 20 July 2017.

Airbus Helicopters ASB SA366-01.29 original issue dated 04 May 2016, or Revision 1 dated 03 June 2016, or Revision 2 dated 28 October 2016, or Revision 3 dated 20 July 2017.

Airbus Helicopters ASB EC155-04A014 original issue dated 04 May 2016, or Revision 1 dated 03 June 2016, or Revision 2 dated 28 October 2016, or Revision 3 dated 20 July 2017.

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. 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: Airbus Helicopters Technical Support Department, Aéroport de Marseille Provence 13725 Marignane Cedex, France, Telephone +33 (0)4 42 85 97 97, Fax +33 (0)4 42 85 99 66, E-mail: [TechnicalSupport.Helicopters@airbus.com](mailto:TechnicalSupport.Helicopters@airbus.com), or [support.technical-dyncomp.ah@airbus.com](mailto:support.technical-dyncomp.ah@airbus.com), or web portal: <https://keycopter.airbushelicopters.com> > Technical Request Management.

