Airworthiness Directive

AD No.: 2021-0170

Issued: 19 July 2021

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:	Type/Model designation(s):
AIRBUS HELICOPTERS	SA 365, AS 365 and EC 155 helicopters

Effective Date:	02 August 2021
TCDS Number(s):	EASA.R.105
Foreign AD:	Not applicable
Supersedure:	This AD supersedes EASA AD 2020-0078 dated 31 March 2020.

ATA 65 – Tail Rotor – Double Bearing – Inspection / Replacement

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

Applicability:
AS 365 N2, AS 365 N3, EC 155 B, EC 155 B1 and SA 365 N1 helicopters, all serial numbers (s/n).

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

The applicable ASB: AH AS365 Emergency Alert Service Bulletin (ASB) 01.00.71 and EC155 Emergency ASB 04A016 (single publication) Revision 3, as applicable.

Affected part: Double bearings, having Part Number (P/N) 704A33-651-245 or P/N 704A33-651-246, installed on a tail rotor gearbox (TGB) P/N 365A33-6005-09.

Serviceable part: Double bearings, having P/N 704A33-651-245 or P/N 704A33-651-246, which are new (never previously installed).

Groups: Group 1 helicopters are those that have an affected part installed, which has accumulated less than 500 flight hours (FH) since first installation on a helicopter.
Group 2 helicopters are those that have an affected part installed, which has accumulated 500 FH or more since first installation on a helicopter.

Close monitoring: Close monitoring procedure in accordance with Work Card 05-53-00-201 (MET) or Aircraft Maintenance Manual (AMM) Task 05-50-01-211.

ALF: After last flight (ALF) of the day inspection.

Reason:

Following a regular TGB chip detector check on an AS 365 N2 helicopter, equipped with a TGB P/N 365A33-6005-09 (terminating action for EASA AD 2017-0125), a certain quantity of abrasion particles and non-critical scale particles was found, triggering the close monitoring procedure according to the applicable maintenance instructions. Since no anomaly was reported during the close monitoring regime, the helicopter returned to the normal inspection program, but after a few flight hours, during an unscheduled check, a large amount of critical scale particles was found on the chip detector's magnetic plug. The particles belonged to the double bearing (pitch control rod bearing) installed inside the TGB. The reported event showed a speed of degradation faster than expected.

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

To address this unsafe condition, AH issued the applicable ASB at original issue (later revised), providing inspection and replacement instructions, and EASA issued Emergency AD 2019-0267-E (also later revised) to require repetitive inspections of the TGB chip detector for particles and replacement of the double bearing.

After EASA AD 2019-0267R1 was issued, it was determined that the interval for the chip detector inspection needed to be reduced. AH issued the applicable ASB at Revision 2 and EASA issued AD 2020-0078, retaining the requirements of EASA AD 2019-0267R1, which was superseded, and requiring the chip detector inspection for Group 1 helicopters at reduced intervals.

Since that AD was issued, additional testing of the affected TGB concluded that the chip detector inspection interval must be further reduced to allow timely detection of an impending TGB bearing failure. AH published the applicable ASB, as defined in this AD, reflecting the new inspection interval, and amending the criteria for corrective action following particle detection.

For the reason described above, this AD retains the requirements of EASA AD 2020-0078, which is superseded, and requires inspection of the TGB chip detector (for Group 1 helicopters) at reduced intervals and, depending on findings, corrective action(s) using new criteria. This AD also introduces a calendar time limit for the first replacement of 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:

Inspection(s):

(1) For Group 1 helicopters under close monitoring on 28 October 2019 [the effective date of the original issue of EASA AD 2019-0267]: Within the applicable compliance time as identified in the close monitoring and until completion of the close monitoring, assess any particles

collected during the close monitoring in accordance with the instructions of paragraph 3.B.2 of the applicable ASB.

(2) For Group 1 helicopters under close monitoring on 28 October 2019 [the effective date of the original issue of EASA AD 2019-0267]: Upon completion of the close monitoring regime, or within 10 FH after the last inspection, as applicable, and thereafter at intervals not to exceed 10 FH, accomplish a TGB chip detector inspection in accordance with the instructions of paragraph 3.B.2 of the applicable ASB.

(3) For Group 1 helicopters not under close monitoring on 28 October 2019 [the effective date of the original issue of EASA AD 2019-0267]: Within 10 FH after the last inspection and, thereafter, at intervals not to exceed 10 FH, accomplish a TGB chip detector inspection in accordance with the instructions of paragraph 3.B.2 of the applicable ASB.

Assessment / Double Bearing Washing:

(4) For Group 2 helicopters under close monitoring on 28 October 2019 [the effective date of the original issue of EASA AD 2019-0267]: Before next flight after 19 November 2019 [the effective date of EASA AD 2019-0267R1], assess any particles collected during the close monitoring in accordance with the instructions of paragraph 3.B.2 of the applicable ASB, or accomplish a double bearing washing in accordance with the instructions of paragraph 3.B.3 of the applicable ASB.

(5) For Group 2 helicopters: Unless already accomplished as required by paragraph (4) of this AD, within 15 FH after 28 October 2019 [the effective date of the original issue of EASA AD 2019-0267], accomplish a double bearing washing in accordance with the instructions of paragraph 3.B.3 of the applicable ASB.

Inspection(s):

(6) For Group 2 helicopters: After accomplishment of the double bearing washing as specified in paragraph (4), or as required by paragraph (5) of this AD, as applicable, accomplish the inspections as required by paragraph (6.1) or (6.2) of this AD (see Note 2 of this AD).

(6.1) Inspect the TGB chip detector in accordance with the instructions of paragraph 3.B.2 of the applicable ASB at intervals not exceeding 10 FH **and** accomplish a double bearing washing in accordance with the instructions of paragraph 3.B.3 of the applicable ASB at intervals not exceeding 30 FH.

(6.2) Inspect the TGB chip detector in accordance with the instructions of paragraph 3.B.2 of the applicable ASB during each ALF, or at intervals not exceeding 5 FH, whichever occurs first.

Note 2: After accomplishment of a double bearing washing in accordance with the instructions of paragraph 3.B.3 of the applicable ASB, subsequent chip detector inspections can be accomplished as required by paragraph (6.1) or (6.2) of this AD.

Corrective Action(s):

(7) If, during any action as required by paragraphs (1) to (6) of this AD, as applicable, any discrepancy, as identified in the applicable ASB, is detected, accomplish the applicable corrective action(s) in accordance with the instructions of, and within the compliance time as identified in, the applicable ASB.

Part(s) Replacement:

(8) For all helicopters: Before an affected part exceeds 610 FH since first installation on a helicopter, or within 110 FH after 28 October 2019 [the effective date of the original issue of EASA AD 2019-0267], whichever occurs later, and, thereafter, at intervals not to exceed 500 FH, replace that affected part with a serviceable part. This can be accomplished in accordance with the instructions of the applicable AMM (see Note 3 of this AD).
For Group 2 helicopters, the first replacement of the affected part must be accomplished not later than 31 December 2021.

Note 3: When an affected part installed on a Group 1 helicopter exceeds 500 FH since first installation on a helicopter, that helicopter effectively becomes Group 2, for which relevant requirements of this AD are then applicable.

Credit:

(9) Inspections, assessment/double bearing washings and corrective actions, accomplished before the effective date of this AD in accordance with the instructions of the applicable ASB at original issue, or Revision 1, or Revision 2, are acceptable to comply with the initial requirements of this AD for that helicopter.

Terminating Action(s):

(10) None.

Parts Installation:

(11) From 28 October 2019 [the effective date of the original issue of EASA AD 2019-0267], it is allowed to install on any helicopter a double bearing, provided it is a serviceable part, as defined in this AD, and that, following installation, it is inspected as required by this AD for Group 1 helicopters.

(12) From the effective date of this AD, it is allowed to install on any helicopter a TGB P/N 365A33-6005-09, provided it is equipped with a serviceable part, as defined in this AD, and that, following installation, that serviceable part is inspected as required by this AD for Group 1 helicopters.

Ref. Publications:

AH AS365 Emergency ASB 01.00.71 original issue dated 24 October 2019, or Revision 1 dated 11 December 2019, or Revision 2 dated 25 March 2020, or Revision 3 dated 14 June 2021.

AH EC155 Emergency ASB 04A016 original issue dated 24 October 2019, or Revision 1 dated 11 December 2019, or Revision 2 dated 25 March 2020, or Revision 3 dated 14 June 2021.

The use of later approved revisions of the above-mentioned 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.

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. This may include reporting on the same or similar components, other than those covered by the design to which this AD applies, if the same unsafe condition can exist or may develop on an aircraft with those components installed. Such components may be installed under an FAA Parts Manufacturer Approval (PMA), Supplemental Type Certificate (STC) or other modification.

5. For any question concerning the technical content of the requirements in this AD, please contact: Airbus Helicopters (Technical Support) – Aéroport de Marseille Provence, 13725 Marignane Cedex, France, Telephone: +33 (4) 42 85 97 97, Fax: +33 (4) 42 85 99 66, Web portal: https://airbusworld.helicopters.airbus.com Technical Requests Management, or E-mail: TechnicalSupport.Helicopters@airbus.com.