



# Notification of a Proposal to issue an Airworthiness Directive

**PAD No.: 20-127**

**Issued: 03 September 2020**

Note: This Proposed Airworthiness Directive (PAD) 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.

In accordance with the EASA Continuing Airworthiness Procedures, the Executive Director is proposing the issuance of an EASA Airworthiness Directive (AD), applicable to the aeronautical product(s) identified below.

All interested persons may send their comments, referencing the PAD Number above, to the e-mail address specified in the 'Remarks' section, prior to the consultation date indicated.

**Design Approval Holder's Name:**

AIRBUS HELICOPTERS

**Type/Model designation(s):**

SA 365, AS 365 and EC 155 helicopters

**Effective Date:** [TBD - standard: 14 days after AD issue date]

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

**Foreign AD:** Not applicable

**Supersedure:** This AD supersedes EASA AD 2014-0179R2 dated 11 April 2016 and EASA AD 2019-0046 dated 11 March 2019.

## ATA 63 – Rotor Drive(s) – Tail Rotor Drive Flange – Inspection / Modification

### Manufacturer(s):

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

### Applicability:

SA 365 C1, SA 365 C2, SA 365 C3, SA 365 N and SA 365 N1 and helicopters, all serial numbers (s/n), on which Airbus Helicopters modification (mod) 07 63B64 has been embodied.

AS 365 N2 and AS 365 N3 helicopters, all s/n, on which AH mod 07 63B64 has been embodied, and which were first delivered after manufacture before 09 July 2014.

EC 155 B and EC 155 B1 helicopters, all s/n, which were first delivered after manufacture before 09 July 2014.

### Definitions:

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

**The applicable inspection ASB:** AH Alert Service Bulletin (ASB) AS365-63.00.18, ASB SA365-65.50 and ASB EC155-63A012, as applicable.



**The applicable modification ASB:** AH ASB AS365-63.00.19 Revision 1, ASB EC155-63A013 Revision 1, ASB SA365-65.52 Revision 1 and ASB AS365-63.00.26, as applicable.

**Groups:** Group 1 are SA 365 N1, AS 365 N2, AS 365 N3, EC 155 B and EC 155 B1 helicopters, all s/n, on which AH mod 07 63B64 has been embodied, except those on which AH mod 07 63C81 was embodied in production, or which were modified in service in accordance with the instructions of AH ASB AS365-63.00.19 Revision 1, or ASB EC155-63A013 Revision 1, as applicable.

Group 2 are SA 365 C1, SA 365 C2, SA 365 C3 and SA 365 N helicopters, all s/n, except those which were modified in service in accordance with the instructions of AH ASB SA365-65.52 Revision 1 or ASB AS365-63.00.26 (both ASBs correspond to AH mod 07 63C81 and mod 07 63D01), as applicable.

Group 3 are SA 365 C1, SA 365 C2 and SA 365 C3 helicopters, all s/n, which were modified in service in accordance with the instructions of the original issue of AH ASB SA365-65.52 (AH mod 07 63C81).

#### Reason:

Several occurrences have been reported of loss of tightening torque of the Shur-Lok nut, which serves as a retainer of the tail rotor (TR) drive flange of the main gearbox (MGB). Subsequent investigation determined that these events were the result of failure of the Shur-Lok nut locking function, which is normally ensured by two anti-rotation tabs engaged into two slots at the end of the MGB output shaft pinion.

This condition, if not detected and corrected, could lead to Shur-Lok nut becoming loose and, ultimately, to complete disengagement of the nut threads, possibly resulting in reduction of TR drive control, rear transmission vibrations and reduced control of the helicopter.

To address this potential unsafe condition, AH issued the applicable inspection ASB to provide inspection instructions and EASA issued AD 2014-0165, superseded by EASA AD 2014-0179 (later revised), to require a one-time inspection of the radial play inside the TR drive flange and the condition of the Shur-Lok nut and, depending on findings, corrective actions.

EASA also issued AD 2019-0046 to make AH mod 07 63C81 mandatory applicable to subset of helicopters models affected by the requirements of EASA AD 2014-0179R2, consisting of installation of a rear output stop with 5 spigots on TR shaft flexible coupling, available for in-service helicopters through AH ASB AS365-63.00.19 Revision 1 or ASB EC155-63A013 Revision 1, as applicable.

After this AD was issued, AH reviewed the applicability of mod 07 63C81 (5 spigots) and developed mod 07 63D01 (4 spigots) and issued ASB SA365-65.52 Revision 1 and ASB AS365-63.00.26, making these mods available for another subset of in service helicopter models initially excluded from the applicability of EASA AD 2014-0179R2.

For the reasons described above, this AD retains the requirements of EASA AD 2014-0179R2 and AD 2019-0046, which are superseded, and requires installation of a rear output stop with 4 or 5 spigots, depending on the front shaft configuration, on the TR shaft flexible coupling for helicopters that were not affected by EASA AD 2019-0046.



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

Required as indicated, unless accomplished previously:

**Inspection(s):**

- (1) For all helicopters: Within 110 flight hours (FH) after 01 August 2014 [the effective date of the original issue of EASA AD 2014-0179], inspect the Shur-Lok nut of the TR drive flange of the MGB in accordance with the instructions of paragraphs 3.A and 3.B of the applicable inspection ASB.

**Corrective Action(s):**

- (2) If, during the inspection as required by paragraph (1) of this AD, any discrepancy is detected, as specified in the applicable inspection ASB, before next flight, accomplish the applicable corrective action(s) in accordance with the instructions of the applicable inspection ASB.

**Modification:**

- (3) Within the compliance time as defined in Table 1 of this AD, modify the MGB TR drive flange in accordance with the instructions of the applicable modification ASB.

Table 1 – MGB TR Drive Modification

Group	Compliance Time
1	Within 600 FH or 12 months , whichever occurs first after 25 March 2019 [the effective date of EASA AD 2019-0046]
2	Within 600 FH or 12 months , whichever occurs first after the effective date of this AD

**Additional Action:**

- (4) For Group 3 helicopters: Within 600 FH or 12 months , whichever occurs first after the effective date of this AD, accomplish all the additional modification actions in accordance with the instructions of AH ASB SA365-65.52 at Revision 1.

**Credit:**

- (5) Modification of a Group 1 helicopter, before 25 March 2019 [the effective date of EASA AD 2019-0046] in accordance with the instructions of the original issue of AH ASB AS365-63.00.19 or ASB EC155-63A013, as applicable, is an acceptable method to comply with the requirements of paragraph (3) of this AD for that helicopter.

**Acceptable Method of Compliance:**

- (6) Modification of a helicopter as required by paragraph (3), (4) or (5) of this AD, as applicable, is an acceptable method to comply (or remain compliant) with the requirements of paragraph (1) of this AD, provided the helicopter remains in that configuration.

**Ref. Publications:**

AH ASB AS365-63.00.18 original issue dated 09 July 2014, or Revision 1 dated 07 March 2016, or Revision 2 dated 31 January 2019, or Revision 3 dated 22 July 2020.



AH ASB SA365-65.50 original issue dated 09 July 2014, or Revision 1 dated 07 March 2016, or Revision 2 dated 22 July 2020.

AH ASB EC155-63A012 Revision 1 dated 21 July 2014, or Revision 2 dated 07 March 2016.

AH ASB AS365-63.00.19 original issue dated 22 January 2018, or Revision 1 dated 31 January 2019.

AH ASB EC155-63A013 original issue dated 22 January 2018, or Revision 1 dated 31 January 2019.

AH ASB SA365-65.52 original issue dated 22 January 2018, or Revision 1 dated 22 July 2020.

AH ASB AS365-63.00.26 original issue dated 22 July 2020.

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

#### Remarks:

1. This Proposed AD will be closed for consultation on 01 October 2020.
2. Enquiries regarding this PAD should be referred to the EASA Programming and Continued Airworthiness Information Section, Certification Directorate. E-mail: [ADs@easa.europa.eu](mailto:ADs@easa.europa.eu).
3. Information about any failures, malfunctions, defects or other occurrences, which may be similar to the unsafe condition addressed by this PAD, and which may occur, or have occurred on a product, part or appliance not affected by this PAD, 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 PAD 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.
4. For any question concerning the technical content of the requirements in this PAD, please contact: Airbus Helicopters (Technical Support), Aéroport de Marseille Provence 13725 Marignane Cedex, France, Telephone +33 (0)4 42 85 97 97, Fax +33 (0)4 42 85 99 66, Web portal: <https://keycopter.airbushelicopters.com> > Technical Requests Management, E-mail: [support.technical-dyncomp.ah@airbus.com](mailto:support.technical-dyncomp.ah@airbus.com), and [TechnicalSupport.Helicopters@airbus.com](mailto:TechnicalSupport.Helicopters@airbus.com).

