Airworthiness Directive

AD No.: 2017-0109

Issued: 23 June 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):
AS 350 helicopters

Effective Date: 07 July 2017
TCDS Number(s): EASA.R.008
Foreign AD: Not applicable
Supersedure: None

ATA 24 – Electrical Power – Starter Generator and Brushes – Inspection / Replacement

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

Applicability:
AS 350 B, AS 350 B1, AS 350 BA and AS 350 BB helicopters, all serial numbers (s/n), except those equipped with a vehicle and engine management display (VEMD) system,
AS 350 B2 helicopters, all s/n, and
AS 350 B3 helicopters, all s/n, if equipped with ARRIEL 2B engine.

Reason:
During a scheduled inspection of the starter generator, abnormal wear of the brushes and the armature was detected. This wear included grooves on the external surface of the commutator. Four additional occurrences were reported concerning the same issue. The investigation results revealed that, under certain operating conditions, the starter generator may suffer abnormal wear. For helicopters without VEMD, any degraded performance or even failure of the starter generator would not be detected by the pilot. In this scenario, the battery will supply the bus bar without any notification to the pilot, thus leading to a progressive discharge of battery. In the frame of the same investigation, the case of certain non-certified brushes was considered and identified as a further risk factor.

This condition, if not detected and corrected, could lead to loss of electrical power, possibly resulting in reduced control of the helicopter. When operating in night Visual Flight Rules (VFR) conditions, loss of electrical power could prevent the flight crew from landing safely.

To address this potential unsafe condition, Airbus Helicopters (AH) issued Alert Service Bulletin (ASB) AS350-05.00.88 to provide instructions to improve the Rotorcraft Flight Manual (RFM) emergency procedures for two specific configurations and to identify criteria to inspect and replace the affected starter generators, SKURKA Part Number (P/N) 150SG22Q-4.

For the reasons described above, this AD requires repetitive inspections of the affected starter generators, a one-time inspection of installed brushes on certain helicopters, and, depending on findings, replacement. In addition, for two specific configurations, this AD requires introduction of improved RFM emergency procedures.

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

Required as indicated, unless accomplished previously:

Note 1: AH ASB AS350-05.00.88, original issue dated 21 June 2017 is hereafter referred as “the ASB” in this AD.

Note 2: SKURKA starter generators, P/N 150SG22Q-4, are hereafter referred to as “affected starter generator” in this AD.

RFM Amendment:

(1) For AS 350 B2 helicopters equipped with VEMD and AS 350 B3 helicopters equipped with ARRIEL 2B engine, within 30 days after the effective date of this AD, amend the RFM by inserting the emergency procedures provided in Appendix 4.C of the ASB, inform all flight crews and, thereafter, operate the helicopter accordingly.

Introducing a later approved RFM revision that contains the improved emergency procedures, as specified in the ASB, is an acceptable method to comply with the RFM amendment as required by this AD.

Inspection(s):

(2) For AS 350 B, B1, B2 (except those equipped with VEMD), BA and BB helicopters: Within the compliance time specified in Table 1 of this AD, as applicable, and, thereafter, at intervals not to exceed 330 flight hours (FH), inspect the affected starter generator in accordance with the instructions of paragraphs 3.B.2 and 3.B.3 of the ASB.

Table 1 – Starter Generator / Brushes Inspection (see Note 3 of this AD)

FH Accumulated	Compliance Time
Less than 300 FH	Before exceeding 350 FH
300 FH or more	Within 50 FH after the effective date of this AD

Note 3: Unless specified otherwise, the FH in Table 1 of this AD are those accumulated by the starter generator since new (first installation on a helicopter), or since last overhaul, as applicable.

(3) For AS 350 B2 helicopters equipped with VEMD and AS350 B3 helicopters equipped with ARRIEL 2B engine: Within the compliance time specified in Table 1 of this AD, as applicable, inspect the configuration of the starter generator brushes in accordance with instructions of paragraph 3.B.2 of the ASB.

Corrective Action(s):

(4) If, during any inspection as required by paragraph (2) of this AD, discrepancies are detected, before next flight, replace the affected starter generator with a serviceable part (see Note 4 of this AD) in accordance with instructions of the ASB.

Note 4: For the purpose of this AD, a serviceable part is an affected starter generator (see Note 2 of this AD) that is new, or has not exceeded 350 FH since new or since overhaul, as applicable.

(5) If, during the inspection as required by paragraph (3) of this AD, uncertified starter generator brushes are found installed, before next flight, replace the affected brushes with correct parts, as defined in, and in accordance with instructions of, the ASB.

Terminating Action:

(6) None.

Parts Installation:

(7) From the effective date, it is allowed to install an affected starter generator (see Note 2 of this AD) on a helicopter, provided that it is a serviceable part (see Note 4 of this AD) and that, following installation, the part is inspected as required by this AD.

Ref. Publications:

Airbus Helicopters ASB AS350-05.00.88, original issue, dated 21 June 2017.

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. 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. 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 (0)4 42 85 97 97, Fax +33 (0)4 42 85 99 66, E-mail: Web portal: https://keycopter.airbushelicopters.com > Technical Requests Management.