



## Airworthiness Directive

**AD No.:** 2015-0220

**Issued:** 09 November 2015

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 DEUTSCHLAND GmbH  
**Type/Model designation(s):** BO105

**Effective Date:** 23 November 2015

**TCDS Number(s):** EASA.R.011

**Foreign AD:** Not applicable

**Supersedure:** None

### ATA 90 – Electrical Power – Ground Reference Connection – Inspection / Modification

#### **Manufacturer(s):**

Eurocopter Deutschland GmbH (ECD), Eurocopter Hubschrauber GmbH, Messerschmitt-Bölkow-Blohm GmbH, Messerschmitt-Bölkow-Blohm Helicopter Canada Limited.

#### **Applicability:**

BO105 A, BO105 C, BO105 D and BO105 S helicopters (all variants, except CB-5 and CBS-5), all serial numbers (S/N), if equipped with voltage regulator part number (P/N) 51565-000, or P/N 51565-000R, or P/N 51509-002R, except helicopters modified in service in accordance with ECD Alert Service Bulletin (ASB) BO105-80-118, or Service Bulletin (SB) BO105-80-119, or SB BO105-90-104.

#### **Reason:**

An in-flight occurrence of overvoltage in the electrical power system and damage to electronic equipment was reported on a MBB-BK117 helicopter. Investigation identified the reason of the overvoltage in the interruption of the grounding connection to the generator voltage regulator, caused by a break in the wire terminal attached at terminal E of the starter-generator. Due to similarity of design, a similar occurrence could affect BO105 helicopters.



This condition, if not detected and corrected, could lead to functional loss of required electronic equipment, possibly resulting in loss of control of the helicopter.

To address this potential unsafe condition, ECD issued ASB BO105-90-103, currently at Revision 4 (hereafter referred to as 'the ASB' in this AD) to provide instructions for inspection and corrective action. To address a similar occurrence and a specific population of helicopters, ECD issued ASB BO105-80-118 to provide modifications instructions, and the German Luftfahrt-Bundesamt (LBA) issued Lufttüchtigkeitsanweisung (LTA/AD) 95-458 to require those actions. Consequently, helicopters accordingly modified, or modified per ECD SB BO105-80-119, are not affected by this AD.

For the reasons described above, this AD requires repetitive inspections and, on helicopters equipped for IFR operations, the modification of the ground reference line.

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

Required as indicated, unless accomplished previously:

- (1) For helicopters with S/N up to 0160 inclusive, accomplish the actions required by paragraphs (1.1), (1.2) and (1.3) of this AD.
  - (1.1) Within 50 flight hours (FH) after the effective date of this AD, visually inspect the wire terminals and measure the resistance between starter-generators and generator voltage regulators, in accordance with the instructions of section 2.A of the ASB.
  - (1.2) Within 6 months after the effective date of this AD, determine whether the ground reference line is connected to both starter-generators, in accordance with the instructions provided in section 2.B.1 of the ASB.
  - (1.3) If, as required by paragraph (1.2) of this AD, it is determined that the ground reference line is connected to the starter-generators, each time a starter-generator is removed and/or the wiring is disconnected from a starter-generator, visually inspect the wire terminals and measure the resistance between starter-generators and generator voltage regulators, in accordance with the instructions of section 2.A of the ASB.
- (2) For helicopters with S/N 0161 and up: Within 50 FH after the effective date of this AD, and, thereafter, each time a starter-generator is removed and/or the wiring is disconnected from a starter-generator, visually inspect the wire terminals and measure the resistance between starter-generators and generator voltage regulators, in accordance with the instructions of section 2.A of the ASB.
- (3) If, during any inspection as required by paragraph (1.1), (1.3) or (2) of this AD, as applicable, any damage or discrepancy is found, before next flight, accomplish the applicable corrective action(s) in accordance with the instructions of section 2.A of the ASB.
- (4) If, during any resistance measurement as required by paragraph (1.1), (1.3) or (2) of this AD, as applicable, a resistance higher than 0,5 ohms is found, inspect the grounding connection and, depending on findings, replace the wire terminal in accordance with section 2.A.1.4 of the ASB.



- (5) For helicopters equipped for IFR operations: Within 6 months after the effective date of this AD, modify the ground reference line in accordance with the instructions of sections 2.B.2 and subsequent of the ASB.
- (6) Inspections, corrective action(s) or modification of a helicopter, accomplished before the effective date of this AD in accordance with the instructions of ECD ASB BO105-90-103 at Revision 2 or Revision 3, are acceptable to comply with the corresponding requirements of paragraphs (1) through (5), as applicable, of this AD to that helicopter.
- (7) Modification of a helicopter as required by paragraph (5) of this AD constitutes terminating action for the repetitive inspections and measurements as required by paragraph (1.3) or (2) of this AD, as applicable, to that helicopter.
- (8) For a helicopter not equipped for IFR operations, modification of the ground reference line in accordance with the instructions of ECD SB BO105-90-104 constitutes terminating action for the repetitive inspections and measurements as required by paragraph (1.3) or (2) of this AD, as applicable, to that helicopter.

**Ref. Publications:**

ECD ASB BO105-90-103 Revision 2, dated 06 May 2009, or Revision 3, dated 08 March 2010, or Revision 4, dated 21 June 2010.

ECD SB BO105-90-104 original issue, dated 08 March 2010, or Revision 1, dated 21 June 2010.

The use of later approved revisions (that may be published by Airbus Helicopters Deutschland GmbH, the current design approval holder) 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. This AD was posted on 08 October 2015 as PAD 15-130 for consultation until 05 November 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: Airbus Helicopters Deutschland GmbH, Industriestrasse 4, 86607 Donauwörth, Federal Republic of Germany  
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