[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2015-4497; Product Identifier 2016-SW-011-AD]

RIN 2120-AA64

Airworthiness Directives; Airbus Helicopters Deutschland GmbH (Type Certificate Previously Held by Eurocopter Deutschland GmbH) Helicopters

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: The FAA proposes to adopt a new airworthiness directive (AD) for Airbus Helicopters Deutschland GmbH (Airbus Helicopters) Model BO-105A, BO-105C, BO-105S, MBB-BK 117 A-1, MBB-BK 117 A-3, MBB-BK 117 A-4, MBB-BK 117 B-1, MBB-BK 117 B-2, and MBB-BK 117 C-1 helicopters. This proposed AD would require inspecting the starter-generator electrical ground connection, retrofitting the starter-generator wire harness, and depending on model, revising the Rotorcraft Flight Manual (RFM) for your helicopter. This proposed AD was prompted by a report of a loss of electrical ground between the starter-generator and the generator voltage regulator (regulator). The proposed actions are intended to correct an unsafe condition on these products.

DATES: The FAA must receive comments on this proposed AD by [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments by any of the following methods:

- Federal eRulemaking Docket: Go to https://www.regulations.gov. Follow the online instructions for sending your comments electronically.

- Fax: 202-493-2251.

- Mail: Send comments to the U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590-0001.

- Hand Delivery: Deliver to the "Mail" address between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

Examining the AD Docket

You may examine the AD docket on the Internet at https://www.regulations.gov by searching for and locating Docket No. FAA-2015-4497; or in person at the Docket Operations Office between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the European Aviation Safety Agency (now European Union Aviation Safety Agency) (EASA) ADs, any comments received, and other information. The street address for the Docket Operations Office is listed above. Comments will be available in the AD docket shortly after receipt.

For Airbus Helicopters and Eurocopter service information identified in this proposed rule, contact Airbus Helicopters, 2701 N. Forum Drive, Grand Prairie, TX 75052; telephone 972-641-0000 or 800-232-0323; fax 972-641-3775; or at https://www.airbus.com/helicopters/services/technical-support.html. You may view the referenced service information at the FAA, Office of the Regional Counsel, Southwest Region, 10101 Hillwood Pkwy, Room 6N-321, Fort Worth, TX 76177.

FOR FURTHER INFORMATION CONTACT: George Schwab, Aviation Safety Engineer, Safety Management Section, Rotorcraft Standards Branch, FAA, 10101 Hillwood Pkwy, Fort Worth, TX 76177; telephone 817-222-5110; email george.schwab@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

The FAA invites you to participate in this rulemaking by submitting written comments, data, or views. The most helpful comments reference a specific portion of the proposal, explain the reason for any recommended change, and include supporting data. To ensure the docket does not contain duplicate comments, commenters should send only one copy of written comments, or if comments are filed electronically, commenters should submit only one time.

Except for Confidential Business Information (CBI) as described in the following paragraph, and other information as described in 14 CFR 11.35, the FAA will file in the docket all comments received, as well as a report summarizing each substantive public contact with FAA personnel concerning this proposed rulemaking. Before acting on this proposal, the FAA will consider all comments received on or before the closing date for comments. The FAA will consider comments filed after the comment period has closed if it is possible to do so without incurring expense or delay. The FAA may change this proposal in light of the comments received.

Confidential Business Information

Confidential Business Information (CBI) is commercial or financial information that is both customarily and actually treated as private by its owner. Under the Freedom

of Information Act (FOIA) (5 U.S.C. 552), CBI is exempt from public disclosure. If your comments responsive to this NPRM contain commercial or financial information that is customarily treated as private, that you actually treat as private, and that is relevant or responsive to this NPRM, it is important that you clearly designate the submitted comments as CBI. Please mark each page of your submission containing CBI as "PROPIN." The FAA will treat such marked submissions as confidential under the FOIA, and they will not be placed in the public docket of this NPRM. Submissions containing CBI should be sent to George Schwab, Aviation Safety Engineer, Safety Management Section, Rotorcraft Standards Branch, FAA, 10101 Hillwood Pkwy, Fort Worth, TX 76177; telephone 817-222-5110; email george.schwab@faa.gov. Any commentary that the FAA receives which is not specifically designated as CBI will be placed in the public docket for this rulemaking.

Discussion

EASA, which is the Technical Agent for the Member States of the European Union, has issued EASA AD No. 2015-0098, dated June 2, 2015, and EASA AD No. 2015-0220, dated November 9, 2015 (EASA AD 2015-0220), to correct an unsafe condition for Airbus Helicopters (previously Eurocopter Deutschland GmbH) Model MBB-BK117 A-1, MBB-BK117 A-3, MBB-BK117 A-4, MBB-BK117 B-1, MBB-BK117 B-2, and MBB-BK117 C-1 helicopters, and Airbus Helicopters Model BO105 A, BO105 C, BO105 D, and BO105 S helicopters with certain part-numbered voltage regulators, respectively. EASA advises of a report of damaged electronic equipment caused by an in-flight overvoltage in the electrical power system of a Model MBB-BK117 helicopter. Due to design similarity, a similar occurrence could affect Model

BO105 helicopters. According to EASA, the overvoltage was caused by an interruption of the electrical ground between the starter generator and the regulator due to a break in a wire terminal attached at Terminal E. EASA further advises that use of an outdated RFM revision for Model MBB-BK117 helicopters could lead to the use of incorrect emergency procedures in the event of an overvoltage.

For these reasons, the EASA ADs require recurring inspections of the wire terminals and measurements of the resistance between the starter generator and the regulator, as well as modifying the ground reference line and, for Model MBB-BK117 helicopters, revising the RFM.

FAA's Determination

These helicopters have been approved by EASA and are approved for operation in the United States. Pursuant to the FAA's bilateral agreement with the European Union, EASA has notified the FAA of the unsafe condition described in its ADs. The FAA is proposing this AD after evaluating all known relevant information and determining that an unsafe condition is likely to exist or develop on other products of the same type designs.

Related Service Information Under 1 CFR part 51

Eurocopter (now Airbus Helicopters) issued Alert Service Bulletin (ASB) No. ASB-MBB-BK117-90-118, Revision 2, dated May 4, 2009, for certain Model MBB-BK117 helicopters and ASB No. ASB BO105-90-103, Revision 4, dated June 21, 2010, for certain Model BO105 helicopters. This service information specifies a visual inspection for damage, corrosion, and cracks and measuring the resistance of the left-hand and right-hand electrical ground connections between each starter-generator and the

regulator. If there is damage or suspected damage, or if the resistance is out of tolerance, this service information specifies replacing the wire terminal. This service information also specifies performing the visual inspection and resistance measurement each time the starter generator is removed or the wiring is disconnected until a retrofit ground connection is installed.

Eurocopter also issued Eurocopter Flight Manual BK117 A-3 Temporary Revision 9, Eurocopter Flight Manual BK117 A-4 Temporary Revision 5, Eurocopter Flight Manual BK117 B-1 Temporary Revision 6, Eurocopter Flight Manual BK 117 B-2 Temporary Revision 1, and Eurocopter Flight Manual BK 117 C-1 Temporary Revision 2, all dated September 22, 2006, to provide updated procedures in the event of a generator failure.

This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

Other Related Service Information

Eurocopter (now Airbus Helicopters) issued Service Bulletin (SB) No. SB BO105-90-104, Revision 1, dated June 21, 2010, for certain Model BO105 helicopters. This service information specifies procedures for installing a retrofit ground connection of the starter-generator for certain Model BO105 helicopters.

Eurocopter issued ASB No. ASB-BO 105-80-118, Revision 1, dated November 29, 1995, and SB No. SB-BO105-80-119, dated November 7, 1994, both for certain Model BO105 helicopters. This service information specifies retrofitting certain

helicopters with voltage regulators that incorporate overvoltage protection by modifying the main relay box, modifying the overhead panel, and performing a functional test.

Eurocopter issued Information Notice No. 2370-I-24, Revision 0, dated November 15, 2011, for certain Model BO105 helicopters to provide notice that a modified starter-generator may only be installed on helicopters that have also been modified. This service information states that combining modified with non-modified can cause overvoltage in the electrical system during the first ground run following engine replacement and subsequent damage to electronic equipment. This service information also recommends retrofitting all helicopters approved to only fly under visual flight rules.

Proposed AD Requirements

This proposed AD would require, within 50 hours time-in-service (TIS), visually inspecting the electrical ground connection of each starter-generator and measuring the resistance between each starter-generator and its regulator. Depending on these outcomes, this proposed AD would require replacing the wire terminal. Within 150 hours TIS, this proposed AD would require installing a wire harness retrofit.

For Model MBB-BK 117 helicopters, this proposed AD would also require revising the RFM for your helicopter.

Differences between this Proposed AD and the EASA ADs

The EASA ADs require visually inspecting the wire terminals for damage, corrosion, and cracks. This proposed AD would require visually inspecting for a crack, a kink, fraying, looseness, missing material, and corrosion.

The EASA ADs require repeating the visual inspection and resistance measurement each time a starter-generator is removed or the wiring is disconnected from

a starter-generator. This proposed AD would not because such a compliance time would be difficult to enforce.

EASA AD 2015-0220 requires additional actions for Model BO-105 helicopters with a serial number up to 0160 than for helicopters with a serial number 0161 and larger. This proposed AD would require the same actions for all Model BO-105 helicopters regardless of serial number.

EASA AD 2015-0220 allows credit for complying with Eurocopter ASB No. ASB BO105-90-103, Revision 2 or Revision 3, whereas this proposed AD would not.

Costs of Compliance

The FAA estimates that this proposed AD affects 40 Model BO-105 helicopters and 44 Model MBB-BK 117 helicopters of U.S. Registry. The FAA estimates that operators may incur the following costs in order to comply with this proposed AD using an estimated labor cost of $85 per work-hour.

Performing a visual inspection and resistance measurement of the electrical ground connection would take about 2 work-hours for an estimated cost of $170 per helicopter and $14,280 for the U.S. fleet per inspection and measurement.

Performing the retrofit of the wiring harness would take about 10 work-hours. Required parts for a Model BO-105 helicopter would cost $2,509 for an estimated replacement cost of $3,359 per helicopter and $134,360 for the U.S. fleet. Required parts for a Model MBB-BK 117 helicopter would cost $1,730 for an estimated replacement cost of $2,580 per helicopter and $113,520 for the U.S. fleet. Revising the RFM for Model MBB-BK 117 helicopters would take about 0.5 work-hour, for an estimated cost of $43 per helicopter and $1,892 for the U.S. fleet.

Authority for This Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

The FAA determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed, I certify this proposed regulation:

1. Is not a "significant regulatory action" under Executive Order 12866,

2. Will not affect intrastate aviation in Alaska to the extent that it justifies making a regulatory distinction, and

3. Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

Airbus Helicopters Deutschland GmbH (Type Certificate Previously Held by Eurocopter Deutschland GmbH): Docket No. FAA-2015-4497; Product Identifier 2016-SW-011-AD.

(a) Applicability

This AD applies to the following Airbus Helicopters Deutschland GmbH (Type Certificate previously held by Eurocopter Deutschland GmbH) helicopters, certificated in any category:

(1) Model BO-105A, BO-105C, and BO-105S helicopters with a voltage regulator part number (P/N) 51565-000, 51565-000R, or 51509-002R installed; and

(2) Model MBB-BK 117 A-1, MBB-BK 117 A-3, MBB-BK 117 A-4, MBB-BK 117 B-1, MBB-BK 117 B-2, and MBB-BK 117 C-1 helicopters.

(b) Unsafe Condition

This AD defines the unsafe condition as loss of electrical ground between the starter-generator and the generator voltage regulator (regulator). This condition could result in an overvoltage of electrical power, damage to electronic equipment, and subsequent loss of control of the helicopter.

(c) Comments Due Date

The FAA must receive comments by [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE Federal Register].

(d) Compliance

You are responsible for performing each action required by this AD within the specified compliance time unless it has already been accomplished prior to that time.

(e) Required Actions

(1) Within 50 hours time-in-service (TIS):

(i) Visually inspect the wire terminal of wire P55F16N/P56F16N for Model BO-105A, BO-105C, and BO-105S helicopters and wire 1PA53B20/2PA53B20 for Model MBB-BK 117 A-1, MBB-BK 117 A-3, MBB-BK 117 A-4, MBB-BK 117 B-1, MBB-BK 117 B-2, and MBB-BK 117 C-1 helicopters on Terminal E of each starter-generator for a crack, a kink, fraying, looseness, missing material, and corrosion. If there is a crack, a kink, fraying, looseness, missing material, or any corrosion, before further flight, replace the wire terminal.

(ii) Measure the resistance between each starter-generator and its regulator in accordance with the Accomplishment Instructions, paragraph 2.A.2.3. of Eurocopter ASB No. ASB BO105-90-103, Revision 4, dated June 21, 2010, or paragraphs 2.A.2.3. and 2.A.2.5. of Eurocopter ASB No. ASB-MBB-BK117-90-118, Revision 2, dated May 4, 2009, as applicable to your model helicopter. If the resistance is more than 500 milliohms, before further flight, replace the wire terminal.

(2) Within 150 hours TIS:

(i) Install a wire harness from each generator voltage regulator as follows.

(A) For Model BO-105A, BO-105C, and BO-105S helicopters: wire harness P/N 105-90081.

(B) For Model MBB-BK 117 A-1, MBB-BK 117 A-3, MBB-BK 117 A-4, MBB-BK 117 B-1, and MBB-BK 117 B-2 helicopters: wire harness P/N 117-901941.

(C) For Model MBB-BK 117 C-1 helicopters: wire harness P/N 117-901961.

(ii) For Model MBB-BK 117 A-3, MBB-BK 117 A-4, MBB-BK 117 B-1, MBB-BK 117 B-2, and MBB-BK 117 C-1 helicopters, revise the Rotorcraft Flight Manual (RFM) for your helicopter to include the information in Section 3 Emergency and Malfunction Procedures of the following temporary revisions, as applicable to your helicopter: Eurocopter Flight Manual BK117 A-3 Temporary Revision 9, Eurocopter Flight Manual BK117 A-4 Temporary Revision 5, Eurocopter Flight Manual BK117 B-1 Temporary Revision 6, Eurocopter Flight Manual BK 117 B-2 Temporary Revision 1, or Eurocopter Flight Manual BK 117 C-1 Temporary Revision 2, all dated September 22, 2006. Using a later RFM revision with information identical to that contained in the

temporary revision specified for your helicopter is acceptable for compliance with the requirement of this paragraph.

(iii) For Model MBB-BK 117 A-1 helicopters, revise Section 3 Emergency and Malfunction Procedures of the RFM for your helicopter to include the information in Figures 1 through 3 to paragraph (e)(2)(iii) of this AD.

CAUTION LIGHT INDICATIONS

GEN I or **GEN II**

Conditions/Indications

Affected generator has failed or is disconnected from the power distribution system.

Procedure

1. BUS-TIE switch position – Check

If BUS–TIE in position OFF:

2. Electrical short circuit procedure – Perform (refer to para 3.6.1)

If voltage is out of normal range (> 30 V):

2. Generator overvoltage procedure – Perform (refer to para 3.6.1.a)

If BUS–TIE in position NORM:

2. Affected GENERATOR switch – RESET, then ON

GEN caution light remains on

3. Relevant GENERATOR sw – OFF
4. GEN TRIP switch (to trip generator) – Relevant position (I or II), then release
5. AMM SEL switch – Select normal generator
6. Ammeter and voltmeter – Monitor

NOTE One generator alone will provide sufficient power for normal services.

Figure 1 to Paragraph (e)(2)(iii)

CAUTION LIGHT INDICATIONS

GEN I and **GEN II**

Conditions/Indications

Both generators have failed or are disconnected from the power distribution system.

Procedure

1. GENERATOR 1 switch – RESET, then ON
2. Ammeter and voltmeter – Check
3. GENERATOR 1 switch – OFF
4. GENERATOR 2 switch – RESET, then ON
5. Ammeter and voltmeter – Check
6. GENERATOR 2 switch – OFF

If voltage is out of normal range (> 30 V):

7. Generator overvoltage procedure – Perform (refer to para 3.6.1.a)

If voltage is in normal range:

8. Both GENERATOR switches – RESET, then ON

If one GEN caution light remains on:

9. Respective GENERATOR switch – OFF
10. GEN TRIP switch – Respective position (I or II), then release

If both GEN caution light remain on:

11. GEN TRIP switch – Position I and II, then release
12. PWR SELECT switch – OFF

Battery supplies **both flight essential busses.**

NOTE If, in addition, both main busses are necessary, both BUS-TIE switches can be set to NORM and PWR SELECT switch to BAT. Then the battery supplies **both flight essential busses and also both main busses.** In this case battery will be discharged at a high rate.

13. AMM SEL switch – BAT

Figure 2 to Paragraph (e)(2)(iii)

14. Ammeter and voltmeter – Monitor

15. LAND AS SOON AS PRACTICABLE

Residual Battery Endurance					
Continuous load [A]	15	20	25	30	40
Time [min]	60	45	35	30	22
NOTE Calculations are based on an assumed minimum battery capacity of 15 Ah. Times include 10 minutes landing light operation and 10 minutes radio transmission.					
WARNING TOTAL ELECTRICAL FAILURE WILL LIMIT FUEL AVAILABLE TO QUANTITY CONTAINED IN SUPPLY TANKS AT TIME OF FAILURE AND THUS RESIDUAL FLIGHT TIME.					

Figure 2 to Paragraph (e)(2)(iii) (continued)

3.6. **SYSTEM EMERGENCY/MALFUNCTION CONDITIONS**

3.6.1. **Electrical Short Circuit - Generator System I Cutoff**

Conditions/Indications

– Short circuit on main bus No. I or on feeder line between generator No. I and main bus No. I or between main bus No. I and battery relay

– Power supply is interrupted to main bus No. I and battery

– Power supply is guaranteed to main bus No. II, flight essential bus No. II and to non–essential bus by generator No. II and to flight – essential bus No. I by battery.

– **GEN I** caution light on

– **BAT DISCH** warning light

– **BUS-TIE** switch OFF

– Failure of equipment powered by affected busses

Procedure

1. GENERATOR I switch – OFF
2. GEN TRIP switch – Position I, then release
3. AMM SEL switch – BAT
4. Electrical consumption on No. I FLT ESS BUS – Reduce
5. Ammeter and voltmeter – Monitor
6. LAND AS SOON AS PRACTICABLE

NOTE One generator alone will provide sufficient power for normal services.

3.6.1.a **Generator overvoltage**

Conditions/Indications

– Voltmeter indication > 30 V

– **GEN I** or **GEN II** caution light on

Procedure

1. Generator with high voltage – OFF (not to be used again)
2. Other generator – RESET, then ON
3. Ammeter and voltmeter – Monitor
4. GEN TRIP switch – Position (I or II), then release
5. AMM SEL switch – Select normal generator
6. LAND AS SOON AS PRACTICABLE

NOTE One generator alone will provide sufficient power for normal services

Figure 3 to Paragraph (e)(2)(iii)

(f) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Rotorcraft Standards Branch, FAA, may approve AMOCs for this AD. Send your proposal to: George Schwab, Aviation Safety Engineer, Safety Management Section, Rotorcraft Standards Branch, FAA, 10101 Hillwood Pkwy, Fort Worth, TX 76177; telephone 817-222-5110; email 9-ASW-FTW-AMOC-Requests@faa.gov.

(2) For operations conducted under a 14 CFR part 119 operating certificate or under 14 CFR part 91, subpart K, the FAA suggests that you notify your principal inspector, or lacking a principal inspector, the manager of the local flight standards district office or certificate holding district office before operating any aircraft complying with this AD through an AMOC.

(g) Additional Information

(1) The following documents, which are not incorporated by reference, contain additional information about the subject of this AD: Eurocopter ASB No. ASB-BO 105-80-118, Revision 1, dated November 29, 1995; Eurocopter Information Notice No. 2370-I-24, Revision 0, dated November 15, 2011; Eurocopter SB No. SB-BO105-80-119, dated November 7, 1994; and Eurocopter SB No. SB BO105-90-104, Revision 1, dated June 21, 2010. For Airbus Helicopters and Eurocopter service information identified in this AD, contact Airbus Helicopters, 2701 N. Forum Drive, Grand Prairie, TX 75052; telephone 972-641-0000 or 800-232-0323; fax 972-641-3775; or https://www.airbus.com/helicopters/services/technical-support.html. You may view a copy of this information at the FAA, Office of the Regional Counsel, Southwest Region, 10101 Hillwood Pkwy, Room 6N-321, Fort Worth, TX 76177.

(2) The subject of this AD is addressed in European Aviation Safety Agency (now European Union Aviation Safety Agency) (EASA) AD No. 2015-0098, dated June 2, 2015, and EASA AD No. 2015-0220, dated November 9, 2015. You may view the EASA ADs on the Internet at https://www.regulations.gov in Docket No. FAA-2015-4497.

(h) Subject

Joint Aircraft Service Component (JASC) Code: 2497, Electrical Power System Wiring.

Issued on July 10, 2020.

Lance T. Gant, Director,
Compliance & Airworthiness Division,
Aircraft Certification Service.
[FR Doc. 2020-15313 Filed: 7/15/2020 8:45 am; Publication Date: 7/16/2020]