**[4910-13-P]**

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2020-0410; Product Identifier 2019-SW-030-AD]**

**RIN 2120-AA64**

**Airworthiness Directives; Airbus 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 certain Airbus Helicopters Model AS-365N2, AS 365N3, EC 155B, EC155B1, and SA-365N1 helicopters. This proposed AD would require modifying the main gearbox (MGB) tail rotor (T/R) drive flange installation. This proposed AD was prompted by several reported occurrences of loss of tightening torque of the Shur-Lok nut, which serves as a retainer of the T/R drive flange. The actions of this proposed AD are intended to address 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-2020-0410; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the European Union Aviation Safety Agency (previously European Aviation Safety Agency) (EASA) AD, any comments received, and other information. The street address for Docket Operations is listed above. Comments will be available in the AD docket shortly after receipt.

For 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:** Matt Fuller, Senior Aviation Safety Engineer, Safety Management Section, Rotorcraft Standards Branch, FAA, 10101 Hillwood Pkwy., Fort Worth, TX 76177; telephone 817-222-5110; email matthew.fuller@faa.gov.

## SUPPLEMENTARY INFORMATION:

### Comments Invited

The FAA invites you to participate in this rulemaking by submitting written comments, data, or views. The FAA also invites comments relating to the economic, environmental, energy, or federalism impacts that might result from adopting the proposals in this document. 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.

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.

### Discussion

EASA, which is the Technical Agent for the Member States of the European Union, has issued EASA AD No. 2019-0046, dated March 11, 2019 (EASA AD 2019-0046), to correct an unsafe condition for Airbus Helicopters (formerly Eurocopter, Eurocopter France, Aerospatiale) Model SA 365 N1, AS 365 N2, AS 365 N3, EC 155 B,

and EC 155 B1 helicopters, all serial numbers, with modification 0763B64 installed, except those with 0763C81 installed.

EASA advises of reported occurrences of loss of tightening torque of the Shur-Lok nut, which serves as a retainer of the T/R drive flange of the MGB. EASA also advises of subsequent investigation that determined that these occurrences 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. EASA states this condition could lead to the loosening and disengagement of the Shur-Lok nut threads, possibly resulting in reduction of T/R drive control, rear transmission vibrations, and subsequent loss of control of the helicopter.

To address this unsafe condition, EASA issued a series of ADs, initially with EASA AD No. 2014-0165, dated July 14, 2014 (EASA AD 2014-0165), which required a one-time inspection of the radial play inside the T/R drive flange and the condition of the Shur-Lok nut. Shortly after, EASA issued EASA AD No. 2014-0179, dated July 25, 2014 (EASA AD 2014-0179) to supersede EASA AD 2014-0165. EASA AD 2014-0179 retained the requirements of EASA AD 2014-0165 and expanded the applicability of helicopters affected by the unsafe condition. EASA later revised EASA AD 2014-0179 to Revision 1, dated July 29, 2014, to revise the applicability and specify updated related service information, and again to Revision 2, dated April 11, 2016 (EASA AD 2014-0179R2), to reduce the applicability and specify additional updated related service information. Since EASA issued EASA AD 2014-0179R2, another occurrence was reported that involved an on-ground loss of T/R synchronization, resulting from disengagement of the Shur-Lok nut. This additional occurrence prompted EASA to issue

EASA AD 2019-0046 to require installation of modification 07 63C81, which consists of installing a rear output stop with 5 spigots on the T/R shaft flexible coupling. According to Airbus Helicopters, the 5 spigots will come into contact with the row of 5 bolt heads of the front T/R shaft if the T/R drive flange moves backwards. This contact limits backward displacement of the T/R drive flange and subsequently prevents T/R drive flange disengagement.

**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 AD. 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**

The FAA reviewed Airbus Helicopters Alert Service Bulletin (ASB) No. AS365-63.00.19, for Model AS365N, N1, N2, and N3 helicopters and non FAA-type certificated military Model AS365F, Fi, Fs, K, and K2 helicopters; and Airbus Helicopters ASB No. EC155-63A013 for Model EC155B and B1 helicopters, both Revision 1 and dated January 31, 2019. This service information specifies procedures for modification 0763C81 to install a rear (aft) output stop between the T/R drive flange and T/R drive shaft.

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.

**Proposed AD Requirements**

This proposed AD would require compliance with certain procedures specified in the manufacturer's service information. This proposed AD would require, within 600 hours time-in-service, modifying the MGB T/R drive flange installation by removing the sliding flange from the flexible coupling and installing the sliding flange with aft output stop part number 365A32-7836-20 added, as per helicopter model and configuration. This proposed AD would also require removing from service certain washers, degreasing the bolt threads, applying a sealant between the interlay mating surfaces, and applying torque to the nuts.

**Costs of Compliance**

The FAA estimates that this proposed AD affects 46 helicopters of U.S. Registry. The FAA estimates that operators may incur the following costs in order to comply with this proposed AD. Labor costs are estimated at $85 per work-hour.

Modifying the MGB T/R drive flange installation would take about 14 work-hours and parts would cost about $2,704 for an estimated cost of $3,894 per helicopter and $179,124 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, 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** Docket No. FAA-2020-0410; Product Identifier 2019-SW-030-AD.

**(a) Applicability**

This AD applies to Airbus Helicopters Model AS-365N2, AS 365N3, EC 155B, EC155B1, and SA-365N1 helicopters, certificated in any category, with modification 0763B64 installed, except those with modification 0763C81.

**(b) Unsafe Condition**

This AD defines the unsafe condition as loss of tightening torque of the Shur-Lok nut, which serves as a retainer of the tail rotor (T/R) drive flange of the main gearbox. This condition could result in loss of the Shur-Lok nut, possibly resulting in disengagement of the T/R drive flange, reduction of T/R drive control, rear transmission vibrations, 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**

Within 600 hours time-in-service:

(1) For Model AS-365N2, AS 365N3, and SA-365N1 helicopters:

(i) Without removing the tail drive shaft flange (a), remove the sliding flange (b) from the flexible coupling (c) as shown in Detail "B" of Figure 1, PRE MOD, of Airbus Helicopters Alert Service Bulletin (ASB) No. AS365-63.00.19, Revision 1, dated January 31, 2019 (ASB AS365-63.00.19); replace the 3 bolts (d) and remove from service the 3 washers (e).

(ii) Install the sliding flange (b) with aft output stop (1) part number (P/N) 365A32-7836-20 as shown in Detail "B" of Figure 1, POST MOD, of ASB AS365-63.00.19 and by following the Accomplishment Instructions, paragraph 3.B.2.b, of ASB AS365-63.00.19.

(2) For Model EC 155B and EC155B1 helicopters:

(i) Without removing the Shur-Lok nut (a), remove the sliding flange (b) from the flexible coupling (c) as shown in Detail "B" of Figure 1, PRE MOD, of Airbus Helicopters ASB No. EC155-63A013, Revision 1, dated January 31, 2019 (ASB EC155-63A013); replace the 3 bolts (d) and remove from service the 3 washers (e).

(ii) Install the sliding flange (b) with aft output stop (1) P/N 365A32-7836-20 as shown in Detail "B" of Figure 1, POST MOD, of ASB EC155-63A013 and by following the Accomplishment Instructions, paragraph 3.B.2.b, of ASB EC155-63A013.

Note 1 to paragraph (e)(2)(ii) of this AD: ASB EC155-63A013 refers to the "aft output stop" as "rear output stop."

**(f) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, Safety Management Section, Rotorcraft Standards Branch, FAA, may approve AMOCs for this AD. Send your proposal to: Matt Fuller, Senior 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**

The subject of this AD is addressed in European Union Aviation Safety Agency (previously European Aviation Safety Agency) (EASA) AD No. 2019-0046, dated March 11, 2019. You may view the EASA AD on the Internet at https://www.regulations.gov in the AD Docket.

**(h) Subject**

Joint Aircraft Service Component (JASC) Code: 6500, Tail Rotor Drive System.

Issued on April 17, 2020.

Lance T. Gant, Director,
Compliance & Airworthiness Division,
Aircraft Certification Service.

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