



Airworthiness Directive

AD No.: 2021-0121

Issued: 04 May 2021

Note: This Airworthiness Directive (AD) 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.

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 (EU) 2018/1139, Article 71 exemption].

Design Approval Holder's Name:

LEONARDO S.p.A.

Type/Model designation(s):

AB139 and AW139 helicopters

Effective Date: 18 May 2021

TCDS Number(s): EASA.R.006

Foreign AD: Not applicable

Supersedure: This AD supersedes EASA AD 2020-0011R1 dated 20 November 2020.

ATA 63 – Main Rotor Drive – Main Gearbox Bearing Lock Nut – Replacement

Manufacturer(s):

Leonardo S.p.A. Helicopters, formerly Finmeccanica S.p.A, AgustaWestland S.p.A., Agusta S.p.A.; and AgustaWestland Philadelphia Corporation, formerly Agusta Aerospace Corporation

Applicability:

AB139 and AW139 helicopters, all serial numbers (s/n).

Definitions:

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

Affected MGB: Main gearboxes (MGB), having a Part Number (P/N) as specified in Table 1 of this AD, except those having MGB bearing lock nuts P/N 3G6320A09152 installed.

Serviceable MGB: Any MGB that is not an affected MGB.

The ASB: Leonardo Alert Service Bulletin (ASB) 139-609.

Groups: Group 1 helicopters are those that have an affected MGB in pre-ASB 139-567 configuration installed, except Group 3 helicopters.

Group 2 helicopters are those have an affected MGB in post-ASB 139-567 configuration installed, except Group 3 helicopters.



Group 3 and Group 4 helicopters are those that have an affected MGB installed, having a P/N and s/n as specified in Appendix 1 of this AD.

Group 5 helicopters are those that do not have an affected MGB installed. A helicopter on which the MGB Log Card records the bearing lock-nut P/N 3G6320A09152 is a Group 5 helicopter.

Reason:

An occurrence was reported where, during non-destructive testing accomplished as a part of overhaul activity, a cracked MGB spherical bearing lock nut P/N 3G6320A09151 was found. The bearing lock nut, the purpose of which is to keep planetary gears in position, was installed on an MGB removed from service for its second scheduled overhaul.

This condition, if not corrected, could lead to failure of the MGB planetary gears, possibly resulting in loss of control of the helicopter.

To address this potential unsafe condition, EASA initially published AD 2019-0036 to require the removal of the MGB and replacement of MGB bearing lock nut P/N 3G6320A09151.

After that AD was issued and prompted by an additional occurrence of a cracked MGB bearing lock-nut P/N 3G6320A09151, EASA published AD 2019-0174, retaining the requirements of EASA AD 2019-0036, which was superseded, but with reduced compliance times.

After that AD was issued, Leonardo published the ASB to provide instructions for installation of an improved MGB lock nut, having P/N 3G6320A09152, which differs from P/N 3G6320A09151 by having a redesigned flange fillet reducing the stresses acting at the nut locations where cracks were found in service. The new P/N has a Retirement Life published in the applicable Maintenance Manual, 39-A-AMPI-00-P Chapter 4 (Airworthiness Limitation Section) Issue 12. Consequently, EASA issued AD 2020-0011 (later revised), partially retaining the requirements of EASA AD 2019-0174, which was superseded, to amend the compliance times and to require replacement of MGB bearing lock nuts P/N 3G6320A09151 with new P/N 3G6320A09152 lock nuts.

Since that AD was issued, it was identified that a limited number of MGBs having P/N 3G6320A00136 are also affected parts and Leonardo amended the ASB accordingly.

For the reason described above, this AD retains the requirements of EASA AD 2020-0011R1, which is superseded, and requires replacement of MGB bearing lock nuts for MGB having P/N 3G6320A00136 and s/n as listed in Appendix 1 of this AD.

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

Required as indicated, unless accomplished previously:

Table 1 – Affected MGB P/N

3G6320A00131	3G6320A00134	3G6320A22031
3G6320A00132	3G6320A00135	4G6320A00132
3G6320A00133	3G6320A00136	4G6320A00133



Replacement:

- (1) Within the compliance times specified in Table 2 of this AD, as applicable to helicopter Group, remove the affected MGB from the helicopter and replace each bearing lock nut P/N 3G6320A09151 with a bearing lock nut P/N 3G6320A09152 in accordance with the instructions of the ASB.

Table 2 – MGB Bearing Lock-nut Replacement (see Note 1 of this AD)

Group	Landings	Compliance Times
1	Less than 26 000	During the next MGB overhaul after 12 February 2020 [the effective date of EASA AD 2020-0011 at original issue], or within 2 000 landings after accumulating 26 000 landings, whichever occurs first
	26 000 or more	Within 2 000 landings, or during the next MGB overhaul, whichever occurs first after 12 February 2020 [the effective date of EASA AD 2020-0011 at original issue]
2	Not applicable	Within 28 000 landings or during the next MGB overhaul, whichever occurs first after the date of embodiment of ASB 139-567
3	Not applicable	Within 28 000 landings or during the next MGB overhaul, whichever occurs first after 14 May 2018
4	Not applicable	Within 28 000 landings since MGB first installation on a helicopter or during the next MGB overhaul after the effective date of this AD, whichever occurs first

Note 1: Unless specified otherwise, the landings indicated in Table 2 of this AD are those accumulated by an affected MGB, on 12 February 2020 [the effective date of EASA AD 2020-011 at original issue], since its first installation on a helicopter.

- (2) If the number of landings accumulated by an affected MGB is unknown, the number of flight hours accumulated by that MGB since its first installation on a helicopter must be multiplied by six (6) to determine the applicable compliance times in Table 1 of this AD for the actions required by paragraph (1) of this AD.

Lock Nuts Installation:

- (3) From the effective date of this AD, do not mix MGB bearing lock nuts having P/N 3G6320A09151 with lock nuts having P/N 3G6320A09152 on the same MGB assembly.

MGB Installation:

- (4) Installation on a helicopter of a serviceable MGB, as defined in this AD, is an acceptable method to comply with the requirements of paragraph (1) of this AD for that helicopter.
- (5) Do not install an affected MGB on any helicopter, as required by paragraph (5.1) or (5.2) of this AD, as applicable.



(5.1) For Group 1, Group 2, Group 3 and Group 4 helicopters: After modification of the helicopter as required by paragraph (1) of this AD.

(5.2) For Group 5 helicopters: From the effective date of this AD.

Ref. Publications:

Leonardo S.p.A. Helicopters ASB 139-609 original issue dated 18 December 2019, or Revision A dated 13 April 2021.

Leonardo S.p.A. Helicopters ASB 139-567 original issue dated 14 February 2019, or Revision A dated 05 July 2019, or Revision B dated 18 October 2019.

The use of later approved revisions of the above-mentioned 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. 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. Information about any failures, malfunctions, defects or other occurrences, which may be similar to the unsafe condition addressed by this AD, and which may occur, or have occurred on a product, part or appliance not affected by this AD, 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 AD 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.
5. For any question concerning the technical content of the requirements in this AD, please contact: Leonardo S.p.A. Helicopters. E-mail: engineering.support.lhd@leonardocompany.com.



Appendix 1

MGB P/N and s/n installed on Group 3 helicopters

P/N	S/N					
3G6320A00133	M23					
3G6320A00134	M6	N76	N92	P124	P129	P131
	P162	P184	Q230	Q243	Q249	R272
	V163	V21	V211	V241	V272	V281
	V384	V386	V39	V622	V96	

MGB P/N and s/n installed on Group 4 helicopters

P/N	S/N				
3G6320A00136	AW1	AW2	AW3	AW5	AW10

