



Notification of a Proposal to issue an Airworthiness Directive

PAD No.: 19-223

Issued: 20 December 2019

Note: This Proposed Airworthiness Directive (PAD) 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.

In accordance with the EASA Continuing Airworthiness Procedures, the Executive Director is proposing the issuance of an EASA Airworthiness Directive (AD), applicable to the aeronautical product(s) identified below.

All interested persons may send their comments, referencing the PAD Number above, to the e-mail address specified in the 'Remarks' section, prior to the consultation date indicated..

Design Approval Holder's Name: LEONARDO S.p.A.
Type/Model designation(s): AB139 and AW139 helicopters

Effective Date: [TBD - standard: 14 days after the issue date]

TCDS Number(s): EASA.R.006

Foreign AD: Not applicable

Supersedure: This AD supersedes EASA AD 2019-0174 dated 18 July 2019.

ATA 63 – Main Gear Box – 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 an MGB bearing lock nut 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 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 4 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 4 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 accomplishment of 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 2019-0174, which was superseded, but with reduced compliance times.

Since that AD was issued, Leonardo published the SB to provide instructions for installation of an improved MGB lock nut, having P/N 3G6320A09152, which differs from P/N 3G6320A9151 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.

For the reason described above, this AD partially retains the requirements of EASA AD 2019-0174, which is superseded, amends the compliance time and requires replacement of MGB bearing lock nuts P/N 3G6320A9151 with new P/N 3G63209A152 lock nuts.

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

Required as indicated, unless accomplished previously:

Table 1 – Affected MGB P/N

3G6320A00131	3G6320A00133	3G6320A00135	4G6320A00132
3G6320A00132	3G6320A00134	3G6320A22031	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 SB.



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

Group	Landings	Compliance Times
1	Less than 26 000	Within 2 000 landings after accumulating 26 000 landings, or during the next MGB overhaul, whichever occurs first
	26 000 or more	Within 2 000 landings, or during the next MGB overhaul, whichever occurs first after the effective date of this AD
2	Not applicable	Within 28 000 landings after embodiment of ASB 139-567 or during the next MGB overhaul, whichever occurs first
3	Not applicable	Within 28 000 landings after 14 May 2018 or during the next MGB overhaul, 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 the effective date of this AD, 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 and Group 3 helicopters: After modification of the helicopter as required by paragraph (1) of this AD.
- (5.2) For Group 4 helicopters: From the effective date of this AD.

Ref. Publications:

Leonardo S.p.A. Helicopters ASB 139-609 original issue dated 18 December 2019.

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. This Proposed AD will be closed for consultation on 17 January 2020.
2. Enquiries regarding this PAD should be referred to the EASA Programming and Continued Airworthiness Information Section, Certification Directorate. E-mail: ADs@easa.europa.eu.
3. Information about any failures, malfunctions, defects or other occurrences, which may be similar to the unsafe condition addressed by this PAD, and which may occur, or have occurred on a product, part or appliance not affected by this PAD, can be reported to the [EU aviation safety reporting system](#).
4. For any question concerning the technical content of the requirements in this PAD, please contact: Leonardo S.p.A. Helicopters. E-mail: cse.aw139.AW@leonardocompany.com.



Appendix 1

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

P/N	S/N					
3G6320A00133	M23					
	M24					
3G6320A00134	M6	N76	N92	N93	P124	P129
	P131	P162	P184	Q230	Q243	Q249
	R272	V163	V21	V211	V241	V272
	V281	V384	V386	V39	V622	V96

