



## Airworthiness Directive

**AD No.:** 2017-0104

**Issued:** 13 June 2017

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

### Type/Model designation(s):

SA 365, AS 365 and EC 155 helicopters

**Effective Date:** 16 June 2017

**TCDS Number(s):** EASA.R.105

**Foreign AD:** Not applicable

**Supersedure:** None

### ATA 05 – Time Limits / Maintenance Checks – Main Gearbox Magnetic Plugs – Inspection ATA 63 – Main Rotor Drive – Planet Gear Assemblies – Replacement

#### Manufacturer(s):

Airbus Helicopters (formerly Eurocopter, Eurocopter France, Aerospatiale)

#### Applicability:

SA 365 N, SA 365 N1, AS 365 N2, AS 365 N3, EC 155 B and EC 155 B1 helicopters, all manufacturer serial numbers.

#### Reason:

Prompted by an EC225 helicopter accident, the investigation revealed that this involved failure of a second stage planet gear of the Main Gearbox (MGB). It was determined that one of the two types of planet gear used in the epicyclic module of the MGB is subject to higher outer race contact pressures and therefore has a greater susceptibility to spalling and cracking. As one of a number of measures developed to ensure safe operation of the EC225/AS332 L2 fleet, this type of planet gear has been permanently removed from service.

Airbus Helicopters (AH) has reviewed its entire range of helicopters in regard to this particular issue. As a result, it has been decided to implement precautionary measures on the SA365 / AS365 / EC155 helicopters to improve the reliability of the installed MGB. AH has issued Alert Service Bulletin (ASB) AS365-05.00.78 and ASB EC155-05A034 (hereafter referred to as "the applicable ASB" in this AD) to provide the necessary instructions.



For the reasons described above, this AD requires repetitive inspections of the MGB magnetic plugs, the identification of the planet gear assemblies installed in the MGB and, depending on finding, the replacement of the planet gear assemblies.

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

Required as indicated, unless accomplished previously:

#### Repetitive Inspections of MGB magnetic plugs:

- (1) For all helicopters: Within 10 flight hours (FH) after the effective date of this AD, and, thereafter, during each “after last flight” of the day (ALF) inspection, or at intervals not to exceed 10 FH, whichever occurs first, inspect the MGB magnetic plugs in accordance with the instructions of the applicable ASB.

#### Corrective Action(s):

- (2) If, during any inspection as required by paragraph (1) of this AD, particles are detected, exceeding the criteria as defined in the applicable ASB, before next flight, accomplish the applicable corrective action(s) in accordance with the instructions of the applicable ASB.

#### Replacement of planet gear assemblies:

Note 1: For the purpose of this AD, an affected MGB is a MGB equipped with a planet gear assembly identified as type X or Y in the applicable ASB.

- (3) For helicopters equipped with an affected MGB: Depending on the helicopter model, the type of planet gear assembly installed and its accumulated FH, within the compliance times specified in Table 1 of this AD but not later than 30 June 2019, replace the affected MGB with a serviceable MGB as defined in accordance with the instructions of the applicable ASB.

Table 1 – Compliance Time

| Helicopter Model(s)          | Type Planet Gear assembly installed  | FH accumulated (see Note 2 of this AD) | Compliance time   |
|------------------------------|--|--|---|
| All                          | At least one planet gear assembly of type X is installed                           | Any                                    | 50 FH after the effective date of this AD   |
| EC155 B and B1               | at least one planet gear assembly of type Y is installed – but no type X installed | Any                                    | 50 FH after the effective date of this AD   |
| SA365 and AS365 (all models) |  | Less than 1 250                        | Before exceeding 1 300 FH by the planet gear assembly, or within 300 FH after the effective date of this AD, whichever occurs first |
|                              |  | 1 250 or more                          | Within 50 FH after the effective date of this AD  |

Note 2: The FH specified in Table 1 of this AD are those accumulated by the affected planet gear assembly with the highest number of FH accumulated since first installation in a MGB.



**Terminating Action:**

(4) None

**Parts Installation:**

- (5) For all helicopters: From the effective date of this AD, do not install on any helicopter a MGB equipped with a planet gear assembly of type X.
- (6) For EC155 B and B1 helicopters: From the effective date of this AD, do not install on any helicopter a MGB equipped with a planet gear assembly of type Y.
- (7) For SA365 and AS365 helicopters: Until 30 June 2019, it is allowed to install a MGB equipped with a planet gear assembly type Y, as required by paragraph (7.1) or (7.2) of this AD, as applicable.
- (7.1) The planet gear assembly was installed on the MGB prior to the effective date of this AD and has not exceeded 1 300 FH since first installation. The MGB must be replaced before exceeding 1 300 FH accumulated by the type Y planet gear assembly with the highest number of FH accumulated since first installation in the MGB, or within 300 FH after that MGB installation, whichever occurs first.
- (7.2) The planet gear assembly was installed new on the MGB after the effective date of this AD and has accumulated, at the time of installation on the helicopter, less than 300 FH since installation on the MGB. The MGB must be replaced before exceeding 300 FH accumulated by the type Y planet gear assembly with the highest number of FH accumulated since first installation in the MGB.
- (8) For SA365 and AS365 helicopters: From 01 July 2019, do not install on any helicopter a MGB equipped with a planet gear assembly of type Y.

**Ref. Publications:**

AH ASB AS365-05.00.78 original issue dated 13 June 2017.

AH ASB EC155-05A034 original issue dated 13 June 2017.

The use of later approved revisions 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. 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](mailto:ADs@easa.europa.eu).



4. For any question concerning the technical content of the requirements in this AD, please contact: Airbus Helicopters (Technical Support), Aéroport de Marseille Provence 13725 Marignane Cedex, France, Telephone +33 (0)4 42 85 97 97, Fax +33 (0)4 42 85 99 66, E-mail: Web portal: <https://keycopter.airbushelicopters.com> > Technical Requests Management.

