European Union Aviation Safety Agency

Airworthiness Directive

AD No.: 2020-0027

Issued: 14 February 2020

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:
AIRBUS

Type/Model designation(s):
A350 aeroplanes

Effective Date: 28 February 2020

TCDS Number(s): EASA.A.151

Foreign AD: Not applicable

Supersedure: This AD supersedes EASA AD 2018-0141 dated 03 July 2018.

ATA 27 – Flight Controls – Aileron, Elevator and Rudder Electro-Hydrostatic Actuators – Inspection / Replacement

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Manufacturer(s):
Airbus

Applicability:
Airbus A350-941 and A350-1041 aeroplanes, all manufacturer serial numbers.

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

The Airbus SB: Airbus Service Bulletin (SB) A350-27-P020.

The AOT: Airbus Alert Operators Transmission (AOT) A27P009-16.

The applicable SB: MOOG Aircraft Group SB CA67001-27-05 (aileron), SB CA67006-27-04 (elevator) and SB CA67008-27-04 (rudder), as applicable.

Affected EHA: Electro-Hydrostatic Actuators (EHA) installed on inboard ailerons, elevators and rudder, as listed by serial number in the applicable SB, except those that are paint marked, as defined in the applicable SB.

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

Groups: Group 1 aeroplanes are those that have an affected EHA installed. Group 2 aeroplanes are those that do not have an affected EHA installed.

Reason:

Occurrences were reported of EHA units that were returned to the manufacturer (MOOG Aircraft Group) with degraded insulation resistance in the direct drive solenoid valve (DDSOV). Investigation results revealed that moisture ingress, due to incorrect sealing application, had caused this degradation.

This condition, if not detected and corrected, could lead to the DDSOV being unable to command or maintain the EHA in active mode, possibly resulting in reduced control of the aeroplane.

Due to similarity of design, all five EHA positions could be affected, inboard aileron EHAs (Functional Item Number (FIN) 4CR1 and FIN 4CR2), elevator EHAs (FIN 2CT1 and FIN 2CT2) and the rudder EHA (FIN 3CY). Prompted by these findings, MOOG Aircraft Group improved the manufacturing process to ensure adequate sealing capability of the DDSOV and issued the applicable SB, providing a screening procedure. To address this potential unsafe condition, Airbus issued the AOT and the Airbus SB, providing instructions to restore the EHA to nominal performance. Consequently, EASA issued AD 2018-0141 requiring a one-time insulation check of each affected EHA, and, depending on findings, accomplishment of applicable corrective action(s).

Since that AD was issued, it has been identified that EHA P/N can be modified and re-identified as specified in EASA AD 2019-0301.

For the reason stated above, this AD retains the requirements of EASA AD 2018-0141, which is superseded, and amends the definition of affected EHA.

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

Required as indicated, unless accomplished previously:

Initial Insulation Check:

(1) For Group 1 aeroplanes: Within 3 months after the aeroplane has reached 700 flight hours since aeroplane first flight, or within 30 days after the effective date of this AD, whichever occurs later, accomplish an insulation check of the DDSOV of each affected EHA in accordance with the instructions of the Airbus SB.

Corrective Action(s):

(2) If, during the insulation check as required by paragraph (1) of this AD, the measured insulation resistance is 15 MOhms or less, before next flight, replace the affected EHA with a serviceable EHA in accordance with the instructions of the Airbus SB.

(3) If, during the insulation check as required by paragraph (1) of this AD, the measured resistance is more than 15 MOhms, within 3 months after the aeroplane has reached 36 months since aeroplane first flight, accomplish another insulation check of the DDSOV of each affected EHA in accordance with the instructions of the Airbus SB.

(4) Depending on measured resistance result of the insulation check as required by paragraph (1) or (3) of this AD, as applicable, within the applicable compliance time defined in Table 1 of this AD, accomplish the applicable corrective action(s), as defined in Table 1 of this AD in accordance with the Airbus SB, or the applicable SB.

Table 1 - Insulation Check Results and Corrective action(s)

Measured Resistance (in MOhms)	**Compliance Time** (since last insulation check)	**Actions**
15 or less	Before next flight	Replace the affected EHA with a serviceable EHA
More than 15, but not more than 50	Within 3 months	
More than 50, but not more than 100	Within 6 months	
More than 100	Before next flight	Re-identify the affected EHA (apply paint marking) as serviceable EHA

Credit:

(5) Accomplishment of an insulation check of the DDSOV of an affected EHA, before the effective date of this AD in accordance with the instructions of the AOT, is acceptable to comply with the requirement of paragraph (1) of this AD for that affected EHA.

Reporting:

(6) Within 30 days after each insulation check as required by paragraph (1) or (3) of this AD, as applicable, report the results (including no findings) to Airbus.

Part Installation:

(7) For Group 1 and Group 2 aeroplanes: From the effective date AD, do not install an affected EHA on any aeroplane.

Ref. Publications:

Airbus SB A350-27-P020 original issue dated 22 February 2018, or Revision 01 dated 09 January 2019 or Revision 02 dated 13 December 2019.

Airbus AOT A27P009-16 original issue dated 15 December 2016.

MOOG INC SB CA67001-27-05 original issue dated 21 February 2018, or Revision 01 dated 14 May 2018, or Revision 02 dated 20 September 2018, or Revision 03 dated 14 September 2019.

MOOG INC SB CA67006-27-04 original issue dated 21 February 2018, or Revision 01 dated 14 May 2018, or Revision 02 dated 05 September 2018, or Revision 03 dated 14 September 2019.

MOOG INC SB CA67008-27-04 original issue dated 21 February 2018, or Revision 01 dated 14 May 2018, or Revision 02 dated 05 September 2018, or Revision 03 dated 14 September 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 Programming and Continued Airworthiness 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.

5. For any question concerning the technical content of the requirements in this AD, please contact: continued-airworthiness.a350@airbus.com.