# Airworthiness Directive

**AD No.: 2020-0157**

**Issued: 16 July 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):**
A380 aeroplanes

Effective Date: 30 July 2020

TCDS Number(s): EASA.A.110

Foreign AD: Not applicable

Supersedure: This AD supersedes EASA AD 2019-0123R1 dated 18 June 2019.

## ATA 32 – Landing Gear – Gravity Extension System – Inspection / Modification

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**Manufacturer(s):**
Airbus

**Applicability:**
Airbus A380-841, A380-842 and A380-861 aeroplanes, all manufacturer serial numbers, except those that have embodied Airbus modification (mod) 77381 in production.

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

**The AOT:** Airbus Alert Operators Transmission (AOT) A32R009-16 Revision 01.

**The SB:** Airbus Service Bulletin (SB) A380-92-8103 Revision 03.

**The ALS CMR task**: Airbus A380 Airworthiness Limitations Section (ALS) Part 3 Revision 06, Certification Maintenance Requirements (CMR) task 323300-0001-1-C.

**Reason:**
During a free-fall gravity landing gear (LG) extension of an A380 aeroplane, the left-hand (LH) wing LG failed to extend, remained in up-locked position in the LG bay and an associated alert was initiated. Consequent investigation determined that the wiring of both channels, A and B, of the LG gravity extension system, providing electrical signals to the LH wing LG Emergency Up-lock Actuator

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(EUA), was found damaged. Similar wiring damage was also detected on channel B of the right-hand (RH) wing LG EUA. The investigation concluded that the detected wiring failure mode was provoked by fatigue degradation present in the wing LG up-lock areas. No fatigue degradation of wiring was identified in the up-lock areas of nose LG, body LG and wing LG doors.

This condition, if not detected and corrected, could result in a failure of the wing LG emergency gravity extension system, possibly preventing safe landing in case of a failure of the normal LG extension system.

To address this potential unsafe condition, Airbus issued AOT A32R009-16 to provide inspection instructions. The results collected by that inspection confirmed that the fatigue degradation was present only on the wing LG up-lock EUA wiring. Consequently, Airbus issued AOT A32R009-16 Revision 01 (the AOT), providing instructions to inspect wing LG up-lock EUA wiring and accomplish on-ground LG gravity extension tests. Additionally, Airbus developed mod 77381, introducing improved attachments for harnesses connected to wing LG EUAs, and issued SB A380-92-8103 to provide instructions for in-service modification.

Consequently, EASA issued AD 2017-0131 (later revised) to require repetitive general visual (GVI) or detailed (DET) inspections of wing LG up-lock EUA wiring and functional on-ground tests of the wing LG gravity extension system, accomplishment of applicable corrective action(s) depending on findings, and modification of the electrical harness, which constituted terminating action for the repetitive inspections and functional tests.

Since EASA AD 2017-0131R1 was issued, it was determined that inspection of the termination of specific wires supplied in the new bundle is necessary for post-SB aeroplanes, and Airbus published SB A380-92-8103 Revision 02 accordingly to provide the necessary additional work instructions. Consequently, EASA issued AD 2019-0123 (later revised), retaining the requirements of EASA AD 2017-0131R1, which was superseded, to require additional work for aeroplanes on which Airbus SB A380-92-8103 at original issue or Revision 01 was embodied.

Since EASA AD 2019-0123R1 was issued, it was determined that an integrity test of the wiring system is necessary for post-SB aeroplanes and Airbus published the SB (as defined in this AD) accordingly to provide the necessary additional work instructions.

For the reason described above, this AD retains the requirements of EASA AD 2019-0123R1, which is superseded, to require additional work for aeroplanes on which Airbus SB A380-92-8103 at Revision 02 was embodied.

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

Required as indicated, unless accomplished previously:

**Inspection(s)**:

(1) Within the compliance time specified in Table 1 of this AD, and, thereafter, at intervals not to exceed 6 months, accomplish concurrently a DET or GVI of the wire harnesses connected to wing LG up-lock EUA, and an on-ground wing LG gravity extension test, in accordance with the instructions of the AOT.



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Table 1 – Initial Wing LG Up-lock EUA DET/GVI and On-Ground Wing LG Gravity Test

| **Compliance Time** (**A**, **B** or **C**, whichever occurs later) | |
|---|---|
| **A** | Within 6 months after aeroplane first flight |
| **B** | Within 6 months after the last wing LG up-lock EUA wiring inspection and LG gravity extension test in accordance with the instructions of the AOT |
| **C** | Within 30 days after 10 August 2017 [the effective date of the original issue of EASA AD 2017-0131] |

**Corrective Action(s)**:

(2) If, during any inspection or test as required by paragraph (1) of this AD, any discrepancy is detected, before next flight, accomplish the applicable corrective action(s) in accordance with the instructions of the AOT.

**Modification**:

(3) Within 42 months after 10 August 2017 [the effective date of the original issue of EASA AD 2017-0131], modify the wing LG EUA electrical harnesses in accordance with the instructions of the SB.

(4) For an aeroplane that was modified, before 19 June 2019 [the effective date of EASA AD 2019-0123] in accordance with the instructions of Airbus SB A380-92-8103 at original issue or Revision 01, within 12 months after 19 June 2019 [the effective date of EASA AD 2019-0123], accomplish the actions identified as “additional work” in Airbus SB A380-92-8103 at Revision 02.

(5) For an aeroplane that was modified, before the effective date of this AD in accordance with the instructions of Airbus SB A380-92-8103 at Revision 02, within 7 months after the effective date of this AD, accomplish the actions identified as “additional work” in the SB.

**Credit:**

(6) Inspection(s), wing LG gravity extension test(s) and, depending on finding(s), corrective action(s) on an aeroplane, accomplished before 10 August 2017 [the effective date of the original issue of EASA AD 2017-0131] in accordance with the instructions of Airbus AOT A32R009-16 at original issue, are acceptable to comply with the initial requirements of paragraphs (1) and (2) of this AD for that aeroplane.

(7) For an aeroplane on which the ALS CMR task, as defined in this AD, has been accomplished after modification of that aeroplane in accordance with the instructions of Airbus SB A380-92-8103 at Revision 01 or Revision 02, the ‘additional work’ requirements of paragraph (5) of this AD do not apply.

(8) For an aeroplane on which, before the effective date of this AD, the instructions of Airbus Technical Adaptation (TA) 80629793/006/2019 or TA 80524858/016/2019, as applicable, have been accomplished, the ‘additional work’ requirements of paragraph (5) of this AD do not apply.



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**Terminating Action**:

(9) Modification of an aeroplane in accordance with the instructions of Airbus SB A380-92-8103 (at any issue) constitutes terminating action for the repetitive inspections and wing LG gravity extension tests as required by paragraph (1) of this AD for that aeroplane.

## Ref. Publications:

Airbus AOT A32R009-16 original issue dated 22 November 2016, or Revision 01 dated 28 February 2017.

Airbus SB A380-92-8103 original issue dated 05 May 2017, or Revision 01 dated 03 May 2018, or Revision 02 dated 22 January 2019, or Revision 03 dated 24 January 2020.

Airbus A380 ALS Part 3 Revision 06 dated 15 December 2017.

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. This AD was posted on 08 June 2020 as PAD 20-092 for consultation until 06 July 2020. The Comment Response Document can be found in the EASA Safety Publications Tool, in the compressed (zipped) file attached to the record for this AD.

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. 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: AIRBUS SAS – IIANA (Airworthiness Office), Telephone: +33 562 110 253, Fax: +33 562 110 307, E-mail: account.airworth-A380@airbus.com.

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