European Union Aviation Safety Agency

Airworthiness Directive

AD No.: 2023-0198

Issued: 16 November 2023

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 the European third countries that participate in the activities of EASA under Article 129 of the 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 or Annex Vb Part ML.A.301, as applicable, 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 Annex Vb Part ML.A.303, as applicable] or agreed with the Authority of the State of Registry [Regulation (EU) 2018/1139, Article 71 exemption].

Design Approval Holder's Name:
AIRBUS S.A.S.

Type/Model designation(s):
A380 aeroplanes

Effective Date: 01 December 2023

TCDS Number(s): EASA.A.110

Foreign AD: Not applicable

Supersedure: This AD supersedes EASA AD 2020-0098R1 dated 15 May 2023.

ATA 57 – Wings – Wing Front and Rear Spars – Inspection

Manufacturer(s):
Airbus

Applicability:
Airbus A380-841, A380-842 and A380-861 aeroplanes, all manufacturer serial numbers (MSN).

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

The Airbus instructions: Airbus Service Bulletin (SB) A380-57-8263 Revision 01 and Airbus Alert Operator Transmission (AOT) A57A019-21 or A57R021-23 original issue.

The AOT: Airbus AOT A57R021-23 Revision 01.

Affected area (on both, left wing and right wing):
- the wing outer inner front spar (OIFS) top and bottom flanges between rib 8 and rib 14;
- the wing outer front spar (OFS) top and bottom flanges between rib 38 and rib 49 of aeroplanes in pre-modification (mod) 77990 configuration, all MSN up to 270 inclusive;
- the wing outer rear spar (ORS) top and bottom flanges between rib 33 and rib 49 of aeroplanes in pre-mod 77989 configuration, all MSN up to 270 inclusive.

Applicable wing box assembly date: The date of wing box assembly, as applicable to MSN, listed in the relevant Appendix of the Airbus instructions (as defined in this AD).

FTOG: Factored time on ground (FTOG), as defined in Airbus AOT A57R021-23 original issue.

SFTOG: Storage FTOG, as defined in Appendix 1 of the AOT.

Reason:

Occurrences were reported of finding cracks in wing ORS of several in-service A380 aeroplanes.

This condition, if not detected and corrected, could reduce the structural integrity of the affected wing.

To address this potential unsafe condition, Airbus issued SB A380-57-5263 (original issue) to provide inspection instructions, and EASA issued AD 2019-0223, as an interim action, to require (for a limited batch of aeroplanes) repetitive special detailed inspections (SDI) of the affected areas of the wing ORS, using ultrasonic testing methods.

After that AD was issued, it was determined that additional areas may be affected by the same unsafe condition, and that, therefore, all A380 aeroplanes needed to be inspected. Consequently, Airbus issued the Airbus instructions, as defined in this AD, providing applicable instructions, and EASA issued AD 2022-0019, retaining the requirements of EASA AD 2019-0223, which was superseded, to expand the Applicability to all A380 aeroplanes and expanding the affected areas to sections of OFS and OIFS, as defined in this AD.

After that AD was issued, inspection results indicated the need to reduce the threshold for wing ORS inspection. Consequently, EASA published AD 2022-0174 (later revised), retaining the requirements of EASA AD 2022-0019, which was superseded, and reducing the threshold for wing ORS inspection from 15 years to 12,5 years since the applicable wing box assembly date (as defined in this AD).

After EASA AD 2022-0174R1 was issued, prompted by analysis of further inspection results, it was determined that the wing ORS inspection threshold needed to be further reduced, from 12,5 years to 11,5 years (since the applicable wing box assembly date). Consequently, EASA issued AD 2022-0262, retaining the requirements of EASA AD 2022-0174R1, which was superseded, and amending the compliance time for initial wing ORS inspection.

After that AD was issued, prompted by further analysis of the wing ORS inspection results, it was determined that the threshold for wing ORS inspection depends on more criteria than only the age of the wing. The severity of findings on wing ORS showed a clear relationship with the amount of time an aeroplane has spent on ground, parked or stored, in severe environmental conditions. This new criteria introduced the need for calculation of an FTOG, as defined in Airbus AOT A57R021-23 original issue.

Consequently, EASA issued AD 2023-0098 (later revised), retaining the requirements of EASA AD 2022-0262, which was superseded, to require FTOG calculation and to introduce new definitions of the compliance time(s) for initial wing ORS inspection, based on this calculated FTOG.

Since EASA AD 2023-0098R1 was issued, assessment of more initial wing ORS inspection results revealed an increased number of findings and of a higher severity, which no longer justify the criteria specified in Airbus AOT A57R021-23 original issue. Prompted by these developments, Airbus redefined one of the driving parameters for the threshold for wing ORS inspections, by replacing the previous (to be calculated) FTOG criterion by an SFTOG, as defined in this AD, more focused on time spent in storage, and issued the AOT (as defined in this AD).

For the reason described above, this AD retains most of the requirements of EASA AD 2023-0098R1, which is superseded, and requires application of the new SFTOG criterion to establish the applicable threshold for wing ORS SDI.

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

Required as indicated, unless accomplished previously:

Inspection(s):

(1) Based on the SFTOG as specified in Appendix 1 of the AOT for each MSN, within the compliance times specified in Table 1 of this AD, as applicable, and, thereafter, at intervals not to exceed 36 months (see Note 1 of this AD), accomplish an SDI of the affected areas of each wing, as defined in this AD, in accordance with the Airbus instructions, as applicable.

Note 1: The 36-months interval for repetitive inspections as required by paragraph (1) of this AD, is applicable for unrepaired affected areas. For areas that have been repaired, as required by paragraph (2) of this AD, the interval specified in paragraph (1) of this AD must be replaced by the interval(s) for post-repair repetitive inspections as specified for each affected area in the approved repair instructions received from Airbus, as applicable.

Table 1 – Inspection Threshold

Affected Area	Compliance Time
wing OIFS	Before exceeding 60 months since the applicable wing box assembly date
wing OFS	
wing ORS	Whichever occurs first, **A** or **B** or **C**
	A: Before exceeding 138 months since the applicable wing box assembly date
	B: (Only) for aeroplanes that have exceeded 4 years of SFTOG (see Appendix 1 of the AOT): Before exceeding the applicable compliance time (grace period) as specified in Table 2 of this AD
	C: Before returning to service from a storage period of more than 12 months (refer to AMM TASK 10-10-00-555-801-A)

Table 2 – Inspection Threshold depending on SFTOG (see option **B** in Table 1 of this AD)

Group	Storage FTOG	Grace period
1	SFTOG > 8 years	1,5 months from AOT effectivity Date
2	7,5 < SFTOG ≤ 8 years	6 months from AOT effectivity Date
3	7 < SFTOG ≤ 7,5 years	9 months from AOT effectivity Da
4	6 < SFTOG ≤ 7 years	12 months from AOT effectivity Da
5	4 < SFTOG ≤ 6 years	18 months from AOT effectivity Date

Note 2: For the purpose of this AD, for the grace period in Table 2 of this AD which is excluded from the AOT and which is only applicable for aeroplanes with an SFTOG of more than 4 years), the 'from AOT effectivity Date', must be read as 'after the effective date of this AD'.

Corrective Action(s):

(2) If, during any inspection as required by paragraph (1) of this AD any crack is detected, before next flight, contact Airbus for approved repair instructions and accomplish those instructions accordingly.

Credit:

(3) Inspection of the affected areas of the wing ORS (both wings), accomplished on an aeroplane, before the effective date of this AD, either in accordance with the Airbus instructions or one of the specific technical adaptations (TA) as identified in Table 3 of this AD, is acceptable to comply with the initial wing ORS inspection required by paragraph (1) of this AD for that aeroplane.

Table 3 – Airbus TAs

MSN	TA	MSN	TA
006	80519764/008/2018 issue 3	009	80574157/021/2019 issue 3
007	80508042/016/2018 issue 2	014	80534050/022/2019 issue 2
008	80510291/2018 issue 1	015	80589031/018/2019 issue 2

Terminating Action:

(4) None.

Reporting:

(5) Within 30 days after the inspection as required by paragraph (1) of this AD, report the inspection results (including no findings) to Airbus.

Alternative Method:

(6) The Alternative Method of Compliance (AMOC) to EASA AD 2022-0019 with EASA approval 10078244 remains valid as AMOC to this AD.

Ref. Publications:

Airbus SB A380-57-8263 original issue dated 23 August 2019, or Revision 01 dated 31 January 2022.

Airbus AOT A57R019-21 original issue dated 31 January 2022.

Airbus AOT A57R021-23 original issue dated 11 May 2023, or Revision 01 dated 16 November 2023.

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: Airbus – 1IANA (Airworthiness Office), Telephone: +33 562 110 253, Fax: +33 562 110 307, E-mail: account.airworth-A380@airbus.com.