

Airworthiness Directive

AD No.: 2023-0098

Issued: 11 May 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 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 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: 25 May 2023

TCDS Number(s): EASA.A.110

Foreign AD: Not applicable

Supersedure: This AD supersedes EASA AD 2022-0262 dated 21 December 2022.

ATA 57 – Wings – 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 SB: Airbus Service Bulletin (SB) A380-57-8263 Revision 01.

The AOT: Airbus Alert Operator Transmission (AOT) A57R021-23.

Affected areas (on both left-hand and right-hand sides):

- Wing outer rear spar (ORS) top and bottom flanges between ribs 33 and 49 (for aeroplanes in pre-modification (pre-mod) 77989 configuration, all MSN up to 270 inclusive);
- Wing outer inner front spar (OIFS) top and bottom flanges between ribs 8 and 14;
- Wing outer front spar (OFS) top and bottom flanges between ribs 38 and 49 (for aeroplanes in pre-mod 77990 configuration, all MSN up to 270 inclusive).

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

FTOG: Factored time on ground (FTOG), as described in the AOT.

Reason:

Occurrences have been reported of finding cracks in the affected areas of the wing ORS on in-service A380 aeroplanes.

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

To address this potential unsafe condition, Airbus issued SB A380-57-8263 original issue to provide inspection instructions, and EASA issued AD 2019-0223, as an interim action, to require repetitive special detailed inspections (SDI), using ultrasonic testing methods, of the affected area of the wing ORS on a limited batch of aeroplanes.

After that AD was issued, it was determined that additional areas may be affected by the same unsafe condition, and that all MSN needed to be inspected; consequently, Airbus issued the Airbus instructions, as defined in this AD, providing applicable instructions. Consequently, EASA issued AD 2022-0019, retaining the requirements of EASA AD 2019-0223, which was superseded, expanding the Applicability to all aeroplanes, including those in pre-mod 77989 configuration (for ORS), and expanding the affected areas subject to inspection to include the wing OFS (for aeroplanes in pre-mod 77990 configuration) and the wing OIFS.

After that AD was issued, inspection results indicated the need to reduce the threshold for 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 ORS inspection from 15 years (180 months) to 12,5 years (150 months).

After EASA AD 2022-0174R1 was issued, prompted by analysis of inspection results, it was determined that the ORS inspection threshold needed to be further reduced from 12,5 years (150 months) to 11,5 years (138 months) 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 ORS inspection.

Since that AD was issued, prompted by analysis of further inspection results, it was determined that the threshold for ORS inspection must depend on more criteria than only the wing age. The severity of ORS findings showed a relationship with the amount of time an aeroplane spends on ground (e.g. parked, stored) in severe environmental conditions. This new criterion introduces the need to calculate FTOG as defined in the AOT.

For the reason described above, this AD retains the requirements of EASA AD 2022-0262, which is superseded, requires FTOG calculation and introduces new compliance times for the initial ORS inspection based on the calculated FTOG.



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

Required as indicated, unless accomplished previously:

Inspection(s):

- (1) Before next flight after the effective date of this AD, and, thereafter, at intervals not exceeding 30 calendar days, calculate the FTOG in accordance with the instructions of the AOT. Following the initial ORS SDI on an aeroplane as required by paragraph (2) of this AD, the repetitive FTOG calculations can be discontinued.
- (2) Based on the FTOG calculation(s) as required by paragraph (1) of this AD, 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 in accordance with the instructions of the SB and AOT.

Note 1: The 36-month inspection interval is applicable for unrepaired areas. For areas repaired as required by paragraph (2) of this AD, the intervals for post-repair inspection as required by paragraph (1) of this AD are those specified in the Airbus approved repair instructions.

Table 1 – Inspection Threshold

Affected Area(s)	Compliance Time
ORS	Whichever occurs first, A or B or C:
	A: Before exceeding 138 months since the applicable wing box assembly date
	B: Before exceeding 14 years of FTOG, or within the applicable compliance time(s) identified in Table 2 of this AD, whichever occurs later
	C: Before returning to service from a storage period of more than 12 months (refer to AMM TASK 10-10-00-555-801-A)
OIFS and OFS	Before exceeding 180 months since the applicable wing box assembly date

Table 2 – Compliance Time depending on Maximum Take-off Weight (MTOW) and FTOG

MTOW	FTOG	Grace period
above 510T	FTOG > 17 years	6 months from AOT effectivity Date
above 510T	14 < FTOG < 17 years	12 months from AOT effectivity Date
at or below 510T	FTOG > 17 years	18 months from AOT effectivity Date
at or below 510T	14 < FTOG < 17 years	24 months from AOT effectivity Date

(extracted from the AOT (table 1), section 5.1)



Note 2: AOT effectivity date as specified in Table 2 of this AD (extract from the AOT) is equal to the effective date of this AD.

Corrective Action(s):

(3) If, during any inspection as required by paragraph (2) of this AD, any crack is detected, before next flight, contact Airbus for approved repair instructions and, within the compliance time specified therein, accomplish those instructions accordingly (see Note 1 of this AD). If no compliance time for the repair is identified in those instructions, accomplish those instructions before next flight.

Credit:

(4) Inspection of the affected areas of the wing ORS, accomplished on an aeroplane before 04 January 2023 [the effective date of EASA AD 2022-0262] in accordance with the instruction of Airbus SB A380-57-8263 original issue, is an acceptable method to comply with the initial ORS inspection as required by paragraph (2) of this AD for that aeroplane.

(5) Inspection of the affected areas of the wing ORS, accomplished on an aeroplane before the effective date of this AD in accordance with the instruction of Airbus AOT A57R019-21, is an acceptable method to comply with the initial ORS inspection as required by paragraph (2) of this AD for that aeroplane.

(6) Accomplishment on an aeroplane of an ORS inspection, before 04 January 2023 [the effective date of EASA AD 2022-0262] in accordance with the instructions of an Airbus technical adaptations (TA), as identified in Table 2 of this AD, as applicable to MSN, is an acceptable method to comply with the initial ORS inspection as required by paragraph (2) of this AD for that aeroplane.

Table 2 – Airbus TA

MSN	TA	MSN	TA
006	80519764/008/2018 iss.3	009	80574157/021/2019 iss.3
007	80508042/016/2018 iss.2	014	80534050/022/2019 iss.2
008	80510291/032/2018 iss.1	015	80589031/018/2019 iss.2

Terminating Action:

(7) None.

Reporting:

(8) Within 30 days after each inspection as required by paragraph (2) of this AD, report the inspection results (including no findings) to Airbus.

Alternative Method:

(9) 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, and 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.

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

