



Airworthiness Directive

AD No.: 2023-0171

Issued: 12 September 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 Change Approval Holder's Name: ELBE FLUGZEUGWERKE GmbH
Type/Model designation(s): Passenger to Freighter conversion

Effective Date: 26 September 2023

STC Number(s): EASA Supplemental Type Certificate (STC) 10071994

Foreign AD: Not applicable

Supersedure: None

ATA 57 – Wings – Centre Wing Box Rear Lower Spar and Slanted Beam – Inspection

Manufacturer(s):

Airbus, formerly Airbus Industrie

Applicability:

Airbus A321-211, A321-212, A321-213, A321-231 and A321-232 aeroplanes, all manufacturer serial numbers, which have been modified in accordance with ELBE Flugzeugwerke GmbH EASA STC 10071994 (Passenger to freighter conversion).

Definitions:

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

Affected areas: Centre wing box (CWB) rear lower spar junction area at fuselage frame (FR) 42 and slanted beam connection with rear spar and lower panel.

The AOT: Airbus Alert Operators Transmission (AOT) A57N020-22.

Airbus date of manufacture: The date of transfer of title (ownership) of the aeroplane upon delivery by Airbus to the first operator, which is referenced in Airbus documentation.



Reason:

In the frame of A321 XLR certification and fatigue and damage tolerance harmonization of the Single Aisle family, a new stress calculation was accomplished for the CWB and slanted junction areas at FR42. Results of stress analyses have highlighted high fatigue stress in the affected areas where cracks may appear with the current inspection regime.

This condition, if not detected and corrected, could affect the structural integrity of the fuselage.

To address this potential unsafe condition, Airbus issued the AOT to provide inspection instructions for A321 Current Engine Option (CEO) CWB rear lower spar junction area using rototest and high-frequency eddy-current (HFEC) inspection methods; and for A321 CEO FR42 slanted beam connection using rototest inspection method. Prompted by this development, ELBE Flugzeugwerke GmbH, holder of EASA STC 10071994 (A321 passenger-to-freighter conversion), assessed the impact of the load distribution resulted from STC-modification and determined that reduced compliance time is necessary for modified aeroplanes.

For the reasons described above, this AD requires a one-time inspection of the affected areas and, depending on findings, accomplishment of applicable corrective action(s). This AD also introduces provisions for a single ferry flight.

This AD is considered to be an interim action and further AD action may follow.

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

Required as indicated, unless accomplished previously:

Inspection(s):

- (1) Within the compliance time as defined in Table 1 of this AD, accomplish a one-time HFEC and rototest inspection of the affected areas in accordance with the instructions of the AOT.

Table 1 – Affected Areas Inspection

Corrected Flight Cycles ($FC_{corrected}$) (see Note 1 of this AD)	Compliance Time
Less than 30 000	Before exceeding 30 000 $FC_{corrected}$ since Airbus date of manufacture or within 6 months after the effective date of this AD, whichever occurs later
30 000 or more, but less than 47 500	Within 6 months after the effective date of this AD without exceeding 3 months after having accumulated 47 500 $FC_{corrected}$ since Airbus date of manufacture
47 500 or more	Within 3 months after the effective date of this AD

Note 1: Unless specified otherwise, the $FC_{corrected}$ indicated in Table 1 of this AD are those calculated using the following formula:



$$FC_{\text{corrected}} = FC_{P2F} + FC_{TOE} \times \left(1 - \frac{FC_{P2F}}{FC_{PAX}}\right)$$

Where:

FC_{P2F} – FC accumulated by an aeroplane since the conversion of the aeroplane to freighter configuration (since embodiment of ELBE Flugzeugwerke GmbH EASA STC 10071994).

FC_{TOE} – FC accumulated by an aeroplane at the time of embodiment of ELBE Flugzeugwerke GmbH EASA STC 10071994.

FC_{PAX} – FC accumulated by an aeroplane in passenger configuration (until embodiment of ELBE Flugzeugwerke GmbH EASA STC 10071994).

Ferry flight:

(2) Beyond the compliance time as defined in paragraph (1) of this AD, a ferry flight (non-revenue flight, no passengers, no cargo, only minimum crew to conduct the flight) not exceeding 2 FC, to position an aeroplane to a maintenance location where the action(s) required by this AD can be accomplished on that aeroplane.

Corrective Action(s):

(3) If, during the inspection as required by paragraph (1) of this AD, any crack is found, before next flight, contact ELBE Flugzeugwerke GmbH and Airbus for approved repair instructions and, within the compliance time specified therein, accomplish those instructions accordingly.

Reporting

(4) Within 90 days after the inspection as required by paragraph (1) of this AD, report the results (including no findings) to ELBE Flugzeugwerke GmbH and Airbus. Using the instructions of the AOT is an acceptable method to comply with this reporting requirement.

Credit:

(5) Inspection and, depending on findings, corrective action(s) accomplished before the effective date of this AD, to comply with the requirements of EASA AD 2023-0074, are acceptable to comply with the requirements of this AD, provided that within 90 days after the effective date of this AD, the inspection result(s) (including no finding) and accomplished corrective action(s), as applicable, are reported to ELBE Flugzeugwerke GmbH.

Compliance with EASA AD 2023-0074:

(6) Aeroplanes that are compliant with the requirements of this AD are also compliant with the requirements of EASA AD 2023-0074.

Ref. Publications:

Airbus AOT A57N020-22 original issue dated 07 December 2022.

The use of later approved revisions of the above-mentioned document 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:
Elbe Flugzeugwerke GmbH, E-mail: airworthiness@efw.aero.
AIRBUS – Airworthiness Office – 1IASA; E-mail: account.airworth-eas@airbus.com.

