



## Airworthiness Directive

**AD No.:** 2022-0197

**Issued:** 22 September 2022

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):

A330 and A340 aeroplanes

**Effective Date:** 06 October 2022

**TCDS Number(s):** EASA.A.004, EASA.A.015

**Foreign AD:** Not applicable

**Supersedure:** This AD supersedes EASA AD 2020-0283 dated 17 December 2020, including its correction dated 24 December 2020.

## ATA 28 – Fuel – Fuel Pump – Inspection / Modification

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### Manufacturer(s):

Airbus, formerly Airbus Industrie

### Applicability:

Airbus A330-201, A330-202, A330-203, A330-223, A330-223F, A330-243, A330-243F, A330-301, A330-302, A330-303, A330-321, A330-322, A330-323, A330-341, A330-342, A330-343, A330-743L, A330-841 and A330-941 aeroplanes, all manufacturer serial numbers (MSN), and

Airbus A340-211, A340-212, A340-213, A340-311, A340-312, A340-313, A340-541, A340-542, A340-642 and A340-643 aeroplanes, all MSN.

### Definitions:

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

**The AOT:** Airbus Alert Operators Transmission (AOT) A28L006-17.

**The applicable SB:** Airbus Service Bulletin (SB) A330-28-3132 Revision 04, SB A340-28-4142 Revision 03 and SB A340-28-5062 Revision 03, as applicable, which refer to Eaton Aerospace Ltd SB 8810-28-06 Revision 2.



**Affected part:** Fuel pumps, having Part Number (P/N) 568-1-28300-101, or P/N 568-1-28300-103, or P/N 568-1-28300-200.

**Non-affected part:** Fuel pumps, eligible for installation, which are not affected parts, which includes, depending on aeroplane model and configuration, fuel pumps having P/N 568-1-28300-104, P/N 568-1-28300-003, P/N 568-1-28300-004 and P/N 568-1-28300-102.

**Locations:**

Location A affected parts are installed at 600QL1(2), 112QA1(2), 608QL1(2), 711QN1(2)(3)(4) and 712QN1(2).

Location B affected parts are installed at the collector cell, 121QA1(2), 122QA1(2), 100QA1(2)(3)(4) and 101QA1(2)(3)(4).

**Erosion cases and breakthrough:** The erosion cases 1, 2, 3 and breakthrough are defined and described with several pictures in Eaton Aerospace Ltd SB 8810-28-06 Revision 2 (or later revisions).

**Serviceable part for installation at locations A:** An affected part, eligible for installation, which is new (not previously installed) or has been repaired (housing was replaced) in accordance with Eaton Aerospace Ltd Component Maintenance Manual (CMM) 28-21-55 or CMM 28-21-59; or which, before installation, has passed an inspection (no erosion detected, or only Case 1 erosion) in accordance with the instructions of the applicable SB or the AOT (any revision); or a non-affected part.

**Serviceable part for installation at locations B:** An affected part, eligible for installation, which is new (not previously installed) or has been repaired (housing was replaced) in accordance with Eaton Aerospace Ltd CMM 28-21-55; or which, before installation, has passed an inspection (no erosion detected, or Case 1 or Case 2 erosion) in accordance with the instructions of the applicable SB or the AOT (any revision); or a non-affected part.

**Groups:** Group 1 aeroplanes are those that have an affected part installed.

Group 2 aeroplanes are those that do not have an affected part installed. An aeroplane in any of the following configurations is a Group 2 aeroplane, provided the aeroplane remains in that configuration:

- An aeroplane on which Airbus modification (mod) 208584 and mod 208585 have been embodied in production;
- An A330 aeroplane on which Airbus SB A330-28-3139 and SB A330-28-3140 have been fully embodied in service;
- An A340 aeroplane on which Airbus SB A340-28-4144 has been fully embodied in service;
- An A340-500 aeroplane on which Airbus SB A340-28-5063 has been fully embodied in service; and Airbus mod 53543/H15530 and SB A340-28-5018 have not been embodied;
- An A340-600 aeroplane on which Airbus SB A340-28-5063 has been fully embodied in service.

**Reason:**

An occurrence was reported of a fuel pump showing cavitation erosion which breached the fuel pump housing through the inlet webs and exposed the fuel pump power supply wires. Inspections



accomplished on fuel pumps removed from other aeroplanes identified signs of erosion in varying degrees. A list of potentially affected fuel pump P/N was established.

This condition, if not detected and corrected, could result, in case the pump is running dry, in an ignition source in the fuel tank, which may result in a fuel tank explosion and consequent loss of the aeroplane.

To address this potential unsafe condition, Airbus issued the AOT (original issue) to provide instructions to inspect the affected parts when installed at specific positions, and to update the applicable Master Minimum Equipment List (MMEL). EASA published AD 2017-0224 to require accomplishment of these actions.

After that AD was published, Airbus issued the applicable SB and the AOT Revision 03, introducing repetitive inspections of all affected parts, regardless of their position on the aeroplane. Consequently, EASA issued AD 2019-0291 (later revised), partially retaining the requirements of EASA AD 2017-0224, which was superseded, expanding the Applicability to include A330-941 aeroplanes and requiring repetitive inspections of affected parts in all affected locations and, depending on findings, replacement of damaged affected parts with serviceable parts.

After that AD was published, it was observed through assessment of inspection results that the flight cycles (FC) accumulated by an affected part, when installed at Location A, must also be considered, and Airbus revised the AOT and the applicable SB to reflect this. EASA issued AD 2020-0283 retaining the requirements of EASA AD 2019-0291R1, which was superseded, and requiring inspection of affected parts, when installed at Location A, at amended compliance times. In addition, the Applicability of that AD was also expanded to include A330-743L and A330-841 aeroplanes.

Since that AD was issued, new, more erosion resistant, pumps have been developed, and Airbus has revised the applicable SB accordingly.

For the reasons described above, this AD retains the requirements of EASA AD 2020-0283, which is superseded, and additionally requires replacement of affected pumps with non-affected pumps (exception made for fuel pump P/N 568-1-28300-200, if installed at location 608QL1(2) of certain aeroplanes).

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

Required as indicated, unless accomplished previously:

#### **Inspection of Affected Parts Installed at Locations A:**

- (1) For Group 1 aeroplanes: Within the compliance time specified in Table 1 of this AD, and, thereafter, at intervals not to exceed the value specified in Table 2 of this AD, as applicable, depending on the detected erosion level, inspect each affected part at a location A in accordance with the instructions of the AOT (any revision) or of the applicable SB.



Table 1 – Fuel Pump Inspection Threshold for Affected Parts at Locations A

<b>Compliance Time (A or B, whichever occurs later)</b>	
<b>A</b>	Before an affected part exceeds 10 000 flight hours (FH) or 3 000 FC, whichever occurs first
<b>B</b>	For affected parts installed at positions 600QL1(2), 608QL1(2), 711QN1(2)(3)(4) and 712QN1(2) (centre/rear centre tank/aft transfer fuel pump): Within 30 days after 31 December 2020 [the effective date of EASA AD 2020-0283] For affected parts installed at position 112QA1(2) (stand-by fuel pump): Within 40 days after 31 December 2020 [the effective date of EASA AD 2020-0283]

Note 1: The FH and FC specified in Table 1 of this AD are those accumulated by an affected part at locations A, since first installation on an aeroplane, or since last repair in accordance with Eaton Aerospace Ltd CMM 28-21-55 (housing was replaced) or CMM 28-21-59 (housing was replaced), as applicable.

Table 2 – Fuel Pump Repetitive Inspection Intervals for Affected Parts at Locations A  
(see Note 2 of this AD)

<b>Erosion</b>	<b>Compliance Time (FH or FC, whichever occurs first since last inspection)</b>
No erosion	5 000 FH or 1 500 FC
Case 1 erosion	
Case 2 erosion	1 000 FH or 300 FC

Note 2: For the first repeat inspection as required by this AD, it is allowed to use the compliance time **B**, as specified in Table 1 of this AD.

#### **Inspection of Affected Parts Installed at Locations B:**

- (2) For Group 1 aeroplanes: Within the compliance times specified in Table 3 of this AD, and, thereafter, at intervals not to exceed 30 months or 10 000 FH, whichever occurs first, inspect each affected part at a location B in accordance with the instructions of the applicable SB.

Table 3 – Fuel Pump Inspection Threshold for Affected Parts at Locations B (see Note 3 of this AD)

<b>FH Accumulated</b>	<b>Compliance Time</b>
50 000 or more, or FH unknown	Within 12 months after 13 December 2019 [the effective date of EASA AD 2019-0291 at original issue]
40 000 or more	Within 18 months, but not earlier than 6 months, after 13 December 2019 [the effective date of EASA AD 2019-0291 at original issue]
30 000 or more	Within 24 months, but not earlier than 12 months, after 13 December 2019 [the effective date of EASA AD 2019-0291 at original issue]
20 000 or more	Within 30 months, but not earlier than 18 months, after 13 December 2019 [the effective date of EASA AD 2019-0291 at original issue]
Less than 20 000	Within 10 000 FH or 30 months, whichever occurs first after exceeding 20 000 FH



Note 3: The FH specified in Table 3 of this AD are those accumulated by an affected part at locations B, on 13 December 2019 [the effective date of EASA AD 2019-0291 at original issue], since first installation on an aeroplane, or since last repair in accordance with Eaton Aerospace Ltd CMM 28-21-55 (housing was replaced).

**Corrective Action(s):**

- (3) If, during any inspection as required by paragraph (1) of this AD, Case 3 erosion or breakthrough is found on an affected part, before next flight, replace that part with a serviceable part, or de-activate that fuel pump, deferring replacement in accordance with the provisions as specified in the applicable operator MEL, in accordance with the instructions of the applicable SB or the AOT.
- (4) If, during any inspection as required by paragraph (2) of this AD, breakthrough is found on an affected part, before next flight, replace that part with a serviceable part, or de-activate that fuel pump, deferring replacement in accordance with the provisions as specified in the applicable operator MEL, in accordance with the instructions of the applicable SB or the AOT.

**Modification:**

- (5) For Group 1 aeroplanes: Within 5 years after the effective date of this AD, replace any affected part having P/N 568-1-28300-101 (see Note 4 of this AD) or P/N 568-1-28300-103, and installed at a location A, with a non-affected part in accordance with the instructions of the applicable SB, or in accordance with instructions approved by Airbus DOA.

Note 4: EASA AD 2015-0194 provides additional requirements for fuel pump P/N 568-1-28300-101.

- (6) For Group 1 aeroplanes: Within 7 years after the effective date of this AD, replace any affected part having P/N 568-1-28300-101 (see Note 4 of this AD) or P/N 568-1-28300-103, and installed at a location B, with a non-affected part in accordance with the instructions of the applicable SB, or in accordance with instructions approved by Airbus DOA.

**Terminating Action:**

- (7) Replacing each affected part of an aeroplane with non-affected parts constitutes terminating action for the repetitive inspections as required by paragraphs (1) and (2) of this AD for that aeroplane, provided no affected parts are re-installed on that aeroplane.

**Part Installation / Switching Pump Location:**

- (8) For Group 1 aeroplanes: From the effective date of this AD, do not replace a non-affected part with an affected part having P/N 568-1-28300-101 or P/N 568-1-28300-103 at any location of any aeroplane.
- (9) For Group 1 aeroplanes: From the effective date of this AD, and until 5 years after the effective date of this AD, it is allowed to replace an affected part at a location A of any aeroplane with an affected part having P/N 568-1-28300-101 or P/N 568-1-28300-103, provided the latter is a serviceable part for installation at locations A, as defined in this AD, and that, following installation, the part is inspected as required by paragraph (1) of this AD.



- (10) For Group 1 aeroplanes: After 5 years from the effective date of this AD, do not install an affected part having P/N 568-1-28300-101 or P/N 568-1-28300-103, at a location A of any aeroplane.
- (11) For Group 1 aeroplanes: From the effective date of this AD, and until 7 years after the effective date of this AD, it is allowed to replace an affected part at a location B of any aeroplane with an affected part having P/N 568-1-28300-101 or P/N 568-1-28300-103, provided the latter is a serviceable part for installation at locations B, as defined in this AD, and that, following installation, the part is inspected as required by paragraph (2) of this AD.
- (12) For Group 1 aeroplanes: After 7 years from the effective date of this AD, do not install an affected part having P/N 568-1-28300-101 or P/N 568-1-28300-103, at a location B of any aeroplane.
- (13) For Group 1 aeroplanes: From the effective date of this AD, it is allowed to install an affected pump having P/N 568-1-28300-200 only at location 608QL1(2) of A340-500 aeroplanes with Airbus mod 53543/H15530 or Airbus SB A340-28-5018 embodied.

Note 5: For the purpose of this AD, removal of an affected part from an aeroplane for inspection, as required by this AD, and subsequent re-installation of that part on that same aeroplane and at the same location after the inspection is not considered an “installation” as specified in paragraphs (8) to (13) of this AD.

Note 6: For the purpose of this AD, removal of an affected part from an aeroplane and subsequent re-installation of that part on that same aeroplane and at a different location is considered an “installation” as specified in paragraphs (8) to (13) of this AD.

- (14) For Group 2 aeroplanes: From the effective date of this AD, do not install an affected part on any aeroplane.

#### **MMEL Changes - Dispatch Restrictions:**

- (15) For Group 1 aeroplanes, except A330-743L, A330-841 and A330-941 aeroplanes: Within 30 days after 17 November 2017 [the effective date of EASA AD 2017-0224], amend the applicable MMEL, on the basis of which the operator’s MEL is established, in accordance with the instructions of the AOT (any revision), inform all flight crews, and, thereafter, operate the aeroplane accordingly. This can be accomplished by inserting a copy of the AOT (any revision) into the applicable MMEL.
- (16) For Group 1 A340-500 and A340-600 aeroplanes: Concurrently with the MMEL amendment as required by paragraph (15) of this AD, amend the applicable MMEL, on the basis of which the operator’s MEL is established, as indicated in Table 4 of this AD, inform all flight crews and, thereafter, operate the aeroplane accordingly.

Amendment of the MMEL can be accomplished by inserting a copy of this AD into the applicable MMEL.



Table 4 – A340-500 and A340-600 MMEL Amendment

<b>MMEL Amendment</b>
MMEL Item 28-27-06 and 28-27-07 can be applied, provided the related circuit breaker is pulled and tagged for the duration of the inoperative period

- (17) For Group 1 aeroplanes: Within 30 days after 13 December 2019 [the effective date of EASA AD 2019-0291 at original issue], amend the applicable MMEL, on the basis of which the operator's MEL is established, to include the additional items specified in the AOT in accordance with the instructions of the AOT, inform all flight crews, and, thereafter, operate the aeroplane accordingly.

Amendment of the MMEL can be accomplished by inserting a copy of the AOT or the applicable SB into the applicable MMEL.

**Maintenance Action:**

- (18) For Group 1 aeroplanes: From 13 December 2019 [the effective date of EASA AD 2019-0291 at original issue], each time de-fueling or ground fuel transfer operations, as specified in the AOT (at Revision 04 and later), are accomplished on an aeroplane, accomplish the actions and implement the restrictions in accordance with the instructions of the AOT (at Revision 04 and later) on that aeroplane. Using the applicable Aircraft Maintenance Manual or Weight and Balance Manual task, provided that task contains the instructions of the AOT for these actions, is acceptable to comply with this requirement.

**MMEL Changes - Dispatch Restrictions; Maintenance Action:**

- (19) For Group 1 aeroplanes: Following the replacement of each affected part on an aeroplane with non-affected parts, that aeroplane is effectively considered to be a Group 2 aeroplane. For that aeroplane, the requirements of paragraphs (15), (16), (17) and (18) of this AD, as applicable, are no longer applicable, provided no affected parts are re-installed on that aeroplane.

**Credit:**

- (20) Inspections and corrective actions, accomplished on an aeroplane before the effective date of this AD in accordance with previous revisions of the applicable SB are acceptable for compliance with the requirements of this AD, as applicable, for that aeroplane.

**Ref. Publications:**

Airbus AOT A28L006-17 original issue dated 03 November 2017, or Revision 01 dated 16 November 2017, or Revision 02 dated 08 February 2018, or Revision 03 dated 28 May 2019, or Revision 04 dated 04 September 2019, or Revision 05 dated 02 March 2020, or Revision 06 dated 17 November 2020.

Airbus SB A330-28-3132 original issue dated 06 March 2019, or Revision 01 dated 05 December 2019, or Revision 02 dated 09 July 2020, or Revision 03 dated 03 March 2021, or Revision 04 dated 13 May 2022.



Airbus SB A340-28-4142 original issue dated 06 March 2019, or Revision 01 dated 28 April 2020, or Revision 02 dated 03 March 2021, or Revision 03 dated 13 May 2022.

Airbus SB A340-28-5062 original issue dated 06 March 2019, or Revision 01 dated 28 April 2020, or Revision 02 dated 03 March 2021, or Revision 03 dated 13 May 2022.

Eaton Aerospace Ltd SB 8810-28-06 Revision 2 dated 01 March 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. This AD was posted on 09 August 2022 as PAD 22-107 for consultation until 06 September 2022. The Comment Response Documents 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 Safety Information Section, Certification Directorate. E-mail: [ADs@easa.europa.eu](mailto: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 – IIAL (Airworthiness Office), E-mail: [airworthiness.A330-A340@airbus.com](mailto:airworthiness.A330-A340@airbus.com).

