



# Notification of a Proposal to issue an Airworthiness Directive

**AD No.:** 20-186

**Issued:** 24 November 2020

Note: This Proposed Airworthiness Directive (PAD) 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.

In accordance with the EASA Continuing Airworthiness Procedures, the Executive Director is proposing the issuance of an EASA Airworthiness Directive (AD), applicable to the aeronautical product(s) identified below.

All interested persons may send their comments, referencing the PAD Number above, to the e-mail address specified in the 'Remarks' section, prior to the consultation date indicated.

**Design Approval Holder's Name:**

AIRBUS

**Type/Model designation(s):**

A330 and A340 aeroplanes

**Effective Date:** [TBD - standard: 14 days after AD issue date]

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

**Foreign AD:** Not applicable

**Supersedure:** This AD supersedes EASA AD 2019-0291R1 dated 04 March 2020.

## ATA 28 – Fuel – Fuel Pump – Inspection

### 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, SB A340-28-4142 and SB A340-28-5062, 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.

**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 A locations:** An affected part which is new (not previously installed) or has been repaired in accordance with Eaton Aerospace Ltd Component Maintenance Manual (CMM) 28-21-55 (housing was replaced); 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 AOT A28L006-17 (any revision); or a fuel pump which is not an affected part.

**Serviceable part for installation at B locations:** An affected part which is new (not previously installed) or has been repaired in accordance with Eaton Aerospace Ltd CMM 28-21-55 (housing was replaced); 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 AOT A28L006-17 (any revision); or a fuel pump which is not an 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.

**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.

Since 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 on all affected locations and, depending on findings, replacement of damaged affected parts with serviceable parts.

Since that AD was published, it has been 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 has revised the AOT to reflect this. The applicable SBs are expected to be revised to also reflect the impact of FC on the accumulation of cavitation erosion.

For the reasons described above, this AD retains the requirements of EASA AD 2019-0291R1, which is superseded, and requires inspection of affected parts, when installed at Location A, at amended compliance times. In addition, the Applicability of this AD is also expanded to include A330-743L and A330-841 aeroplanes.

This AD is still an interim action as it is expected that a new pump, more erosion resistant, will be developed and the installation of these pumps may be required by a new AD.

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

Required as indicated, unless accomplished previously:

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

- (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 locations in accordance with the instructions of the applicable SB or Airbus AOT A28L006-17 (any revision).

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

Compliance Time (A or B, whichever occurs later)	
<b>A</b>	Before an affected part exceeds 10 000 flight hours (FH) or 3 000 FC, whichever occurs first
<b>B</b>	Within 30 days after the effective date of this AD [for centre/rear centre tank/aft transfer fuel pump] Within 40 days after the effective date of this AD [for stand-by fuel pump]

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

Table 2 – Fuel Pump Repetitive Inspection Intervals for Affected Parts at A Locations

Erosion	Compliance Time (FH or FC, whichever occurs first)
No erosion	5 000 FH or 1 500 FC
Case 1 erosion	
Case 2 erosion	1 000 FH or 300 FC



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

- (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 in accordance with the instructions of the applicable SB (at Revision 01 or later).

Table 3 – Fuel Pump Inspection Threshold for Affected Parts at B Locations (see Note 1 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 1: The FH specified in Table 3 of this AD are those accumulated by an affected part at B locations, on 11 March 2020 [the effective date of EASA AD 2019-0291R1], 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.

**Terminating Action:**

- (5) None.

**Part Installation / Switching Pump Location:**

- (6) For Group 1 and Group 2 aeroplanes: From the effective date of this AD, it is allowed to install on any aeroplane an affected part in an A or B location, provided it is a serviceable part (see Definitions and restrictions in Table 4 of this AD) and that, following installation, it is inspected as required by paragraphs (1) and (2) of this AD. For the purpose of this AD, installation of an affected part (at A or B locations) on a Group 2 aeroplane effectively makes that aeroplane a



Group 1 aeroplane and, following installation, actions are required by this AD accordingly for that aeroplane.

Table 4 – Fuel Pump Installation

Affected Part Condition	Installation on A or B Location	Affected Part Installation
Breakthrough	A or B	Not allowed
Case 3	A or B	
Case 2	A	
	B	Allowed
Case 1	A or B	

Note 2: 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 paragraph (6) or Table 4 of this AD.

- (7) For Group 1 and Group 2 aeroplanes: Removing an affected part from an A location and installation of that affected part at an B location, or removing an affected part from an B location and installation at an A location, as applicable, is allowed (see paragraph (6) and restrictions in Table 4 of this AD), provided that, concurrently with installation, the affected part passes an inspection for the new location (see Definitions – serviceable part of this AD). For the purpose of this AD, installation of an affected part (at A or B locations) on a Group 2 aeroplane effectively makes that aeroplane a Group 1 aeroplane and, following installation, actions are required by this AD accordingly for that aeroplane.

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

- (8) 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 Airbus AOT A28L006-17 (any revision), inform all flight crews, and, thereafter, operate the aeroplane accordingly. This can be accomplished by inserting a copy of Airbus AOT A28L006-17 (any revision) into the applicable MMEL.
- (9) For Group 1 A340-500 and A340-600 aeroplanes: Concurrently with the MMEL amendment as required by paragraph (8) of this AD, amend the applicable MMEL, on the basis of which the operator’s MEL is established, as indicated in Table 5 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 5 – A340-500 and A340-600 MMEL Amendment

MMEL Amendment
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

- (10) 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:**

- (11) For Group 1 aeroplanes: From 13 December 2019 [the effective date of EASA AD 2019-0291 at original issue], each time defueling and 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 contains the instructions of the AOT for these actions, is acceptable to comply with this requirement.

#### **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.

Airbus SB A340-28-4142 original issue dated 06 March 2019, or Revision 01 dated 28 April 2020.

Airbus SB A340-28-5062 original issue dated 06 March 2019, or Revision 01 dated 28 April 2020..

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. This Proposed AD will be closed for consultation on 08 December 2020.



2. Enquiries regarding this PAD should be referred to the EASA Programming and Continued Airworthiness Information Section, Certification Directorate. E-mail: [ADs@easa.europa.eu](mailto:ADs@easa.europa.eu).
3. Information about any failures, malfunctions, defects or other occurrences, which may be similar to the unsafe condition addressed by this PAD, and which may occur, or have occurred on a product, part or appliance not affected by this PAD, 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 PAD 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.
4. For any question concerning the technical content of the requirements in this PAD, please contact: AIRBUS – Airworthiness Office – IIAL; E-mail: [airworthiness.A330-A340@airbus.com](mailto:airworthiness.A330-A340@airbus.com).

