



# Notification of a Proposal to issue an Airworthiness Directive

**PAD No.: 18-104**

**Issued: 20 July 2018**

Note: This Proposed Airworthiness Directive (PAD) is issued by EASA, acting in accordance with Regulation (EC) 216/2008 on behalf of the European Union, its Member States and of the European third countries that participate in the activities of EASA under Article 66 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):**

A340 aeroplanes

**Effective Date:** Revision 1: [TbD - 7 days after publication]

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

**Foreign AD:** Not applicable

**Revision:** This AD revises EASA AD 2016-0035 dated 24 February 2016.

## ATA 53 – Fuselage – Structure Frames and Joints – Modification / Reinforcement

**Manufacturer(s):**

Airbus, formerly Airbus Industrie

**Applicability:**

Airbus A340-211, A340-212, A340-213, A340-311, A340-312 and A340-313 aeroplanes, all manufacturer serial numbers (MSN).

**Reason:**

During the analysis supporting A340 extension of the Maintenance Program Publication Trigger (MPPT), based on engineering data that supports the structural maintenance program, it was determined that no affected aeroplane should be operated beyond a given threshold, also known as SMP (Structural Modification Point), without prior embodiment of some modifications. As defined in Airbus Operators Information Transmission (OIT) 999-0133/14, the MPPT corresponds to the values up to which the structural maintenance program has been validated in compliance with damage tolerance requirements of FAR/JAR/CS 25.571. The A340 MPPT extension took into account further operation of full scale fatigue test results, in-service findings, and the structural ageing effect including re-evaluation of the Fatigue and Damage Tolerance analysis of the original structure and its modifications.



To allow the A340 MPPT extension, Airbus designed a number of modifications which were initially integrated in Section 3 of Airbus A340 ALS Part 2.

Failure to embody those modifications could lead to crack initiation and (undetected) propagation, possibly resulting in reduced structural integrity of the aeroplane fuselage.

EASA issued AD 2013-0127 to require accomplishment of these modifications as part of compliance with the ALS. After that AD was issued, Airbus A340 ALS Part 2 variation 1.3 Revision 03 was published, removing Section 3, which may have caused operators to conclude that the modifications were no longer required.

Consequently, EASA issued AD 2016-0035 to require the accomplishment of certain modifications, previously listed in Section 3 of Airbus A340 ALS Part 2, as specified in Appendix 1 of that AD.

Since that AD was issued, Airbus also developed some modifications which can be an alternative to some existing ones.

For the reasons described above, this AD is revised to provide alternative solutions for certain modifications. In addition, the configurations affected by Actions No.5 and No.11 have been amended, effectively clarifying the Applicability of those actions. This revised AD also contains some editorial changes to meet the latest AD writing standards, without changes to the technical content.

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

Required as indicated, unless accomplished previously:

#### **Modification(s):**

- (1) Within the compliance time(s) of the applicable SMP, as defined for each action in Appendix 1, Table 3, of this AD, but not before reaching the lower limit as defined in Appendix 1, Table 2, of this AD, as applicable to aeroplane configuration, modify the aeroplane in accordance with the instructions of each corresponding Airbus Service Bulletin (SB), as specified for each action in Appendix 1 of this AD.
- (2) For those actions where Appendix 1, Table 3, of this AD does not identify an SB, contact Airbus for approved instructions for the corresponding modification, as listed in Appendix 1 of this AD, and, within the compliance time(s) of the applicable SMP, as specified in Appendix 1, Table 3, of this AD, accomplish those instructions accordingly.

#### **Alternative Method(s):**

- (3) Modification of an aeroplane in accordance with the instructions of Airbus SB A340-53-4237 is an acceptable alternative method to comply with the modification requirements of Action No.11 (Airbus SB A340-53-4234) for that aeroplane, provided this is accomplished without exceeding the applicable compliance times.
- (4) Modification of an aeroplane in accordance with the instructions of Airbus SB A340-53-4241 (A340-300 aeroplanes) or SB A340-53-4242 (A340-200 aeroplanes) is an acceptable alternative method to comply with the modification requirements of Action No.10 (Airbus SB



A340-53-4198) for that aeroplane, provided this is accomplished without exceeding the applicable compliance times.

#### Ref. Publications:

Airbus SB A340-53-4065 original issue dated 15 May 1996, or Revision 01 dated 27 May 1998, or Revision 02 dated 22 February 1999, or Revision 03 dated 15 November 1999, or Revision 04 dated 01 June 2012.

Airbus SB A340-53-4135 original issue dated 12 July 2002, or Revision 01 dated 19 March 2003, or Revision 02 dated 21 June 2010, or Revision 03 dated 17 July 2012.

Airbus SB A340-53-4191 original issue dated 25 June 2012.

Airbus SB A340-53-4194 original issue dated 04 October 2012, or Revision 01 dated 16 August 2016.

Airbus SB A340-53-4196 original issue dated 16 May 2013.

Airbus SB A340-53-4197 original issue dated 16 May 2013.

Airbus SB A340-53-4198 original issue dated 24 May 2013, or Revision 01 dated 12 October 2016.

Airbus SB A340-53-4234 original issue dated 30 November 2015.

Airbus SB A340-53-4237 original issue dated 05 February 2018.

Airbus SB A340-53-4241 original issue dated 05 July 2018.

Airbus SB A340-53-4242 original issue dated 21 June 2018.

The use of later approved revisions of the above-mentioned documents is acceptable for compliance with the requirements of this AD.

Airbus OIT 999-0133/14 Revision 02, dated 27 August 2015, provides additional information on the subject addressed by this AD.

#### Remarks:

1. This Proposed AD will be closed for consultation on 03 August 2018.
2. Enquiries regarding this PAD should be referred to the EASA Safety 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](#).



4. For any question concerning the technical content of the requirements in this PAD, please contact: AIRBUS – Airworthiness Office – EIAL, E-mail: [airworthiness.A330-A340@airbus.com](mailto:airworthiness.A330-A340@airbus.com).



## Appendix 1 – SMP / Modifications

Notes referenced in Table 3 below:

Note 1: LR = Flight Hours (FH) optimized set for aeroplane in Long Range (LR) operations; SR = FH optimized set for aeroplane in Short Range (SR) operations.

Note 2: Each applicable SB defines the aeroplanes (MSN) and configuration(s) for which the actions are required. The affected Weight Variant (WV) Group definitions are provided in Table 1 of this AD.

Table 1 – WV Group Definitions

Aeroplanes	Group	WV
A340-200	Group 42A	000, 001 and 002
	Group 42B	021
A340-300	Group 43A	000, 001, 002, 003 and 004
	Group 43B	020, 021, 023, 024, 025, 026, 028 and 029
	Group 43C	027

Note 3: For some modifications, a lower threshold, as defined in flight cycles (FC) or FH, whichever occurs later, as specified in Table 2 of this AD, was determined to be necessary.

Table 2 – Window of Embodiment: Lower Threshold for Modification (see Note 1 of this AD)

Action No.	SB (Mod)	LR (Note 1)	SR (Note 1)
1	SB A340-53-4065 (Mod 43904)	5 500 FC	3 200 FC or 44 600 FH
2	SB A340-53-4135 (Mod 49404), only for Groups 42B, 43B and 43C	9 300 FC or 9 300 FH	1 300 FC or 37 000 FH
8	SB A340-53-4194 (Mod 202494), only for Groups 42B, 43B and 43C	9 100 FC or 8 000 FH	7 200 FC or 61 000 FH

Note 4: For aeroplanes that are close to, or have already exceeded the thresholds, as specified for **Action (11)** in Table 3 of this AD (SB A340-53-4234), accomplishment of the modification can be deferred for a period not exceeding 12 months after 09 March 2016 [the effective date of EASA AD 2016-0035 at original issue].



Table 3 – Modifications

Action No.	Description of Action	Applicability (Note 2)	Applicable SB (Equivalent Airbus Mod, EASA approval)	Compliance Time (FC or FH, whichever occurs first)	
				SMP LR (Note 1)	SMP SR (Note 1)
1	Change at the stringer holes of center fuselage upper frames	Group 43A – Pre-mod 43904	SB A340-53-4065 (Mod 43904)	17 200 FC / 116 400 FH (Note 3)	18 700 FC / 75 000 FH (Note 3)
		Group 42A – Pre-mod 43904		17 700 FC / 120 000 FH (Note 3)	19 300 FC / 77 400 FH (Note 3)
2	Reinforce area of frame FR40.3 to FR45, STR 26 to stringer STR 29	Group 42B – Pre-mod 49404, or Group 43B – Pre-mod 49404, or Group 43C – Pre-mod 49404	SB A340-53-4135 (Mod 49404)	12 000 FC / 81 400 FH (Note 3)	16 500 FC / 66 000 FH (Note 3)
		Group 42A – Pre-mod 49404, or Group 43A – Pre-mod 49404		16 200 FC / 109 800 FH	22 200 FC / 89 000 FH
3	Improve fatigue life at circumferential joints of frame FR45 at intersections with longitudinal joints	Group 42B – Pre-mod 202357	SB A340-53-4191 (Mod 202357)	20 700 FC	
		Group 43B – Post-mod 44583, Pre-mod 49202 and Pre-mod 202357, or Group 43C – Pre-mod 202357		17 400 FC	
		Group 43B – Pre-mod 44583 and Pre-mod 202357		21 700 FC	
4	Reinforce frame couplings in area of frame FR20-FR25 / stringer STR20-STR22	Group 43A – Post-mod 42185, Pre-mod 202450	(Mod 202450, Airbus DOA approved)	21 000 FC	
		Group 43B – Pre-mod 202450, or Group 43C – Pre-mod 202450		21 700 FC	



Action No.	Description of Action	Applicability (Note 2)	Applicable SB (Equivalent Airbus Mod, EASA approval)	Compliance Time (FC or FH, whichever occurs first)	
				SMP LR (Note 1)	SMP SR (Note 1)
4 (cont.)	Reinforce frame couplings in area of frame FR20-FR25 / stringer STR20-STR22	Group 42A – Post-mod 42185, Pre-mod 202450, or Group 42B – Post-mod 42185, Pre-mod 202450	(Mod 202450, Airbus DOA approved)	22 500 FC	
5	Reinforce circumferential joint at frame FR53.6-FR53.7 (Door TYPE A)	Group 43A – Post-mod 40161 and Pre-mod 202451	(Mod 202451, EASA 10055708)	24 200 FC / 16 3300 FH	28 600 FC / 114 900 FH
		Group 43B – Post-mod 40161 and Pre-mod 202451, or Group 43C – Post-mod 40161 and Pre-mod 202451		22 200 FC / 149 600 FH	25 900 FC / 103 900 FH
6	Reinforce circumferential joint of rear fuselage at frame FR58	Group 42A – Pre-mod 40556 and Pre-mod 202452	SB A340-53-4196 (Mod 202452)	11 800 FC / 79 800 FH	13 800 FC / 55 700 FH
		Group 43B – Pre-mod 202452, or Group 43C – Pre-mod 202452		15 400 FC / 104 900 FH	18 300 FC / 73 300 FH
		Group 43A – Pre-mod 40556 and Pre-mod 202452		19 200 FC / 129 600 FH	22 500 FC / 90 400 FH
		Groups 42A and 42B (Airbus document refers to A340-200) – Post-mod 40556, Pre-mod 202452		24 100 FC / 162 800 FH	28 300 FC / 113 600 FH
7	Improve fatigue life of the external fuselage structure between frame FR53-2 and FR53-3 at stringer STR39	Group 42A – Pre-mod 42607 and Pre-Mod 202492, or Group 43A – Pre-mod 42607 and Pre-Mod 202492	(Mod 202492, EASA 10040091)	20 000 FC	



Action No.	Description of Action	Applicability (Note 2)	Applicable SB (Equivalent Airbus Mod, EASA approval)	Compliance Time (FC or FH, whichever occurs first)	
				SMP LR (Note 1)	SMP SR (Note 1)
8	Improve fatigue life of frame foot from FR.48 to FR.53-2 at stringer STR 25 and STR26 of center fuselage	Group 42B – Pre-mod 202494, or Group 43B – Pre-mod 202494, or Group 43C – Pre-mod 202494	SB A340-53-4194 (Mod 202494)	12 100 FC / 81 700 FH (Note 3)	13 100 FC / 52 700 FH (Note 3)
		Group 42A – Post-mod 42409S11839, Pre-mod 202494, or Group 43A – Post-mod 42409S11839, Pre-mod 202494		18 500 FC / 125 400 FH	20 200 FC / 80 900 FH
9	Improve fatigue life of internal fuselage structure on longitudinal beams above center wing box	Group 43A – Pre-mod 202553, or Group 43B – Pre-mod 49202 and Pre-mod 202553, or Group 43C – Pre-mod 202553	(Mod 202553, EASA 10040091)	26 800 FC	
10	Reinforce circumferential joint and longitudinal joint in area of frame FR31-FR37.1	Group 43B – Pre-mod 202582, or Group 43C – Pre-mod 202582	SB A340-53-4198 (Mod 202582)	16 200 FC / 105 600 FH	19 100 FC / 72 000 FH
		Group 42A – Pre-mod 202582, or Group 42B – Pre-mod 202582		18 700 FC	
		Group 43A – Pre-mod 202582		19 500 FC	
11	Reinforce circumferential joint and longitudinal joint at frame FR53.6-FR53.7 (Door TYPE 1)	Group 43A – Pre-mod 40161 and Pre-mod 202583	(Mod 202583, EASA 10055708)	23 900 FC / 163 000 FH	28 600 FC / 115 000 FH
		Group 43B – Pre-mod 40161, Pre-mod 202583 and Pre-mod 206136, or Group 43C – Pre-mod 40161, Pre-mod 202583 and Pre-mod 206136	SB A340-53-4234 (Mod 202583)	14 900 FC / 101 900 FH	17 900 FC / 71 900 FH



Action No.	Description of Action	Applicability (Note 2)	Applicable SB (Equivalent Airbus Mod, EASA approval)	Compliance Time (FC or FH, whichever occurs first)	
				SMP LR (Note 1)	SMP SR (Note 1)
12	Reinforce circumferential joint at frame FR72 of rear fuselage	Group 43A – Pre-mod 40556 and Pre-mod 202584	SB A340-53-4197 (Mod 202584)	10 400 FC / 71 000 FH	12 200 FC / 51 600 FH
		Group 42A – Pre-mod 40556 and Pre-mod 202584		8 600 FC / 58 800 FH	10 100 FC / 40 100 FH

