

Notification of a Proposal to issue an Airworthiness Directive

PAD No.: 21-106

Issued: 23 July 2021

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):

A318, A319, A320, and A321 aeroplanes

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

TCDS Number(s): EASA.A.064

Foreign AD: Not applicable

Supersedure: This AD supersedes EASA AD 2017-0099 dated 08 June 2017.

ATA 57 – Wings – Front Spar Vertical Stringers – Inspection

Manufacturer(s):

Airbus, formerly Airbus Industrie

Applicability:

Airbus A318-111, A318-112, A318-121, A318-122, A319-111, A319-112, A319-113, A319-114, A319-115, A319-131, A319-132, A319-133, A320-211, A320-212, A320-214, A320-215, A320-216, A320-231, A320-232, A320-233, A321-111, A321-112, A321-131, A321-211, A321-212, A321-213, A321-231 and A321-232 aeroplanes, all manufacturer serial numbers (MSN), except those on which Airbus modification (mod) 160000 (structural reinforcement for A319 and A320 sharklet installation) or mod 155946 was implemented in production.

Definitions:

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

Config.: Aeroplane configurations (config.) as defined in Appendix 1 of this AD.

SDI: Special detailed inspection (SDI) of the spar vertical stringer radius, the horizontal floor beam radius and the fastener holes on frame (FR) 36.

The SB: Airbus Service Bulletin (SB) A320-57-1178 Revision 04.

Reason:

During centre fuselage certification full scale fatigue test, cracks were found on the wing front spar vertical stringer at FR 36. Analysis of these findings indicated that in-service aeroplanes could be similarly affected.

This condition, if not detected and corrected, could lead to crack propagation and consequent deterioration of the structural integrity of the aeroplane.

To address this potential unsafe condition, Airbus issued SB A320-57-1016 to provide inspection instructions and, consequently, DGAC France issued AD 97-311-105 to require (for A320 aeroplanes) those repetitive inspections. At the same time, modification in accordance with Airbus SB A320-57-1017 was introduced as (optional) terminating action for the repetitive inspections required by that AD.

After that AD was issued, and following new analysis, modification per Airbus SB A320-57-1017 was no longer considered to be terminating action for the repetitive inspections as required by DGAC France AD 97-311-105. Aeroplanes with MSN 0080 up to MSN 0155 inclusive had been delivered with the addition of a 5 mm thick light alloy shim under the heads of 2 fasteners at the top end of the front spar vertical stringers (Airbus mod 21290P1546, which was the production line equivalent to in-service modification through Airbus SB A320-57-1017). Aeroplanes with MSN 0156 and higher were delivered with vertical stiffeners of the forward wing spar upper end with stiffener cap thickness increased from 4 to 6 mm (Airbus mod 21290P1547).

Prompted by these findings, Airbus issued SB A320-57-1178 Revision 01 to introduce new repetitive inspections and, consequently, EASA issued AD 2014-0069, superseding DGAC France AD 97-311-105, to require the new repetitive SDI and, depending on findings, accomplishment of applicable corrective action(s).

After that AD was issued, further investigations in the frame of the Widespread Fatigue Damage (WFD) campaign identified that some repetitive inspection thresholds and intervals had to be revised or introduced, and a new terminating action modification was designed. Consequently, EASA issued AD 2017-0099, retaining the requirements of EASA AD 2014-0069, which was superseded, expanding the Applicability and updating threshold and intervals for the SDI.

Since that AD was issued, Airbus SB A320-57-1200 was revised (now at Revision 01) and the SB, as defined in this AD, was issued, expanding the effectivity to include post-mod 160021 (structural reinforcement for A321 sharklet installation) A321 aeroplanes.

For the reasons described above, this AD retains the requirements of EASA AD 2017-0099, which is superseded, but requires accomplishment of the SDI in accordance with the instruction of the SB and expands the Applicability.

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

Required as indicated, unless accomplished previously:



Pre-Inspection Action(s):

- (1) For aeroplanes in Config. 1, 2 or 3 that have been inspected, before the effective date of this AD, in accordance with the instructions of Airbus SB A320-57-1178 at original issue, without accomplishment of the additional work as specified in Airbus SB A320-57-1178 Revision 01, before accomplishment of the first SDI as required by this AD, contact Airbus for further instructions and accomplish those instructions accordingly.

Inspection(s):

- (2) Within the compliance time defined in Table 1 of this AD, as applicable to aeroplane configuration, and, thereafter, at intervals not to exceed the values defined in Table 2 of this AD, accomplish an SDI, as defined in this AD, in accordance with the instructions of the SB.
- (3) For an aeroplane that has been repaired, before the effective date of this AD, at the wing front spar vertical stringers, in accordance with instructions approved by EASA or approved under Airbus DOA, accomplish the repetitive SDI as required by this AD within the compliance time(s) as defined in those instructions. If no compliance time is identified in those instructions, the repetitive SDI must be accomplished at intervals not exceeding the values as defined in Table 2 of this AD.

Table 1 – Initial SDI

Compliance Time(s) (A or B, whichever occurs later)		
Config.	A: (flight cycles (FC) or flight hours (FH), whichever occurs first)	B: (calendar time, FC or FH, whichever occurs first)
1	Before exceeding 25 100 FC or 50 200 FH since aeroplane first flight	Within 8 800 FC or 17 700 FH after the last SDI accomplished in accordance with Airbus SB A320-57-1178 (at any revision)
2	Within 8 800 FC or 17 700 FH after Airbus SB A320-57-1017 embodiment, without prior accomplishment of SB A320-57-1016 or SB A320-57-1178 and before exceeding 32 000 FC or 64 000 FH since aeroplane first flight	Within 15 900 FC or 31 900 FH after the last SDI accomplished in accordance with Airbus SB A320-57-1178 (at any revision)
3	Before exceeding 32 000 FC or 64 000 FH since aeroplane first flight	
5	Before exceeding 48 000 FC or 96 000 FH since aeroplane first flight	Within 11 500 FC or 23 000 FH after the last SDI accomplished in accordance with Airbus SB A320-57-1178 (at any revision)
6		
7	Before exceeding 44 400 FC or 88 900 FH since aeroplane first flight	Within 10 200 FC or 20 500 FH after the last SDI accomplished in accordance with Airbus SB A320-57-1178 (at any revision)
8	Before exceeding 26 880 FC or 115 580 FH since aeroplane first flight	None
9		
10	Within 48 000 FC or 96 000 FH after SB A320-57-1200 embodiment	None



Compliance Time(s) (A or B, whichever occurs later)		
Config.	A: (flight cycles (FC) or flight hours (FH), whichever occurs first)	B: (calendar time, FC or FH, whichever occurs first)
11	Before exceeding 44 400 FC or 88 900 FH since aeroplane first flight	None

Table 2 – SDI Intervals

Config.	Compliance Time(s) (FC or FH, whichever occurs first)
1	Within 8 800 FC or 17 700 FH
2 and 3	Within 15 900 FC or 31 900 FH
5, 6 and 10	Within 11 500 FC or 23 000 FH
7 and 11	Within 10 200 FC or 20 500 FH
8 and 9	Within 6 240 FC or 26 830 FH

Corrective Action(s):

- (4) If, during any SDI as required by this AD, any crack is found, before next flight, contact Airbus for approved corrective action instructions and accomplish those instructions accordingly.

Modification:

- (5) For A320 aeroplanes in Config. 1, 2 or 3, within the compliance time defined in Table 3 of this AD, as applicable, modify the centre wing box area in accordance with the instructions of Airbus SB A320-57-1200.

Table 3 – Airbus SB A320-57-1200 Modification Threshold

Aeroplane Mod-Status	Compliance Time
pre-mod 21290P1546	Before exceeding 37 700 FC or 75 400 FH, whichever occurs first since aeroplane first flight, but not before accumulating 28 000 FC and 56 000 FH since aeroplane first flight
post-mod 21290P1546	Before exceeding 48 000 FC or 96 000 FH, whichever occurs first since aeroplane first flight, but not before accumulating 28 000 FC and 56 000 FH since aeroplane first flight

Terminating Action:

- (6) Corrective action(s), repair, or modification of an aeroplane, as required by paragraph (4) or (5) of this AD, as applicable, does not constitute terminating action for the repetitive SDI as required by this AD for that aeroplane, unless specified otherwise in Airbus documentation.
- (7) For aeroplanes in Config. 5, 6 or 7: Modification of the centre wing box area of an aeroplane in accordance with the instructions of Airbus SB A320-57-1228 constitutes terminating action for



the repetitive SDI as required by this AD for that aeroplane, provided the modification is accomplished not before the threshold as identified in Table 4 of this AD, as applicable.

Table 4 – Airbus SB A320-57-1228 Modification Threshold

Aeroplane configuration	Threshold
5, 6	Not before accumulating 30 000 FC and 60 000 FH since aeroplane first flight
7	Not before accumulating 34 000 FC and 68 000 FH since aeroplane first flight

Credit:

- (8) Inspections accomplished on an aeroplane in accordance with the instructions of the SB, supplemented by additional instructions approved before the effective date of this AD by Airbus DOA, are an acceptable alternative method to comply with the repetitive inspections as required by paragraph (2) of this AD for that aeroplane.
- (9) For Config 5 to 11 (inclusive): Inspections accomplished on an aeroplane before the effective date of this AD in accordance with the instructions of Airbus SB A320-57-1178 (original issue up to Revision 03) are acceptable to comply with the initial inspection as required by paragraph (2) of this AD for that aeroplane.

Ref. Publications:

Airbus SB A320-57-1016 Revision 02 dated 20 January 1998.

Airbus SB A320-57-1017 original issue dated 03 September 1991, or Revision 01 dated 17 March 1997.

Airbus SB A320-57-1178 Revision 01 dated 28 May 2014, or Revision 02 dated 20 November 2015, or Revision 03 dated 29 November 2016, or Revision 04 dated 15 November 2019.

Airbus SB A320-57-1200 original issue dated 20 November 2015, or Revision 01 dated 09 January 2019.

Airbus SB A320-57-1228 original issue dated 21 November 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 20 August 2021.
2. Enquiries regarding this PAD should be referred to the EASA Safety Information Section, Certification Directorate. E-mail: 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 – IIASA; E-mail: account.airworth-eas@airbus.com.



Appendix 1 – Aeroplane Configuration (Config.) Definition

Config.	Airbus Mod embodied in production / SB embodied				Affected Aeroplanes			
	21290P1546	21290P1547	36993P9963	SB A320-57-1017	A320	A321	A319	A318
1	No	No	No	No	X			
2	No	No	No	Yes	X			
3	Yes	No	No	No	X			
5	No	Yes	No	No	X			
	No	Yes	No	No			X	
	No	Yes	No	No				X
6	No	Yes	Yes	No	X			
	No	Yes	Yes	No			X	
	No	Yes	Yes	No				X

Config. 4: not applicable.

Config. 7: A321 aeroplanes pre Mod 160021

Config. 8: A319 aeroplanes on which Mod 28162, 28238 and 28342 have been embodied (“Corporate Jet”), and Mod 36993P9963 is not embodied.

Config. 9: A319 aeroplanes on which Mod 28162, 28238 and 28342 have been embodied (“Corporate Jet”), and Mod 36993P9963 is embodied.

Config. 10: A320 aeroplanes post SB A320-57-1200.

Config. 11: A321 aeroplanes post Mod 160021.

