European Union Aviation Safety Agency

Airworthiness Directive

AD No.: 2023-0205

Issued: 21 November 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 Approval Holder's Name:

AIRBUS S.A.S.

Type/Model designation(s):

A318, A319, A320 and A321 aeroplanes

Effective Date: 05 December 2023

TCDS Number(s): EASA.A.064

Foreign AD: Not applicable

Supersedure: This AD supersedes EASA AD 2021-0241 dated 08 November 2021.

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, A321-232 and A321-271N 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 embodied 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.

HFEC: High-frequency eddy-current (HFEC) inspection of the vertical stiffeners' radius and of the horizontal beam radius.

Rototest inspection: Rototest inspection of the fasteners' holes on FR36.

CEO aeroplanes: Commercial designation standing for Current Engine Option (CEO) for certain A319, A320 and A321 aeroplanes having a configuration as defined in the EASA TCDS EASA.A.064.

NEO aeroplanes: Commercial designation standing for New Engine Option (NEO) for certain A319, A320 and A321 aeroplanes having a configuration as defined in the EASA TCDS EASA.A.064.

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

The NEO SB: Airbus SB A320-57-1238.

Reason:

During full-scale certification fatigue testing of the centre fuselage, cracks were found on a wing front spar vertical stringer at FR36. 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, possibly resulting in reduced 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) repetitive inspections. In addition, 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, it was determined that modification per Airbus SB A320-57-1017 could no longer be considered as 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 this determination, 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.
After that AD was issued, Airbus issued SB A320-57-1200 Revision 01 and the CEO SB, as defined in this AD, expanding the Effectivity to include post-mod 160021 (structural reinforcement for A321 sharklet installation) A321 aeroplanes. Prompted by this development, EASA issued AD 2021-0241,

retaining the requirements of EASA AD 2017-0099, which was superseded, to expand the Applicability and to require additional SDI in accordance with the instructions of the CEO SB.

Since that AD was issued, complementary investigation results indicated that NEO aeroplanes in post-mod 161349 and pre-mod 155946P14268 configuration could also be affected by the unsafe condition addressed by this AD. Consequently, Airbus issued the NEO SB to provide inspection instructions for Airbus A321-271N aeroplanes.

For the reasons described above, this AD retains the requirements of EASA AD 2021-0241, which is superseded, expands the Applicability to include Airbus A321-271N aeroplanes and introduces SDI (HFEC and rototest inspections) for these aeroplanes.

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 22 November 2021 [the effective date of EASA AD 2021-0241], 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) For all aeroplanes, except those in Config. 12, 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 SDI (HFEC and rototest inspections), as defined in this AD, in accordance with the instructions of the CEO SB.

(3) For aeroplanes in Config. 12, within the compliance time defined in Table 1 of this AD, and, thereafter, at intervals not to exceed the values defined in Table 2 of this AD, accomplish SDI (HFEC and rototest inspections), as defined in this AD, in accordance with the instructions of the NEO SB.

(4) For an aeroplane that has been repaired, before 22 November 2021 [the effective date of EASA AD 2021-0241], at the wing front spar vertical stringers, in accordance with instructions approved by EASA or approved under the authority of Airbus Design Organization Approval (DOA) privileges, 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 (HFEC and Rototest Inspections)

Compliance Time(s) - (**A** or **B**, whichever occurs later)		
Config.	**A**: (flight cycles (FC) or flight hours (FH), (whichever occurs first)	**B**: (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 and **6**	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 6 SB A320-57-1178 (at any revision)
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 and **9**	Before exceeding 26 880 FC or 115 580 FH since aeroplane first flight	None
10	Within 48 000 FC or 96 000 FH after SB A320-57-1200 embodiment	
11 and **12**	Before exceeding 44 400 FC or 88 900 FH since aeroplane first flight	

Table 2 – SDI Intervals (HFEC and Rototest Inspections)

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, 11 and **12**	Within 10 200 FC or 20 500 FH
8 and **9**	Within 6 240 FC or 26 830 FH

Corrective Action(s):

(5) 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:

(6) 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 Thresholds

Aeroplane Mod-Status	Compliance Time(s)
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:

(7) Corrective action(s), repair, or modification of an aeroplane, as required by paragraph (5) or (6) 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.

(8) 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 not accomplished before reaching the threshold as identified in Table 4 of this AD, as applicable.

Table 4 – Airbus SB A320-57-1228 Modification

Config.	Threshold(s)
5 and **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:

(9) Inspections accomplished on an aeroplane in accordance with the instructions of the CEO SB, supplemented by additional instructions approved before 22 November 2021 [the effective date of EASA AD 2021-0241] by Airbus DOA, are acceptable to comply with the repetitive inspections as required by paragraph (2) of this AD for that aeroplane.

(10) For Config. 5 to 11 (inclusive): Inspections accomplished on an aeroplane before 22 November 2021 [the effective date of EASA AD 2021-0241] in accordance with the instructions of Airbus SB A320-57-1178 (original issue up to Revision 03) are acceptable to comply with the initial inspections 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.

Airbus SB A320-57-1238 original issue dated 09 June 2023.

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 19 October 2023 as PAD 23-118 for consultation until 16 November 2023. No comments were received during the consultation period.

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: AIRBUS – Airworthiness Office – 1IASA; 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 on which mod 160021 has not been embodied.

Config. 8: A319 aeroplanes on which mod 28162, 28238 and 28342 have been embodied ("Corporate Jet"), and mod 36993P9963 has not been embodied.

Config. 9: A319 aeroplanes on which mod 28162, 28238 and 28342 have been embodied ("Corporate Jet"), and mod 36993P9963 has been embodied.

Config. 10: A320 aeroplanes on which SB A320-57-1200 has been embodied.

Config. 11: A321 aeroplanes on which mod 160021 has been embodied.

Config. 12: A321 aeroplanes on which mod 161349 has been embodied; and mod 155946P14268 has not been embodied.