



## Notification of a Proposal to issue an Airworthiness Directive

**PAD No.:** 22-104

**Issued:** 29 July 2022

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 S.A.S.

**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 2018-0135R1 dated 06 July 2018.

### ATA 32 – Landing Gear – Main Landing Gear Sliding Tube – Inspection / Replacement

**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.

**Definitions:**

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

**The SDI SB:** Safran Landing Systems (Safran, formerly Messier-Dowty, Messier-Bugatti-Dowty) Service Bulletin (SB) 200-32-313, Safran SB 201-32-62 and Airbus SB A320-32-1416, as applicable.

**The DET SB:** Airbus SB A320-32-1441 Revision 02.



**Affected MLG shock absorber:** Main landing gear (MLG) shock absorbers, equipped with a sliding tube having a Part Number (P/N) and serial number (s/n) as identified in Safran SB 200-32-286 for A318, A319, and A320 aeroplanes, or in Safran SB 201-32-43 for A321 aeroplanes.

**Affected MLG sliding tube A:** MLG sliding tubes, having a P/N and s/n as listed in Safran SB 200-32-313 for A318, A319 and A320 aeroplanes, or in Safran SB 201-32-62 for A321 aeroplanes, except those that have passed (i.e. no damage detected) a Special Detailed Inspection (SDI) as required by paragraph (2) of this AD.

**Affected MLG sliding tube B:** MLG sliding tubes, having a P/N as identified in Safran SB 200-32-321 Revision 04 or SB 201-32-68 Revision 04, except those that have passed the inspection (i.e. without burrs found) in accordance with the instructions of Safran SB 200-32-321 (any Revision) or SB 201-32-68 (any Revision), as applicable, or that have been repaired, following that inspection (i.e. burrs found), in accordance with approved instructions provided by Safran.

**Batches:**

Affected MLG sliding tubes B Batch 1 are those having a P/N and s/n as identified in Appendix B of Safran SB 200-32-321 at original issue, or Revision 01, or Revision 02, or Revision 03, or SB 201-32-68 original issue, or Revision 01, or Revision 02, or Revision 03, as applicable.

Affected MLG sliding tubes B Batch 2 are those having a P/N as identified in Safran SB 200-32-321 or SB 201-32-68 and a s/n that is not part of Batch 1.

**Serviceable part A:** Any MLG sliding tube, eligible for installation, that is not an affected MLG sliding tube A.

**Serviceable part B:** Any MLG sliding tube, eligible for installation, that is not an affected MLG sliding tube A or B; or an affected MLG sliding tube B that has not exceeded 10 000 flight cycles (FC) since first installation on an aeroplane; or an affected MLG sliding tube B that, within the last 10 000 FC before installation on an aeroplane, has passed a Detailed Visual Inspection (DET) (no damage detected) in accordance with the instructions of Airbus SB A320-32-1441 (any revision).

**Reason:**

Cracks were reported on MLG sliding tubes and the investigations determined metallic inclusion during production and abnormal grinding operation during overhaul as cause of these cracks. Prompted by these reports, DGAC France issued AD F-2005-115 (EASA approval 2005-6032) and EASA issued AD 2014-0058 (further to issuance of the SDI SB), both requiring inspections and replacement of certain MLG sliding tubes.

After those AD were issued, during overhaul, cracks were found in the lower slave link bracket lug holes on two MLG sliding tubes. Subsequent investigation determined that these cracks may have developed due to burrs, which could have been present since manufacture. Based on the fact that the sliding tube is certified as a safe life part, this is considered to be a non-compliance with the requirements of JAR 25.571(c). Cracks in the affected sliding tubes may not be found during the existing on-wing scheduled inspections.



This condition, if not detected and corrected, could lead to sliding tube failure, possibly resulting in MLG collapse, damage to the aeroplane and injury to occupants.

Prompted by these findings, Safran introduced additional quality steps to eliminate burrs in the manufacturing process. To address this potential unsafe condition on delivered MLG sliding tubes, Airbus issued SB A320-32-1441 (later revised), providing instructions for on-wing repetitive DET, and Safran issued SB 200-32-321 and SB 201-32-68, as applicable to MLG configuration, providing instructions for inspection in shop.

Consequently, EASA issued AD 2018-0135 (later revised), partially retaining the requirements of DGAC France AD F-2005-115 (EASA approval 2005-6032) and EASA AD 2014-0058, which were superseded, and requiring repetitive DET of the affected MLG sliding tubes and, depending on findings, accomplishment of applicable corrective action(s). That AD also defined criteria for installation on an aeroplane of an affected MLG sliding tube.

Since EASA AD 2018-0135R1 was issued, two additional cases have been reported of cracking at the same location of MLG sliding tubes not affected by the inspection requirements of EASA AD 2018-0135R1. Consequently, Airbus issued the DET SB, as defined in this AD, to include additional actions for the new affected MLG sliding tubes Batch 2, as defined in this AD. Further investigation also determined that the inspection interval may be increased from 5 000 FC to 10 000 FC.

For the reason described above, this AD retains the requirements of EASA AD 2018-0135R1, which is superseded, extends the inspection requirement to affected MLG sliding tubes Batch 2 and increases the repetitive inspection interval.

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

Required as indicated, unless accomplished previously:

#### **Partial Restatement of the Requirements of DGAC France AD F-2005-115:**

- (1) Before 15 December 2008, replace each affected MLG shock absorber with a non-affected part. Instructions provided in the applicable Aircraft Maintenance Manual 32-11-13 page block 401 are an acceptable method to replace the MLG shock absorber.

#### **Partial Restatement of the Requirements of EASA AD 2014-0058:**

#### **Inspections:**

- (2) Within 3 months after 25 March 2014 [the effective date of EASA AD 2014-0058], accomplish an SDI of the MLG axle and brake flange of each affected MLG sliding tube A, as defined in this AD, in accordance with the instructions of the SDI SB.

#### **Corrective Action:**

- (3) If, during the SDI as required by paragraph (2) of this AD, any damage is detected, before next flight, replace that affected MLG sliding tube A with a serviceable part A, in accordance with the instructions of the SDI SB.



**Parts Installation:**

(4) [REFER TO PARAGRAPH 11]

**Partial Restatement of the Requirements of EASA AD 2018-0135R1 / New Requirements:****Repetitive Inspections:**

(5) Within the threshold as defined in Table 1 of this AD and, thereafter, at intervals not to exceed 10 000 FC, accomplish a DET of each affected MLG sliding tube B, in accordance with the instructions of the DET SB.

Table 1 – Initial DET of MLG Sliding Tube B (Batch 1 and Batch 2)

<b>Threshold (whichever occurs later, A, B or C)</b>	
<b>A</b>	Before exceeding 10 000 FC since first installation on an aeroplane (see Note 1 of this AD)
<b>B</b>	Before exceeding 10 000 FC since last MLG sliding tube overhaul
<b>C</b>	For Batch 1: Before exceeding 5 000 FC or within 25 months, whichever occurs first after 10 July 2018 [the effective date of EASA AD 2018-0135] For Batch 2: Before exceeding 2 000 FC after the effective date of this AD

Note 1: If no reliable data is available, operators may refer to the guidance specified in the Airbus A318/A319/A320/A321 Airworthiness Limitations Section (ALS) Part 1, Section 1 Chapter 5.2 (traceability) to determine the FC accumulated by the MLG sliding tube.

**Corrective Action:**

(6) If, during any DET as required by paragraph (5) of this AD, any crack is detected, before next flight, replace that affected MLG sliding tube B with a serviceable part B in accordance with the instructions of the DET SB (see Note 2 of this AD).

Note 2: Replacement of an MLG on an aeroplane with an MLG which has a serviceable part B installed is an acceptable method to comply with the requirements of paragraph (6) of this AD for that aeroplane.

**Part Replacement / Terminating Action:**

(7) Within the compliance time as defined in Table 2 of this AD, as applicable, replace each affected MLG sliding tube B with a non affected MLG sliding tube (A nor B). Installation of non affected MLG sliding tubes (A nor B) on an aeroplane constitutes terminating action for the repetitive inspections as required by paragraph (5) of this AD for that aeroplane (see Note 3 of this AD).

Table 2 – MLG Sliding Tube B Replacement

<b>Compliance Time</b>	
<b>Batch 1</b>	Within 10 years after 10 July 2018 [the effective date of EASA AD 2018-0135]
<b>Batch 2</b>	Within 10 years after the effective date of this AD



Note 3: Replacement of an MLG on an aeroplane with an MLG that does not have an affected MLG sliding tube (A nor B) installed is an acceptable method to comply with the requirements of paragraph (7) of this AD for that aeroplane.

**Conditional Credit:**

- (8) An aeroplane on which Airbus modification (mod) 161202 or mod 161346 has been embodied in production is not affected by the requirements of paragraphs (1), (2), (5) and (7) of this AD, provided it is determined that no affected MLG shock absorber and no affected MLG sliding tube (A nor B) is installed on that aeroplane.
- (9) Inspections and corrective actions, accomplished on an aeroplane before the effective date of this AD in accordance with the instructions of Airbus SB A320-32-1441 at original issue or Revision 01 are acceptable to comply with the initial requirements of paragraphs (5) and (6) of this AD for that aeroplane.

**Parts Installation:**

- (10) From 10 July 2018 [the effective date of EASA AD 2018-0135] do not install on any aeroplane an affected MLG shock absorber, as defined in this AD.
- (11) Do not install an affected MLG sliding tube A on any aeroplane, as required by paragraphs (11.1) or (11.2) of this AD, as applicable.
  - (11.1) For an aeroplane that, on 25 March 2014 [the effective date of EASA AD 2014-0058] had an affected MLG sliding tube A installed: After the inspection as required by paragraph (2) of this AD for that aeroplane.
  - (11.2) For an aeroplane that, on 25 March 2014 [the effective date of EASA AD 2014-0058], did not have an affected MLG sliding tube A installed: From 25 March 2014.
- (12) Do not install an affected MLG sliding tube B (Batch 1 or Batch 2) on any aeroplane, as required by paragraphs (12.1), (12.2) or (12.3) of this AD, as applicable.
  - (12.1) For an aeroplane that, on 10 July 2018 [the effective date of EASA AD 2018-0135], had an affected MLG sliding tube B (Batch 1) installed: After replacement of each affected MLG sliding tube B (Batch 1) as required by paragraph (7) of this AD.
  - (12.2) For an aeroplane that, on the effective date of this AD, has an affected MLG sliding tube B (Batch 2) installed: After replacement of each affected MLG sliding tube B (Batch 2) as required by paragraph (7) of this AD.
  - (12.3) For an aeroplane that, on the effective date of this AD, does not have an affected MLG sliding tube B (Batch 1 or Batch 2) installed: From the effective date of this AD.

**Ref. Publications:**

Airbus SB A320-32-1441, original issue dated 28 December 2016, or Revision 01 dated 14 December 2017, or Revision 02 [publication expected in July 2022].



Airbus SB A320-32-1416 original issue dated 10 March 2014.

Safran SB 200-32-321 original issue dated 09 September 2015, or Revision 01 dated 01 November 2016, or Revision 02 dated 03 October 2017, or Revision 03 dated 08 January 2020, or Revision 04 dated 03 November 2021.

Safran SB 201-32-68 original issue dated 09 September 2015, or Revision 01 dated 01 November 2016, or Revision 02 dated 03 October 2017, or Revision 03 dated 08 January 2020, or Revision 04 dated 03 November 2021.

Safran SB 200-32-286 original issue dated 03 September 2004, or Revision 01 dated 01 May 2005, or Revision 02 dated 15 June 2007, or Revision 03 dated 03 October 2008.

Safran SB 201-32-43 original issue dated 03 September 2004, or Revision 01 dated 01 May 2005, or Revision 02 dated 15 June 2007, or Revision 03 dated 03 October 2008.

Safran SB 200-32-313 original issue dated 25 February 2013, or Revision 01 dated 24 June 2014.

Safran SB 201-32-62 original issue dated 25 February 2013, or Revision 01 dated 24 June 2014.

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 26 August 2022.
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](#). 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 – 1IASA; E-mail: [account.airworth-eas@airbus.com](mailto:account.airworth-eas@airbus.com).

