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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2017-0498; Product Identifier 2016-NM-175-AD; Amendment 39-19053; AD 2017-19-23]**

**RIN 2120-AA64**

#### **Airworthiness Directives; Airbus Airplanes**

**AGENCY:** Federal Aviation Administration (FAA), Department of Transportation (DOT).

**ACTION:** Final rule.

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**SUMMARY:** We are superseding Airworthiness Directive (AD) 2015-15-10, which applied to all Airbus Model A318, A319, A320, and A321 series airplanes. AD 2015-15-10 required repetitive inspections of the trimmable horizontal stabilizer actuator (THSA) for damage, and replacement if necessary; and replacement of the THSA after reaching a certain life limit. This AD requires repetitive detailed inspections of certain THSAs, and related investigative and corrective actions if necessary. This AD was prompted by the establishment of an additional life limit for the THSA, based on flight cycles. In addition, the THSA manufacturer has issued service information which, when accomplished, increases the life limit of the THSA. We are issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective November 1, 2017.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of November 1, 2017.

**ADDRESSES:** For service information identified in this final rule, contact Airbus, Airworthiness Office–EIAS, 1 Rond Point Maurice Bellonte, 31707 Blagnac Cedex, France; telephone +33 5 61 93 36 96; fax +33 5 61 93 44 51; email account.airworth-eas@airbus.com; Internet <http://www.airbus.com>.

You may view this referenced service information at the FAA, Transport Standards Branch, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221. It is also available on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2017-0498.

## Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2017-0498; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this AD, the regulatory evaluation, any comments received, and other information. The address for the Docket Office (telephone 800-647-5527) is Docket Management Facility, U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

**FOR FURTHER INFORMATION CONTACT:** Sanjay Ralhan, Aerospace Engineer, International Section, Transport Standards Branch, FAA, 1601 Lind Avenue SW., Renton, WA 98057-3356; telephone 425-227-1405; fax 425-227-1149.

### **SUPPLEMENTARY INFORMATION:** **Discussion**

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to supersede AD 2015-15-10, Amendment 39-18219 (80 FR 43928, July 24, 2015) (“AD 2015-15-10”). AD 2015-15-10 applied to all Airbus Model A318, A319, A320, and A321 series airplanes. The NPRM published in the Federal Register on June 2, 2017 (82 FR 25542). The NPRM was prompted by the establishment of an additional life limit for the THSA, based on flight cycles. The NPRM proposed to require repetitive detailed inspections of certain THSAs, and related investigative and corrective actions if necessary. We are issuing this AD to detect and correct wear of the THSA, which could reduce the remaining life of the THSA, possibly resulting in premature failure and consequent reduced controllability of the airplane.

The European Aviation Safety Agency (EASA), which is the Technical Agent for the Member States of the European Union, has issued EASA Airworthiness Directive 2016-0184, dated September 13, 2016 (referred to after this as the Mandatory Continuing Airworthiness Information, or “the MCAI”), to correct an unsafe condition for all Airbus Model A318 and A319 series airplanes; Model A320-211, -212, -214, -231, -232, and -233 airplanes; and Model A321-111, -112, -131, -211, -212, -213, -231, and -232 airplanes. The MCAI states:

In the frame of the A320 Extended Service Goal (ESG) project and the study on the Trimmable Horizontal Stabilizer Actuator (THSA), a sampling programme of in-service units was performed and several cases of wear at different THSA levels were reported.

This condition, if not detected and corrected, would reduce the remaining life of the THSA, possibly resulting in premature failure and consequent reduced control of the aeroplane.

Prompted by these findings, Airbus issued Service Bulletin (SB) A320-27-1227 to provide THSA inspection instructions. Consequently, EASA issued AD 2014-0011 (later revised) [which corresponds to AD 2015-15-10] to require repetitive inspections of the THSA [and related investigative and corrective actions] and to introduce a life limit for the THSA, based on flight hours (FH).

Since EASA AD 2014-0011R1 was issued, an additional life limitation has been established, based on flight cycles (FC). Furthermore, United Technologies Corporation Aerospace Systems (UTAS), the THSA manufacturer, issued an SB which, after accomplishment on THSA, increases the life limit of the THSA.

For the reasons described above, this [EASA] AD retains the requirements of EASA AD 2014-0011R1, which is superseded, and introduces an additional FC life limit for the affected THSA. This [EASA] AD also provides a revised life limit for the THSA after UTAS SB accomplishment on that THSA.

You may examine the MCAI in the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2017-0498.

## **Comments**

We gave the public the opportunity to participate in developing this AD. We considered the comments received. Air Line Pilots Association, International (ALPA) and United Airlines expressed their support for the NPRM.

## **Changes Made to This AD**

The NPRM specified that a THSA that had been repaired in-shop as specified in UTAS Component Maintenance Manual 27-44-51 would be an equivalent method of compliance for the initial inspection required by paragraph (h) of this AD. We have revised paragraph (m) of this AD to specify that a THSA that has been repaired in-shop using a method approved by the Manager, International Section, Transport Standards Branch, FAA; or the EASA; or Airbus's EASA Design Organization Approval (DOA), is acceptable for compliance with the initial inspection required by paragraph (h) of this AD. We have also added Note 1 to paragraph (m) of this AD to reference UTAS Component Maintenance Manual 27-44-51 as an additional source of guidance for the in-shop repair of the THSA.

## **Conclusion**

We reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting this AD with the changes described previously and minor editorial changes. We have determined that these minor changes:

- Are consistent with the intent that was proposed in the NPRM for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM.

We also determined that these changes will not increase the economic burden on any operator or increase the scope of this AD.

## **Related Service Information Under 1 CFR Part 51**

Airbus has issued Service Bulletin A320-27-1227, Revision 03, dated April 29, 2016. This service information describes procedures for repetitive special detailed inspections for wear of the THSA, and related investigative and corrective actions.

This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

## **Costs of Compliance**

We estimate that this AD affects 1,182 airplanes of U.S. registry.  
We estimate the following costs to comply with this AD:

### Estimated Costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Inspections	6 work-hours × \$85 per hour = \$510 per inspection cycle	\$0	\$510 per inspection cycle	\$602,820 per inspection cycle.

We have received no definitive data that would enable us to provide cost estimates for the spectrometric analysis of the oil drained from the THSA gearbox. We estimate the following costs to do any necessary replacements or overhauls that would be required based on the results of the inspection. We have no way of determining the number of aircraft that might need these replacements or overhauls:

### On-Condition Costs

Action	Labor cost	Parts cost	Cost per product
Replacement of THSA (retained from AD 2015-15-10)	11 work-hours × \$85 per hour = \$935	\$240,000	\$240,935
Overhaul of THSA (new action)	66 work-hours × \$85 per hour = \$5,610	115,000	120,610

### Authority for This Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. “Subtitle VII: Aviation Programs,” describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in “Subtitle VII, Part A, Subpart III, Section 44701: General requirements.” Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

This AD is issued in accordance with authority delegated by the Executive Director, Aircraft Certification Service, as authorized by FAA Order 8000.51C. In accordance with that order, issuance of ADs is normally a function of the Compliance and Airworthiness Division, but during this transition period, the Executive Director has delegated the authority to issue ADs applicable to transport category airplanes to the Director of the System Oversight Division.

### Regulatory Findings

We determined that this AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

1. Is not a “significant regulatory action” under Executive Order 12866;
2. Is not a “significant rule” under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979);
3. Will not affect intrastate aviation in Alaska; and

4. Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

**List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

**Adoption of the Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

**PART 39—AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

**§ 39.13 [Amended]**

2. The FAA amends § 39.13 by removing Airworthiness Directive (AD) 2015-15-10, Amendment 39-18219 (80 FR 43928, July 24, 2015), and adding the following new AD:



**2017-19-23 Airbus:** Amendment 39-19053; Docket No. FAA-2017-0498; Product Identifier 2016-NM-175-AD.

**(a) Effective Date**

This AD is effective November 1, 2017.

**(b) Affected ADs**

This AD replaces AD 2015-15-10, Amendment 39-18219 (80 FR 43928, July 24, 2015) (“AD 2015-15-10”).

**(c) Applicability**

This AD applies to the airplanes identified in paragraphs (c)(1) through (c)(4) of this AD, certificated in any category, all manufacturer serial numbers.

- (1) Airbus Model A318-111, -112, -121, and -122 airplanes.
- (2) Airbus Model A319-111, -112, -113, -114, -115, -131, -132, and -133 airplanes.
- (3) Airbus Model A320-211, -212, -214, -231, -232, and -233 airplanes.
- (4) Airbus Model A321-111, -112, -131, -211, -212, -213, -231, and -232 airplanes.

**(d) Subject**

Air Transport Association (ATA) of America Code 27, Flight controls.

**(e) Reason**

This AD was prompted by reports of wear at different levels in the trimmable horizontal stabilizer actuator (THSA). We are issuing this AD to detect and correct wear of the THSA, which could reduce the remaining life of the THSA, possibly resulting in premature failure and consequent reduced controllability of the airplane.

**(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(g) Serviceable THSA Definition**

For the purposes of this AD, a serviceable THSA is a THSA that does not exceed the life limits as identified in table 1 to paragraphs (g) and (j) of this AD.

• **Table 1 to Paragraphs (g) and (j) of This AD–THSA Life Limits**

<b>Configuration, based on service bulletin (SB) embodiment</b>	<b>Compliance time (whichever occurs first)</b>
THSA on which United Technologies Corporation Aerospace Systems (UTAS) SB 47145-27-19 has not been embodied	Before exceeding 67,500 flight hours (FH) since first installation on an airplane, or before exceeding 48,000 flight cycles (FC) since first installation on an airplane.
THSA on which UTAS SB 47145-27-19 has been embodied	Before exceeding 52,500 FH after embodiment of UTAS SB 47145-27-19 on an airplane, without exceeding 120,000 FH since first installation on an airplane; or before exceeding 27,000 FC after embodiment of UTAS SB 47145-27-19 on an airplane, without exceeding 75,000 FC since first installation on an airplane.

**(h) Repetitive Inspection and Related Investigative Actions**

For any airplane on which UTAS Service Bulletin 47145-27-19 has not been embodied: Before the THSA exceeds 48,000 flight hours or 30,000 flight cycles, whichever occurs first since first installation on an airplane, do a special detailed inspection of the THSA and do all applicable related investigative actions, in accordance with the Accomplishment Instructions of Airbus Service Bulletin A320-27-1227, Revision 03, dated April 29, 2016. Do all applicable related investigative actions at the applicable times specified in paragraph 1.E., “Compliance” of Airbus Service Bulletin A320-27-1227, Revision 03, dated April 29, 2016. Repeat the inspections thereafter at intervals not to exceed 24 months.

**(i) Corrective Action**

If, during any inspection required by paragraph (h) of this AD, any finding as described in the Accomplishment Instructions of Airbus Service Bulletin A320-27-1227, Revision 03, dated April 29, 2016, is identified: At the applicable time (depending on the applicable finding) specified in paragraph 1.E., “Compliance,” of Airbus Service Bulletin A320-27-1227, Revision 03, dated April 29, 2016, replace the THSA with a serviceable THSA, as specified in paragraph (g) of this AD, in accordance with the Accomplishment Instructions of Airbus Service Bulletin A320-27-1227, Revision 03, dated April 29, 2016.

**(j) THSA Replacement**

Within the applicable compliance time specified in table 1 to paragraphs (g) and (j) of this AD, replace each THSA with a serviceable THSA, as specified in paragraph (g) of this AD, in accordance with the Accomplishment Instructions of Airbus Service Bulletin A320-27-1227, Revision 03, dated April 29, 2016.

**(k) Replacement of a THSA: Not Terminating Action**

Replacement of a THSA on an airplane, as required by paragraph (i) or (j) of this AD, does not constitute terminating action for the repetitive inspections required by paragraph (h) of this AD for that airplane, unless the THSA has been overhauled as specified in UTAS Service Bulletin 47145-27-19 (i.e., post-service bulletin).

### **(l) Optional Terminating Action: Overhaul of THSA**

Accomplishment of a modification of an airplane by installing a THSA that has been overhauled as specified in UTAS Service Bulletin 47145-27-19 constitutes terminating action for the repetitive inspections required by paragraph (h) of this AD, provided that, following modification, no THSA is reinstalled on the airplane unless it has been overhauled as specified in UTAS Service Bulletin 47145-27-19.

### **(m) Replacement THSA Equivalency**

As of the effective date of this AD: A THSA that has been repaired in-shop is acceptable for compliance with the initial inspection required by paragraph (h) of this AD, provided that repair was done using a method approved by the Manager, International Section, Transport Standards Branch, FAA; or the European Aviation Safety Agency (EASA); or Airbus's EASA Design Organization Approval (DOA).

Note 1 to paragraph (m) of this AD: Guidance for THSA repair in-shop can be found in UTAS Component Maintenance Manual 27-44-51.

### **(n) Parts Installation Limitation**

As of the effective date of this AD: Do not install on any airplane a THSA unless it is a serviceable THSA as specified in paragraph (g) of this AD.

### **(o) Credit for Previous Actions**

This paragraph provides credit for the actions required by paragraphs (h) and (i) of this AD, if those actions were performed before the effective date of this AD using any of the service information specified in paragraphs (o)(1), (o)(2), or (o)(3) of this AD.

(1) Airbus Service Bulletin A320-27-1227, dated July 1, 2013, which is not incorporated by reference in this AD.

(2) Airbus Service Bulletin A320-27-1227, Revision 01, dated October 7, 2013, which was incorporated by reference in AD 2015-15-10.

(3) Airbus Service Bulletin A320-27-1227, Revision 02, dated February 2, 2015, which is not incorporated by reference in this AD.

### **(p) Other FAA AD Provisions**

The following provisions also apply to this AD:

(1) Alternative Methods of Compliance (AMOCs): The Manager, International Section, Transport Standards Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the International Section, send it to the attention of the person identified in paragraph (q)(2) of this AD. Information may be emailed to: 9-ANM-116-AMOC-REQUESTS@faa.gov. Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(2) Contacting the Manufacturer: For any requirement in this AD to obtain corrective actions from a manufacturer, the action must be accomplished using a method approved by the Manager, International Section, Transport Standards Branch, FAA; or the EASA; or Airbus's EASA DOA. If approved by the DOA, the approval must include the DOA-authorized signature.



(3) Required for Compliance (RC): If any service information contains procedures or tests that are identified as RC, those procedures and tests must be done to comply with this AD; any procedures or tests that are not identified as RC are recommended. Those procedures and tests that are not identified as RC may be deviated from using accepted methods in accordance with the operator's maintenance or inspection program without obtaining approval of an AMOC, provided the procedures and tests identified as RC can be done and the airplane can be put back in an airworthy condition. Any substitutions or changes to procedures or tests identified as RC require approval of an AMOC.

**(q) Related Information**

(1) Refer to Mandatory Continuing Airworthiness Information (MCAI) EASA Airworthiness Directive 2016-0184, dated September 13, 2016, for related information. This MCAI may be found in the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2017-0498.

(2) For more information about this AD, contact Sanjay Ralhan, Aerospace Engineer, International Section, Transport Standards Branch, FAA, 1601 Lind Avenue SW., Renton, WA 98057-3356; telephone 425-227-1405; fax 425-227-1149.

(3) Service information identified in this AD that is not incorporated by reference is available at the addresses specified in paragraphs (r)(3) and (r)(4) of this AD.

**(r) Material Incorporated by Reference**

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless this AD specifies otherwise.

(i) Airbus Service Bulletin A320-27-1227, Revision 03, dated April 29, 2016.

(ii) Reserved.

(3) For Airbus service information identified in this AD, contact Airbus, Airworthiness Office—EIAS, 1 Rond Point Maurice Bellonte, 31707 Blagnac Cedex, France; telephone +33 5 61 93 36 96; fax +33 5 61 93 44 51; email [account.airworth-eas@airbus.com](mailto:account.airworth-eas@airbus.com); Internet <http://www.airbus.com>.

(4) You may view this service information at the FAA, Transport Standards Branch, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221.

(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: <http://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued in Renton, Washington, on September 14, 2017.

Jeffrey E. Duven,  
Director, System Oversight Division,  
Aircraft Certification Service.