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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

**[Docket No. FAA-2014-0748; Directorate Identifier 2014-NM-013-AD; Amendment 39-18219; AD 2015-15-10]**

**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 adopting a new airworthiness directive (AD) for all Airbus Model A318, A319, A320, and A321 series airplanes. This AD was prompted by reports of wear of the trimmable horizontal stabilizer actuator (THSA). This AD requires repetitive inspections of the THSA for damage, and replacement if necessary; and replacement of the THSA after reaching a certain life limit. We are issuing this AD to detect and correct wear on the THSA, which would reduce the remaining life of the THSA, possibly resulting in premature failure and consequent reduced control of the airplane.

**DATES:** This AD becomes effective August 28, 2015.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of August 28, 2015.

**ADDRESSES:** You may examine the AD docket on the Internet at <http://www.regulations.gov/#!docketDetail;D=FAA-2014-0748> or in person at the 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.

For 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>. You may view this referenced service information at the FAA, Transport Airplane Directorate, 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 2014-0748.

**FOR FURTHER INFORMATION CONTACT:** Sanjay Ralhan, Aerospace Engineer, International Branch, ANM-116, Transport Airplane Directorate, 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 by adding an AD that would apply to all Airbus Model A318, A319, A320, and A321 series airplanes. The NPRM published in the Federal Register on October 16, 2014 (79 FR 62072).

The European Aviation Safety Agency (EASA), which is the Technical Agent for the Member States of the European Union, has issued EASA Airworthiness Directive 2014-0011R1, dated January 17, 2014 (referred to after this as the Mandatory Continuing Airworthiness Information, or "the MCAI"), to correct an unsafe condition. 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 has been 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.

For the reasons described above, this [EASA] AD requires repetitive inspections of the THSA and introduces a life limit for the THSA.

This AD also requires a detailed inspection of the magnetic chip detector for metal particles, a spectrometric analysis of the oil drained from the THSA gearbox, a detailed inspection of the ballscrew and nut, and a detailed inspection of the upper and the lower attachments for damage. The corrective action is replacement of the THSA with a serviceable THSA. The compliance time for the THSA replacement ranges from before further flight to within 4 months from drainage of the oil sample.

You may examine the MCAI in the AD docket on the Internet at <http://www.regulations.gov/#!documentDetail;D=FAA-2014-0748-0002>.

### **Comments**

We gave the public the opportunity to participate in developing this AD. We have considered the comments received. The following presents the comments received on the NPRM (79 FR 62072, October 16, 2014) and the FAA's response to each comment.

### **Requests To Extend Compliance Time**

Airlines for America (A4A), on behalf of American Airlines (AAL), Delta Airlines (DAL), and United Airlines (UAL), requested that we extend the initial inspection compliance time in paragraph (g)(2) of the NPRM (79 FR 62072, October 16, 2014) from 4 months to 12 months after the effective date of the AD. A4A stated that the fleet age of multiple U.S. carriers means that a large number of

airplanes will require inspection in a short period of time, likely resulting in schedule disruptions and/or cancellations.

We disagree with the commenters' request. We base AD compliance times primarily on our assessment of safety risk. Some safety issues are more time sensitive than others. We consider the overall risk to the fleet, including the severity of the failure and the likelihood of the failure's occurrence in development of the compliance time for the ADs. The FAA and EASA work closely with the respective manufacturers to ensure that all appropriate instructions and parts are available at the appropriate time to meet our collective safety goals, and that those goals are based on safety of the fleet. We have not changed this AD in this regard.

### **Requests To Clarify Wording in Paragraphs (h) and (j) of the NPRM (79 FR 62072, October 16, 2014)**

A4A, on behalf of UAL and JetBlue, requested that we clarify the wording of the flight time/cycle guidance in paragraphs (h) and (j) of the NPRM (79 FR 62072, October 16, 2014). JetBlue asked whether an operator can continue a THSA in service in perpetuity if the inspection is performed every 4 months, or whether the THSA must be removed at 12 months after the effective date of the AD.

We agree that clarification is necessary. If a THSA exceeds 67,500 flight hours on the effective date of the AD, then repetitive inspections are to be accomplished every 4 months until replacement is performed within 12 months after the effective date of the AD. Paragraph (m) of this AD is an exception or an alternative to paragraph (j) of this AD and is intended to match the requirements of the MCAI. We have not changed this AD in this regard.

### **Requests To Extend or Remove Life Limit of the THSA**

JetBlue objected to the THSA 67,500-flight-hour life limit specified by paragraph (j) of the NPRM (79 FR 62072, October 16, 2014). JetBlue stated that establishing a life limit for a component that previously had no such life limit, with no overhaul or inspection criteria for continued airworthiness, is an enormous burden for operators. JetBlue commented that both Airbus and UTAS/Goodrich are developing either an overhaul procedure to zero-time the units, or a method to permit continued airworthy operation of the units beyond the 67,500-flight-hour life limit.

A4A stated that an operator that prefers to bear the overhaul costs to restore an older THSA to service beyond 67,500 flight hours should not be precluded from doing so because repair and/or overhaul would return the unit to a new condition, which should address any safety concerns.

We disagree with the commenters' request to change the THSA life limit. JetBlue did not provide substantiation that overhaul or repair methods would provide an acceptable level of safety in lieu of the life limits. The FAA takes into consideration the system safety analysis and quantitative and qualitative risk assessment for establishing a life limit for a component, failure of which may cause a catastrophic failure and consequently affect the safe flight of the airplane. This assessment resulted in establishing the THSA life limit required by paragraph (j) of this AD. Once we issue this AD, a request for approval of an alternative method of compliance (AMOC) to extend the THSA life limit under the provisions of paragraph (o)(1) of this AD may be submitted. Sufficient data must be submitted to substantiate that the THSA has been modified or inspected in a manner that would provide an acceptable level of safety. We have not changed this AD in this regard.

### **Requests To Remove Oil Sampling Inspection**

A4A, on behalf of AAL and JetBlue, requested that we remove the proposed oil sampling inspection requirement in paragraph (g) of the NPRM (79 FR 62072, October 16, 2014). A4A stated that there is no data on the correlation between sample findings and associated component wear.

JetBlue commented that the sampling test results may be skewed high or low depending on either a low oil level in the THSA at the time of testing or any recent introduction of clean oil.

We disagree with the commenters' request. The oil sampling inspection includes examination for metal particles in the magnetic chip detector. The spectrometric analysis checks for the presence of aluminum particles. Findings may include unusually large quantities of metal particles larger than 2 millimeters by 1 millimeter, which could indicate wear or damage of the THSA. We and our colleagues in the foreign certification authorities (in this case, EASA) work closely with manufacturers to determine appropriate service information for addressing the identified unsafe condition. We have not changed this AD in this regard.

### **Request To Clarify Reporting Requirement**

JetBlue requested that we permit the reporting described in Airbus Service Bulletin A320-27-1227, Revision 01, dated October 7, 2013, to be done at the operator's discretion. JetBlue stated that there is no value in the reporting, which does not require quantitative disclosure of the oil sampling result—only pass/fail. JetBlue stated that mandating this reporting requirement adds an undue burden to the operator as there is no information to be gained by having operators report whether or not the THSA was changed.

We agree with the commenter's request. This AD and the EASA MCAI do not include a reporting requirement. However, when the service information includes a reporting request, then operators are encouraged to provide the report. Reports provide data that can be valuable for the airframe original equipment manufacturers to develop product improvements and/or enhance safety. We have not changed this AD in this regard.

### **Requests To Revise Cost Estimates**

A4A, on behalf of AAL, JetBlue, and UAL, requested that we revise the cost analysis to accurately reflect the accomplishment burden. A4A stated that the inspections in paragraph (g) of the NPRM (79 FR 62072, October 16, 2014) would require 7 to 9 work-hours rather than 6 work-hours, while removal, replacement, and checkout typically consume 15 to 20 work-hours, not the NPRM estimate of 7 work-hours.

We partially agree with the commenter's request to revise the cost estimate. We recognize that costs may vary from operator to operator. Our cost estimates are based on the manufacturer's service information. The service information for this AD specifies 6 work-hours for the inspection and 11 work-hours for the replacement. Therefore, we have changed the work-hours for the replacement accordingly.

### **Clarification of Requirements**

In order to clarify the repetitive compliance times, we have added a reference to "paragraph (h) of this AD" within paragraphs (h)(1) and (h)(2) of this AD.

We have also added a reference to "paragraph (h) of this AD" in paragraphs (k) and (l) of this AD to clarify that repetitive inspections are required.

### **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 (79 FR 62072, October 16, 2014) for correcting the unsafe condition; and

- Do not add any additional burden upon the public than was already proposed in the NPRM (79 FR 62072, October 16, 2014).

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

We reviewed Airbus Service Bulletin A320-27-1227, Revision 01, dated October 7, 2013. The service information describes procedures for an inspection for damage of the THSA and replacement. 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 of this AD.

## **Costs of Compliance**

We estimate that this AD affects 851 airplanes of U.S. registry.

We also estimate that it would take about 6 work-hours per product to comply with the inspection requirements of this AD. The average labor rate is \$85 per work-hour. Based on these figures, we estimate the cost for the inspection specified in this AD on U.S. operators to be \$434,010, or \$510 per product.

We estimate that it would take about 11 work-hours per product to comply with the actuator replacement requirements of this AD. Required parts would cost about \$240,000 per product. The average labor rate is \$85 per work-hour. Based on these figures, we estimate the cost for the actuator replacement specified in this AD on U.S. operators to be \$205,035,685, or \$240,935 per product.

## **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.

## **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.

## **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov/#!docketDetail;D=FAA-2014-0748>; 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 street address for the Docket Operations office (telephone 800-647-5527) is in the ADDRESSES section.

## **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 adding the following new airworthiness directive (AD):



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**2015-15-10 Airbus:** Amendment 39-18219. Docket No. FAA-2014-0748; Directorate Identifier 2014-NM-013-AD.

**(a) Effective Date**

This AD becomes effective August 28, 2015.

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to the Airbus airplanes, certificated in any category, identified in paragraphs (c)(1), (c)(2), (c)(3), and (c)(4) of this AD, all manufacturer serial numbers.

- (1) Model A318-111, -112, -121, and -122 airplanes.
- (2) Model A319-111, -112, -113, -114, -115, -131, -132, and -133 airplanes.
- (3) Model A320-211, -212, -214, -231, -232, and -233 airplanes.
- (4) 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 of the trimmable horizontal stabilizer actuator (THSA). We are issuing this AD to detect and correct wear on the THSA, which would reduce the remaining life of the THSA, possibly resulting in premature failure and consequent reduced control of the airplane.

**(f) Compliance**

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

**(g) Initial Inspections**

At the later of the times specified in paragraphs (g)(1) and (g)(2) of this AD: Do a detailed inspection of the magnetic chip detector for metal particles, a spectrometric analysis of the oil drained from the THSA gearbox, a detailed inspection of the ballscrew and nut for damage (including, but not limited to, cracks, dents, corrosion, and unsatisfactory surface protection), and a detailed inspection of the upper and the lower attachments for damage (including, but not limited to, cracks, dents, corrosion, and unsatisfactory surface protection), in accordance with the Accomplishment Instructions of Airbus Service Bulletin A320-27-1227, Revision 01, dated October 7, 2013.

(1) Before the THSA accumulates 48,000 total flight hours or 30,000 total flight cycles, whichever occurs first since first installation on an airplane.

(2) Within 4 months after the effective date of this AD.

#### **(h) Repetitive Inspections**

Repeat the inspections required by paragraph (g) of this AD thereafter at intervals not to exceed the applicable time specified in paragraphs (h)(1) and (h)(2) of this AD.

(1) For a THSA that, as of the date of the most recent inspection required by paragraph (g) or (h) of this AD, has accumulated less than 67,500 total flight hours since first installation on an airplane: The repetitive inspection interval is 24 months.

(2) For a THSA that, as of the date of the most recent inspection required by paragraph (g) or (h) of this AD, has accumulated 67,500 total flight hours or more since first installation on an airplane: The repetitive inspection interval is 4 months.

#### **(i) THSA Corrective Action**

If, during any inspection required by paragraphs (g) and (h) of this AD, any finding as described in the Accomplishment Instructions of Airbus Service Bulletin A320-27-1227, Revision 01, dated October 7, 2013, is found: At the applicable compliance time (depending on the applicable findings) specified in paragraph 1.E., "Compliance," of Airbus Service Bulletin A320-27-1227, Revision 01, dated October 7, 2013, replace the THSA with a serviceable THSA, in accordance with the Accomplishment Instructions of Airbus Service Bulletin A320-27-1227, Revision 01, dated October 7, 2013. For the purposes of this AD, a serviceable THSA is a THSA that has accumulated less than 67,500 total flight hours since first installation on an airplane.

#### **(j) THSA Replacement**

Before a THSA accumulates 67,500 total flight hours since first installation on an airplane, or within 12 months after the effective date of this AD, whichever occurs later: Replace the THSA with a serviceable THSA, in accordance with the Accomplishment Instructions of Airbus Service Bulletin A320-27-1227, Revision 01, dated October 7, 2013. Thereafter, before the accumulation of 67,500 total flight hours on any THSA since first installation on an airplane, replace it with a serviceable THSA.

#### **(k) Replacement THSA: No 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 paragraphs (g) and (h) of this AD for that airplane. After THSA replacement: At the applicable compliance time specified in paragraphs (g)(1), (g)(2), (h)(1), and (h)(2) of this AD, do the inspections required by paragraphs (g) and (h) of this AD.

#### **(l) Replacement THSA Equivalency**

A THSA that has been repaired in shop as specified in United Technologies Corporation Aerospace Systems Component Maintenance Manual 27-44-51 is considered equivalent to having passed an inspection in accordance with the Accomplishment Instructions of Airbus Service Bulletin A320-27-1227, Revision 01, dated October 7, 2013. Depending on the flight hours or flight cycles accumulated by the repaired THSA: At the applicable compliance time specified in paragraphs (g)(1), (g)(2), (h)(1), and (h)(2) of this AD, do the inspections required by paragraphs (g) and (h) of this AD.

### **(m) Parts Installation Limitation**

As of the effective date of this AD, installation on an airplane of a THSA that has accumulated 67,500 or more total flight hours is allowed, provided that, prior to installation, the THSA has been modified or inspected using a method approved by the Manager, International Branch, ANM-116, Transport Airplane Directorate, FAA; or the European Aviation Safety Agency (EASA); or Airbus's EASA Design Organization Approval (DOA).

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

This paragraph provides credit for inspections required by paragraphs (g), (h), and (l) of this AD, if those inspections were performed before the effective date of this AD using Airbus Service Bulletin A320-27-1227, dated July 1, 2013, which is not incorporated by reference in this AD.

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

The following provisions also apply to this AD:

(1) Alternative Methods of Compliance (AMOCs): The Manager, International Branch, ANM-116, Transport Airplane Directorate, 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 Branch, send it to ATTN: Sanjay Ralhan, Aerospace Engineer, International Branch, ANM-116, Transport Airplane Directorate, FAA, 1601 Lind Avenue SW., Renton, WA 98057-3356; telephone 425-227-1405; fax 425-227-1149. 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. The AMOC approval letter must specifically reference this AD.

(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 Branch, ANM-116, Transport Airplane Directorate, FAA; or the EASA; or Airbus's EASA DOA. If approved by the DOA, the approval must include the DOA-authorized signature.

### **(p) Related Information**

(1) Refer to Mandatory Continuing Airworthiness Information (MCAI) EASA Airworthiness Directive 2014-0011R1, dated January 17, 2014, for related information. This MCAI may be found in the AD docket on the Internet at <http://www.regulations.gov/#!documentDetail;D=FAA-2014-0748-0002>.

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

### **(q) 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 01, dated October 7, 2013.

(ii) Reserved.

(3) For 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 Airplane Directorate, 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 July 12, 2015.

Jeffrey E. Duven,  
Manager, Transport Airplane Directorate,  
Aircraft Certification Service.