

[Federal Register Volume 82, Number 3 (Thursday, January 5, 2017)]

[Rules and Regulations]

[Pages 1175-1179]

From the Federal Register Online via the Government Publishing Office [www.gpo.gov]

[FR Doc No: 2016-30411]

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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

**[Docket No. FAA-2016-7424; Directorate Identifier 2015-NM-173-AD; Amendment 39-18756; AD 2016-25-30]**

**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 A330-200, -200 Freighter, and -300 series airplanes; and Model A340-200, -300, -500, and -600 series airplanes. This AD was prompted by certain anomalies of the flight guidance computers. We are issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective February 9, 2017.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of February 9, 2017.

**ADDRESSES:** For service information identified in this final rule, contact Airbus SAS, Airworthiness Office–EAL, 1 Rond Point Maurice Bellonte, 31707 Blagnac Cedex, France; telephone: +33 5 61 93 36 96; fax: +33 5 61 93 45 80; email: airworthiness.A330-A340@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-2016-7424.

#### **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-2016-7424; 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 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:** Vladimir Ulyanov, Aerospace Engineer, International Branch, ANM 116, Transport Airplane Directorate, FAA, 1601 Lind Avenue SW., Renton, WA 98057-3356; telephone: 425-227-1138; 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 A330-200, -200 Freighter, and -300 series airplanes; and Model A340-200, -300, -500, and -600 series airplanes. The NPRM published in the Federal Register on July 7, 2016 (81 FR 44235) ("the NPRM").

The European Aviation Safety Agency (EASA), which is the Technical Agent for the Member States of the European Union, has issued EASA AD 2015-0124R2, dated August 31, 2016 (referred to after this as the Mandatory Continuing Airworthiness Information, or "the MCAI"), to correct an unsafe condition for all Airbus Model A330-200, -200 Freighter, and -300 series airplanes; and Model A340-200, -300, -500, and -600 series airplanes. The MCAI states:

It was determined that, when there are significant differences between all airspeed sources, the flight controls of an Airbus A330 or A340 aeroplane will revert to alternate law, the autopilot (AP) and the auto-thrust (A/THR) automatically disconnect, and the Flight Director (FD) bars are automatically removed. Further analyses have shown that, after such an event, if two airspeed sources become similar while still erroneous, the flight guidance computers will display the FD bars again, and enable the re-engagement of AP and A/THR. However, in some cases, the AP orders may be inappropriate, such as an abrupt pitch command.

This condition, if not corrected, may, under specific circumstances, result in reduced control of the aeroplane.

In order to prevent such events, EASA issued AD 2010-0271 [which corresponds to FAA AD 2011-02-09, Amendment 39-16583 (76 FR 4219, January 25, 2011)] to require an amendment of the Airplane Flight Manual (AFM) to ensure that flight crews apply the appropriate operational procedure.

Since EASA AD 2010-0271 was issued, new Flight Control Primary Computer (FCPC) software standards were developed that inhibit autopilot engagement under unreliable airspeed conditions. Consequently, EASA issued AD 2011-0199 (later revised) [which corresponds to FAA AD 2013-19-14, Amendment 39-17596 (78 FR 68347, November 14, 2013)] for A330 and A340-200/300 aeroplanes, and [EASA] AD 2013-0107 [which also corresponds to FAA AD 2013-19-14] for A340-500/600 aeroplanes, to require a software standard upgrade of the three FCPCs by either modification or replacement.

Since EASA AD 2011-0199R1 and [EASA] AD 2013-0107 were issued, new FCPC software standards were developed to correct aeroplane behaviour in case of undetected erroneous (Radio Altimeter) RA information and to introduce other improvements. In addition, the new FCPC software standards also implement

enhanced Angle of Attack (AOA) monitoring in order to better detect cases of AOA blockage, including multiple AOA blockage.

Prompted by these developments, EASA issued AD 2015-0124 (later revised) to require the latest software standard upgrade of the three FCPCs, either by modification or replacement. At the time, some of the Airbus SBs as specified in Table 1 (originally, Appendix 1) of this [EASA] AD were not yet available.

Since EASA AD 2015-0124R1 was issued, Airbus published SB A340-27-5064, and for this reason, this [EASA] AD is revised to introduce the date of publication of this SB. This [EASA] AD also contains some editorial changes to meet the latest [EASA] AD writing standards, without changes to the technical content.

There is still one SB that remains unavailable at this time. It is expected that this [EASA] AD will be revised again when this SB is published.

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-2016-7424.

## **Comments**

We gave the public the opportunity to participate in developing this AD. The following presents the comments received on the NPRM and the FAA's response to each comment.

## **Support for the NPRM**

The Air Line Pilots Association, International stated that it had no objection to the NPRM.

## **Request To Include Certain Service Information in the NPRM**

Airbus requested that Airbus Service Bulletin A340-27-5064, dated June 1, 2016, ("SB A340-27-5064, Revision 0"), which is applicable to Airbus Model A340-500 and -600 series airplanes, be included in the NPRM. Airbus noted that SB A340-27-5064, Revision 0, was issued after the NPRM was published and that EASA planned to issue a revision to EASA AD 2015-0124R1, dated February 2, 2016, to include SB A340-27-5064, Revision 0.

We agree with the commenter's request to include SB A340-27-5064, Revision 0, in this final rule. Paragraph (g) of the proposed AD instructed operators of Model A340-500 and -600 series airplanes to upgrade the three FCPCs in accordance with a method approved by the Manager, International Branch, ANM-116, Transport Airplane Directorate, FAA; or EASA; or Airbus's EASA Design Organization Approval (DOA). Now that SB A340-27-5064, Revision 0, is available, we have revised paragraph (g) of this AD to require the upgrade to be done in accordance with the Accomplishment Instructions of the applicable service information specified in paragraphs (h)(1), (h)(2), (h)(3), (h)(4), and (h)(5) of this AD. We have added a new paragraph (h)(5) to this AD, which identifies the service information for Model A340-541 and A340-642 series airplanes with hardware standard FCPC 2K2 as Airbus Service Bulletin A340-27-5064, dated June 1, 2016.

In addition, the commenter is correct that EASA has revised AD 2015-0124 R1, dated February 2, 2016, to include SB A340-27-5064, Revision 0. We have revised the Discussion section of this final rule and paragraph (p)(1), Related Information, of this AD to refer to the revised EASA AD 2015-0124R2, dated August 31, 2016.

## **Request To Include Certain Airplane Models in the NPRM**

Airbus stated that the NPRM addressed Model A330-200, -200 Freighter, and -300 series airplanes; and Model A340-200 and -300 airplanes; but not Model A340-500 and -600 series airplanes. Airbus commented that there were inconsistencies in the NPRM because if Model A340-500 and -600 series airplanes are not included in the applicability then paragraph (l) of the NPRM was incorrect because it referred to AD 2013-19-14, which includes all Model A340-541 and -642 airplanes in its applicability.

We infer that Airbus is requesting that Model A340-541 and -642 airplanes be included in the applicability of the NPRM, or requesting that this AD be revised to remove all text that is associated with Model A340-541 and -642 airplanes.

We agree to clarify. Model A340-541 and -642 airplanes were included in the applicability of the proposed AD and continue to be included in the applicability of this AD. The SUMMARY section of the NPRM included Model A340-500 and -600 series airplanes, and paragraphs (c)(6) and (c)(7) of the proposed AD included Model A340-541 and -642 airplanes, respectively. In addition, paragraph (g) of the proposed AD specified that operators of Model A340-500 and -600 airplanes must upgrade the FCPCs in accordance with a method approved by the Manager, International Branch, ANM-116 Transport Airplane Directorate, FAA; or the EASA; or Airbus's EASA DOA. For clarification we have revised the header of paragraph (g) of this AD to include Model A340-500 and -600 series airplanes.

## **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**

We reviewed the following service information:

- Airbus Service Bulletin A330-27-3205, Revision 02, dated March 23, 2016.
- Airbus Service Bulletin A330-27-3207, dated June 30, 2015.
- Airbus Service Bulletin A340-27-4195, dated November 24, 2015.
- Airbus Service Bulletin A340-27-4196, dated November 24, 2015.
- Airbus Service Bulletin A340-27-5064, dated June 1, 2016.

The service information describes procedures for upgrading (replacing or modifying) the software standards for the FCPCs. These documents are distinct since they apply to different airplane models. 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 92 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
Modification/replacement	3 work-hours × \$85 per hour = \$255	Not available	\$255	\$23,460

According to the manufacturer, some of the costs of this AD may be covered under warranty, thereby reducing the cost impact on affected individuals. We do not control warranty coverage for affected individuals. As a result, we have included all costs in our cost estimate.

### 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.

### 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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**2016-25-30 Airbus:** Amendment 39-18756; Docket No. FAA-2016-7424; Directorate Identifier 2015-NM-173-AD.

**(a) Effective Date**

This AD is effective February 9, 2017.

**(b) Affected ADs**

This AD affects the ADs identified in paragraphs (b)(1), (b)(2), (b)(3), and (b)(4) of this AD:

- (1) AD 2012-08-02, Amendment 39-17018 (77 FR 24829, April 26, 2012) ("AD 2012-08-02").
- (2) AD 2013-03-06, Amendment 39-17341 (78 FR 15279, March 11, 2013) ("AD 2013-03-06").
- (3) AD 2013-05-08, Amendment 39-17380 (78 FR 27015, May 9, 2013; corrected August 29, 2013 (78 FR 53237)) ("AD 2013-05-08").
- (4) AD 2013-19-14, Amendment 39-17596 (78 FR 68347, November 14, 2013) ("AD 2013-19-14").

**(c) Applicability**

This AD applies to the Airbus airplanes, certificated in any category, identified in paragraphs (c)(1) through (c)(7) of this AD, all manufacturer serial numbers.

- (1) Model A330-223F and -243F airplanes.
- (2) Model A330-201, -202, -203, -223, and -243 airplanes.
- (3) Model A330-301, -302, -303, -321, -322, -323, -341, -342, and -343 airplanes.
- (4) Model A340-211, -212, and -213 airplanes.
- (5) Model A340-311, -312, and -313 airplanes.
- (6) Model A340-541 airplanes.
- (7) Model A340-642 airplanes.

**(d) Subject**

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

**(e) Reason**

This AD was prompted by a determination that, due to significant differences among all airspeed sources, the flight controls will revert to alternate law, the autopilot (AP) and the auto-thrust (A/THR) will automatically disconnect, and the flight director (FD) bars will be automatically removed. Then, if two airspeed sources become similar while still erroneous, the flight guidance computers will display the FD bars again, and enable the re-engagement of the AP and A/THR. In some cases, however, the AP orders may be inappropriate, such as a possible abrupt pitch command. We are issuing this AD to prevent AP engagement under unreliable airspeed conditions, which could result in reduced control of the airplane.

**(f) Compliance**

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

**(g) New Software Standard Upgrade for Model A330 Series Airplanes, and Model A340-200, -300, -500, and -600 Series Airplanes**

At the applicable time specified in table 1 to paragraph (g) of this AD: Upgrade (by modification or replacement, as applicable) the three flight control primary computers (FCPCs), as specified in table 1 to paragraph (g) of this AD, in accordance with the Accomplishment Instructions of the applicable service information specified in paragraphs (h)(1), (h)(2), (h)(3), (h)(4), and (h)(5) of this AD.

**Table 1 to Paragraph (g) of This AD—Software Standard Updates and Compliance Times**

<b>Software standard</b>	<b>Hardware standard</b>	<b>Compliance time after effective date of this AD</b>
P13/M22	FCPC 2K2	Within 9 months.
P14/M23	FCPC 2K1	Within 9 months.
M23	FCPC 2K0	Within 9 months.
L24	FCPC 2K1 or 2K0	Within 15 months.
L23	FCPC 2K2	Within 15 months.
W13	FCPC 2K2	Within 15 months.

**(h) Service Information**

For the upgrade required by paragraph (g) of this AD, applicable service information is identified in paragraphs (h)(1), (h)(2), (h)(3), (h)(4), and (h)(5) of this AD.

(1) For Model A330 airplanes with hardware standard FCPC 2K2: Airbus Service Bulletin A330-27-3205, Revision 02, dated March 23, 2016.

(2) For Model A330 airplanes with hardware standard FCPC 2K1 or FCPC 2K0: Airbus Service Bulletin A330-27-3207, dated June 30, 2015.

(3) For Model A340-200 and -300 series airplanes with hardware standard FCPC 2K0 or FCPC 2K1: Airbus Service Bulletin A340-27-4195, dated November 24, 2015.

(4) For Model A340-200 and -300 series airplanes with hardware standard FCPC 2K2: Airbus Service Bulletin A340-27-4196, dated November 24, 2015.

(5) For Model A340-500 and A340-600 series airplanes with hardware standard FCPC 2K2: Airbus Service Bulletin A340-27-5064, dated June 1, 2016.

**(i) Removal of Certain Airplane Flight Manual (AFM) Requirements**

After accomplishing the FCPC upgrade required by paragraph (g) of this AD, the AFM operational procedures required by the AFM revisions identified in paragraphs (i)(1), (i)(2), and (i)(3) of this AD are no longer required and can be removed from the AFM for that airplane only.

(1) The AFM revision required by paragraph (g) of AD 2013-19-14.

(2) The AFM revision required by paragraph (h) of AD 2013-19-14.

(3) The AFM revision required by paragraph (g) of AD 2013-03-06.



#### **(j) Removal of Certain Other AFM Requirements**

Accomplishing the FCPC upgrade required by paragraph (g) of this AD terminates the dispatch limitations required by paragraphs (g), (h), and (i) of AD 2012-08-02 for that airplane only, and after accomplishing the FCPC upgrade, those dispatch limitations can be removed from the AFM for that airplane only.

#### **(k) Certain Actions Required by AD 2013-05-08 Affected by This AD**

Accomplishing the FCPC upgrade required by paragraph (g) this AD constitutes compliance with the requirements of paragraph (l) and paragraphs (o)(1) through (o)(4) of AD 2013-05-08.

#### **(l) Certain Actions Required by AD 2013-19-14 Affected by This AD**

Accomplishing the FCPC upgrade required by paragraph (g) this AD constitutes compliance with the requirements of paragraphs (i) and (j) of AD 2013-19-14.

#### **(m) Airplanes Excluded From Certain Requirements**

For Airbus Model A330 series airplanes having Airbus Modification 202680 (installation of FCPC 2K2 with software standard P13/M22) incorporated in production: The actions specified in paragraph (g) of this AD are not required, provided it can be positively determined that since the date of issuance of the original certificate of airworthiness or the original export certificate of airworthiness, no FCPC has been replaced on that airplane with an FCPC having an earlier standard.

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

This paragraph provides credit for the actions required by paragraph (g) of this AD, if those actions were performed before the effective date of this AD using Airbus Service Bulletin A330-27-3205, dated March 9, 2015; or Airbus Service Bulletin A330-27-3205, Revision 01, dated July 3, 2015.

#### **(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: Vladimir Ulyanov, Aerospace Engineer, International Branch, ANM-116, Transport Airplane Directorate, FAA, 1601 Lind Avenue SW., Renton, WA 98057-3356; telephone: 425-227-1138; 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.

(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 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.

**(p) Related Information**

(1) Refer to Mandatory Continuing Airworthiness Information (MCAI) EASA AD 2015-0124R2, dated August 31, 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-2016-7424.

(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 A330-27-3205, Revision 02, dated March 23, 2016.

(ii) Airbus Service Bulletin A330-27-3207, dated June 30, 2015.

(iii) Airbus Service Bulletin A340-27-4195, dated November 24, 2015.

(iv) Airbus Service Bulletin A340-27-4196, dated November 24, 2015.

(v) Airbus Service Bulletin A340-27-5064, dated June 1, 2016.

(3) For service information identified in this AD, contact Airbus SAS, Airworthiness Office—EAL, 1 Rond Point Maurice Bellonte, 31707 Blagnac Cedex, France; telephone: +33 5 61 93 36 96; fax: +33 5 61 93 45 80; email: [airworthiness.A330-A340@airbus.com](mailto:airworthiness.A330-A340@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 December 7, 2016.

Dionne Palermo,  
Acting Manager, Transport Airplane Directorate,  
Aircraft Certification Service.