

[Federal Register: February 18, 2009 (Volume 74, Number 31)]
[Rules and Regulations]
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[DOCID:fr18fe09-2]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2009-0122; Directorate Identifier 2008-NM-223-AD; Amendment 39-15813; AD 2009-04-07]

RIN 2120-AA64

Airworthiness Directives; Airbus Model A330-200 and -300 Series Airplanes, and Airbus Model A340-200, -300, -500, and -600 Series Airplanes

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

ACTION: Final rule; request for comments.

SUMMARY: We are adopting a new airworthiness directive (AD) for the products listed above. This AD results from mandatory continuing airworthiness information (MCAI) originated by an aviation authority of another country to identify and correct an unsafe condition on an aviation product. The MCAI describes the unsafe condition as:

An A330 aircraft experienced a sudden [uncommanded] nose down order [event] while in cruise. This order was preceded by an automatic autopilot disconnection and triggering of the "NAV IR1 FAULT" Electronic Centralised Aircraft Monitor (ECAM) Caution.

Investigations highlighted that at time of the event the Air Data Reference 1 (ADR) part of ADIRU1 [Air Data Inertial Reference Unit] was providing erroneous and temporary wrong parameters in a random manner. This abnormal behaviour of the ADR1 led to several consequences such as unjustified stall and over speed warnings, loss of attitude information on Captain Primary Flight Display (PFD) and several ECAM warnings. Among the abnormal parameters, the provided Angle of Attack (AoA) value was such that the flight control computers commanded a sudden nose down aircraft movement, which constitutes an unsafe condition. * * * * *

These anomalies could result in high pilot workload, deviation from the intended flight path, and possible loss of control of the airplane. This AD requires actions that are intended to address the unsafe condition described in the MCAI.

DATES: This AD becomes effective March 5, 2009.

The Director of the Federal Register approved the incorporation by reference of certain publications, listed in the AD as of March 5, 2009.

We must receive comments on this AD by March 20, 2009.

ADDRESSES: You may send comments by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: (202) 493-2251.
- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE., Washington, DC 20590.
- Hand Delivery: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-40, 1200 New Jersey Avenue, SE., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov>; or in person at the Docket Operations office 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. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Vladimir Ulyanov, Aerospace Engineer, International Branch, ANM-116, Transport Airplane Directorate, FAA, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; telephone (425) 227-1138; fax (425) 227-1149.

SUPPLEMENTARY INFORMATION:

Discussion

The European Aviation Safety Agency (EASA), which is the Technical Agent for the Member States of the European Community, has issued EASA Emergency Airworthiness Directive 2009-0012-E, dated January 15, 2009 (referred to after this as "the MCAI"), to correct an unsafe condition for the specified products. The MCAI states:

An A330 aircraft experienced a sudden [uncommanded] nose down order [event] while in cruise. This order was preceded by an automatic autopilot disconnection and triggering of the "NAV IR1 FAULT" Electronic Centralised Aircraft Monitor (ECAM) Caution.

Investigations highlighted that at time of the event the Air Data Reference 1 (ADR) part of ADIRU1 [Air Data Inertial Reference Unit] was providing erroneous and temporary wrong parameters in a random manner. This abnormal behaviour of the ADR1 led to several consequences such as unjustified stall and over speed warnings, loss of attitude information on Captain Primary Flight Display (PFD) and several ECAM warnings. Among the abnormal parameters, the provided Angle of Attack (AoA) value was such that the flight control computers commanded a sudden [uncommanded] nose down aircraft movement, which constitutes an unsafe condition. At this stage of the investigation, the analysis of available data indicates that ADIRU1 abnormal behaviour is likely at the origin of the event. Due to similar design, the A340 aircraft are also impacted by this issue.

In order to prevent the ADR from providing erroneous data to other aircraft systems, EASA [Emergency] AD 2008-0203-E [dated November 19, 2008] was issued to require, in case faulty Inertial Reference (IR) is detected, to isolate both the IR and ADR by accomplishment of a modified Aircraft Flight Manual (AFM) operational procedure.

Since that AD [EASA AD 2008-0203-E, dated November 19, 2008] was issued, it has been reported that the "OFF" light did not illuminate in the cockpit after setting the IR and ADR pushbuttons to OFF. Investigation has determined that the ADIRU was indeed sometimes affected by another failure control.

To prevent such a failure, the operational procedure has been updated to instruct the flight crew to de-energize the ADIRU if the "OFF" light is not illuminated after setting the IR and ADR pushbuttons to OFF. Consequently, [EASA Emergency] AD 2008-0225-E [dated December 18, 2008], which superseded [EASA Emergency] AD 2008-0203-E [dated November 19, 2008], requires accomplishment of the updated AFM operational procedure.

Since this second AD was issued [EASA Emergency AD 2008-0225-E, dated December 18, 2008], a new service event has been reported highlighting that, in some failure cases, even though the "OFF" light illuminates in the cockpit after setting the IR and ADR pushbuttons to OFF, the IR could keep providing erroneous data to other systems.

In order to address all identified failure cases, de-energizing the affected ADIRU must be done by setting the IR mode rotary selector to OFF. Consequently, this AD, which supersedes AD 2008-0225-E [dated December 18, 2008], requires accomplishment of the updated AFM operational procedure.

The anomalies described above could result in high pilot workload, deviation from the intended flight path, and possible loss of control of the airplane. You may obtain further information by examining the MCAI in the AD docket.

Relevant Service Information

Airbus has issued A330 Temporary Revision 4.02.00/46, Issue 3, dated January 13, 2009, to the A330 (Airbus) Flight Manual; and A340 Temporary Revision 4.02.00/54, Issue 3, dated January 13, 2009, to the A340 (Airbus) Flight Manual. The actions described in this service information are intended to correct the unsafe condition identified in the MCAI.

FAA's Determination and Requirements of This AD

This product has been approved by the aviation authority of another country, and is approved for operation in the United States. Pursuant to our bilateral agreement with the State of Design Authority, we have been notified of the unsafe condition described in the MCAI and service information referenced above. We are issuing this AD because we evaluated all pertinent information and determined the unsafe condition exists and is likely to exist or develop on other products of the same type design.

Differences Between the AD and the MCAI or Service Information

We have reviewed the MCAI and related service information and, in general, agree with their substance. But we might have found it necessary to use different words from those in the MCAI to ensure the AD is clear for U.S. operators and is enforceable. In making these changes, we do not

intend to differ substantively from the information provided in the MCAI and related service information.

We might also have required different actions in this AD from those in the MCAI in order to follow FAA policies. Any such differences are highlighted in a Note within the AD.

FAA's Determination of the Effective Date

An unsafe condition exists that requires the immediate adoption of this AD. The FAA has found that the risk to the flying public justifies waiving notice and comment prior to adoption of this rule to prevent the ADR from providing erroneous data to other aircraft systems, which could result in high pilot workload, deviation from the intended flight path, and possible loss of control of the airplane. Therefore, we determined that notice and opportunity for public comment before issuing this AD are impracticable and that good cause exists for making this amendment effective in fewer than 30 days.

Comments Invited

This AD is a final rule that involves requirements affecting flight safety, and we did not precede it by notice and opportunity for public comment. We invite you to send any written relevant data, views, or arguments about this AD. Send your comments to an address listed under the ADDRESSES section. Include "Docket No. FAA-2009-0122; Directorate Identifier 2008-NM-223-AD" at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this AD. We will consider all comments received by the closing date and may amend this AD because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this AD.

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 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); and
3. 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.

We prepared a regulatory evaluation of the estimated costs to comply with this AD and placed it in the AD docket.

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 AD:



2009-04-07 Airbus: Amendment 39-15813. Docket No. FAA-2009-0122; Directorate Identifier 2008-NM-223-AD.

Effective Date

- (a) This airworthiness directive (AD) becomes effective March 5, 2009.

Affected ADs

- (b) None.

Applicability

(c) This AD applies to Airbus Model A330-200 and -300; and A340-200, -300, -500, and -600 series airplanes, certificated in any category, as listed in paragraphs (c)(1) and (c)(2) of this AD.

(1) A330-201, -202, -203, -223, -243, -301, -302, -303, -321, -322, -323, -341, -342, and -343 airplanes, all serial numbers, equipped with Northrop-Grumman (formerly Litton) Air Data Inertial Reference Units (ADIRUs), part number (P/N) 465020-0303-03ZZ (with ZZ from 09 up to 16 inclusive).

(2) A340-211, -212, -213, -311, -312, -313, -541, and -642 airplanes, all serial numbers, equipped with Northrop-Grumman (formerly Litton) ADIRUs, P/N 465020-0303-03ZZ (with ZZ from 09 up to 16 inclusive).

Subject

- (d) Air Transport Association (ATA) of America Code 34: Navigation.

Reason

- (e) The mandatory continued airworthiness information (MCAI) states:

An A330 aircraft experienced a sudden [uncommanded] nose down order [event] while in cruise. This order was preceded by an automatic autopilot disconnection and triggering of the "NAV IR1 FAULT" Electronic Centralised Aircraft Monitor (ECAM) Caution.

Investigations highlighted that at time of the event the Air Data Reference 1 (ADR) part of ADIRU1 [Air Data Inertial Reference Unit] was providing erroneous and temporary wrong parameters in a random manner. This abnormal behaviour of the ADR1 led to several consequences such as unjustified stall and over speed warnings, loss of attitude information on Captain Primary Flight Display (PFD) and several ECAM warnings. Among the abnormal parameters, the provided Angle of Attack (AoA) value was such that the flight control computers commanded a sudden [uncommanded] nose down aircraft movement, which constitutes an unsafe condition. At this stage of the investigation, the analysis of available data indicates that ADIRU1 abnormal behaviour is

likely at the origin of the event. Due to similar design, the A340 aircraft are also impacted by this issue.

In order to prevent the ADR from providing erroneous data to other aircraft systems, EASA [Emergency] AD 2008-0203-E [dated November 19, 2008] was issued to require, in case faulty Inertial Reference (IR) is detected, to isolate both the IR and ADR by accomplishment of a modified Aircraft Flight Manual (AFM) operational procedure.

Since that AD [EASA AD 2008-0203-E, dated November 19, 2008] was issued, it has been reported that the "OFF" light did not illuminate in the cockpit after setting the IR and ADR pushbuttons to OFF. Investigation has determined that the ADIRU was indeed sometimes affected by another failure control.

To prevent such a failure, the operational procedure has been updated to instruct the flight crew to de-energize the ADIRU if the "OFF" light is not illuminated after setting the IR and ADR pushbuttons to OFF. Consequently, [EASA Emergency] AD 2008-0225-E [dated December 18, 2008], which superseded [EASA Emergency] AD 2008-0203-E [dated November 19, 2008], requires accomplishment of the updated AFM operational procedure.

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In order to address all identified failure cases, de-energizing the affected ADIRU must be done by setting the IR mode rotary selector to OFF. Consequently, this AD, which supersedes AD 2008-0225-E [dated December 18, 2008], requires accomplishment of the updated AFM operational procedure.

The anomalies described above could result in high pilot workload, deviation from the intended flight path, and possible loss of control of the airplane.

Actions and Compliance

(f) Unless already done: Within 14 days after the effective date of this AD, revise the applicable section of the A330 or A340 (Airbus) Flight Manual (FM) by inserting a copy of A330 (Airbus) Temporary Revision (TR) 4.02.00/46, or A340 (Airbus) TR 4.02.00/54, both Issue 3, both dated January 13, 2009, as applicable. Thereafter, operate the airplane according to the limitations and procedures in the TRs. When information identical to that in the TR has been included in the general revisions of the FM, the general revisions may be inserted in the FM, and the TR may be removed.

FAA AD Differences

Note 1: This AD differs from the MCAI and/or service information as follows: No differences.

Other FAA AD Provisions

(g) 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. Send information to ATTN: Vladimir

Ulyanov, Aerospace Engineer, International Branch, ANM-116, Transport Airplane Directorate, FAA, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; telephone (425) 227-1138; fax (425) 227-1149. Before using any approved AMOC on any airplane to which the AMOC applies, notify your principal maintenance inspector (PMI) or principal avionics inspector (PAI), as appropriate, or lacking a principal inspector, your local Flight Standards District Office.

(2) Airworthy Product: For any requirement in this AD to obtain corrective actions from a manufacturer or other source, use these actions if they are FAA-approved. Corrective actions are considered FAA-approved if they are approved by the State of Design Authority (or their delegated agent). You are required to assure the product is airworthy before it is returned to service.

(3) Reporting Requirements: For any reporting requirement in this AD, under the provisions of the Paperwork Reduction Act, the Office of Management and Budget (OMB) has approved the information collection requirements and has assigned OMB Control Number 2120-0056.

Related Information

(h) Refer to MCAI European Aviation Safety Agency Emergency Airworthiness Directive 2009-0012-E, dated January 15, 2009; A330 (Airbus) TR 4.02.00/46, Issue 3, dated January 13, 2009; and A340 (Airbus) TR 4.02.00/54, Issue 3, dated January 13, 2009; for related information.

Material Incorporated by Reference

(i) You must use A330 (Airbus) Temporary Revision 4.02.00/46, Issue 3, dated January 13, 2009, to the A330 (Airbus) Flight Manual; or A340 (Airbus) Temporary Revision 4.02.00/54, Issue 3, dated January 13, 2009, to the A340 (Airbus) Flight Manual; as applicable; to do the actions required by this AD, unless the AD specifies otherwise.

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

(2) For service information identified in this AD, contact Airbus SAS—Airworthiness Office—EAL, 1 Rond Point Maurice Bellonte, 31707 Blagnac Cedex, France; fax +33 5 61 93 45 80; e-mail airworthiness.A330-A340@airbus.com; Internet <http://www.airbus.com>.

(3) You may review copies of the service information that is incorporated by reference at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington. For information on the availability of this material at the FAA, call 425-227-1221 or 425-227-1152.

(4) You may also review copies of the service information 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/code_of_federal_regulations/ibr_locations.html.

Issued in Renton, Washington, on January 23, 2009.

Ali Bahrami,
Manager, Transport Airplane Directorate,
Aircraft Certification Service.