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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2010-1161; Directorate Identifier 2010-NM-152-AD; Amendment 39-16658; AD 2011-08-08]

RIN 2120-AA64

Airworthiness Directives; Empresa Brasileira de Aeronautica S.A. (EMBRAER) Model ERJ 170 and ERJ 190 Airplanes

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

ACTION: Final rule.

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:

It has been found occurrence of screw units manufactured with metallographic non-conformity that may increase their susceptibility to brittle fracture. The screw failure may result in loss of the related balance washer causing a possible ram air turbine (RAT) imbalance event, which may result in RAT structural failure, which associated with an electrical emergency situation, could result in loss of power to airplane flight controls hydraulic back-up system.

* * * * *

Loss of power to the hydraulic back-up system for airplane flight controls could reduce the ability of the flightcrew to maintain the safe flight and landing of the airplane. We are issuing this AD to require actions to correct the unsafe condition on these products.

DATES: This AD becomes effective May 18, 2011.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of May 18, 2011.

ADDRESSES: You may examine the AD docket on the Internet at <http://www.regulations.gov> or in person at the U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE., Washington, DC.

FOR FURTHER INFORMATION CONTACT: Cindy Ashforth, Aerospace Engineer, International Branch, ANM-116, Transport Airplane Directorate, FAA, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; telephone (425) 227-2768; fax (425) 227-1149.

SUPPLEMENTARY INFORMATION:

Discussion

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to include an AD that would apply to the specified products. That NPRM was published in the Federal Register on December 1, 2010 (75 FR 74670). That NPRM proposed to correct an unsafe condition for the specified products. The MCAI states:

It has been found occurrence of screw units manufactured with metallographic non-conformity that may increase their susceptibility to brittle fracture. The screw failure may result in loss of the related balance washer causing a possible ram air turbine (RAT) imbalance event, which may result in RAT structural failure, which associated with an electrical emergency situation, could result in loss of power to airplane flight controls hydraulic back-up system.

* * * * *

Loss of power to the hydraulic back-up system for airplane flight controls could reduce the ability of the flightcrew to maintain the safe flight and landing of the airplane. Required actions include doing a general visual inspection to determine the model, part number, and serial number of the RAT, and to determine if a certain symbol is marked on affected RATs. Corrective actions include replacing the RAT balance screw and marking the RAT identification plate. You may obtain further information by examining the MCAI in the AD docket.

Comments

We gave the public the opportunity to participate in developing this AD. We considered the comment received.

Request To Include Service Bulletin for Model ERJ 190-100 ECJ Airplanes

EMBRAER requested that we add EMBRAER Service Bulletin 190LIN-24-0006, dated July 27, 2010, to the NPRM, because it applies to Model ERJ 190-100 ECJ airplanes which are included in the NPRM applicability. The commenter requested that we change paragraphs (g), (h), (i), and (k) of the NPRM accordingly.

We agree that EMBRAER Service Bulletin 190LIN-24-0006, dated July 27, 2010, is acceptable for accomplishing the required actions of the AD for Model ERJ 190-100 ECJ airplanes. We have added a new paragraph (i) to this AD (and renumbered subsequent paragraphs accordingly) to refer to that service bulletin as an optional method of compliance for the requirements of this AD for those airplanes. This addition has been coordinated with the Agência Nacional de Aviação Civil (ANAC), the aviation authority for Brazil.

Clarification of Terminology

Paragraph (g)(2)(ii) of the NPRM specified to "replace the RAT balance screw with a new balance screw," while some RATs in fact have more than one balance screw. We have clarified that instruction by stating "replace the RAT balance screw(s) with a new balance screw(s)," in this final rule.

Conclusion

We reviewed the available data, including the comment received, and determined that air safety and the public interest require adopting the AD with the changes described previously. We determined that these changes will not increase the economic burden on any operator or increase the scope of the AD.

Differences Between This 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 our FAA policies. Any such differences are highlighted in a NOTE within the AD.

Costs of Compliance

We estimate that this AD will affect about 241 products of U.S. registry. We also estimate that it will take about 9 work-hours per product to comply with the basic requirements of this AD. The average labor rate is \$85 per work-hour. Required parts will cost about \$0 per product. Where the service information lists required parts costs that are covered under warranty, we have assumed that there will be no charge for these parts. As we do not control warranty coverage for affected parties, some parties may incur costs higher than estimated here. Based on these figures, we estimate the cost of this AD to the U.S. operators to be \$184,365, or \$765 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 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.

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 the NPRM, 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.

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:



2011-08-08 Empresa Brasileira de Aeronautica S.A. (EMBRAER): Amendment 39-16658.
Docket No. FAA-2010-1161; Directorate Identifier 2010-NM-152-AD.

Effective Date

(a) This airworthiness directive (AD) becomes effective May 18, 2011.

Affected ADs

(b) None.

Applicability

(c) This AD applies to all Empresa Brasileira de Aeronautica S.A. (EMBRAER) Model ERJ 170-100 LR, -100 STD, -100 SE, and -100 SU airplanes; and Model ERJ 170-200 LR, -200 SU, and -200 STD airplanes; and Model ERJ 190-100 STD, -100 LR, -100 ECJ, and -100 IGW airplanes; and Model ERJ 190-200 STD, -200 LR, and -200 IGW airplanes; certificated in any category.

Subject

(d) Air Transport Association (ATA) of America Code 24: Electrical power.

Reason

(e) The mandatory continuing airworthiness information (MCAI) states:

It has been found occurrence of screw units manufactured with metallographic non-conformity that may increase their susceptibility to brittle fracture. The screw failure may result in loss of the related balance washer causing a possible ram air turbine (RAT) imbalance event, which may result in RAT structural failure, which associated with an electrical emergency situation, could result in loss of power to airplane flight controls hydraulic back-up system.

* * * * *

Loss of power to the hydraulic back-up system for airplane flight controls could reduce the ability of the flightcrew to maintain the safe flight and landing of the airplane.

Compliance

(f) You are responsible for having the actions required by this AD performed within the compliance times specified, unless the actions have already been done.

Actions

(g) Within 1,200 flight hours or 6 months after the effective date of this AD, whichever occurs first: Do a general visual inspection (GVI) to determine the RAT model, part number, and serial number, in accordance with Part 1 of the Accomplishment Instructions of EMBRAER Service Bulletin 170-24-0048, Revision 01, dated May 12, 2010; or EMBRAER Service Bulletin 190-24-0019, Revision 01, dated May 11, 2010; as applicable. A review of airplane maintenance records is acceptable in lieu of this inspection if the model, part number, and serial number of the RAT can be conclusively determined from that review.

Note 1: For the purpose of this AD, a GVI is: "A visual examination of an interior or exterior area, installation or assembly to detect obvious damage, failure or irregularity. This level of inspection is made from within touching distance, unless otherwise specified. A mirror may be necessary to enhance visual access to all exposed surfaces in the inspection area. This level of inspection is made under normally available lighting conditions such as daylight, hangar lighting, flashlight or drop-light, and may require removal or opening of access panels or doors. Stands, ladders or platforms may be required to gain proximity to the area being checked."

(1) For any RAT not having a serial number identified in EMBRAER Service Bulletin 170-24-0048, Revision 01, dated May 12, 2010; or EMBRAER Service Bulletin 190-24-0019, Revision 01, dated May 11, 2010: No further action is required by this paragraph.

(2) For any RAT having a serial number identified in EMBRAER Service Bulletin 170-24-0048, Revision 01, dated May 12, 2010; or EMBRAER Service Bulletin 190-24-0019, Revision 01, dated May 11, 2010: Within 1,200 flight hours or 6 months after the effective date of this AD, whichever occurs first, inspect to determine if the symbol "24-5" is marked on the RAT identification plate. A review of airplane maintenance records is acceptable in lieu of this inspection if the RAT identification plate can be conclusively determined to be marked with "24-5" from that review.

(i) If the symbol "24-5" is marked on the RAT identification plate: No further action is required by this paragraph.

(ii) If the symbol "24-5" is not marked on the RAT identification plate: Within 1,200 flight hours or 6 months after the effective date of this AD, whichever occurs first, replace the RAT balance screw(s) with a new balance screw(s), and mark the RAT identification plate with the symbol "24-5," in accordance with Part 2 of the Accomplishment Instructions of EMBRAER Service Bulletin 170-24-0048, Revision 01, dated May 12, 2010; or EMBRAER Service Bulletin 190-24-0019, Revision 01, dated May 11, 2010; as applicable.

(h) As of the effective date of this AD, no person may install a RAT identified in Part 1 of the Accomplishment Instructions of EMBRAER Service Bulletin 170-24-0048, Revision 01, dated May 12, 2010; or EMBRAER Service Bulletin 190-24-0019, Revision 01, dated May 11, 2010; as applicable; on any airplane, unless that RAT is identified with the symbol "24-5" on the identification plate.

Acceptable Method of Compliance for Model ERJ 190-100 ECJ Airplanes

(i) Actions accomplished in accordance with EMBRAER Service Bulletin 190LIN-24-0006, dated July 27, 2010, for Model ERJ 190-100 ECJ airplanes, are considered acceptable for compliance with the corresponding actions specified in this AD.

Credit for Actions Accomplished in Accordance With Previous Service Information

(j) Actions accomplished before the effective date of this AD in accordance with EMBRAER Service Bulletins 170-24-0048 or 190-24-0019, both dated March 31, 2010, as applicable, are considered acceptable for compliance with the corresponding actions specified in this AD.

FAA AD Differences

Note 2: This AD differs from the MCAI and/or service information as follows:

(1) The Brazilian ADs apply to "airplanes equipped with Hamilton Sundstrand ram air turbine (RAT), Model ERPS37T, Part Number (P/N) 1703781 Series; with the serial numbers (S/N) contained in Embraer Service Bulletin[s 170-24-0048 or 190-24-0019]," and their first action is an inspection to determine if affected equipment is installed. This AD applies to all of the airplanes, with the first action in the AD being an inspection to determine if affected equipment is installed, because the affected part could be rotated onto any of the airplanes listed in the applicability of this AD.

(2) Although the MCAI states not to install the part identified in paragraph (h) of this AD after accomplishing the actions specified in paragraph (g)(2) of this AD, this AD prohibits installation of the part as of the effective date of this AD.

Other FAA AD Provisions

(k) 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: Cindy Ashforth, Aerospace Engineer, International Branch, ANM-116, Transport Airplane Directorate, FAA, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; telephone (425) 227-2768; fax (425) 227-1149. Information may be e-mailed 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) 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.

Related Information

(l) Refer to MCAI Brazilian Airworthiness Directives 2010-06-04 and 2010-06-05, both dated July 26, 2010, and the service information identified in table 1 of this AD, for related information.

Table 1—Related Service Information

EMBRAER Service Bulletin -	Revision -	Date -
170-24-0048	01	May 12, 2010
190-24-0019	01	May 11, 2010
190LIN-24-0006	Original	July 27, 2010

Material Incorporated by Reference

(m) You must use the applicable service information contained in Table 2 of this AD 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 Empresa Brasileira de Aeronautica S.A. (EMBRAER), Technical Publications Section (PC 060), Av. Brigadeiro Faria Lima, 2170–Putim–12227-901 São Jose dos Campos–SP–BRASIL; telephone: +55 12 3927-5852 or +55 12 3309-0732; fax: +55 12 3927-7546; e-mail: distrib@embraer.com.br; Internet: <http://www.flyembraer.com>.

(3) You may review copies of the service information 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.

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

Table 2–Material Incorporated by Reference

EMBRAER Service Bulletin	Revision	Date
170-24-0048	01	May 12, 2010
190-24-0019	01	May 11, 2010
190LIN-24-0006	Original	July 27, 2010

Issued in Renton, Washington, on March 24, 2011.

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