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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2008-1005; Directorate Identifier 2008-NM-119-AD; Amendment 39-15981; AD 2009-15-18]

RIN 2120-AA64

Airworthiness Directives; Empresa Brasileira de Aeronautica S.A. (EMBRAER) Model EMB-120, -120ER, -120FC, -120QC, and -120RT 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 was found one occurrence of a fuel booster pump circuit breaker opening during an engine maintenance servicing. An inspection inside the fuel tank revealed the fuel booster pump's electrical harness chafing against its body, causing the loss of the electrical wiring protection and resulting in a short circuit. Further in-tank inspections have showed other fuel booster pump electrical harnesses chafing either with the pump body and/or with adjacent fuel lines, causing damage to the harness protective layers and resulting * * * [in a] possible ignition source inside the fuel tank.

* * * * *

We are issuing this AD to require actions to correct the unsafe condition on these products.

DATES: This AD becomes effective September 2, 2009.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of September 2, 2009.

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: Sanjay Ralhan, Aerospace Engineer, International Branch, ANM-116, Transport Airplane Directorate, FAA, 1601 Lind Avenue, SW., Renton, Washington 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 include an AD that would apply to the specified products. That NPRM was published in the Federal Register on October 7, 2008 (73 FR 58507). That NPRM proposed to correct an unsafe condition for the specified products. The MCAI states:

It was found one occurrence of a fuel booster pump circuit breaker opening during an engine maintenance servicing. An inspection inside the fuel tank revealed the fuel booster pump's electrical harness chafing against its body, causing the loss of the electrical wiring protection and resulting in a short circuit. Further in-tank inspections have showed other fuel booster pump electrical harnesses chafing either with the pump body and/or with adjacent fuel lines, causing damage to the harness protective layers and resulting * * * [in a] possible ignition source inside the fuel tank.

* * * * *

The corrective actions include revising the Limitations section of the airplane flight manual to include a minimum fuel quantity, adding a minimum fuel quantity limitation for operation of the fuel booster pump, inspecting the fuel booster pump electrical harness of the left- and right-hand fuel tanks for damage, replacing any fuel booster pump assembly having a damaged electrical harness, installing clamps on the tank structure, and installing tie down straps for the fuel booster pump electrical harness. You may obtain further information by examining the MCAI in the AD docket.

Changes to the NPRM

We have clarified the references to the fuel booster pump by adding "assembly" where applicable in the paragraph immediately above this paragraph, and in paragraphs (e) and (f)(3)(i) of the AD.

Comments

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

Request To Remove Fuel Restriction for Certain Airplanes

The manufacturer, Embraer, agrees with the main concern for issuing the AD, and understands that the addressed unsafe condition does exist. However, Embraer requests that operators who have inspected for and replaced damaged wires inside the fuel tanks be excluded from the minimum requirement of 300 kg of fuel in each tank. Embraer requests that the AD allow operators that have already inspected their airplanes, and are flying under a safe condition, to fly without the restriction of 300 kg of fuel in each tank for at least 2,000 flight hours or 12 months.

Embraer recommends adding the following paragraph to the "Actions and Compliance" section of the proposed AD: "Aircraft that have been inspected in accordance with paragraph (f)(3)(i) of this AD, prior to the effective date of this AD, are exempt from the limitations imposed by paragraphs (f)(1) and (f)(2) for a period of 12 calendar months or 2,000 flight hours from the time of inspection, whichever occurs first." Embraer bases this request on inspections of 28 airplanes where damage was

found only on the first layer of protection of the pumps' wiring, and on service experience showing that very few fuel pumps with chafed wiring have been found on airplanes with more than 20,000 flight hours and 18 years of operation.

We disagree with Embraer's request to remove the fuel quantity restriction. Paragraph (f)(4) of this AD specifies that the limitations imposed by paragraphs (f)(1) and (f)(2) of this AD are no longer required only after complying with both the inspection specified in paragraph (f)(3)(i) of this AD and the installation specified in paragraph (f)(3)(ii) of this AD (both actions must be done in accordance with Embraer Service Bulletin 120-28-0016, dated January 9, 2008).

We contacted Agência Nacional de Aviação Civil (ANAC), the aviation authority for Brazil, which issued the Brazilian Airworthiness Directive 2008-05-01, effective June 13, 2008, referenced in the NPRM. We agree with ANAC that the unsafe condition can continue to exist until Embraer Service Bulletin 120-28-0016, dated January 9, 2008, has been accomplished, including installing the clamps in accordance with paragraph (f)(3)(ii) of this AD. Therefore, even if the inspection has been accomplished in accordance with paragraph (f)(3)(i) of this AD, the limitations must remain in effect until the installation required by paragraph (f)(3)(ii) of this AD is also done. However, under the provisions of paragraph (g)(1) of this AD, we will consider requests for approval of an alternative method of compliance if sufficient data are submitted to substantiate that the method would provide an acceptable level of safety. We have not changed the AD in this regard.

Conclusion

We reviewed the available data, including the comment received, and determined that air safety and the public interest require adopting the AD as proposed.

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 110 products of U.S. registry. We also estimate that it will take about 8 work-hours per product to comply with the basic requirements of this AD. The average labor rate is \$80 per work-hour. Required parts will cost about \$269 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 \$99,990, or \$909 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:



2009-15-18 Empresa Brasileira de Aeronautica S.A. (EMBRAER): Amendment 39-15981.
Docket No. FAA-2008-1005; Directorate Identifier 2008-NM-119-AD.

Effective Date

(a) This airworthiness directive (AD) becomes effective September 2, 2009.

Affected ADs

(b) None.

Applicability

(c) This AD applies to EMBRAER Model EMB-120, -120ER, -120FC, -120QC, and -120RT airplanes, certificated in any category, serial numbers 120001 to 120359.

Subject

(d) Air Transport Association (ATA) of America Code 28: Fuel.

Reason

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

It was found one occurrence of a fuel booster pump circuit breaker opening during an engine maintenance servicing. An inspection inside the fuel tank revealed the fuel booster pump's electrical harness chafing against its body, causing the loss of the electrical wiring protection and resulting in a short circuit. Further in-tank inspections have showed other fuel booster pump electrical harnesses chafing either with the pump body and/or with adjacent fuel lines, causing damage to the harness protective layers and resulting * *

* [in a] possible ignition source inside the fuel tank.

* * * * *

The corrective actions include revising the Limitations section of the airplane flight manual (AFM) to include a minimum fuel quantity, adding a minimum fuel quantity limitation for operation of the fuel booster pump, inspecting the fuel booster pump electrical harness of the left- and right-hand fuel tanks for damage, replacing any fuel booster pump assembly having a damaged electrical harness, installing clamps on the tank structure, and installing tie down straps for the fuel booster pump electrical harness.

Actions and Compliance

(f) Unless already done, do the following actions.

(1) Within 30 days after the effective date of this AD, insert in the Limitations section of the AFM a copy of this AD or the following statement:

The minimum fuel quantity inside each tank must be 300 kg (662 pounds) or 370 liters (97.75 gallons).

(2) As of the effective date of this AD, any fuel tank defueling or other maintenance action which demands use of the fuel booster pumps is limited to a minimum fuel quantity of no less than 300 kilograms (662 pounds) or 370 liters (97.75 gallons) inside the respective tank.

(3) Within 4,000 flight hours, or 24 months, or at the next scheduled or unscheduled fuel tank opening after the effective date of this AD, whichever occurs first, do the following actions:

(i) Inspect the fuel booster pump electrical harness of the left- and right-hand fuel tanks for damage on its external protection, in accordance with paragraph 3.F. (Part I) of the Accomplishment Instructions of Embraer Service Bulletin 120-28-0016, dated January 9, 2008. If any damaged fuel booster pump electrical harness is found, before further flight, replace the affected fuel booster pump assembly with another fuel booster pump assembly bearing the same part number, in accordance with the Accomplishment Instructions of Embraer Service Bulletin 120-28-0016, dated January 9, 2008.

(ii) Install clamps and tie down straps on the tank structure and attach each fuel booster pump electrical harness to the left- and right-hand fuel tanks to avoid eventual chafing against the pump body, adjacent fuel lines, structure or any other part, and to prevent damage to the harness protective layers, in accordance with paragraph 3.G. (Part II) of the Accomplishment Instructions of Embraer Service Bulletin 120-28-0016, dated January 9, 2008.

(4) After complying with the actions in paragraphs (f)(3)(i) and (f)(3)(ii) of this AD, the limitations imposed by paragraphs (f)(1) and (f)(2) of this AD are no longer required, and the AFM revision required by paragraph (f)(1) of this AD may be removed from the AFM.

FAA AD Differences

Note: 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: Sanjay Ralhan, Aerospace Engineer, International Branch, ANM-116, Transport Airplane Directorate, FAA, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; telephone (425) 227-1405; fax (425) 227-1149. Before using any approved AMOC on any airplane to which the AMOC applies, notify your appropriate principal inspector (PI) in the FAA Flight Standards District Office (FSDO), or lacking a PI, your local FSDO.

(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 Brazilian Airworthiness Directive 2008-05-01, effective June 13, 2008; and Embraer Service Bulletin 120-28-0016, dated January 9, 2008; for related information.

Material Incorporated by Reference

(i) You must use Embraer Service Bulletin 120-28-0016, dated January 9, 2008, 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 or 425-227-1152.

(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.

Issued in Renton, Washington, on July 13, 2009.

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