

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39s**

**[Docket No. FAA-2011-0312; Directorate Identifier 2010-NM-159-AD; Amendment 39-16838; AD 2011-21-15]**

**RIN 2120-AA64**

**Airworthiness Directives; Empresa Brasileira de Aeronautica S.A. (EMBRAER) 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 certain Model EMB-135ER, -135KE, -135KL, and -135LR airplanes; and Model EMB-145, -145ER, -145MR, -145LR, -145MP, and -145EP airplanes. 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:

This [Brazilian] AD results from reports of cracking in the firewall of the auxiliary power unit (APU). This AD is being issued to detect and correct this cracking, which could result in reduced structural integrity of the fuselage and empennage in the event that a fire penetrates through the firewall of the APU.

\* \* \* \* \*

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

**DATES:** This AD becomes effective November 23, 2011.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of November 23, 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:** Todd Thompson, Aerospace Engineer, International Branch, ANM-116, Transport Airplane Directorate, FAA, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; telephone (425) 227-1175; 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

April 19, 2011 (76 FR 21822). That NPRM proposed to correct an unsafe condition for the specified products. The MCAI states:

This [Brazilian] AD results from reports of cracking in the firewall of the auxiliary power unit (APU). This AD is being issued to detect and correct this cracking, which could result in reduced structural integrity of the fuselage and empennage in the event that a fire penetrates through the firewall of the APU.

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The required actions include repetitive detailed inspections for cracking of the rearward and forward face of the APU firewall, and repair if necessary. 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 comments received.

### **Request To Reference Latest Revision of Embraer Service Bulletin 145-53-0062**

EMBRAER and ExpressJet Airlines requested that we reference EMBRAER Service Bulletin 145-53-0062, Revision 07, dated May 27, 2011, in the NPRM (76 FR 21822, April 19, 2011) as it is the most current.

We agree that the latest service information should be referenced in this AD. We have changed references in paragraphs (h) and (l) of this AD to include EMBRAER Service Bulletin 145-53-0062, Revision 07, dated May 27, 2011. The effectivity of Revision 07 was changed to add serial numbers that were inadvertently omitted in EMBRAER Service Bulletin 145-53-0062, Revision 06, dated August 11, 2010. (The applicability of this final rule remains unchanged.) In addition, we have added EMBRAER Service Bulletin 145-53-0062, Revision 06, dated August 11, 2010, to "Table 1—Credit Service Bulletins" of this AD.

### **Request To Remove Date and Revision Level of the Airplane Maintenance Manual (AMM) or Allow for Later Revisions**

American Eagle Airlines requested that we remove the date and revision level of the AMM specified in paragraph (g) of the NPRM (76 FR 21822, April 19, 2011), or allow for future revisions to the AMM. The commenter noted that if either of the AMM sections is updated by the manufacturer, the operators would be required to accomplish an obsolete task.

We disagree with removing the date and revision level of the AMM because all documents incorporated by reference are required to have the date and revision level in accordance with the Office of the Federal Register regulations for approval of materials "incorporated by reference" in rules. See 1 CFR 51.1(f). We also disagree with allowing the use of "future" revisions to the AMM. When referring to a specific service document in an AD, using the phrase, "or later FAA-approved revisions," violates Office of the Federal Register regulations for approval of materials "incorporated by reference" in rules. See 1 CFR 51.1(f). In general terms, we are required by these OFR regulations to either publish the service document contents as part of the actual AD language; or submit the service document to the OFR for approval as "referenced" material, in which case we may only refer to such material in the text of an AD. The AD may refer to the service document only if the OFR approved it for "incorporation by reference." See 1 CFR part 51.

However, because a later revision of the AMM has been issued since the NPRM (76 FR 21822, April 19, 2011) was published, we have revised paragraphs (g) and (l), and Note 2 of this AD to refer to EMBRAER EMB145 Aircraft Maintenance Manual, Part II, AMM-145/1124, Revision 54, dated

April 28, 2011. We have also added new paragraph (i) (and re-identified subsequent paragraphs accordingly) to this AD to give credit for EMBRAER EMB145 Aircraft Maintenance Manual, Part II, AMM-145/1124, Revision 53, dated October 28, 2010, which was referenced as the appropriate source of service information for certain actions specified in the NPRM. However, operators may request approval of an AMOC to use later revisions of this AMM under the provisions of paragraph (k) of this AD. No changes have been made to the AD in this regard.

### **Request To Change the Initial Compliance Time**

ExpressJet Airlines requested that we change the initial compliance time from 3,300 flight hours to “5,000 flight hours or at the next heavy maintenance visit.” The commenter stated that its experience with repairing and replacing APU firewalls can be a very time consuming process which would be better suited for a heavy check.

We disagree with the commenter's request to extend the compliance time. In developing an appropriate compliance time for this action, we considered the safety implications, parts availability, and normal maintenance schedules for the timely accomplishment of the inspection. In consideration of these items, as well as the reports of cracking in the firewall of the APU, we have determined that the initial compliance time of 3,300 flight hours will ensure an acceptable level of safety. However, operators may request approval of an AMOC under the provisions of paragraph (k) of this AD. No changes have been made to the AD in this regard.

### **Conclusion**

We reviewed the available data, including the comments 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 668 products of U.S. registry. We also estimate that it will take about 2 work-hours per product to comply with the basic requirements of this AD. The average labor rate is \$85 per work-hour. Based on these figures, we estimate the cost of this AD to the U.S. operators to be \$113,560, or \$170 per product.

In addition, we estimate that any necessary follow-on actions would take about 10 work-hours and require parts costing \$10,060 for a cost of \$10,910 per product. We have no way of determining the number of products that may need these actions.

## **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 (76 FR 21822, April 19, 2011), 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:



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**2011-21-15 Empresa Brasileira de Aeronautica S.A. (EMBRAER):** Amendment 39-16838.  
Docket No. FAA-2011-0312; Directorate Identifier 2010-NM-159-AD.

**Effective Date**

- (a) This airworthiness directive (AD) becomes effective November 23, 2011.

**Affected ADs**

- (b) None.

**Applicability**

(c) This AD applies to Empresa Brasileira de Aeronautica S.A. (EMBRAER) Model EMB-135ER, -135KE, -135KL, and -135LR airplanes; and Model EMB-145, -145ER, -145MR, -145LR, -145MP, and -145EP airplanes; certificated in any category; equipped with titanium auxiliary power unit (APU) firewall part number (P/N) 145-47494-401, 145-26850-401, 145-26850-601, or 145-47494-403.

**Subject**

- (d) Air Transport Association (ATA) of America Code 53: Fuselage.

**Reason**

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

This [Brazilian] AD results from reports of cracking in the firewall of the auxiliary power unit (APU). This AD is being issued to detect and correct this cracking, which could result in reduced structural integrity of the fuselage and empennage in the event that a fire penetrates through the firewall of the APU.

\* \* \* \* \*

**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 3,300 flight hours after the effective date of this AD, do a detailed inspection for cracking of the rearward and forward face of the APU firewall, including its attachment to the fuselage, removing neither the structural reinforcements nor the dampers, in accordance with Task 05-20-47-200-801-A, Rear Fuselage II–Aft of Rear Pressure Bulkhead–Internal General Visual Inspection, of Subject 5-20-47, Rear Fuselage II–Aft of Rear Pressure Bulkhead–Internal, and Task

05-20-57-200-801-A, Rear Fuselage II–Tail Cone Fairing–Internal General Visual Inspection, of Subject 5-20-57, Rear Fuselage II–Tail Cone Fairing–Internal, of Chapter 5, Time Limits Maintenance Checks, of EMBRAER EMB145 Aircraft Maintenance Manual, Part II, AMM-145/1124, Revision 54, dated April 28, 2011.

(1) If no cracking is found during any inspection required by paragraph (g) of this AD, repeat the inspection thereafter at intervals not to exceed 6,600 flight hours, until the terminating action specified in paragraph (h) of this AD has been accomplished.

(2) If any cracking is found during any inspection required by paragraph (g) of this AD, before further flight, repair in accordance with Subject 53-32-13, Rear Fuselage II–APU Firewall, of Chapter 53, Fuselage, of the EMBRAER EMB135, ERJ140, EMB145, Structural Repair Manual, SRM-145/1142, Revision 43, dated December 1, 2010; or in accordance with a method approved by the International Branch, ANM-116, Transport Airplane Directorate, FAA; or Agência Nacional de Aviação Civil (ANAC) (or its delegated agent). Within 6,600 flight hours after doing the repair, do the inspection required by paragraph (g) of this AD and repeat the inspection thereafter at intervals not to exceed 6,600 flight hours, until the terminating action specified in paragraph (h) of this AD has been accomplished.

**Note 1:** For the purpose of this AD, a detailed inspection is: “An intensive examination of a specific item, installation or assembly to detect damage, failure or irregularity. Available lighting is normally supplemented with a direct source of good lighting at an intensity deemed appropriate. Inspection aids such as mirrors, magnifying lenses, etc., may be necessary. Surface cleaning and elaborate access procedures may be required.”

### Optional Terminating Action

(h) Replacing the APU firewall having P/N 145-47494-401, 145-26850-401, 145-26850-601, or 145-47494-403, with a new APU firewall having P/N 145-47494-607, in accordance with the Accomplishment Instructions of EMBRAER Service Bulletin 145-53-0062, Revision 07, dated May 27, 2011, terminates the repetitive inspections required by paragraphs (g)(1) and (g)(2) of this AD.

### Credit for Actions Accomplished in Accordance With Previous Service Information

(i) Actions done before the effective date of this AD, in accordance with Task 05-20-47-200-801-A, Rear Fuselage II–Aft of Rear Pressure Bulkhead–Internal General Visual Inspection, of Subject 5-20-47, Rear Fuselage II–Aft of Rear Pressure Bulkhead–Internal, of Chapter 5, Time Limits Maintenance Checks, of EMBRAER EMB145 Aircraft Maintenance Manual, Part II, AMM-145/1124, Revision 53, dated October 28, 2010, are acceptable for compliance with the requirements of paragraph (g) of this AD.

(j) Actions done before the effective date of this AD, in accordance with the applicable service bulletin specified in table 1 of this AD, are acceptable for compliance with the requirements of paragraph (h) of this AD.

**Table 1–Credit Service Bulletins**

<b>EMBRAER Service Bulletin –</b>	<b>Revision –</b>	<b>Dated –</b>
145-53-0062	06	August 11, 2010
145-53-0062	05	May 20, 2008
145-53-0062	04	November 23, 2007

145-53-0062	03	September 21, 2007
145-53-0062	02	January 25, 2006
145-53-0062	01	October 28, 2005
145-53-0062		July 29, 2005

## FAA AD Differences

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

(1) The MCAI AD does not specify how to do the inspection for cracking. This AD requires doing a detailed inspection of the rearward and forward face of the APU firewall, including its attachment to the fuselage, in accordance with Task 05-20-47-200-801-A, Rear Fuselage II–Aft of Rear Pressure Bulkhead–Internal General Visual Inspection, of Subject 5-20-47, Rear Fuselage II–Aft of Rear Pressure Bulkhead–Internal, and Task 05-20-57-200-801-A, Rear Fuselage II–Tail Cone Fairing–Internal General Visual Inspection, of Subject 5-20-57, Rear Fuselage II–Tail Cone Fairing–Internal, of Chapter 5, Time Limits Maintenance Checks, of EMBRAER EMB145 Aircraft Maintenance Manual, Part II, AMM-145/1124, Revision 54, dated April 28, 2011.

(2) Where Subjects 5-20-47, Rear Fuselage II–Aft of Rear Pressure Bulkhead–Internal, and 5-20-57, Rear Fuselage II–Tail Cone Fairing–Internal, of Chapter 5, Time Limits Maintenance Checks, of EMBRAER EMB145 Aircraft Maintenance Manual, Part II, AMM-145/1124, Revision 54, dated April 28, 2011, specify an internal general visual inspection, this AD requires a detailed inspection.

## 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: Todd Thompson, Aerospace Engineer, International Branch, ANM-116, Transport Airplane Directorate, FAA, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; telephone (425) 227-1175; 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

(1) Refer to MCAI ANAC Airworthiness Directive 2010-06-03R1, dated September 20, 2010; EMBRAER Service Bulletin 145-53-0062, Revision 07, dated May 27, 2011; Task 05-20-47-200-801-A, Rear Fuselage II–Aft of Rear Pressure Bulkhead–Internal General Visual Inspection, of Subject 5-20-47, Rear Fuselage II–Aft of Rear Pressure Bulkhead–Internal, and Task 05-20-57-200-801-A, Rear Fuselage II–Tail Cone Fairing–Internal General Visual Inspection, of Subject 5-20-57, Rear Fuselage II–Tail Cone Fairing–Internal, of Chapter 5, Time Limits Maintenance Checks, of

EMBRAER EMB145 Aircraft Maintenance Manual, Part II, AMM-145/1124, Revision 54, dated April 28, 2011; and Subject 53-32-13, Rear Fuselage II–APU Firewall, of Chapter 53, Fuselage, of the EMBRAER EMB135, ERJ140, EMB145, Structural Repair Manual, SRM-145/1142, Revision 43, dated December 1, 2010; for related information.

### **Material Incorporated by Reference**

(m) You must use Task 05-20-47-200-801-A, Rear Fuselage II–Aft of Rear Pressure Bulkhead–Internal General Visual Inspection, of Subject 5-20-47, Rear Fuselage II–Aft of Rear Pressure Bulkhead–Internal, and Task 05-20-57-200-801-A, Rear Fuselage II–Tail Cone Fairing–Internal General Visual Inspection, of Subject 5-20-57, Rear Fuselage II–Tail Cone Fairing–Internal, of Chapter 5, Time Limits Maintenance Checks, of EMBRAER EMB145 Aircraft Maintenance Manual, Part II, AMM-145/1124, Revision 54, dated April 28, 2011; and Subject 53-32-13, Rear Fuselage II–APU Firewall, of Chapter 53, Fuselage, of the EMBRAER EMB135, ERJ140, EMB145, Structural Repair Manual, SRM-145/1142, Revision 43, dated December 1, 2010; to do the actions required by this AD, unless the AD specifies otherwise. If you accomplish the optional terminating action specified in this AD, you must use EMBRAER Service Bulletin 145-53-0062, Revision 07, dated May 27, 2011, to do those actions, unless the AD specifies otherwise. The revision level of the EMBRAER EMB145 Aircraft Maintenance Manual AMM-145/1124 is specified on only the title page and Chapter 5 List of Effective Pages of this document; the Chapter 5 title page of this document does not contain a revision level or date. The revision level of the EMBRAER EMB135, ERJ140, EMB145, Structural Repair Manual SRM-145/1142 is specified on only the title page and Chapter 53 List of Effective pages of this document; the Chapter 53 title page does not contain a revision level or date.

(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](mailto: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](http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html).

Issued in Renton, Washington, on October 3, 2011.

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