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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

**[Docket No. FAA-2009-0687; Directorate Identifier 2009-NM-033-AD; Amendment 39-16080; AD 2009-23-08]**

**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.

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**SUMMARY:** We are superseding an existing 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 the occurrence of two events of aircraft being dispatched with the cargo door opened without indication. In one of the events the aircraft took off with the cargo door opened.

\* \* \* \* \*

The unsafe condition is a cargo door opening during flight, which could result in reduced structural integrity and consequent rapid decompression of the airplane. We are issuing this AD to require actions to correct the unsafe condition on these products.

**DATES:** This AD becomes effective December 17, 2009.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of December 17, 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:** Kenny Kaulia, Aerospace Engineer, International Branch, ANM-116, FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, Washington 98057-3356; telephone (425) 227-2848; 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 August 18, 2009 (74 FR 41642), and proposed to supersede AD 2007-06-53, Amendment 39-15035 (72 FR 21088, April 30, 2007). That NPRM proposed to correct an unsafe condition for the specified products. The MCAI states:

It has been found the occurrence of two events of aircraft being dispatched with the cargo door opened without indication. In one of the events the aircraft took off with the cargo door opened.

The unsafe condition is a cargo door opening during flight, which could result in reduced structural integrity and consequent rapid decompression of the airplane. Required actions include repetitive inspections of the forward and aft cargo doors to detect signs of interference between the lock handle and the aft edge liner assembly and reworking the assembly; a one-time inspection for signs of damage of the lateral roller fitting on the forward and aft cargo door frames at the fuselage and replacement of the roller if necessary, and modification of the cargo door, which ends the repetitive inspections. After accomplishing the modification, the actions include incorporating information into the maintenance program to include the operational (OPC) and functional (FNC) checks of the forward and aft cargo doors and accomplishing repetitive OPC and FNC checks. 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 received no comments on the NPRM or on the determination of the cost to the public.

### **Conclusion**

We reviewed the available data 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 about 145 products of U.S. registry.

The actions that are required by AD 2007-06-53 and retained in this AD take about 1 work-hour per product, at an average labor rate of \$80 per work hour. Based on these figures, the estimated cost of the currently required actions is \$80 per product.

We estimate that it would take about 7 work-hours per product to comply with the new basic requirements of this AD. The average labor rate is \$80 per work-hour. Required parts will cost about

\$17,162 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 costs. 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 the AD on U.S. operators to be \$2,569,690, or \$17,722 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 removing Amendment 39-15035 (72 FR 21088, April 30, 2007) and adding the following new AD:



**2009-23-08 Empresa Brasileira de Aeronautica S.A. (EMBRAER):** Amendment 39-16080.  
Docket No. FAA-2009-0687; Directorate Identifier 2009-NM-033-AD.

**Effective Date**

- (a) This airworthiness directive (AD) becomes effective December 17, 2009.

**Affected ADs**

- (b) This AD supersedes AD 2007-06-53, Amendment 39-15035.

**Applicability**

(c) This AD applies to EMBRAER Model ERJ 170-100 LR, -100 STD, -100 SE, -100 SU, -200 LR, -200 STD, and -200 SU airplanes; and ERJ 190-100 STD, -100 LR, -100 IGW, -200 LR, -200 STD, and -200 IGW airplanes; certificated in any category.

**Subject**

- (d) Air Transport Association (ATA) of America Code 52: Doors.

**Reason**

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

It has been found the occurrence of two events of aircraft being dispatched with the cargo door opened without indication. In one of the events the aircraft took off with the cargo door opened.

The unsafe condition is a cargo door opening during flight, which could result in reduced structural integrity and consequent rapid decompression of the airplane. Required actions include repetitive inspections of the forward and aft cargo doors to detect signs of interference between the lock handle and the aft edge liner assembly and reworking the assembly; a one-time inspection for signs of damage of the lateral roller fitting on the forward and aft cargo door frames at the fuselage and replacement of the roller if necessary, and modification of the cargo door, which ends the repetitive inspections. After accomplishing the modification, the actions include incorporating information into the maintenance program to include the operational (OPC) and functional (FNC) checks of the forward and aft cargo doors and accomplishing repetitive OPC and FNC checks.

**Compliance**

- (f) Required as indicated, unless accomplished previously.

## Restatement of Requirements of AD 2007-06-53, With New Service Information

### *Preflight Verification of Correct Door Closure*

(g) For Model ERJ 170-100 LR, -100 STD, -100 SE, -100 SU, -200 LR, -200 STD, and -200 SU airplanes; and ERJ 190-100 STD, -100 LR, and -100 IGW airplanes: As of 24 hours after May 7, 2007 (the effective date of AD 2007-06-53), before each flight after closing the cargo doors, verify that the forward and aft cargo doors are closed flush with the fuselage skin, and that all 4 latched and locked indicators at the bottom of each door are green. Persons qualified to do this verification are mechanics and flightcrew members. If it cannot be verified that both doors are closed flush with the fuselage skin, and that all 4 latched and locked indicators at the bottom of each door are green, repair before further flight. Repeat the verification before every flight until accomplishment of the actions required by paragraph (h) of this AD.

### *Inspection for Interference and Damage*

(h) For Model ERJ 170-100 LR, -100 STD, -100 SE, -100 SU, -200 LR, -200 STD, and -200 SU airplanes; and ERJ 190-100 STD, -100 LR, and -100 IGW airplanes: Within 10 days after May 7, 2007, do the actions specified in paragraphs (h)(1), (h)(2), and (h)(3) of this AD, in accordance with the Accomplishment Instructions of Embraer Alert Service Bulletin 170-52-A036 (for Model ERJ 170 airplanes) or 190-52-A018 (for Model ERJ 190 airplanes), both dated March 12, 2007; or Revision 01, both dated March 23, 2007; as applicable. As of the effective date of this AD, use Revision 01 of Embraer Alert Service Bulletin 170-52-A036 or 190-52-A018.

(1) Remove the roller fitting cover plate on the forward and aft cargo door frames.

(2) Perform a detailed inspection of the forward and aft cargo doors to detect signs of interference between the lock handle and the aft edge liner assembly. Then rework the aft edge liner assembly at the applicable time specified in paragraph (h)(2)(i) or (h)(2)(ii) of this AD.

(i) If any sign of interference is detected: Rework the assembly before further flight.

(ii) If no sign of interference is detected: Rework the assembly within 150 flight cycles after the inspection.

(3) Perform a detailed inspection for signs of damage of the lateral roller fitting on the forward and aft cargo door frames at the fuselage. If any damage is found, replace the lateral roller fitting before further flight with a new roller fitting having the same part number, in accordance with Embraer Alert Service Bulletin 170-52-A036 or 190-52-A018, as applicable.

(4) Actions done before May 7, 2007, in accordance with Embraer Alert Service Bulletin 170-52-A036 or 190-52-A018, both dated March 12, 2007, are acceptable for compliance with the corresponding requirements of this AD.

**Note 1:** For the purposes 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 mirror, magnifying lenses, etc., may be necessary. Surface cleaning and elaborate procedures may be required.”

**Note 2:** Embraer Alert Service Bulletins 170-52-A036 and 190-52-A018 refer to Embraer Service Bulletins 170-50-0006 and 190-50-0006, respectively, as additional sources of guidance for the rework and roller fitting cover plate removal. Embraer Alert Service Bulletins 170-50-0006 and 190-50-0006 are currently at Revision 01, dated March 13, 2007.

## *Repetitive Inspections for Damage*

(i) For Model ERJ 170-100 LR, -100 STD, -100 SE, -100 SU, -200 LR, -200 STD, and -200 SU airplanes; and ERJ 190-100 STD, -100 LR, and -100 IGW airplanes: Repeat the inspection specified in paragraph (h)(3) of this AD at intervals not to exceed 150 flight cycles until the terminating action specified in paragraph (k)(3) of this AD has been accomplished.

## *Parts Installation*

(j) For Model ERJ 170-100 LR, -100 STD, -100 SE, -100 SU, -200 LR, -200 STD, and -200 SU airplanes; and ERJ 190-100 STD, -100 LR, and -100 IGW airplanes: As of May 7, 2007, no person may install a roller fitting cover plate on the forward and aft cargo door frames on any airplane.

## **New Requirements of This AD**

### *Actions and Compliance*

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

(1) For Model ERJ 190-200 LR, -200 STD, and -200 IGW airplanes: As of 24 hours after the effective date of this AD, before each flight after closing the cargo doors, verify that the forward and aft cargo doors are closed flush with the fuselage skin, and that all 4 latched and locked indicators at the bottom of each door are green. Persons qualified to do this verification are mechanics and flightcrew members. If it cannot be verified that both doors are closed flush with the fuselage skin, and that all 4 latched and locked indicators at the bottom of each door are green, repair before further flight. Repeat the verification before every flight until accomplishment of the actions required by paragraph (k)(2) of this AD.

(2) For Model ERJ 190-200 LR, -200 STD, and -200 IGW airplanes: Within 10 days after the effective date of this AD, do the actions specified in paragraphs (k)(2)(i), (k)(2)(ii), and (k)(2)(iii) of this AD, in accordance with the Accomplishment Instructions of Embraer Alert Service Bulletin 190-52-A018, Revision 01, dated March 23, 2007. Repeat the inspection specified in paragraph (k)(2)(iii) of this AD at intervals not to exceed 150 flight cycles until the terminating action specified in paragraph (k)(3) of this AD has been accomplished.

(i) Remove the roller fitting cover plate on the forward and aft cargo door frames.

(ii) Perform a detailed inspection of the forward and aft cargo doors to detect signs of interference between the lock handle and the aft edge liner assembly. Then rework the aft edge liner assembly at the applicable time specified in paragraph (k)(2)(ii)(A) or (k)(2)(ii)(B) of this AD.

(A) If any sign of interference is detected: Rework the assembly before further flight.

(B) If no sign of interference is detected: Rework the assembly within 150 flight cycles after the inspection.

(iii) Perform a detailed inspection for signs of damage of the lateral roller fitting on the forward and aft cargo door frames at the fuselage. If any damage is found, replace the lateral roller fitting before further flight with a new roller fitting having the same part number, in accordance with Embraer Alert Service Bulletin 190-52-A018, Revision 01, dated March 23, 2007.

(3) For all airplanes: Within 5,000 flight cycles after the effective date of this AD, do the actions specified in paragraphs (k)(3)(i) and (k)(3)(ii) of this AD on the forward and aft cargo doors. Accomplishing the actions in this paragraph terminates the repetitive inspections required by paragraphs (i) and (k)(2) of this AD.

(i) Relocate the cargo door closed indication sensor in accordance with the Accomplishment Instructions of Embraer Service Bulletin 170-52-0041, Revision 01, dated June 13, 2008; or 190-52-0023, Revision 02, dated March 11, 2008; as applicable.

(ii) Modify the cargo door lock handle mechanism and replace the forward and aft cargo door roller fittings having part number (P/N) 170-92569-401 and 170-85452-401 with new fittings having

P/N 170-92569-403 and 170-85452-403, as applicable. Do the modification in accordance with the Accomplishment Instructions of Embraer Service Bulletins 170-52-0044, dated January 18, 2008; or 190-52-0027, dated March 20, 2008; as applicable.

(4) Actions done before the effective date of this AD in accordance with Embraer Service Bulletin 170-52-0041, dated September 6, 2007; or 190-52-0023, dated September 6, 2007, or Revision 01, dated December 6, 2007; as applicable; are acceptable for compliance with the corresponding requirements of this AD.

(5) Within 12 months after the effective date of this AD or 12 months after accomplishing the modification required by paragraph (k)(3) of this AD, whichever occurs later: Incorporate information into the maintenance program to include the operational (OPC) and functional (FNC) checks of the forward and aft cargo doors; in accordance with a method approved by the Manager, International Branch, ANM-116, Transport Airplane Directorate, FAA; or the Agência Nacional de Aviação Civil (or its delegated agent). Within 6,000 flight hours after doing the actions required by paragraph (k)(3) of this AD, do the OPC and FNC checks and repeat the checks thereafter at intervals not to exceed 6,000 flight hours.

**Note 3:** Guidance on the OPC and FNC checks specified in paragraph (k)(5) of this AD can be found in the document specified in Table 1 of this AD, as applicable:

**Table 1—OPC and FNC Guidance**

<b>Manual -</b>	<b>Task -</b>	<b>Date -</b>
Embraer 170 Aircraft Maintenance Manual	52-31-00-710-801-A/500	July 15, 2008
	52-31-20-720-801-A/500	July 15, 2008
	52-32-00-710-801-A/500	July 15, 2008
	52-32-20-720-801-A/500	July 15, 2008
Embraer 190 Aircraft Maintenance Manual	52-31-00-710-801-A/500	July 15, 2008
	52-31-20-720-801-A/500	July 15, 2008
	52-32-00-710-801-A/500	July 15, 2008
	52-32-20-720-801-A/500	July 15, 2008

**Note 4:** For the purposes of this AD, a functional check (FNC) is: “A quantitative check to determine if one or more functions of an item perform within specified limits.”

**Note 5:** For the purposes of this AD, an operational check (OPC) is: “A task to determine if an item is fulfilling its intended purpose. Since it is a failure finding task, it does not require quantitative tolerances.”

**FAA AD Differences**

Note 6: This AD differs from the MCAI and/or service information as follows: Where the MCAI includes a compliance time of “after accomplishment of the modification” for revising the maintenance program for Model ERJ-170 airplanes, we have determined that a compliance time of

“within 12 months after the effective date of the AD or within 12 months after accomplishment of the modification, whichever occurs later” is appropriate. This compliance time is equivalent to the compliance time required for Model ERJ-190 airplanes. The manufacturer and ANAC agree with this compliance time.

**Other FAA AD Provisions**

(l) The following provisions also apply to this AD:

(1) Alternative Methods of Compliance (AMOCs): The Manager, International Branch, 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: Kenny Kaulia, Aerospace Engineer, International Branch, ANM-116, FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington 98055-4056; telephone (425) 227-2848; 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. The AMOC approval letter must specifically reference this AD. AMOCs approved previously in accordance with AD 2007-06-53, are approved as AMOCs for the corresponding provisions of paragraph (i) of 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.

(3) Reporting Requirements: For any reporting requirement in this AD, under the provisions of the Paperwork Reduction Act (44 U.S.C. 3501 et seq.), the Office of Management and Budget (OMB) has approved the information collection requirements and has assigned OMB Control Number 2120-0056.

**Related Information**

(m) Refer to Brazilian Airworthiness Directives 2007-03-01R1, dated June 9, 2008, and 2007-03-02R2, dated November 21, 2008; and the service information contained in Table 2 of this AD; for related information.

**Table 2–Service Information**

<b>Service Bulletin</b>	<b>Revision</b>	<b>Date</b>
Embraer Alert Service Bulletin 170-52-A036	01	March 23, 2007
Embraer Alert Service Bulletin 190-52-A018	01	March 23, 2007
Embraer Service Bulletin 170-52-0041	01	June 13, 2008
Embraer Service Bulletin 170-52-0044	<sup>1</sup>	January 18, 2008
Embraer Service Bulletin 190-52-0023	02	March 11, 2008
Embraer Service Bulletin 190-52-0027	<sup>1</sup>	March 20, 2008

<sup>1</sup>Original

**Material Incorporated by Reference**

(n) You must use the applicable service information contained in Table 3 of this AD to do the actions required by this AD, unless the AD specifies otherwise.

**Table 3—Material Incorporated by Reference**

<b>Service Bulletin</b>	<b>Revision</b>	<b>Date</b>
Embraer Alert Service Bulletin 170-52-A036	01	March 23, 2007
Embraer Alert Service Bulletin 190-52-A018	01	March 23, 2007
Embraer Service Bulletin 170-52-0041	01	June 13, 2008
Embraer Service Bulletin 170-52-0044	<sup>1</sup>	January 18, 2008
Embraer Service Bulletin 190-52-0023	02	March 11, 2008
Embraer Service Bulletin 190-52-0027	<sup>1</sup>	March 20, 2008

<sup>1</sup> Original.

(1) 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>.

(2) 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.

(3) 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 26, 2009.

Stephen P. Boyd,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.

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