EMERGENCY AIRWORTHINESS DIRECTIVE

Aircraft Certification Service
Washington, DC

U.S. Department
of Transportation
**Federal Aviation
Administration**

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ISSUE DATE: March 19, 2007
AD 2007-06-53; Docket No. FAA-2007-27616; Directorate Docket No. 2007-NM-052-AD

Emergency airworthiness directive (AD) 2007-06-53 is sent to all owners and operators of Empresa Brasileira de Aeronautica S.A. (EMBRAER) Model ERJ 170 and ERJ 190 airplanes.

Background

The FAA received a report that the aft cargo door of a Model ERJ 190 airplane opened in flight just after takeoff. The airplane returned to the departure airport and landed without incident. We advised the Agência Nacional de Aviação Civil (ANAC), which is the airworthiness authority for Brazil, of the report and worked closely with the ANAC to assess the safety implications of the report. The assessment of the event indicated that the door was not fully closed when the airplane took off. Inspection of the airplane revealed that the door frame lateral roller fitting was cracked and the roller fitting cover plate was distorted. The roller fitting cover plate distortion caused a malfunction in the door position indication system. A similar situation was found on the forward cargo door on a Model ERJ 170 airplane. In that instance, the problem was discovered by ground personnel, and the door was secured prior to takeoff. The cargo door design is the same for the Model ERJ 190 and ERJ 170 airplanes. Therefore, an unsafe condition may exist on all EMBRAER Model ERJ 170 and ERJ 190 airplanes. We are issuing this AD to prevent a cargo door from opening during flight; which could lead to structural failure or loss of control.

Explanation of Relevant Service Information

EMBRAER has issued Alert Service Bulletins 170-52-A036 (for Model ERJ 170 airplanes) and 190-52-A018 (for Model ERJ 190 airplanes), both dated March 12, 2007. The alert service bulletins describe the following procedures:

• Removal of the roller fitting cover plate;

• A one-time visual inspection of the forward and aft cargo doors to detect signs of interference between the lock handle and the aft edge liner assembly;

• Rework of the aft edge liner assembly, which must be done immediately if there are signs of interference, and may be deferred for a specified time if there are no signs of interference;

• A one-time visual inspection of the forward and aft cargo doors to detect signs of damage of the lateral roller fitting; and

• Immediate replacement of any damaged fitting with one having the same part number.

The ANAC mandated the actions in the alert service bulletins and issued Brazilian airworthiness directives 2007-03-01 and 2007-03-02, both effective March 16, 2007, to ensure the continued airworthiness of these airplanes in Brazil.

The alert service bulletins refer to EMBRAER Service Bulletins 170-50-0006 and 190-50-0006 as additional sources of service information for removing the roller fitting cover plate and reworking the aft edge liner assembly. These service bulletins are currently at Revision 01, dated March 13, 2007.

FAA's Determination and Requirements of the Rule

These airplanes are manufactured in Brazil and are type certificated for operation in the United States under the provisions of section 21.29 of the Federal Aviation Regulations (14 CFR 21.29) and the applicable bilateral airworthiness agreement. Pursuant to this bilateral airworthiness agreement, the ANAC has kept the FAA informed of the situation described above. We have examined the ANAC's findings, evaluated all pertinent information, and determined that we need to issue an AD for products of this type design that are certificated for operation in the United States.

Therefore, we are issuing this AD to prevent a cargo door from opening during flight; the door could detach from and strike the airplane and result in structural damage and possible loss of control of the airplane. This AD requires accomplishing the actions specified in the service information described previously. This AD also requires repetitively verifying, before each flight, the correct closure of the forward and aft cargo doors, and reporting positive inspection results to EMBRAER.

Clarification of Qualifications for Performing Preflight Verifications

This AD permits the preflight verifications to be done by mechanics and flight crew members. We have determined that this provision will accommodate operators' maintenance scheduling demands and yet ensure an acceptable level of safety.

Explanation of Reporting Requirement

This AD also requires that operators report the results of positive inspection findings to EMBRAER. The required inspection reports will help determine the extent in the fleet of potentially contributing conditions. Based on the results of these reports, we might determine that further corrective action is warranted.

Interim Action

We consider this AD interim action. The manufacturer is currently developing a modification to the door position sensing system that will further address the unsafe condition identified in this AD. Once this modification is developed, approved, and available, we might consider additional rulemaking.

Examining the Docket

You may examine the contents of this AD docket on the Internet at http://dms.dot.gov (on the next business day after we have issued the AD), or in person at the Docket Management Facility, between 9:00 a.m. and 5:00 p.m., Monday through Friday, except Federal holidays. The Docket Management Facility office (telephone (800) 647-5227) is located on the plaza level of the Nassif Building, U.S. Department of Transportation, 400 Seventh Street SW., Room PL-401, Washington, DC. This docket number is FAA-2007-27616; the directorate identifier for this docket is 2007-NM-052-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.

Determination of Rule's Effective Date

This AD is issued under 49 U.S.C. Section 44701 according to the authority delegated to me by the Administrator, and is effective immediately upon receipt.

AD 2007-06-53 EMPRESA BRASILEIRA DE AERONAUTICA S.A. (EMBRAER): Docket No. FAA-2007-27616; Directorate Identifier 2007-NM-052-AD.

Effective Date

(a) Emergency airworthiness directive (AD) 2007-06-53, issued on March 19, 2007, is effective immediately upon receipt.

Affected ADs

(b) None.

Applicability

(c) This AD applies to all 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, and -100 IGW airplanes; certificated in any category.

Unsafe Condition

(d) This AD results from a report indicating that the aft cargo door of a Model ERJ 190 airplane opened in flight just after departure, and from a report indicating that a Model ERJ 170 airplane dispatched with an unsecured forward cargo door. The Federal Aviation Administration is issuing this AD to prevent a cargo door from opening during flight; which could lead to structural failure or loss of control.

Compliance

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

Preflight Verifications of Correct Door Closure

(f) As of 24 hours after receipt 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 flight crew 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 (g) of this AD.

Inspection for Interference and Damage

(g) Within 10 days after receipt of this AD, do the actions specified in paragraphs (g)(1), (g)(2), and (g)(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, as applicable.

(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 (g)(2)(i) or (g)(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 the applicable service bulletin.

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 service information for the rework and roller fitting cover plate removal. Service Bulletins 170-50-0006 and 190-50-0006 are currently at Revision 01, dated March 13, 2007.

Repetitive Inspection for Damage

(h) Repeat the inspection specified in paragraph (g)(3) of this AD at intervals not to exceed 150 flight cycles.

Report

(i) At the applicable time specified in paragraph (i)(1) or (i)(2) of this AD: Send EMBRAER a report of any signs of interference or damage found during each inspection required by paragraphs (g)(2), (g)(3), and (h) of this AD. The report must include the inspection results, a description of any discrepancies found, the airplane serial number, and the number of landings and flight hours on the airplane. Send the report to Embraer, EFTC, AOG Structure Team; structure@embraer.com.br; fax +55 12 3927 6600, extension 0484. 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 contained in this AD and has assigned OMB Control Number 2120-0056.

(1) For any inspection done after receipt of this AD: Within 10 days after the inspection.

(2) For any inspection done before receipt of this AD: Within 10 days after receipt of this AD.

Parts Installation

(j) As of the date of receipt of this AD: No person may install a roller fitting cover plate on the forward and aft cargo door frames on any airplane.

Alternative Methods of Compliance (AMOCs)

(k)(1) The Manager, International Branch, ANM-116, Transport Airplane Directorate, FAA, has the authority to approve AMOCs for this AD, if requested in accordance with the procedures found in 14 CFR 39.19.

(2) To request a different method of compliance or a different compliance time for this AD, follow the procedures in 14 CFR 39.19. 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.

Related Information

(l) Brazilian airworthiness directives 2007-03-01 and 2007-03-02, both effective March 16, 2007, also address the subject of this AD.

Contact Information

(m) For technical information about this AD, contact Tom Groves, Aerospace Engineer, International Branch, ANM-116, FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; telephone (425) 227-1503; fax (425) 227-1149. For service information identified in this AD, contact EMBRAER, P.O. Box 343 - CEP 12.225, Sao Jose dos Campos - SP, Brazil.

Issued in Renton, Washington, on March 19, 2007.

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