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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

**[Docket No. FAA-2012-0590; Directorate Identifier 2011-NM-112-AD; Amendment 39-17265; AD 2012-23-09]**

**RIN 2120-AA64**

#### **Airworthiness Directives; Embraer S.A. 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 all Embraer S.A. Model ERJ 190-100 STD, -100 LR, -100 IGW, -200 STD, -200 LR, and -200 IGW airplanes. That AD currently requires revising the maintenance program to incorporate modifications in the Airworthiness Limitation Section (ALS) of the EMBRAER ERJ 190 Maintenance Review Board Report (MRBR). This new AD requires revising the maintenance program to incorporate modifications in the ALS of the EMBRAER ERJ 190 MRBR to include new inspection tasks and their respective thresholds and intervals. This AD was prompted by issuance of new inspection tasks and their respective thresholds and intervals. We are issuing this AD since failure to inspect these structural components according to the new ALS tasks, thresholds, and intervals could prevent a timely detection of fatigue cracking, which if not properly addressed, could result in reduced structural integrity of the airplane.

**DATES:** This AD becomes effective January 14, 2013.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of January 14, 2013.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of July 6, 2010 (75 FR 30277, June 1, 2010).

**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, WA 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 June 6, 2012 (77 FR 33334), and proposed to supersede AD 2010-11-14, Amendment 39-16319 (75 FR 30277, June 1, 2010). That NPRM proposed to correct an unsafe condition for the specified products. The MCAI states:

During the airplane full scale fatigue test, cracks were found in some structural components of the airplane. Analysis of these cracks resulted in modifications on the Airworthiness Limitation Section (ALS) of Embraer ERJ 190 Maintenance Review Board Report (MRBR), to include new inspections tasks and its respective thresholds and intervals.

Failure to inspect these structural components, according to the new tasks, thresholds and intervals, could prevent a timely detection of fatigue cracking. These cracks, if not properly addressed, could adversely affect the structural integrity of the airplane.

Since this condition may occur in other airplanes of the same type and affects flight safety, a corrective action is required. Thus, sufficient reason exists to request compliance with this [Agência Nacional de Aviação Civil (ANAC)] AD in the indicated time limit.

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 have considered the comments received.

### **Request To Incorporate New and Revised Structural Airworthiness Limitations**

Embraer requested that we include EMBRAER Temporary Revision (TR) 5-5, dated May 24, 2012; and EMBRAER TR 5-7, dated August 12, 2012; to Appendix A, Part 2, Airworthiness Limitation Inspections (ALI)–Structures, of the EMBRAER 190 MRBR, MRB-1928, in the operators' maintenance programs. Embraer points out that those TRs include additional maintenance tasks that were approved in recent design changes, which identify and mitigate potential premature structural cracks.

We disagree. There have been numerous changes to the structural inspection requirements intended to identify potential premature cracks since the last structural airworthiness limitations (EMBRAER TR 2-5, dated December 6, 2007; and EMBRAER TR 2-6, dated February 12, 2008; to Appendix A, Part 2, Airworthiness Limitation Inspections (ALI) -Structures, of the EMBRAER 190 MRBR, MRB-1928 were mandated in FAA AD 2010-11-14, Amendment 39-16319 (75 FR 30277, June 1, 2010).

The requested changes would alter the actions currently required by this AD, so additional rulemaking would be required. We find that delaying this action would be inappropriate in light of the identified unsafe condition.

In addition, we have contacted the ANAC, the aviation authority for Brazil. ANAC has indicated it intends to mandate the maintenance actions in Appendix A, Parts I, II, and IV of EMBRAER 190 MRBR, MRB-1928, Revision 5, dated November 11, 2010; including EMBRAER TR 5-3, dated

November 11, 2010; and EMBRAER TR 5-6, dated November 11, 2010, in addition to the TRs referred to by the commenter. These new maintenance actions include certification maintenance requirements (CMRs) and life-limited parts, in addition to the structural inspections from the TRs referred to by the commenter. As we stated previously, we consider that to delay this AD action would be inappropriate, since we have determined that an unsafe condition exists. When ANAC issues mandatory continued airworthiness instructions that encompass all appropriate airworthiness limitations, including the commenter's recommended action, we might consider additional rulemaking. We have not changed the AD in this regard.

### **Explanation of Changes Made to This AD**

We have deleted Note 1 to paragraph (g)(1) of the NPRM (77 FR 33334, June 6, 2012). Instead, we have added the same information in paragraph (g)(2) of this AD.

We also revised the compliance times specified in table 1 to paragraph (g)(1) of this AD to correctly identify the effective date of AD 2010-11-14, Amendment 39-16319 (75 FR 30277, June 1, 2010).

### **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 and minor editorial changes. We have determined that these minor changes:

- Are consistent with the intent that was proposed in the NPRM (77 FR 33334, June 6, 2012) for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM (77 FR 33334, June 6, 2012).

### **Costs of Compliance**

We estimate that this AD will affect about 88 products of U.S. registry.

The actions that are required by AD 2010-11-14, Amendment 39-16319 (75 FR 30277, June 1, 2010), and retained in this AD take about 1 work-hour per product, at an average labor rate of \$85 per work-hour. Based on these figures, the estimated cost of the currently required actions is \$85 per product.

We estimate that it will take about 1 work-hour per product to comply with the new 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 \$7,480, or \$85 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 that 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);
3. Will not affect intrastate aviation in Alaska; and
4. 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 (77 FR 33334, June 6, 2012), 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 airworthiness directive (AD) 2010-11-14, Amendment 39-16319 (75 FR 30277, June 1, 2010), and adding the following new AD:



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**2012-23-09 Embraer S.A.:** Amendment 39-17265. Docket No. FAA-2012-0590; Directorate Identifier 2011-NM-112-AD.

**(a) Effective Date**

This airworthiness directive (AD) becomes effective January 14, 2013.

**(b) Affected ADs**

This AD supersedes AD 2010-11-14, Amendment 39-16319 (75 FR 30277, June 1, 2010).

**(c) Applicability**

(1) This AD applies to Embraer S.A. Model ERJ 190-100 STD, -100 LR, and -100 IGW airplanes; and Model ERJ 190-200 STD, -200 LR, and -200 IGW airplanes; certificated in any category; all serial numbers.

(2) This AD requires revisions to certain operator maintenance documents to include new actions (e.g., inspections). Compliance with these actions is required by 14 CFR 91.403(c). For airplanes that have been previously modified, altered, or repaired in the areas addressed by this AD, the operator may not be able to accomplish the actions described in the revisions. In this situation, to comply with 14 CFR 91.403(c), the operator must request approval of an alternative method of compliance (AMOC) according to paragraph (j)(1) of this AD. The request should include a description of changes to the required actions that will ensure the continued operational safety of the airplane.

**(d) Subject**

Air Transport Association (ATA) of America Code 52, Doors; 53, Fuselage; 54, Nacelles/Pylons; 55, Stabilizers; 57, Wings; 71, Powerplant; and 78, Engine Exhaust.

**(e) Reason**

This AD was prompted by reports of cracks in some of the structural components of the airplane. We are issuing this AD since failure to inspect these structural components according to the new airworthiness limitation section (ALS) tasks, thresholds, and intervals could prevent a timely detection of fatigue cracking, which if not properly addressed, could result in reduced structural integrity of the airplane.

**(f) Compliance**

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

**(g) Restated Actions: Revision and Compliance Times**

This paragraph restates the actions required by paragraph (f) of AD 2010-11-14, Amendment 39-16319 (75 FR 30277, June 1, 2010).

(1) Within 90 days after July 6, 2010 (the effective date of AD 2010-11-14, Amendment 39-16319 (75 FR 30277, June 1, 2010)), revise the ALS of the Instructions for Continued Airworthiness (ICA) to include the tasks specified in table 1 to paragraph (g)(1) of this AD. These tasks are identified in EMBRAER Temporary Revision (TR) 2-5, dated December 6, 2007; and EMBRAER TR 2-6, dated February 12, 2008; to Appendix A, Part 2, Airworthiness Limitation Inspections (ALI) -Structures, of the EMBRAER 190 Maintenance Review Board Report (MRBR), MRB-1928.

**Table 1 to Paragraph (g)(1) of This AD—MRBR TRs and Tasks, With Compliance Times**

<b>EMBRAER MRBR TR</b>	<b>Subject</b>	<b>MRBR Task No.</b>	<b>Compliance time</b>
TR 2-5, dated December 6, 2007.	Wing stub main box lower skin and splices—internal.	57-01-002-0002	250 flight cycles after July 6, 2010 (the effective date of AD 2010-11-14, Amendment 39-16319 (75 FR 30277, June 1, 2010)).
TR 2-5, dated December 6, 2007.	Wing stub spar 3—internal/external.	57-01-008-0003	500 flight cycles after July 6, 2010 (the effective date of AD 2010-11-14, Amendment 39-16319 (75 FR 30277, June 1, 2010)).
TR 2-5, dated December 6, 2007.	Wing stub spar 3—external.	57-01-008-0004	500 flight cycles after July 6, 2010 (the effective date of AD 2010-11-14, Amendment 39-16319 (75 FR 30277, June 1, 2010)).
TR 2-5, dated December 6, 2007.	Wing lower skin panel stringers—internal.	57-10-007-0004	500 flight cycles after July 6, 2010 (the effective date of AD 2010-11-14, Amendment 39-16319 (75 FR 30277, June 1, 2010)).
TR 2-5, dated December 6, 2007.	Wing main box rib 11—internal.	57-10-012-0003	500 flight cycles after July 6, 2010 (the effective date of AD 2010-11-14, Amendment 39-16319 (75 FR 30277, June 1, 2010)).
TR 2-6, dated February 12, 2008.	Nose landing gear wheel well metallic structure.	53-10-021-0004	500 flight cycles after July 6, 2010 (the effective date of AD 2010-11-14, Amendment 39-16319 (75 FR 30277, June 1, 2010)).

(2) The actions required by paragraph (g)(1) of this AD may be done by inserting a copy of EMBRAER TR 2-5, dated December 6, 2007; and EMBRAER TR 2-6, dated February 12, 2008; to Appendix A, Part 2, Airworthiness Limitation Inspections (ALI) -Structures, of the EMBRAER 190 MRBR, MRB-1928, into the ALS of the EMBRAER 190 MRBR, MRB-1928. When these TRs have been included in general revisions of the EMBRAER 190 MRBR, MRB-1928, the general revisions may be inserted, provided the relevant information in the general revision is identical to that in EMBRAER TR 2-5, dated December 6, 2007; and EMBRAER TR 2-6, dated February 12, 2008, and these TRs may be removed.

(3) The initial compliance times for the tasks specified in EMBRAER TR 2-5, dated December 6, 2007; and EMBRAER TR 2-6, dated February 12, 2008; to Appendix A, Part 2, Airworthiness Limitation Inspections (ALI)–Structures, of the EMBRAER 190 MRBR, MRB-1928; start at the later of the times specified in paragraphs (g)(3)(i) and (g)(3)(ii) of this AD. For certain tasks, the compliance times depend on the pre-modification and post-modification condition of the associated service bulletin, as specified in the "Applicability" column of these TRs.

(i) Within the applicable threshold times specified in the TRs specified in table 1 to paragraph (g)(1) of this AD.

(ii) At the applicable compliance time specified in table 1 to paragraph (g)(1) of this AD.

(iii) Thereafter, except as provided in paragraphs (h) and (j) of this AD, no alternative replacement times or structural inspection intervals may be approved for the tasks specified in the TRs specified in table 1 to paragraph (g)(1) of this AD.

#### **(h) New Requirements of This AD: Revision of the Maintenance Program**

Within 90 days after the effective date of this AD, revise the maintenance program to incorporate the tasks specified in Part 2–

Airworthiness Limitation Inspections (ALI)–Structures, of Appendix A, Airworthiness Limitations (AL), of the EMBRAER 190 Maintenance Review Board Report, MRB-1928, Revision 5, dated November 11, 2010; and EMBRAER TR 5-1, dated February 11, 2011, to Part 2–

Airworthiness Limitation Inspections (ALI)–Structures, of Appendix A, Airworthiness Limitations (AL), of the EMBRAER 190 Maintenance Review Board Report, MRB-1928, Revision 5, dated November 11, 2010; with the thresholds and intervals stated in these documents. The initial compliance times for the tasks are stated in the "Implementation Plan" section of Appendix A, Airworthiness Limitations (AL), of the EMBRAER 190 Maintenance Review Board Report, MRB-1928, Revision 5, dated November 11, 2010. Doing the revision required by this paragraph terminates the revision required by paragraph (g) of this AD.

#### **(i) No Alternative Actions or Intervals**

After accomplishing the revision required by paragraph (h) of this AD, no alternative actions (e.g., inspections) or intervals, may be used, unless the actions or intervals are approved as an AMOC in accordance with the procedures specified in paragraph (j)(1) of this AD.

#### **(j) Other FAA AD Provisions**

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, WA 98057-3356; telephone (425) 227-2768; fax (425) 227-1149. Information may be emailed 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.

#### **(k) Related Information**

Refer to MCAI Brazilian Airworthiness Directive 2011-05-04, effective June 16, 2011, and the service information specified in paragraphs (k)(1) through (k)(4) of this AD, for related information.

(1) EMBRAER Temporary Revision (TR) 2-5, dated December 6, 2007, to Appendix A, Part 2–Airworthiness Limitation Inspections (ALI)–Structures, of the EMBRAER 190 Maintenance Review Board Report, MRB-1928.

(2) EMBRAER TR 2-6, dated February 12, 2008, to Appendix A, Part 2–Airworthiness Limitation Inspections (ALI)–Structures, of the EMBRAER 190 Maintenance Review Board Report, MRB-1928.

(3) EMBRAER TR 5-1, dated February 11, 2011, to Part 2–Airworthiness Limitation Inspections (ALI)–Structures, of Appendix A, Airworthiness Limitations (AL), of the EMBRAER 190 Maintenance Review Board Report, MRB-1928, Revision 5, dated November 11, 2010.

(4) Part 2–Airworthiness Limitation Inspections (ALI)–Structures, of Appendix A, Airworthiness Limitations (AL), of the EMBRAER 190 Maintenance Review Board Report, MRB-1928, Revision 5, dated November 11, 2010.

#### **(I) Material Incorporated by Reference**

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(3) The following service information was approved for IBR on January 14, 2013.

(i) EMBRAER Temporary Revision (TR) 5-1, dated February 11, 2011, to Part 2–Airworthiness Limitation Inspections (ALI)–Structures, of Appendix A, Airworthiness Limitations (AL), of the EMBRAER 190 Maintenance Review Board Report, MRB-1928, Revision 5, dated November 11, 2010.

(ii) Appendix A, Airworthiness Limitation (AL), of the EMBRAER 190 Maintenance Review Board Report, MRB-1928, Revision 5, dated November 11, 2010.

(4) The following service information was approved for IBR on July 6, 2012 (75 FR 30277, June 1, 2010).

(i) EMBRAER TR 2-5, dated December 6, 2007, to Appendix A, Part 2–Airworthiness Limitation Inspections (ALI)–Structures of the EMBRAER 190 Maintenance Review Board Report, MRB-1928.

(ii) EMBRAER TR 2-6, dated February 12, 2008, to Appendix A, Part 2–Airworthiness Limitation Inspections (ALI)–Structures of the EMBRAER 190 Maintenance Review Board Report, MRB-1928.

(5) For service information identified in this AD, contact Embraer S.A., 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; email [distrib@embraer.com.br](mailto:distrib@embraer.com.br); Internet <http://www.flyembraer.com>.

(6) You may review copies of the service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221.

(7) You may view this 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/cfr/ibr-locations.html>.

Issued in Renton, Washington, on November 13, 2012.

John P. Piccola,  
Acting Manager, Transport Airplane Directorate,  
Aircraft Certification Service.