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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

**[Docket No. FAA-2014-0008; Product Identifier 2013-NM-076-AD; Amendment 39-18985; AD 2017-16-08]**

**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 Airworthiness Directive (AD) 2012-23-09, which applied to all 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. AD 2012-23-09 required revising the maintenance program to incorporate certain modifications in airworthiness limitations. This new AD requires revising the maintenance or inspection program to incorporate certain modifications in the airworthiness limitations to include new inspection tasks and their respective thresholds and intervals. This AD was prompted by our determination that more restrictive maintenance requirements and airworthiness limitations are necessary. We are issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective October 11, 2017.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of October 11, 2017.

The Director of the Federal Register approved the incorporation by reference of certain other publications listed in this AD as of January 14, 2013 (77 FR 73270, December 10, 2012).

**ADDRESSES:** For service information identified in this final rule, 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>. You may view this referenced service information at the FAA, Transport Standards Branch, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221. It is also available on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2014-0008.

## Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2014-0008; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this AD, the regulatory evaluation, any comments received, and other information. The address for the Docket Office (telephone 800-647-5527) is Docket Management Facility, U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

**FOR FURTHER INFORMATION CONTACT:** Ana Martinez Hueto, Aerospace Engineer, International Section, Transport Standards Branch, FAA, 1601 Lind Avenue SW., Renton, WA 98057-3356; telephone 425-227-1622; fax 425-227-1320.

## SUPPLEMENTARY INFORMATION:

### Discussion

We issued a supplemental notice of proposed rulemaking (SNPRM) to amend 14 CFR part 39 to supersede AD 2012-23-09, Amendment 39-17265 (77 FR 73270, December 10, 2012) (“AD 2012-23-09”). AD 2012-23-09 applied to all 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. The SNPRM published in the Federal Register on May 22, 2017 (82 FR 23153) (“the SNPRM”). We preceded the SNPRM with a notice of proposed rulemaking (NPRM) that published in the Federal Register on February 3, 2014 (79 FR 6106) (“the NPRM”). The NPRM was prompted by our determination that more restrictive maintenance requirements and airworthiness limitations are necessary. The NPRM proposed to require revising the maintenance or inspection program to incorporate modifications in the airworthiness limitations specified in the Embraer S.A. ERJ 190/195 MRBR to include new inspection tasks and their respective thresholds and intervals. The SNPRM proposed to revise the NPRM by adding a requirement to revise the maintenance or inspection program, as applicable, to incorporate new airworthiness limitations and by adding certain airplanes to the applicability. We are issuing this AD to detect and correct fatigue cracking of structural components, which could result in reduced structural integrity of the airplane.

The Agência Nacional de Aviação Civil (ANAC), which is the aviation authority for Brazil, has issued Brazilian Airworthiness Directive 2016-04-01, effective April 4, 2016 (referred to after this as the Mandatory Continuing Airworthiness Information, or “the MCAI”), to correct an unsafe condition on certain Embraer S.A. Model ERJ 190-100 STD, -100 LR, -100 IGW, and -100 ECJ airplanes; and Model ERJ 190-200 STD, -200 LR, and -200 IGW airplanes. The MCAI states:

This [Brazilian] AD was prompted by a determination that existing maintenance requirements and airworthiness limitations are inadequate to ensure the structural integrity of the airplane. We are issuing this [Brazilian] AD to prevent failure of certain system components, which could result in reduced structural integrity of the airplane.

The required action is revising the maintenance or inspection program, as applicable, to incorporate the airworthiness limitations.

You may examine the MCAI in the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2014-0008.

## Comments

We gave the public the opportunity to participate in developing this AD. We received no comments on the SNPRM 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 this AD as proposed except for minor editorial changes. We have determined that these minor changes:

- Are consistent with the intent that was proposed in the SNPRM for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the SNPRM.

## Related Service Information Under 1 CFR Part 51

Embraer S.A. has issued the following service information for Model ERJ 190-100 STD, ERJ 190-100 LR, ERJ 190-100 IGW, ERJ 190-200 STD, ERJ 190-200 LR, and ERJ 190-200 IGW airplanes.

- Appendix A, Airworthiness Limitations (AL), of the EMBRAER ERJ 190/195 Maintenance Review Board Report (MRBR), MRB-1928, Revision 9, dated August 14, 2015. This service information describes certification maintenance requirements, airworthiness limitation inspections for structures, fuel system limitation items, and life limited items, which make up the airworthiness limitations in the MRBR.
- EMBRAER MRB–Temporary Revision 9-1, dated October 27, 2015, which provides revised airworthiness limitation inspections and life-limited items due to new structural provisions for Live TV and Connectivity System.
- EMBRAER MRB–Temporary Revision 9-3, dated October 27, 2015, which updates the life limitations of certain main landing gear and nose landing gear components.

Embraer S.A. has also issued the following service information for Model ERJ 190-100 ECJ airplanes.

- Appendix A, Airworthiness Limitations (AL), of the EMBRAER Lineage 1000/1000E Maintenance Planning Guide (MPG), MPG-2928, Revision 4, dated July 14, 2014. This service information describes certification maintenance requirements, airworthiness limitation inspections for structures, fuel system limitation items, and life-limited items, which make up the airworthiness limitations in the MPG.
- EMBRAER MPG–Temporary Revision 4-2, dated February 13, 2015, which describes detailed inspections for the upper doubler at the forward passenger door cutout.
- EMBRAER MPG–Temporary Revision 4-3, dated October 30, 2015, which updates the life limitations of certain main landing gear and nose landing gear components.

This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

## Costs of Compliance

We estimate that this AD affects 83 airplanes of U.S. registry.

We estimate the following costs to comply with this AD:

### Estimated Costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Revision (retained actions from AD 2012-23-09)	1 work-hour × \$85 per hour = \$85	\$0	\$85	\$7,055
Revision to include MPG-2928, Revision 4, and temporary revisions (new action)	1 work-hour × \$85 per hour = \$85	0	85	7,055

### 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.

This AD is issued in accordance with authority delegated by the Executive Director, Aircraft Certification Service, as authorized by FAA Order 8000.51C. In accordance with that order, issuance of ADs is normally a function of the Compliance and Airworthiness Division, but during this transition period, the Executive Director has delegated the authority to issue ADs applicable to transport category airplanes to the Director of the System Oversight Division.

### 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.

### 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) 2012-23-09, Amendment 39-17265 (77 FR 73270, December 10, 2012), and adding the following new AD:



FAA  
Aviation Safety

## AIRWORTHINESS DIRECTIVE

[www.faa.gov/aircraft/safety/alerts/](http://www.faa.gov/aircraft/safety/alerts/)  
[www.gpoaccess.gov/fr/advanced.html](http://www.gpoaccess.gov/fr/advanced.html)

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**2017-16-08 Embraer S.A.:** Amendment 39-18985; Docket No. FAA-2014-0008; Product Identifier 2013-NM-076-AD.

**(a) Effective Date**

This AD is effective October 11, 2017.

**(b) Affected ADs**

This AD replaces 2012-23-09, Amendment 39-17265 (77 FR 73270, December 10, 2012) (“AD 2012-23-09”).

**(c) Applicability**

This AD applies to Embraer S.A. Model ERJ 190-100 STD, -100 LR, -100 ECJ, and -100 IGW airplanes; and Model ERJ 190-200 STD, -200 LR, and -200 IGW airplanes; certificated in any category; serial numbers 19000002, 19000004, 19000006 through 19000213 inclusive, 19000215 through 19000276 inclusive, 19000278 through 19000466 inclusive, 19000468 through 19000525 inclusive, and 19000527 through 19000696 inclusive.

**(d) Subject**

Air Transport Association (ATA) of America Codes 27, Flight controls; 28, Fuel; 52, Doors; 53, Fuselage; 54, Nacelles/pylons; 55, Stabilizers; 57, Wings; 71, Powerplant; and 78, Exhaust.

**(e) Reason**

This AD was prompted by a determination that more restrictive airworthiness limitations are necessary. We are issuing this AD to detect and correct fatigue cracking of structural components and to prevent failure of certain system components; these conditions could result in reduced structural integrity and system reliability of the airplane.

**(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(g) Retained Revision of the Maintenance Program, With No Changes**

For Model ERJ 190-100 STD, ERJ 190-100 LR, ERJ 190-100 IGW, ERJ 190-200 STD, ERJ 190-200 LR, and ERJ 190-200 IGW airplanes: This paragraph restates the actions required by paragraph (h) of AD 2012-23-09, with no changes. Within 90 days after January 14, 2013 (the effective date of AD 2012-23-09), 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 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; 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.

#### **(h) Retained No Alternative Actions or Intervals, With New Exception**

This paragraph restates the actions required by paragraph (i) of AD 2012-23-09, with a new exception. After accomplishing the revision required by paragraph (g) of this AD, no alternative actions (e.g., inspections) or intervals, may be used, unless the actions or intervals are approved as an alternative method of compliance (AMOC) in accordance with the procedures specified in paragraph (k)(1) of this AD, and except as required by paragraph (i) of this AD.

#### **(i) New Requirements of This AD: Revision of the Maintenance or Inspection Program**

(1) For Model ERJ 190-100 STD, ERJ 190-100 LR, ERJ 190-100 IGW, ERJ 190-200 STD, ERJ 190-200 LR, and ERJ 190-200 IGW airplanes: Within 90 days after the effective date of this AD, revise the maintenance or inspection program, as applicable, to incorporate the tasks specified in Part 2–Airworthiness Limitation Inspections–Structures, of Appendix A–Airworthiness Limitations (AL), of the EMBRAER 190/195 Maintenance Review Board Report, MRB-1928, Revision 9, dated August 14, 2015 (“MRB-1928, Revision 9”); EMBRAER MRB–TR 9-1, dated October 27, 2015, to Part 2–Airworthiness Limitation Inspections–Structures, and Part 4–Life Limited Items, of Appendix A, Airworthiness Limitations (AL), of MRB-1928, Revision 9; and EMBRAER MRB–TR 9-3, dated October 27, 2015, to Part 2–Airworthiness Limitation Inspections–Structures, of Appendix A, Airworthiness Limitations (AL), of MRB-1928, Revision 9; with the thresholds and intervals stated in these documents. The initial compliance times for the tasks are at the later of the times specified in paragraphs (i)(1)(i) and (i)(1)(ii) of this AD. Doing the revision required by this paragraph terminates the revision required by paragraph (g) of this AD.

(i) Within the applicable times specified in MRB-1928, Revision 9; EMBRAER MRB–TR 9-1, dated October 27, 2015, to Part 2–Airworthiness Limitation Inspections–Structures, and Part 4–Life Limited Items, of Appendix A, Airworthiness Limitations (AL), of MRB-1928, Revision 9; and EMBRAER MRB–TR 9-3, dated October 27, 2015, to Part 2–Airworthiness Limitation Inspections–Structures, of Appendix A, Airworthiness Limitations (AL), of MRB-1928, Revision 9. Where tasks are listed in both MRB-1928, Revision 9, and a temporary revision, the compliance times in the temporary revision take precedence.

(ii) Within 90 days or 600 flight cycles after the effective date of this AD, whichever occurs later.

(2) For Model ERJ 190-100 ECJ airplanes: Within 90 days after the effective date of this AD, revise the maintenance or inspection program, as applicable, to incorporate the tasks specified in Part 1, Certification Maintenance Requirements, Part 2, Airworthiness Limitation Inspections–Structures, Part 3, Fuel System Limitation Items, and Part 4, Life Limited Items, of Appendix A, Airworthiness Limitation, of the EMBRAER Lineage 1000/1000E Maintenance Planning Guide, MPG-2928, Revision 4, dated July 14, 2014; EMBRAER MPG–TR 4-2, dated February 13, 2015; and EMBRAER MPG–TR 4-3, dated October 30, 2015; with the thresholds and intervals stated in these documents. The initial compliance times for the tasks are at the later of the times specified in paragraphs (i)(2)(i) and (i)(2)(ii) of this AD.

(i) Within the applicable times specified in Part 1, Certification Maintenance Requirements, Part 2, Airworthiness Limitation Inspections—Structures, Part 3, Fuel System Limitation Items, and Part 4, Life Limited Items, of Appendix A, Airworthiness Limitation (AL), of the EMBRAER Lineage 1000/1000E Maintenance Planning Guide, MPG-2928, Revision 4, dated July 14, 2014; EMBRAER MPG-TR 4-2, dated February 13, 2015; and EMBRAER MPG-TR 4-3, dated October 30, 2015. Where tasks are listed in both MPG-2928, Revision 4, and a temporary revision, the compliance times in the temporary revision take precedence.

(ii) Within 90 days or 600 flight cycles after the effective date of this AD, whichever occurs later.

**(j) No Alternative Actions, Intervals, and/or Critical Design Configuration Control Limitations (CDCCLs)**

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

**(k) Other FAA AD Provisions**

The following provisions also apply to this AD:

(1) Alternative Methods of Compliance (AMOCs): The Manager, International Section, Transport Standards Branch, 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 Section, send it to the attention of the person identified in paragraph (l)(2) of this AD. 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.

(2) Contacting the Manufacturer: As of the effective date of this AD, for any requirement in this AD to obtain corrective actions from a manufacturer, the action must be accomplished using a method approved by the Manager, International Section, Transport Standards Branch, FAA; or the Agência Nacional de Aviação Civil (ANAC); or ANAC's authorized Designee. If approved by the ANAC Designee, the approval must include the Designee's authorized signature.

**(l) Related Information**

(1) Refer to Mandatory Continuing Airworthiness Information (MCAI) Brazilian AD 2016-04-01, effective April 4, 2016, for related information. This MCAI may be found in the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2014-0008.

(2) For more information about this AD, contact Ana Martinez Hueto, Aerospace Engineer, International Section, Transport Standards Branch, FAA, 1601 Lind Avenue SW., Renton, WA 98057-3356; telephone 425-227-1622; fax 425-227-1320.

**(m) 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 this AD specifies otherwise.

(3) The following service information was approved for IBR on October 11, 2017.



(i) Appendix A, Airworthiness Limitations (AL), of the EMBRAER ERJ 190/195 Maintenance Review Board Report, MRB-1928, Revision 9, dated August 14, 2015.

(ii) Appendix A, Airworthiness Limitations (AL), of the EMBRAER Lineage 1000/1000E Maintenance Planning Guide, MPG-2928, Revision 4, dated July 14, 2014.

(iii) EMBRAER MPG–Temporary Revision 4-2, dated February 13, 2015.

(iv) EMBRAER MPG–Temporary Revision 4-3, dated October 30, 2015.

(v) EMBRAER MRB–Temporary Revision 9-1, dated October 27, 2015.

(vi) EMBRAER MRB–Temporary Revision 9-3, dated October 27, 2015.

(4) The following service information was approved for IBR on January 14, 2013 (77 FR 73270, December 10, 2012).

(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.

(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 view this service information at the FAA, Transport Standards Branch, 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 July 28, 2017.

John P. Piccola, Jr.,  
Acting Director, System Oversight Division,  
Aircraft Certification Service.