



[4910-13-P]

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2015-6542; Directorate Identifier 2015-NM-038-AD]**

**RIN 2120-AA64**

**Airworthiness Directives; Embraer S.A. Airplanes**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Notice of proposed rulemaking (NPRM).

**SUMMARY:** We propose to adopt a new airworthiness directive (AD) for all Embraer S.A. Model ERJ 170 airplanes; and all Embraer S.A. Model ERJ 190-100 STD, -100 LR, -100 IGW, -200 STD, -200 LR, and -200 IGW airplanes. This proposed AD was prompted by reports of cracks in certain engine low-stage bleed check valves. This proposed AD would require replacing the air management system (AMS) controller operation program of the AMS controller processor boards, and replacement of the current low-stage bleed check valve and associated seals. We are proposing this AD to prevent failure of the low-stage bleed check valve, which could result in dual engine in-flight shutdown.

**DATES:** We must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.

- Fax: 202-493-2251.
- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.
- Hand Delivery: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this proposed 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>. You may view this referenced 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.

### **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-2015-6542; 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 proposed AD, 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.

**FOR FURTHER INFORMATION CONTACT:** Ana Martinez Hueto, Aerospace Engineer, International Branch, ANM-116, Transport Airplane Directorate, FAA, 1601 Lind Avenue SW., Renton, WA 98057-3356; telephone 425-227-1622; fax 425-227-1149.

**SUPPLEMENTARY INFORMATION:**

**Comments Invited**

We invite you to send any written relevant data, views, or arguments about this proposed AD. Send your comments to an address listed under the ADDRESSES section. Include “Docket No. FAA-2015-6542; Directorate Identifier 2015-NM-038-AD” at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this proposed AD. We will consider all comments received by the closing date and may amend this proposed AD based on those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this proposed AD.

**Discussion**

The Agência Nacional de Aviação Civil (ANAC), which is the aviation authority for Brazil, has issued Brazilian Airworthiness Directive 2015-02-02, dated March 6, 2015 (referred to after this as the Mandatory Continuing Airworthiness Information, or “the MCAI”), to correct an unsafe condition for Embraer S.A. Model ERJ 190-100 STD, -100 LR, -100 IGW, -200 STD, -200 LR, and -200 IGW airplanes. The MCAI states:

This [Brazilian] AD was prompted by reports of cracks in some engine low-stage bleed check valves having part number (P[/]N) 1001447-6. Further analysis has determined that if a new (zero hour) low-stage bleed check valve P/N 1001447-6 is installed in an airplane already equipped with the Air Management System (AMS) controller processor boards containing the AMS Controller Operational Program version Black Label 13, or a later version, premature cracking on the petals of the low-stage bleed check valve is not expected to occur. We are issuing this [Brazilian] AD to prevent the possibility of a dual engine in-flight shutdown due to low-stage bleed check valve failure.

The required action is replacement of the AMS controller operation program of the AMS controller processor boards, and replacement of the low-stage bleed check valves and associated seals. 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-2015-6542.

#### **Related Service Information under 1 CFR part 51**

Embraer has issued Service Bulletin 190-36-0023, Revision 03, dated September 24, 2014, which describes procedures for replacing the engine low-stage bleed check valves. Embraer has also issued Service Bulletin 190-21-0041, Revision 02, dated July 30, 2013, which describe procedures for replacing the AMS controller operation program of the AMS controller processor boards. 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 of this NPRM.

#### **Differences Between the MCAI and this Proposed AD**

The applicability of paragraph (g) of this proposed AD is limited to airplanes identified in Embraer Service Bulletin 190-21-0041, Revision 02, dated July 30, 2013.

The MCAI did not include this limitation. We have included this limitation because Model ERJ 190 airplanes with serial number (S/N) 19000587, S/N 19000589, S/N 19000593 and subsequent have a modification incorporated at the factory equivalent to the modification required by this AD.

Also, this proposed AD includes all Embraer S.A. Model ERJ 170-100 LR, -100 STD, -100 SE, and -100 SU airplanes; and Model ERJ 170-200 LR, -200 SU, and -200 STD airplanes, because of an additional proposed requirement in paragraph (j)(1) of this AD, which is related to installation of used low-stage bleed check valves having P/N 001447-6 on Model ERJ 170 airplanes. ANAC is considering future rulemaking to include a similar requirement.

#### **FAA's Determination and Requirements of this Proposed AD**

This product has been approved by the aviation authority of another country, and is approved for operation in the United States. Pursuant to our bilateral agreement with the State of Design Authority, we have been notified of the unsafe condition described in the MCAI and service information referenced above. We are proposing this AD because we evaluated all pertinent information and determined an unsafe condition exists and is likely to exist or develop on other products of the same type design.

#### **Costs of Compliance**

We estimate that this proposed AD affects 197 airplanes of U.S. registry.

We also estimate that it would take about 4 work-hours per product to comply with the basic requirements of this proposed AD. The average labor rate is \$85 per work-hour. Required parts would cost about \$638 per product. Based on these figures, we

estimate the cost of this proposed AD on U.S. operators to be \$192,666, or \$978 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 proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would 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 proposed regulation:

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.

**The Proposed Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 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 airworthiness directive (AD):

**Embraer S.A.:** Docket No. FAA-2015-6542; Directorate Identifier 2015-NM-038-AD.

**(a) Comments Due Date**

We must receive comments by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to the airplanes identified in paragraphs (c)(1) and (c)(2) of this AD, certificated in any category.

(1) All Embraer S.A. Model ERJ 170-100 LR, -100 STD, -100 SE, and -100 SU airplanes; and Model ERJ 170-200 LR, -200 SU, and -200 STD airplanes.

(2) All Embraer S.A. Model ERJ 190-100 STD, -100 LR, -100 IGW, -200 STD, -200 LR, and -200 IGW airplanes.

**(d) Subject**

Air Transport Association (ATA) of America Code 36, Pneumatic.

**(e) Reason**

This AD was prompted by reports of cracks in certain engine low-stage bleed check valves. We are issuing this AD to prevent failure of the low-stage bleed check valve, which could result in dual engine in-flight shutdown.

**(f) Compliance**

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

**(g) Modification**

For Embraer S.A. Model ERJ 190 airplanes identified in Embraer Service Bulletin 190-21-0041, Revision 02, dated July 30, 2013, within 3 months after the effective date of this AD, replace the Hamilton Sundstrand air management system (AMS) controller operation program of the AMS controller processor boards, as specified in paragraph (g)(1) or (g)(2) of this AD.

(1) Replace with a new, improved program, in accordance with the Accomplishment Instructions of Embraer Service Bulletin 190-21-0041, Revision 02, dated July 30, 2013.

(2) Replace with a version of the Hamilton Sundstrand AMS controller operation program approved after August 31, 2012, using a method approved by the Manager, International Branch, ANM-116, Transport Airplane Directorate, FAA; Agência Nacional de Aviação Civil (ANAC); or ANAC's authorized Designee.

**(h) Valve Replacement**

For Embraer S.A. Model ERJ 190 airplanes identified in Embraer Service Bulletin 190-21-0041, Revision 02, dated July 30, 2013, within 3 months after the effective date of this AD, and after accomplishment of the actions required by paragraph (g) of this AD: Replace the check valve and associated seals of the left-hand and right-hand engine bleed system with a check valve identified in paragraph (i) of this AD, and new seals, in accordance with the Accomplishment Instructions of Embraer Service Bulletin 190-36-0023, Revision 03, dated September 24, 2014.

**(i) Allowed Valves**

When complying with paragraph (h) of this AD, the low-stage bleed check valves having P/N 1001447-6, and associated seals, are replaced with new ones (zero-hour). Low-stage bleed check valves having P/N 1001447-6 that can be demonstrated with logged hours only on ERJ-170 aircraft and/or on ERJ-190 aircraft equipped with the AMS Controller Operational Program version Black Label 13, or a later version, can be used instead of new ones (zero-hour).

**(j) Parts Installation Limitation**

(1) For Model ERJ 170-100 STD, -100 LR, -100SU, -100SE, -200 STD, -200 LR, and -200 SU airplanes: No person may install on any airplane a low-stage bleed check valve having P/N 1001447-6 that was installed on any Model ERJ 190-100 STD,

-100 LR, -100 IGW, -200 STD, -200 LR, or -200 IGW airplane, any serial number except 190-00587, 190-00589, and 190-00593 and subsequent, prior to accomplishment of paragraph (g) of this AD.

(2) For Model ERJ 190-100 STD, -100 LR, -100IGW, -200 STD, -200 LR, and -200 IGW airplanes: No person may install on any airplane on which the actions of paragraph (g) of this AD have been done, a low-stage bleed check valve having P/N 1001447-6 that was previously installed on any Model ERJ 190-100 STD, -100 LR, -100 IGW, -200 STD, -200 LR, or -200 IGW airplane, any serial number except 190-00587, 190-00589, 190-00593 and subsequent, prior to accomplishment of paragraph (g) of this AD.

**(k) Credit for Previous Actions**

(1) This paragraph provides credit for actions required by paragraph (g) of this AD, if those actions were performed before the effective date of this AD using the service information identified in paragraph (k)(1)(i) or (k)(1)(ii) of this AD. This service information is not incorporated by reference in this AD.

(i) Embraer Service Bulletin 190-21-0041, dated September 27, 2012.

(ii) Embraer Service Bulletin 190-21-0041, Revision 01, dated December 20, 2012.

(2) This paragraph provides credit for actions required by paragraph (h) of this AD, if those actions were performed before the effective date of this AD using the service information identified in paragraph (k)(2)(i), (k)(2)(ii), or (k)(2)(iii) of this AD. This service information is not incorporated by reference in this AD.

(i) Embraer Service Bulletin 190-36-0023, dated July 22, 2013.

(ii) Embraer Service Bulletin 190-36-0023, Revision 01, dated September 3, 2013.

(iii) Embraer Service Bulletin 190-36-0023, Revision 02, dated April 30, 2014.

**(l) 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: Ana Martinez Hueto, Aerospace Engineer, International Branch, ANM-116, Transport Airplane Directorate, FAA, 1601 Lind Avenue SW., Renton, WA 98057-3356; telephone 425-227-1622; 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) Contacting the Manufacturer:** 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 Branch, ANM-116, Transport Airplane Directorate, FAA; or ANAC; or ANAC's authorized Designee. If approved by the ANAC Designee, the approval must include the Designee's authorized signature.

**(m) Related Information**

(1) Refer to Mandatory Continuing Airworthiness Information (MCAI) Brazilian Airworthiness Directive 2015-02-02, dated March 6, 2015, 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-2015-6542.

(2) 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>. You may view this 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.

Issued in Renton, Washington, on November 20, 2015.

**Jeffrey E. Duven,**

*Manager,*

*Transport Airplane Directorate,*

*Aircraft Certification Service.*

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