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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

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

**[Docket No. FAA-2018-0509; Product Identifier 2017-NM-076-AD; Amendment 39-19429; AD 2018-19-28]**

**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 adopting a new airworthiness directive (AD) for certain 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. This AD was prompted by reports of bushing migration and loss of nut torque on the engine pylon lower inboard and outboard link fittings. This AD requires modification of the attaching parts of the left-hand (LH) and right-hand (RH) pylon lower link fittings, inboard and outboard positions. We are issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective November 2, 2018.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of November 2, 2018.

**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–Brazil; phone: +55 12 3927-5852 or +55 12 3309-0732; fax: +55 12 3927-7546; email: distrib@embraer.com.br; internet: <http://www.flyembraer.com>. You may view this service information at the FAA, Transport Standards Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195. It is also available on the internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2018-0509

#### **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-2018-0509; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, the regulatory evaluation, any comments received, and other information. The address for Docket

Operations (phone: 800-647-5527) is 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:** Krista Greer, Aerospace Engineer, International Section, Transport Standards Branch, FAA, 2200 South 216th St., Des Moines, WA 98198; phone and fax: 206-231-3221.

## **SUPPLEMENTARY INFORMATION:**

### **Discussion**

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to certain 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. The NPRM published in the Federal Register on June 11, 2018 (83 FR 26877). The NPRM was prompted by reports of bushing migration and loss of nut torque on the engine pylon lower inboard and outboard link fittings. The NPRM proposed to require modification of the attaching parts of the LH and RH pylon lower link fittings, inboard and outboard positions. The NPRM also specified that accomplishing certain proposed actions would terminate certain requirements in AD 2014-16-16, Amendment 39-17940 (79 FR 48018, August 15, 2014).

We are issuing this AD to address loss of integrity of the engine pylon lower link fittings, possibly resulting in separation of the engine from the wing.

Agência Nacional de Aviação Civil (ANAC), which is the aviation authority for Brazil, has issued Brazilian AD 2017-04-01, effective April 25, 2017 (referred to after this as the Mandatory Continuing Airworthiness Information, or “the MCAI”), to correct an unsafe condition for certain 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. The MCAI states:

This [Brazilian] AD was prompted by reports of bushing migration and loss of nut torque on the engine pylon lower inboard and outboard link fittings. We are issuing this [Brazilian] AD to prevent loss of integrity of the engine pylon lower link fittings, which could result in separation of the engine from the wing.

This [Brazilian] AD requires modifications of the attaching parts of the left handle (LH) and right handle (RH) pylon lower link fittings, inboard and outboard positions.

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-2018-0509.

### **Comments**

We gave the public the opportunity to participate in developing this final rule. We have considered the comment received. The Air Line Pilots Association, International (ALPA) stated that it supported the intent of the NPRM.

### **Conclusion**

We reviewed the relevant data, considered the comment received, and determined that air safety and the public interest require adopting this final rule as proposed, except for minor editorial changes. We have determined that these minor changes:

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

**Related Service Information Under 1 CFR Part 51**

Embraer S.A. has issued Embraer Service Bulletin 190-54-0016, Revision 04, dated December 7, 2017; and Embraer Service Bulletin 190LIN-54-0008, Revision 02, dated May 9, 2018. The service information describes procedures for modification of the attaching parts of the LH and RH pylon lower link fittings, inboard and outboard positions. These documents are distinct since they apply to different airplane models. 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 85 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
Modification	Up to 270 work-hours × \$85 per hour = \$22,950	\$3,200	Up to \$26,150	Up to \$2,222,750.

According to the manufacturer, some of the costs of this AD may be covered under warranty, thereby reducing the cost impact on affected individuals. We do not control warranty coverage for affected individuals. As a result, we have included all available costs in our cost estimate.

**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 and associated appliances to the Director of the System Oversight Division.

## **Regulatory Findings**

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 adding the following new airworthiness directive (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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**2018-19-28 Embraer S.A.:** Amendment 39-19429; Docket No. FAA-2018-0509; Product Identifier 2017-NM-076-AD.

### **(a) Effective Date**

This AD is effective November 2, 2018.

### **(b) Affected ADs**

This AD affects AD 2014-16-16, Amendment 39-17940 (79 FR 48018, August 15, 2014) (“AD 2014-16-16”).

### **(c) Applicability**

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

(1) Model ERJ 190-100 STD, -100 LR, and -100 IGW airplanes; and Model ERJ 190-200 STD, -200 LR, and -200 IGW airplanes; as identified in Embraer Service Bulletin 190-54-0016, Revision 04, dated December 7, 2017.

(2) Model ERJ 190-100 ECJ airplanes as identified in Embraer Service Bulletin 190LIN-54-0008, Revision 02, dated May 9, 2018.

### **(d) Subject**

Air Transport Association (ATA) of America Code 54, Nacelles/pylons.

### **(e) Reason**

This AD was prompted by reports of bushing migration and loss of nut torque on the engine pylon lower inboard and outboard link fittings. We are issuing this AD to prevent loss of integrity of the engine pylon lower link fittings, possibly resulting in separation of the engine from the wing.

### **(f) Compliance**

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

### **(g) Definitions**

(1) Group 1 airplanes are defined as: Serial numbers 19000002, 19000004, 19000006 through 19000108 inclusive, 19000110 through 19000139 inclusive, 19000141 through 19000158 inclusive, 19000160 through 19000176 inclusive, 19000178 through 19000202 inclusive, 19000204 through 19000224 inclusive, 19000226 through 19000235 inclusive, 19000237 through 19000242 inclusive, 19000244 through 19000260 inclusive, 19000262 through 19000277 inclusive, 19000279 through 19000295 inclusive, 19000297 through 19000306 inclusive, 19000308 through 19000316 inclusive,

19000318 through 19000361 inclusive, 19000363 through 19000437 inclusive, 19000439 through 19000452 inclusive, 19000454 through 19000466 inclusive, 19000468 through 19000525 inclusive, 19000527 through 19000533 inclusive, 19000535 through 19000558 inclusive, 19000560 through 19000570 inclusive, 19000572 through 19000610 inclusive, 19000612 through 19000631 inclusive, and 19000633 through 19000636 inclusive.

(2) Group 2 airplanes are defined as: Serial numbers 19000637 through 19000640 inclusive, 19000642 through 19000655 inclusive, 19000657 through 19000682 inclusive, 19000684 through 19000686 inclusive, 19000688, 19000689, and 19000692 through 19000694 inclusive.

#### **(h) Left-Hand (LH) Pylon Lower Link Fitting Attaching Parts Modification**

(1) For Group 1 airplanes as identified in paragraph (g)(1) of this AD: Within 15,000 flight hours or 48 months after the effective date of this AD, whichever occurs later, replace the plain bushings of the lower inboard and outboard link fittings, install the lock washers with the L-profile on the fuse pin's head side, and replace the internal shear pin of the fuse pins with new ones having larger head diameter, in accordance with "PART I" of the Accomplishment Instructions of Embraer Service Bulletin 190-54-0016, Revision 04, dated December 7, 2017.

(2) For Group 2 airplanes as identified in paragraph (g)(2) of this AD: Within 15,000 flight hours or 48 months after the effective date of this AD, whichever occurs later, replace the internal shear pin of the fuse pins with new ones having larger head diameter, in accordance with "PART I" of the Accomplishment Instructions of Embraer Service Bulletin 190-54-0016, Revision 04, dated December 7, 2017.

(3) For airplanes identified as Group 1 in Embraer Service Bulletin 190LIN-54-0008, Revision 02, dated May 9, 2018: Within 48 months after the effective date of this AD, replace the plain bushings of the lower inboard and outboard link fittings, install the lock washers with the L-profile on the fuse pin's head side, and replace the internal shear pin of the fuse pins with new ones having larger head diameter, in accordance with "PART I" of the Accomplishment Instructions of Embraer Service Bulletin 190LIN-54-0008, Revision 02, dated May 9, 2018.

(4) For airplanes identified as Group 2 in Embraer Service Bulletin 190LIN-54-0008, Revision 02, dated May 9, 2018: Within 48 months after the effective date of this AD, replace the internal shear pin of the fuse pins with new ones having larger head diameter, in accordance with "PART I" of the Accomplishment Instructions of Embraer Service Bulletin 190LIN-54-0008, Revision 02, dated May 9, 2018.

#### **(i) Right-Hand (RH) Pylon Lower Link Fitting Attaching Parts Modification**

(1) For Group 1 airplanes as identified in paragraph (g)(1) of this AD: Within 15,000 flight hours or 48 months after the effective date of this AD, whichever occurs later, replace the plain bushings of the lower inboard and outboard link fittings, install the lock washers with the L-profile on the fuse pin's head side, and replace the internal shear pin of the fuse pins with new ones having larger head diameter, in accordance with "PART II" of the Accomplishment Instructions of Embraer Service Bulletin 190-54-0016, Revision 04, dated December 7, 2017.

(2) For Group 2 airplanes as identified in paragraph (g)(2) of this AD: Within 15,000 flight hours or 48 months after the effective date of this AD, whichever occurs later, replace the internal shear pin of the fuse pins with new ones having larger head diameter, in accordance with "PART II" of the Accomplishment Instructions of Embraer Service Bulletin 190-54-0016, Revision 04, dated December 7, 2017.

(3) For airplanes identified as Group 1 in Embraer Service Bulletin 190LIN-54-0008, Revision 02, dated May 9, 2018: Within 48 months after the effective date of this AD, replace the plain bushings of the lower inboard and outboard link fittings, install the lock washers with the L-profile on the fuse pin's head side, and replace the internal shear pin of the fuse pins with new ones having

larger head diameter, in accordance with “PART II” of the Accomplishment Instructions of Embraer Service Bulletin 190LIN-54-0008, Revision 02, dated May 9, 2018.

(4) For airplanes identified as Group 2 in Embraer Service Bulletin 190LIN-54-0008, Revision 02, dated May 9, 2018: Within 48 months after the effective date of this AD, replace the internal shear pin of the fuse pins with new ones having larger head diameter, in accordance with “PART II” of the Accomplishment Instructions of Embraer Service Bulletin 190LIN-54-0008, Revision 02, dated May 9, 2018.

#### **(j) Terminating Action for AD 2014-16-16**

(1) Accomplishing the actions required by paragraph (h)(1) or (h)(2) of this AD, as applicable, terminates the requirements of paragraphs (g)(1), (h)(1), and (i)(1) of AD 2014-16-16 for that LH pylon lower link fitting.

(2) Accomplishing the actions required by paragraph (h)(3) or (h)(4) of this AD, as applicable, terminates the requirements of paragraphs (g)(2), (h)(2), and (i)(2) of AD 2014-16-16 for that LH pylon lower link fitting.

(3) Accomplishing the actions required by paragraph (i)(1) or (i)(2) of this AD, as applicable, terminates the requirements of paragraphs (g)(1), (h)(1), and (i)(1) of AD 2014-16-16 for that RH pylon lower link fitting.

(4) Accomplishing the actions required by paragraph (i)(3) or (i)(4) of this AD, as applicable, terminates the requirements of paragraphs (g)(2), (h)(2), and (i)(2) of AD 2014-16-16 for that RH pylon lower link fitting.

#### **(k) Credit for Previous Actions**

(1) This paragraph provides credit for actions required by paragraphs (h)(1), (h)(2), (i)(1), and (i)(2) of this AD, if those actions were performed before the effective date of this AD using Embraer Service Bulletin 190-54-0016, dated September 22, 2015; Embraer Service Bulletin 190-54-0016, Revision 01, dated January 18, 2016; Embraer Service Bulletin 190-54-0016, Revision 02, dated September 12, 2016; or Embraer Service Bulletin 190-54-0016, Revision 03, dated May 18, 2017.

(2) This paragraph provides credit for actions required by paragraphs (h)(3), (h)(4), (i)(3), and (i)(4) of this AD, if those actions were performed before the effective date of this AD using Embraer Service Bulletin 190LIN-54-0008, dated October 2, 2015; or Embraer Service Bulletin 190LIN-54-0008, Revision 01, dated April 13, 2017.

#### **(l) 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 (m)(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: 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.

(3) Required for Compliance (RC): For service information that contains steps that are labeled as RC, the provisions of paragraphs (l)(3)(i) and (l)(3)(ii) of this AD apply.

(i) The steps labeled as RC, including substeps under an RC step and any figures identified in an RC step, must be done to comply with the AD. If a step or substep is labeled “RC Exempt,” then the RC requirement is removed from that step or substep. An AMOC is required for any deviations to RC steps, including substeps and identified figures.

(ii) Steps not labeled as RC may be deviated from using accepted methods in accordance with the operator's maintenance or inspection program without obtaining approval of an AMOC, provided the RC steps, including substeps and identified figures, can still be done as specified, and the airplane can be put back in an airworthy condition.

#### **(m) Related Information**

(1) Refer to Mandatory Continuing Airworthiness Information (MCAI) Brazilian AD 2017-04-01, effective April 25, 2017, 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-2018-0509.

(2) For more information about this AD, contact Krista Greer, Aerospace Engineer, International Section, Transport Standards Branch, FAA, 2200 South 216th St., Des Moines, WA 98198; phone and fax: 206-231-3221.

#### **(n) 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.

(i) Embraer Service Bulletin 190-54-0016, Revision 04, dated December 7, 2017.

(ii) Embraer Service Bulletin 190LIN-54-0008, Revision 02, dated May 9, 2018.

(3) 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–Brazil; phone: +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>.

(4) You may view this service information at the FAA, Transport Standards Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

(5) 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 Des Moines, Washington, on September 14, 2018.

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