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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2018-0905; Product Identifier 2018-NM-115-AD; Amendment 39-19573; AD 2019-03-21]

RIN 2120-AA64

Airworthiness Directives; Embraer S.A. Airplanes

AGENCY: Federal Aviation Administration (FAA), Department of Transportation (DOT).

ACTION: Final rule.

SUMMARY: We are adopting a new airworthiness directive (AD) for all Embraer S.A. Model ERJ 190-100 STD, -100 LR, -100 IGW airplanes; and Model ERJ 190-200 STD, -200 LR, and -200 IGW airplanes. This AD was prompted by reports of corrosion and chromium layer chipping of the forward and aft pintle pins of the main landing gear (MLG) shock struts. This AD requires repetitive inspections for discrepancies of affected forward and aft pintle pins of the MLG shock struts, and corrective actions if necessary. We are issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective April 2, 2019.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of April 2, 2019.

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; telephone: +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-2018-0905.

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-2018-0905; 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; telephone 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 all Embraer S.A. Model ERJ 190-100 STD, -100 LR, -100 IGW, -200 STD, -200 LR, and -200 IGW airplanes. The NPRM published in the Federal Register on November 5, 2018 (83 FR 55297). The NPRM was prompted by reports of corrosion and chromium layer chipping of the forward and aft pintle pins of the MLG shock struts. The NPRM proposed to require repetitive inspections for discrepancies of affected forward and aft pintle pins of the MLG shock struts, and corrective actions if necessary. We are issuing this AD to address discrepancies of affected forward and aft pintle pins of the MLG shock struts, which could result in the pintle pin shearing under normal load and consequent collapse of the MLG during takeoff or landing.

Agência Nacional de Aviação Civil (ANAC), which is the aviation authority for Brazil, has issued Brazilian Airworthiness Directive 2018-07-01, effective July 24, 2018 (referred to after this as the Mandatory Continuing Airworthiness Information, or “the MCAI”), to correct an unsafe condition for all Embraer S.A. Model ERJ 190-100 STD, -100 LR, -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 corrosion and chromium layer chipping on the rearward and forward Pintle Pin of the Main Landing Gear (MLG) Shock Struts. We are issuing this [Brazilian] AD to detect and correct Pintle Pin[s] having [discrepancies including] corrosion or chromium layer chipping, which could cause the Pintle Pin[s] to shear under normal load and lead to collapse of the MLG during take-off or landing.

Corrective actions include repair or replacement of affected forward and aft pintle pins of the left- and right-hand MLG shock struts. 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-2018-0905.

Comments

We gave the public the opportunity to participate in developing this final rule. We received no comments on the NPRM or on the determination of the cost to the public.

Change Made to This Final Rule

We have changed this final rule to reference Task 32-11-001-1034, “Main Landing Gear Shock Strut Pintle Pins–Internal,” of the Embraer 190/195 Maintenance Review Board Report MRB-1928, Revision 12, dated September 27, 2018. In Revision 12, among other changes, the task interval is extended from 66 months to 72 months resulting from findings of an MLG sampling program.

We have also added Embraer 190/195 Maintenance Review Board Report MRB-1928, Revision 12, dated September 27, 2018, to paragraphs (i)(1) and (i)(2) of this AD to give credit for inspections

that have been done before the effective date of this AD as specified in Task 57-50-007-1247, “Main Landing Gear Trunnion Fittings–Inside Surfaces–Internal,” and Task 32-11-00-001, “Main Landing Gear (MLG)” of Embraer 190/195 Maintenance Review Board Report MRB-1928, Revision 12, dated September 27, 2018.

We have also revised paragraph (i)(3) of this AD to refer to Task 32-11-001-1034, “Main Landing Gear Shock Strut Pintle Pins–Internal,” Embraer 190/195 Maintenance Review Board Report MRB-1928, Revision 11, dated May 10, 2017, and we have redesignated subsequent paragraphs.

Conclusion

We reviewed the relevant data and determined that air safety and the public interest require adopting this final rule 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 for addressing the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM.

We also determined that these changes will not increase the economic burden on any operator or increase the scope of this final rule.

Related Service Information Under 1 CFR Part 51

Embraer has issued Service Bulletin 190-32-0065, Revision 02, dated November 1, 2017. This service information describes procedures for repetitive detailed inspection for discrepancies of affected forward and aft pintle pins of the left- and right-hand MLG shock struts, and repair or replacement of any discrepant affected pintle pin.

Embraer has also issued Task 32-11-001-1034, “Main Landing Gear Shock Strut Pintle Pins–Internal,” of the Embraer 190/195 Maintenance Review Board Report MRB-1928, Revision 12, dated September 27, 2018. This service information describes procedures for the inspection of pintle pins of the MLG shock struts at areas covered by the MLG shock strut and trunnion.

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 96 airplanes of U.S. registry. We estimate the following costs to comply with this AD:

Estimated Costs			
Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Up to 22 work-hours × \$85 per hour = Up to \$1,870	\$0	Up to \$1,870 per inspection cycle	Up to \$179,520 per inspection cycle.

We estimate the following costs to do any necessary on-condition actions that would be required based on the results of any required inspection. We have no way of determining the number of aircraft that might need these on-condition actions:

Estimated Costs of On-Condition Actions

Labor cost	Parts cost	Cost per product
6 work-hours × \$85 per hour = \$510 per MLG (replacement)	\$1,750 per MLG	\$2,260 per MLG
6 work-hours × \$85 per hour = \$510 per MLG (repair)	\$0	\$510 per MLG.

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):



2019-03-21 Embraer S.A.: Amendment 39-19573; Docket No. FAA-2018-0905; Product Identifier 2018-NM-115-AD.

(a) Effective Date

This AD is effective April 2, 2019.

(b) Affected ADs

None.

(c) Applicability

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.

(d) Subject

Air Transport Association (ATA) of America Code 32, Landing Gear.

(e) Reason

This AD was prompted by reports of corrosion and chromium layer chipping of the forward and aft pintle pins of the main landing gear (MLG) shock struts. We are issuing this AD to address discrepancies of affected forward and aft pintle pins of the MLG shock struts, which could result in the pintle pin shearing under normal load and consequent collapse of the MLG during takeoff or landing.

(f) Compliance

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

(g) Repetitive Inspections

At the applicable time specified in paragraph (g)(1) or (g)(2) of this AD: Do a detailed inspection for discrepancies of affected forward and aft pintle pins of the left- and right-hand MLG shock struts, in accordance with the Accomplishment Instructions of Embraer Service Bulletin 190-32-0065, Revision 02, dated November 1, 2017. Repeat the inspection thereafter at intervals not to exceed 72 months.

(1) For airplanes on which any MLG pintle pin having part number (P/N) 2821-0067 or 2821-0025 has accumulated fewer than 17,000 total flight cycles since new: Before the accumulation of 17,750 total flight cycles.

(2) For airplanes on which any MLG pintle pin having P/N 2821-0067 or 2821-0025 has accumulated 17,000 or more total flight cycles since new: Within 750 flight cycles after the effective date of this AD.

(h) Corrective Actions

If any discrepancy of any pintle pin is found during any inspection required by paragraph (g) of this AD: Before further flight, repair the affected pintle pin or replace it with a new pintle pin, as applicable, in accordance with the Accomplishment Instructions of Embraer Service Bulletin 190-32-0065, Revision 02, dated November 1, 2017.

(i) Credit for Previous Actions

This paragraph provides credit for the initial inspection required by paragraph (g) of this AD, if that inspection was performed before the effective date of this AD using the applicable service information identified in paragraphs (i)(1) through (i)(6) of this AD.

(1) Task 57-50-007-1247, “Main Landing Gear Trunnion Fittings–Inside Surfaces–Internal,” Embraer 190/195 Maintenance Review Board Report MRB-1928, Revision 11, dated May 10, 2017; or Revision 12, dated September 27, 2018.

(2) Task 32-11-00-001, “Main Landing Gear (MLG),” Embraer 190/195 Maintenance Review Board Report MRB-1928, Revision 11, dated May 10, 2017; or Revision 12, dated September 27, 2018.

(3) Task 32-11-001-1034, “Main Landing Gear Shock Strut Pintle Pins–Internal,” Embraer 190/195 Maintenance Review Board Report MRB-1928, Revision 11, dated May 10, 2017.

(4) Embraer Service Bulletin 190-32-0002, Revision 01, dated November 8, 2012.

(5) Embraer Service Bulletin 190-32-0065, dated August 31, 2016.

(6) Embraer Service Bulletin 190-32-0065, Revision 01, dated October 24, 2017.

(j) Equivalent Inspection

Performing a detailed inspection for discrepancies of affected forward and aft pintle pins of the left- and right-hand MLG shock struts, in accordance with Task 32-11-001-1034, “Main Landing Gear Shock Strut Pintle Pins–Internal,” of the Embraer 190/195 Maintenance Review Board Report MRB-1928, Revision 12, dated September 27, 2018, at intervals not to exceed 72 months, is equivalent to an inspection required by paragraph (g) 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: 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): If any service information contains procedures or tests that are identified as RC, those procedures and tests must be done to comply with this AD; any procedures or tests that are not identified as RC are recommended. Those procedures and tests that are not identified 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 procedures and tests identified as RC can be done and the airplane can be put back in an airworthy condition. Any substitutions or changes to procedures or tests identified as RC require approval of an AMOC.

(l) Related Information

(1) Refer to Mandatory Continuing Airworthiness Information (MCAI) Brazilian Airworthiness Directive 2018-07-01, effective July 24, 2018, 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-2018-0905.

(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; telephone and fax 206-231-3221.

(3) Service information identified in this AD that is not incorporated by reference is available at the addresses specified in paragraphs (m)(3) and (m)(4) of this AD.

(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.

(i) Embraer Service Bulletin 190-32-0065, Revision 02, dated November 1, 2017.

(ii) Task 32-11-001-1034, "Main Landing Gear Shock Strut Pintle Pins–Internal," of the Embraer 190/195 Maintenance Review Board Report MRB-1928, Revision 12, dated September 27, 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; telephone: +55 12 3927-5852 or +55 12 3309-0732; fax: +55 12 3927-7546; email: 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 February 14, 2019.

Michael Kaszycki,
Acting Director, System Oversight Division,
Aircraft Certification Service.