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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2012-1077; Directorate Identifier 2012-NM-146-AD; Amendment 39-17384; AD 2013-05-12]

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 certain Embraer S.A. Model ERJ 170 and ERJ 190 airplanes. This AD was prompted by a report that high rate discharge (HRD) bottle explosive cartridges of a cargo compartment fire extinguisher system were swapped between the forward and aft cargo compartments. Additional investigation also revealed the possibility of swapping between the electrical connectors of the HRD and low rate discharge (LRD) bottles, and a rotated installation of the HRD bottle. Improper assembly of the fire extinguishing bottle might cause the extinguishing agent to be discharged toward the unselected cargo compartment rather than toward the cargo compartment with fire. This AD requires an inspection of the HRD bottle for correct installation and to determine if the pressure switch is in the correct position, and re-installation if necessary; an inspection of the HRD and LRD bottle discharge heads to determine the part number, and replacement if necessary; and, for certain airplanes, an inspection to identify the HRD and LRD bottle electrical connectors, and relocation if necessary. We are issuing this AD to prevent the inability of the fire extinguishing system to suppress fire.

DATES: This AD becomes effective May 3, 2013.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of May 3, 2013.

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 October 16, 2012 (77 FR 63272). That NPRM proposed to correct an unsafe condition for the specified products. The Mandatory Continuing Airworthiness Information (MCAI) states:

It was found during an inspection of the cargo compartment fire extinguisher system that High Rate Discharge (HRD) bottle explosive cartridges were swapped between forward and aft cargo compartments. Additional investigation has also revealed the possibility of swapping between the electrical connectors of the HRD and Low Rate Discharge (LRD) bottles and a rotated installation of the HRD bottle. Such improper assembly of the fire extinguishing bottle may cause the extinguishing agent to be discharged toward the unselected cargo compartment rather than toward the cargo compartment with fire, resulting in an insufficient concentration of fire extinguishing agent in the cargo compartment with fire, and consequent inability of the fire extinguishing system to suppress fire.

* * * * *

Required actions include an inspection of the HRD bottle for correct installation and to determine if the pressure switch is in the correct position, and re-installation if necessary; an inspection of the HRD and LRD bottle discharge heads to determine the part number and replacement if necessary; and, for certain airplanes, an inspection to identify the HRD and LRD bottle electrical connectors, and relocation if necessary. 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 considered the comments received.

Request To Refer to Revised Service Information

Embraer requested that we revise the NPRM (77 FR 63272, October 16, 2012) to include the latest revision of the referenced service information. Embraer also requested that we provide credit for actions done using the following service bulletins.

- Embraer Service Bulletin 170-26-0011, Revision 01, dated June 19, 2012.
- Embraer Service Bulletin 190-26-0011, Revision 01, dated June 19, 2012.
- Embraer Service Bulletin 190LIN-26-0006, Revision 01, dated June 19, 2012.

We agree to refer to the following service bulletins in this AD as requested. We have revised paragraphs (c), (g), and (h) of this AD accordingly.

- Embraer Service Bulletin 170-26-0011, Revision 02, dated October 17, 2012.
- Embraer Service Bulletin 190-26-0011, Revision 02, dated October 17, 2012.
- Embraer Service Bulletin 190LIN-26-0006, Revision 02, dated September 28, 2012.

We have also added new paragraph (i) to this AD (and re-identified subsequent paragraphs accordingly) to allow credit for actions done previously using the following service bulletins.

- Embraer Service Bulletin 170-26-0011, Revision 01, dated June 19, 2012.
- Embraer Service Bulletin 190-26-0011, Revision 01, dated June 19, 2012.

- Embraer Service Bulletin 190LIN-26-0006, Revision 01, dated June 19, 2012.

Request To Clarify the Proposed Applicability for Certain Actions

Embraer requested that we clarify the applicability for paragraphs (g), (h), and (i) of the NPRM (77 FR 63272, October 16, 2012), for airplanes subject to Embraer Service Bulletin 190LIN-26-0006, Revision 02, dated September 28, 2012. Embraer stated that Embraer Service Bulletin 190LIN-26-0006, Revision 02, dated September 28, 2012, applies only to Model ERJ 190-100 ECJ airplanes, and requested that we revise paragraphs (g), (h), and (i) of the NPRM, accordingly.

We partially agree. We disagree with revising paragraph (i) of the NPRM (77 FR 63272, October 16, 2012). Paragraph (i) of the NPRM—now paragraph (j) of this AD—has no reference to Embraer Service Bulletin 190LIN-26-0006, Revision 02, dated September 28, 2012; therefore, we have made no change to that paragraph.

We agree that Embraer Service Bulletin 190LIN-26-0006, Revision 02, dated September 28, 2012, affects only Model ERJ 190-100 ECJ airplanes. Embraer Service Bulletin 190-26-0011, Revision 02, dated October 17, 2012, does not affect Model ERJ 190-100 ECJ airplanes. We have revised paragraphs (c), (g), and (h) of this AD accordingly.

Request To Clarify Inspection Requirement

Embraer requested that we clarify that the inspection is for proper identification of the electrical connectors, rather than for specific electrical connector part numbers, as specified in the NPRM (77 FR 63272, October 16, 2012). Embraer stated that the electrical connector identification is not the same as the part number.

We agree to clarify the inspection requirement as requested. We have revised paragraph (g)(3) of this AD to require the inspection to identify the HRD and LRD bottle electrical connectors.

Additional Change to NPRM

We have also revised paragraphs (g)(2) and (h)(2) of this AD to clarify the replacement part.

Conclusion

We reviewed the available data, including the comments 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 changes:

- Are consistent with the intent that was proposed in the NPRM (77 FR 63272, October 16, 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 63272, October 16, 2012).

Costs of Compliance

We estimate that this AD will affect 163 products of U.S. registry. We also estimate that it will take about 7 work-hours per product to comply with the 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 \$96,985, or \$595 per product.

In addition, we estimate that any necessary follow-on actions would take about 1 work-hour and require parts costing \$68,588, for a cost of \$68,673 per product. We have no way of determining the number of products that may need these actions.

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 63272, October 16, 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 adding the following new AD:



2013-05-12 Embraer S.A.: Amendment 39-17384. Docket No. FAA-2012-1077; Directorate Identifier 2012-NM-146-AD.

(a) Effective Date

This airworthiness directive (AD) becomes effective May 3, 2013.

(b) Affected ADs

None.

(c) Applicability

This AD applies to the airplanes identified in paragraphs (c)(1), (c)(2), and (c)(3) of this AD.

(1) 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; certificated in any category; as identified in Embraer Service Bulletin 170-26-0011, Revision 02, dated October 17, 2012.

(2) 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; as identified in Embraer Service Bulletin 190-26-0011, Revision 02, dated October 17, 2012.

(3) Embraer S.A. Model ERJ 190-100 ECJ airplanes, certificated in any category, as identified in Embraer Service Bulletin 190LIN-26-0006, Revision 02, dated September 28, 2012.

(d) Subject

Air Transport Association (ATA) of America Code 26, Fire Protection.

(e) Reason

This AD was prompted by a report that high rate discharge (HRD) bottle explosive cartridges of a cargo compartment fire extinguisher system were swapped between the forward and aft cargo compartments. Additional investigation also revealed the possibility of swapping between the electrical connectors of the HRD and low rate discharge (LRD) bottles, and a rotated installation of the HRD bottle. We are issuing this AD to prevent the inability of the fire extinguishing system to suppress fire.

(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) Inspections and Corrective Actions for Group 1 Airplanes

For airplanes on which Embraer Service Bulletin 170-26-0011, dated December 1, 2011 (for 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); Embraer Service Bulletin 190-26-0011, dated December 1, 2011 (for Model ERJ 190-100 STD, -100 LR, and -100 IGW airplanes); and Model ERJ 190-200 STD, -200 LR, and -200 IGW airplanes); or Embraer Service Bulletin 190LIN-26-0006, dated December 1, 2011 (for Model ERJ 190-100 ECJ airplanes); has not been accomplished as of the effective date of this AD: Within 3,000 flight hours after the effective date of this AD, do the actions specified in paragraphs (g)(1), (g)(2), and (g)(3) of this AD. All actions must be done in accordance with Part I and Part II, as applicable, of the Accomplishment Instructions of Embraer Service Bulletin 170-26-0011, Revision 02, dated October 17, 2012 (for 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); Embraer Service Bulletin 190-26-0011, Revision 02, dated October 17, 2012 (for Model ERJ 190-100 STD, -100 LR, and -100 IGW airplanes; and Model ERJ 190-200 STD, -200 LR, and -200 IGW airplanes); or Embraer Service Bulletin 190LIN-26-0006, Revision 02, dated September 28, 2012 (for Model ERJ 190-100 ECJ airplanes).

(1) Do a general visual inspection of the HRD bottle to determine if it is correctly installed and if the pressure switch is in the correct position. If the bottle is not correctly installed or the pressure switch is in the incorrect position, before further flight, remove and re-install the HRD bottle.

(2) Inspect the HRD and LRD bottle discharge heads to determine the part number. If the part number of the discharge heads is not the part number specified in Figure 3 of Embraer Service Bulletin 170-26-0011, Revision 02, dated October 17, 2012 (for 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); Embraer Service Bulletin 190-26-0011, Revision 02, dated October 17, 2012 (for Model ERJ 190-100 STD, -100LR, and -100 IGW airplanes; and Model ERJ 190-200 STD, -200 LR, and -200 IGW airplanes); or Embraer Service Bulletin 190LIN-26-0006, Revision 02, dated September 28, 2012 (for Model ERJ 190-100 ECJ airplanes): Before further flight, replace the discharge bottle with a discharge bottle of the same part number that has a correct discharge head part number, as shown in Figure 3 of Embraer Service Bulletin 170-26-0011, Revision 02, dated October 17, 2012 (for 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); Embraer Service Bulletin 190-26-0011, Revision 02, dated October 17, 2012 (for Model ERJ 190-100 STD, -100LR, and -100 IGW airplanes; and Model ERJ 190-200 STD, -200 LR, and -200 IGW airplanes); or Embraer Service Bulletin 190LIN-26-0006, Revision 02, dated September 28, 2012 (for Model ERJ 190-100 ECJ airplanes), as applicable.

(3) Inspect to identify the HRD and LRD bottle electrical connectors. If the identification of the HRD or LRD bottle electrical connectors is not specified in Figure 1 of Embraer Service Bulletin 170-26-0011, Revision 02, dated October 17, 2012 (for 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); Embraer Service Bulletin 190-26-0011, Revision 02, dated October 17, 2012 (for Model ERJ 190-100 STD, -100LR, and -100 IGW airplanes; and Model ERJ 190-200 STD, -200 LR, and -200 IGW airplanes); or Embraer Service Bulletin 190LIN-26-0006, Revision 02, dated September 28, 2012 (for Model ERJ 190-100 ECJ airplanes): Before further flight, relocate the HRD or LRD bottle electrical connectors by re-routing the electrical harness.

(h) Inspections and Corrective Actions for Group 2 Airplanes

For airplanes on which Embraer Service Bulletin 170-26-0011, dated December 1, 2011 (for 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); Embraer Service Bulletin 190-26-0011, dated December 1, 2011 (for Model ERJ 190-100 STD, -100 LR, and -100 IGW airplanes; and Model ERJ 190-200 STD, -200 LR, and -200 IGW airplanes); or Embraer Service Bulletin 190LIN-26-0006, dated December 1, 2011 (for Model ERJ 190-100 ECJ airplanes); has been accomplished as of the effective date of this AD: Within 3,000 flight hours after the effective date of this AD, do the actions specified in paragraphs (h)(1) and (h)(2) of this AD. All actions must be done in accordance with Part III of the Accomplishment Instructions of Embraer Service Bulletin 170-26-0011, Revision 02, dated October

17, 2012 (for Model ERJ 170-100 LR, -100 STD, -100 SE., and -100 SU airplanes; and Model ERJ 170-200LR, -200 SU, and -200 STD airplanes); Embraer Service Bulletin 190-26-0011, Revision 02, dated October 17, 2012 (for Model ERJ 190-100 STD, -100LR, and -100 IGW airplanes; and Model ERJ 190-200 STD, -200 LR, and -200 IGW airplanes); or Embraer Service Bulletin 190LIN-26-0006, Revision 02, dated September 28, 2012 (for Model ERJ 190-100 ECJ airplanes).

(1) Do a general visual inspection of the HRD bottle to determine if it is correctly installed and if the pressure switch is in the correct position. If the bottle is not correctly installed or the pressure switch is in the incorrect position, before further flight, remove and re-install the HRD bottle.

(2) Inspect the HRD and LRD bottle discharge heads to determine the part number. If the part number of the discharge heads is not the part number specified in Figure 3 of Embraer Service Bulletin 170-26-0011, Revision 02, dated October 17, 2012 (for 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); Embraer Service Bulletin 190-26-0011, Revision 02, dated October 17, 2012 (for Model ERJ 190-100 STD, -100 LR, and -100 IGW airplanes; and Model ERJ 190-200 STD, -200 LR, and -200 IGW airplanes); or Embraer Service Bulletin 190LIN-26-0006, Revision 02, dated September 28, 2012 (for Model ERJ 190-100 ECJ airplanes); before further flight, replace the discharge bottle with a discharge bottle of the same part number that has a correct discharge head part number, as shown in Figure 3 of Embraer Service Bulletin 170-26-0011, Revision 02, dated October 17, 2012 (for 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); Embraer Service Bulletin 190-26-0011, Revision 02, dated October 17, 2012 (for Model ERJ 190-100 STD, -100 LR, and -100 IGW airplanes; and Model ERJ 190-200 STD, -200 LR, and -200 IGW airplanes); or Embraer Service Bulletin 190LIN-26-0006, Revision 02, dated September 28, 2012 (for Model ERJ 190-100 ECJ airplanes), as applicable.

(i) Credit for Previous Actions

This paragraph provides credit for the applicable actions required by paragraphs (g) and (h) of this AD, if those actions were performed before the effective date of this AD using the applicable service bulletins specified in paragraphs (i)(1), (i)(2), and (i)(3) of this AD.

(1) For 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: Embraer Service Bulletin 170-26-0011, Revision 01, dated June 19, 2012.

(2) For Model ERJ 190-100 STD, -100 LR, and -100 IGW airplanes; and Model ERJ 190-200 STD, -200 LR, and -200 IGW airplanes: Embraer Service Bulletin 190-26-0011, Revision 01, dated June 19, 2012.

(3) For Model ERJ 190-100 ECJ airplanes: Embraer Service Bulletin 190LIN-26-0006, Revision 01, dated June 19, 2012.

(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 Directives 2012-07-01 and 2012-07-02, both effective July 30, 2012, and the service bulletins identified in paragraphs (k)(1), (k)(2), and (k)(3) of this AD, for related information.

- (1) Embraer Service Bulletin 170-26-0011, Revision 02, dated October 17, 2012.
- (2) Embraer Service Bulletin 190-26-0011, Revision 02, dated October 17, 2012.
- (3) Embraer Service Bulletin 190LIN-26-0006, Revision 02, dated September 28, 2012.

(l) 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.

- (i) Embraer Service Bulletin 170-26-0011, Revision 02, October 17, 2012.
- (ii) Embraer Service Bulletin 190-26-0011, Revision 02, dated October 17, 2012.
- (iii) Embraer Service Bulletin 190LIN-26-0006, Revision 02, dated September 28, 2012.

(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–BRASIL; 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 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.

(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 Renton, Washington, on March 6, 2013.

Ali Bahrami,
Manager, Transport Airplane Directorate,
Aircraft Certification Service.