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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2006-25643; Directorate Identifier 2006-NM-135-AD; Amendment 39-14869; AD 2006-26-11]

RIN 2120-AA64

Airworthiness Directives; Empresa Brasileira de Aeronautica S.A. (EMBRAER) Model ERJ 170 and ERJ 190 Airplanes

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

ACTION: Final rule.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for certain EMBRAER Model ERJ 170 and ERJ 190 airplanes. This AD requires repetitive inspections to detect damaged smoke seals in the aft avionics compartment, repair/replacement if any damage is found, and reinforcement if no damage is found. This AD also requires eventual replacement of all smoke seals in the aft avionics compartment with new, improved seals having new part numbers, which terminates the repetitive inspections. This AD results from a report of damaged smoke seals in the aft avionics compartment of the affected airplanes. We are issuing this AD to prevent smoke from penetrating into the passenger cabin during a fire in the avionics compartment.

DATES: This AD becomes effective February 8, 2007.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in the AD as of February 8, 2007.

ADDRESSES: You may examine the AD docket on the Internet at <http://dms.dot.gov> or in person at the Docket Management Facility, U.S. Department of Transportation, 400 Seventh Street SW., Nassif Building, Room PL-401, Washington, DC.

Contact Empresa Brasileira de Aeronautica S.A. (EMBRAER), P.O. Box 343-CEP 12.225, Sao Jose dos Campos-SP, Brazil, for service information identified in this AD.

FOR FURTHER INFORMATION CONTACT: Todd Thompson, Aerospace Engineer, International Branch, ANM-116, FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; telephone (425) 227-1175; fax (425) 227-1149.

SUPPLEMENTARY INFORMATION:

Examining the Docket

You may examine the airworthiness directive (AD) docket on the Internet at <http://dms.dot.gov> or in person at the Docket Management Facility office between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The Docket Management Facility office (telephone (800) 647-5227) is located on the plaza level of the Nassif Building at the street address stated in the ADDRESSES section.

Discussion

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to include an AD that would apply to certain EMBRAER Model ERJ 170 and ERJ 190 airplanes. That NPRM was published in the Federal Register on August 21, 2006 (71 FR 48490). That NPRM proposed to require repetitive inspections to detect damaged smoke seals in the aft avionics compartment, repair/replacement if any damage is found, and reinforcement if no damage is found. That AD also proposed to require eventual replacement of all smoke seals in the aft avionics compartment with new, improved seals having new part numbers, which would terminate the repetitive inspections.

Comments

We provided the public the opportunity to participate in the development of this AD. We have considered the comments received.

Request To Withdraw the NPRM

EMBRAER states that an AD does not apply in this case because there is no unsafe condition associated with this failure mode. EMBRAER explains that the smoke seals in the aft avionics compartment are installed to demonstrate compliance with section 25.831(c) of the Federal Aviation Regulations (14 CFR 25.831(c)). EMBRAER states that the configuration of the smoke seals was approved during the ERJ 170/190 certification campaign, based on the procedures established by Advisory Circular AC 25-9A ("Smoke Detection, Penetration, and Evacuation Tests and Related Flight Manual Emergency Procedures"), dated January 6, 1994, which, in part, provides guidelines for conducting certification tests relating to smoke detection, penetration, and evacuation. EMBRAER states that the smoke penetration test was carried out under critical conditions with a very large amount of smoke, and confirmed that the smoke seal is an efficient smoke barrier. EMBRAER also states that the potential source of smoke coming from the aft avionics compartment is residual smoke coming from the electronic equipment, which is designed not to generate fire. Therefore, EMBRAER states that no fire event is expected in the region, only a small amount of smoke.

EMBRAER also addresses the damage on the smoke seal and states that all of the reported cases most likely happened during maintenance. EMBRAER states that these small damaged areas would not prevent the smoke seal from working satisfactorily as a smoke barrier, and that even in case of an unexpected smoke generation in the area, only a small amount of smoke would enter the passenger compartment. EMBRAER points out that the presence of smoke wisps in the passenger compartment was considered in the environmental system safety assessment, and that there are crew actions defined to mitigate this condition.

We disagree that an AD does not apply in this case. EMBRAER has not provided sufficient technical justification that damaged smoke seals in the aft avionics compartment of the affected airplanes are not a potentially serious safety problem. Specifically, EMBRAER does not state

whether it has performed smoke penetration testing with damaged or worn seals. EMBRAER also does not state if it has performed flight testing or only ground testing for smoke penetration. Finally, EMBRAER states that it has defined crew actions to mitigate wisps of smoke entering the cabin but does not refer to a documented cabin smoke evacuation procedure in the airplane flight manual to support this claim.

We have determined that an unsafe condition exists, and that issuing an AD is the appropriate way to correct an unsafe condition. In addition, Agencia Nacional de Avia[ccedil][atilde]o Civil (ANAC), which is the airworthiness authority for Brazil, issued Brazilian airworthiness directives 2006-05-04 (for Model ERJ 170 airplanes) and 2006-05-07 (for Model ERJ 190 airplanes), both effective June 14, 2006, to address the subject unsafe condition. ANAC has not withdrawn their airworthiness directives, and has not advised us that it plans to do so. If EMBRAER can provide additional information to substantiate its statements, we may consider further rulemaking then. We have not changed the AD in this regard.

Request To Change Incorporation of Certain Information

The Modification and Replacement of Parts Association (MARPA), states that, typically, airworthiness directives are based on service information originating with the type certificate holder or its suppliers. MARPA adds that manufacturer service documents are privately authored instruments generally having copyright protection against duplication and distribution. MARPA notes that when a service document is incorporated by reference into a public document, such as an airworthiness directive, it loses its private, protected status and becomes a public document. MARPA adds that if a service document is used as a mandatory element of compliance, it should not simply be referenced, but should be incorporated into the regulatory document; by definition, public laws must be public, which means they cannot rely upon private writings. MARPA is concerned that the failure to incorporate essential service information could result in a court decision invalidating the AD.

MARPA adds that incorporated by reference service documents should be made available to the public by publication in the Docket Management System (DMS), keyed to the action that incorporates them. MARPA notes that the stated purpose of the incorporation by reference method is brevity, to keep from expanding the Federal Register needlessly by publishing documents already in the hands of the affected individuals; traditionally, "affected individuals" means aircraft owners and operators, who are generally provided service information by the manufacturer. MARPA adds that a new class of affected individuals has emerged, since the majority of aircraft maintenance is now performed by specialty shops instead of aircraft owners and operators. MARPA notes that this new class includes maintenance and repair organizations, component servicing and repair shops, parts purveyors and distributors, and organizations manufacturing or servicing alternatively certified parts under part 21 of the Federal Aviation Regulations (14 CFR part 21), section 21.303 (parts manufacturer approval (PMA)). MARPA adds that the concept of brevity is now nearly archaic, as documents exist more frequently in electronic format than on paper. Therefore, MARPA asks that the service documents deemed essential to the accomplishment of the NPRM be incorporated by reference into the regulatory instrument, and published in the DMS.

We understand MARPA's comment concerning incorporation by reference. The Office of the Federal Register (OFR) requires that documents that are necessary to accomplish the requirements of the AD be incorporated by reference during the final rule phase of rulemaking. This final rule incorporates by reference the documents necessary for the accomplishment of the requirements mandated by this AD. Further, we point out that while documents that are incorporated by reference do become public information, they do not lose their copyright protection. For that reason, we advise the public to contact the manufacturer to obtain copies of the referenced service information.

Additionally, we do not publish service documents in DMS. We are currently reviewing our practice of publishing proprietary service information. Once we have thoroughly examined all aspects of this issue, and have made a final determination, we will consider whether our current practice

needs to be revised. However, we consider that to delay this AD action for that reason would be inappropriate, since we have determined that an unsafe condition exists and that the requirements in this AD must be accomplished to ensure continued safety. Therefore, we have not changed the AD in this regard.

Request To Reference PMA Parts

MARPA also states that type certificate holders in their service documents universally ignore the possible existence of PMA parts. MARPA states that this is especially true with foreign manufacturers where the concept may not exist or be implemented in the country of origin. MARPA points out that the service document upon which an airworthiness directive is based frequently will require removing a certain part-numbered part and installing a different part-numbered part as a corrective action. According to MARPA, this runs afoul of section 21.303 ("Parts Manufacturer Approval") of the Federal Aviation Regulations (14 CFR 21.303), which permits the development, certification, and installation of alternatively certified parts.

MARPA further states that installing a certain part-numbered part to the exclusion of all other parts is not a favored general practice. MARPA states that such an action has the dual effect of preventing, in some cases, the installation of a perfectly good part; while at the same time prohibiting the development of new parts permitted under section 21.303. According to MARPA, such a prohibition runs the risk of taking the AD out of the realm of safety and into the world of economics, since prohibiting the development, sale, and use of a perfectly airworthy part has nothing to do with safety. MARPA states that courts could easily construe such actions as being outside the statutory basis of the AD (safety) and, as such, unenforceable. MARPA adds that courts are reluctant to find portions of a rule unenforceable since they lack the knowledge and authority to re-write requirements, and are thus generally inclined to simply void the entire rule.

We infer that MARPA would like the AD to permit installation of any equivalent PMA parts so that it is not necessary for an operator to request approval of an alternative method of compliance (AMOC) in order to install an "alternatively certified" PMA part. Whether an alternative part resolves the unsafe condition can be determined only on a case-by-case basis, based on a complete understanding of the unsafe condition. We are not currently aware of any such parts. Our policy is that, in order for operators to replace a part with one that is not specified in the AD, they must request an AMOC. This is necessary so that we can make a specific determination that an alternative part is or is not susceptible to the same unsafe condition.

In response to MARPA's statement regarding running afoul of section 21.303 of the Federal Aviation Regulations (14 CFR 21.303), under which the FAA issues PMAs, this statement appears to reflect a misunderstanding of the relationship between ADs and the certification procedural regulations of 14 CFR part 21. Those regulations, including section 21.303, are intended to ensure that aeronautical products comply with the applicable airworthiness standards. But ADs are issued when, notwithstanding those procedures, we become aware of unsafe conditions in these products or parts. Therefore, an AD takes precedence over design approvals when we identify an unsafe condition, and mandating installation of a certain part number in an AD is not at variance with section 21.303.

The AD provides a means of compliance for operators to ensure that the identified unsafe condition is addressed appropriately. For an unsafe condition attributable to a part, the AD normally identifies the replacement parts necessary to obtain that compliance. As stated in section 39.7 of the Federal Aviation Regulations (14 CFR 39.7), "Anyone who operates a product that does not meet the requirements of an applicable airworthiness directive is in violation of this section." Unless an operator obtains approval for an AMOC, replacing a part with one not specified by the AD would make the operator subject to an enforcement action and result in a civil penalty. No change to the AD is necessary in this regard.

Request for Compliance With FAA Order 8040.2/Agreement on Parts Replacement

MARPA also points out that the NPRM, as written, does not comply with proposed Order 8040.2 (AD Process for Mandatory Continuing Airworthiness Information (MCAI)), which states in the PMA section: "MCAI that require replacement or installation of certain parts could have replacement parts approved under 14 CFR § 21.303 based on a finding of identity. We have determined that any parts approved under this regulation and installed should be subject to the actions of our AD and included in the applicability of our AD."

MARPA states that in this case, certain seals have been determined to be defective and must be replaced with parts not containing the identified defect. MARPA has reviewed both the MARPA PMA database and the FAA's database for possible PMA alternatives to the defective seals, and found none. MARPA states that this does not guarantee that such parts do not now exist or may not exist in the future and believes the proposed regulatory action should address the possibility that there are or will be PMA parts matching those determined not to be airworthy. MARPA has noted that the FAA frequently states its policy of identifying defective parts only when they are known, but MARPA is of the opinion that the FAA's state of mind is irrelevant when constructing enforceable regulatory actions. MARPA believes that incorporating the language specified in proposed FAA Order 8040.2 should adequately address this concern.

MARPA points out that the Small Airplane Directorate has developed a blanket statement that resolves this issue. The statement includes words similar to that in the proposed Order 8040.2. MARPA also points out that the Engine and Rotocraft Directorates avoid the issue by specifying "airworthy parts" be installed, leaving the determination of exactly which parts to the discretion of the installer.

MARPA further states that because the NPRM differs markedly in treatment of this issue from that of the other directorates, the mandates contained in Section 1, paragraph (b)(10) of Executive Order 12866 are not being met. This paragraph requires that all agencies act uniformly on a given issue. MARPA therefore requests that we take steps to bring the universe of PMA parts under the appropriate scope of this AD both with respect to possible defective PMA parts and the use of possible present or future approved parts.

We infer that MARPA would like the Transport Airplane Directorate to include words similar to those quoted from proposed Order 8040.2 in our ADs. We disagree. The order has been approved and released as Order 8040.5 (AD Process for Mandatory Continuing Airworthiness Information (MCAI)), dated September 29, 2006. The approved order does not include the requested language.

Request To Append Certain Language

MARPA also requests that we append the language in paragraph (f)(2) of the NPRM to add the following words, "or FAA-approved equivalent part number." MARPA contends that the addition of those words would remove any possible conflict with 14 CFR 21.303 that may be raised with respect to the unmodified text in paragraph (f)(2) of the NPRM.

We recognize the need for standardization on this issue and currently are in the process of reviewing it at the national level. The Transport Airplane Directorate considers that to delay this particular AD action would be inappropriate, since we have determined that an unsafe condition exists and that replacement of certain parts must be accomplished to ensure continued safety. Therefore, no change has been made to the final rule in this regard.

Explanation of Change to Applicability

We have revised the applicability of the existing AD to identify model designations as published in the most recent type certificate data sheet for the affected models.

Conclusion

We have carefully reviewed the available data, including the comments received, and determined that air safety and the public interest require adopting the AD with the change described previously. We have determined that this change will neither increase the economic burden on any operator nor increase the scope of the AD.

Costs of Compliance

The following table provides the estimated costs for U.S. operators to comply with this AD.

Estimated Costs

Action	Work hours	Average labor rate per hour	Parts	Cost per airplane	Number of U.S.-registered airplanes	Fleet cost
Inspection, per inspection cycle	1	\$80	None	\$80, per inspection cycle	78	\$6,240
Reinforcement	1	\$80	Operator supplied	\$80, per inspection cycle	78	\$6,240
Replacement	8	\$80	\$244 to \$265	\$884 to \$905	78	\$68,952 to \$70,590

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 have 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 DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); and
- (3) 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. See the ADDRESSES section for a location to examine the regulatory evaluation.

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 Federal Aviation Administration (FAA) amends § 39.13 by adding the following new airworthiness directive (AD):



2006-26-11 Empresa brasileira De Aeronautica S.A. (EMBRAER): Amendment 39-14869.
Docket No. FAA-2006-25643; Directorate Identifier 2006-NM-135-AD.

Effective Date

- (a) This AD becomes effective February 8, 2007.

Affected ADs

- (b) None.

Applicability

- (c) This AD applies to the airplanes identified in Table 1 of this AD, certificated in any category.

Table 1.—Airplanes Affected by This AD

EMBRAER Model –	As Identified in EMBRAER Service Bulletin –
ERJ 170-100 LR, -100 STD, -100 SE, -100 SU, -200 LR, -200 STD, and -200 SU airplanes	170-21-0017, Revision 01, dated February 15, 2006
ERJ 190-100 STD, -100 LR, and -100 IGW airplanes	190-21-0003, Revision 01, dated February 15, 2006

Unsafe Condition

(d) This AD results from a report of damaged smoke seals in the aft avionics compartment of the affected airplanes. We are issuing this AD to prevent smoke from penetrating into the passenger cabin during a fire in the avionics compartment.

Compliance

(e) You are responsible for having the actions required by this AD performed within the compliance times specified, unless the actions have already been done.

Service Bulletin References

(f) The term "service bulletin," as used in this AD, means the Accomplishment Instructions of the following service bulletins, as applicable:

(1) For the inspections, applicable corrective actions, and reinforcement specified in paragraph (g) of this AD: EMBRAER Service Bulletins 170-21-0017, Revision 01, dated February 15, 2006 (for Model ERJ 170-100 LR, -100 STD, -100 SE, -100 SU, -200 LR, -200 STD, and -200 SU airplanes); and 190-21-0003, Revision 01, dated February 15, 2006 (for Model ERJ 190-100 STD, -100 LR, and -100 IGW airplanes); and

(2) For the replacement specified in paragraph (h) of this AD: EMBRAER Service Bulletins 170-21-0018, Revision 01, dated February 15, 2006 (for Model ERJ 170-100 LR, -100 STD, -100 SE, -100 SU, -200 LR, -200 STD, and -200 SU airplanes); and 190-21-0004, dated December 2, 2005 (for Model ERJ 190-100 STD, -100 LR, and -100 IGW airplanes).

Inspections and Reinforcement

(g) Within 600 flight hours after the effective date of this AD: Do a detailed inspection for damaged smoke seals in the aft avionics compartment; and, following the inspection, before further flight, reinforce around the Velcro fasteners by installing silver tape if no damage is found, and do all applicable corrective actions if any damage is found. Repeat the inspection thereafter at intervals not to exceed 1,200 flight hours until the replacement required by paragraph (h) of this AD is done. Where the applicable service bulletin specifies reinforcing around the Velcro fasteners by installing silver tape if no damage is found during the detailed inspection, that reinforcement must be done the first time; it is required again only if damage is found during any repeat inspection. Do all actions in accordance with the applicable service bulletin specified in paragraph (f)(1) of this AD. If any damage exceeds the limits specified in the applicable service bulletin: Before further flight, do the replacement in paragraph (h) of this AD.

Note 1: For the purposes of this AD, a detailed inspection is: "An intensive examination of a specific item, installation, or assembly to detect damage, failure, or irregularity. Available lighting is normally supplemented with a direct source of good lighting at an intensity deemed appropriate. Inspection aids such as mirror, magnifying lenses, etc., may be necessary. Surface cleaning and elaborate procedures may be required."

Replacement

(h) Within 6,000 flight hours after the effective date of this AD: Replace the smoke seal in the aft avionics compartment with a new, improved seal, having a new part number, in accordance with the Accomplishment Instructions of the applicable service bulletin specified in paragraph (f)(2) of this AD. Doing this replacement terminates the repetitive inspection requirements of paragraph (g) of this AD.

Parts Installation

(i) As of the effective date of this AD, no person may install a smoke seal in the aft avionics compartment on any airplane that has part number 170-96563-509, -511, -513, -515, -517, -519, -521, or -523; 171-04768-501, -503, -505, or -507; 190-15062-501, -503, -505, or -507; or 190-15902-501, -503, -505, or -507.

Actions Accomplished According to Previous Issues of Service Bulletins

(j) Actions done before the effective date of this AD in accordance with the applicable service bulletins identified in Table 2 of this AD, are acceptable for compliance with the corresponding requirements of paragraphs (g) and (h) of this AD.

Table 2.—Previous Issues of Service Bulletins

EMBRAER Service Bulletin	Date
170-21-0017	December 29, 2005
170-21-0018	December 2, 2005
190-21-0003	December 29, 2005

Alternative Methods of Compliance (AMOCs)

(k)(1) The Manager, International Branch, ANM-116, Transport Airplane Directorate, FAA, has the authority to approve AMOCs for this AD, if requested in accordance with the procedures found in 14 CFR 39.19.

(2) Before using any AMOC approved in accordance with § 39.19 on any airplane to which the AMOC applies, notify the appropriate principal inspector in the FAA Flight Standards Certificate Holding District Office.

Related Information

(l) Brazilian airworthiness directives 2006-05-04 (for Model ERJ 170 airplanes) and 2006-05-07 (for Model ERJ 190 airplanes), both effective June 14, 2006, also address the subject of this AD.

Material Incorporated by Reference

(m) You must use the service information specified in Table 3 of this AD, as applicable, to perform the actions that are required by this AD, unless the AD specifies otherwise. The Director of the Federal Register approved the incorporation by reference of these documents in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Contact Empresa Brasileira de Aeronautica S.A. (EMBRAER), P.O. Box 343—CEP 12.225, Sao Jose dos Campos—SP, Brazil, for a copy of this service information. You may review copies at the Docket Management Facility, U.S. Department of Transportation, 400 Seventh Street SW., Room PL-401, Nassif Building, Washington, DC; on the Internet at <http://dms.dot.gov> ; or at the National Archives and Records Administration (NARA). For information on the availability of this material at the NARA, call (202) 741-6030, or go to http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

Table 3.—Material Incorporated by Reference

EMBRAER Service Bulletin	Revision Level	Date
170-21-0017	01	February 15, 2006
170-21-0018	01	February 15, 2006
190-21-0003	01	February 15, 2006
190-21-0004	Original	December 2, 2005

Issued in Renton, Washington, on December 21, 2006.

Ali Bahrami,

Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. E6-22464 Filed 1-3-07; 8:45 am]