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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2005-20011; Directorate Identifier 2003-NM-22-AD; Amendment 39-14382; AD 2005-24-02]

RIN 2120-AA64

Airworthiness Directives; Empresa Brasileira de Aeronautica S.A. (EMBRAER) Model EMB-135 Airplanes and Model EMB-145, -145ER, -145MR, -145LR, -145XR, -145MP, and -145EP Airplanes

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

ACTION: Final rule.

SUMMARY: The FAA is superseding an existing airworthiness directive (AD), which applies to certain EMBRAER Model EMB-135 airplanes and Model EMB-145, -145ER, -145MR, -145LR, -145XR, -145MP, and -145EP airplanes. That AD currently requires revising the airplane flight manual (AFM) to prohibit in-flight auxiliary power unit (APU) starts, and installing a placard on or near the APU start/stop switch panel to provide such instructions to the flightcrew. This new AD adds an optional revision to the AFM that allows limited APU starts and adds a terminating action. This AD results from the airplane manufacturer developing modifications that revise or eliminate the need for restrictions to in-flight APU starts. We are issuing this AD to prevent flame backflow into the APU compartment through the eductor during in-flight APU starts, which could result in fire in the APU compartment.

DATES: This AD becomes effective December 28, 2005.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in the AD as of December 28, 2005.

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 98055-4056; 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 supersedes AD 2001-10-01, amendment 39-12226 (66 FR 24049, May 11, 2001), for certain EMBRAER Model EMB-135 and EMB-145 series airplanes. That NPRM was published in the Federal Register on January 12, 2005 (70 FR 2057). That NPRM proposed to continue to require revising the airplane flight manual (AFM) to prohibit in-flight auxiliary power unit (APU) starts, and installing a placard on or near the APU start/stop switch panel to provide such instructions to the flightcrew. That NPRM also proposed an optional revision to the AFM that allows limited APU starts and a terminating action.

Comments

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

Request To Revise Applicability to Refer to Model T-62T-40C14 as APS 500R

One commenter requests that the applicability be revised to refer to Model T-62T-40C14 as APS 500R. The commenter states that the commercial model designation for APU model T-62T-40C14 is APS 500R. The "S" in APS 500R is not a typographical error, as stated in the NPRM, and is the correct nomenclature.

We agree with the commenter and have revised the applicability of the final rule. This revision does not change the number of airplanes affected by the final rule.

Request To Revise Description of Part Number (P/N) 120-45060-001

One commenter requests that the description of P/N 120-45060-001 in the second paragraph of the "Relevant Service Information" section of the NPRM be revised. The commenter states that "flush-type APU air inlet" should be revised to "flush-type air inlet frame."

We agree with the commenter that the part is a flush-type air inlet frame and we have revised paragraph (g) of the final rule to specify installing a "flush-type APU air inlet frame." We have not revised the "Relevant Service Information" section, as that section is not restated in the final rule.

Request To Refer to Latest Revision of EMBRAER Service Bulletin 145-49-0018

Two commenters request that the NPRM refer to the latest revision of EMBRAER Service Bulletin 145-49-0018. One commenter states that EMBRAER Service Bulletin 145-49-0018, Change 03, dated January 3, 2002 (referenced as the appropriate source of service information for accomplishing the actions specified in paragraph (h) of the NPRM) should be replaced with Change 04, dated November 26, 2002. The other commenter states that Revision 8 is the latest revision of the service bulletin.

We agree to revise the final rule to reference EMBRAER Service Bulletin 145-49-0018, Change 04, dated November 26, 2002, which is the latest revision. The procedures in Change 04 of the service bulletin are essentially the same as those in Change 03 of the referenced service bulletin. We have also added Change 03 of the service bulletin to paragraph (k) of the final rule to state that actions accomplished before the effective date of this AD per Change 03 of the service bulletin are acceptable for compliance with the requirements of this final rule.

Request To Revise Description of P/N 145-48999-401

Two commenters request that, where the NPRM refers to P/N 145-48999-401 as a flush-type air inlet, the reference should be revised to say a raised-type APU air inlet frame. One commenter states that EMBRAER Service Bulletin 145-49-0018 (referenced as the appropriate source of service information for accomplishing the actions specified in paragraph (h) of the NPRM) refers to P/N 145-48999-401 as a raised-type APU air inlet frame. In addition, the service bulletin describes P/N 145-52453-401 as a raised-type APU air inlet frame.

We agree with the commenters. Both part numbers are raised-type APU air inlet frames that may be installed in accordance with EMBRAER Service Bulletin 145-49-0018, Change 04, dated November 26, 2002. We have revised paragraph (h) of the final rule to specify installing a "raised-type APU air inlet frame."

Request To Refer to Latest Revision of EMBRAER Service Bulletin 145-49-0009

Two commenters request that the NPRM refer to the latest revision of EMBRAER Service Bulletin 145-49-0009. One commenter states that EMBRAER Service Bulletin 145-49-0009, Change 07, dated September 1, 2002 (referenced as the appropriate source of service information for accomplishing the actions specified in paragraph (i) of the NPRM) should be replaced with Change 08, dated September 1, 2003. One commenter also notes that the NPRM did not give credit for actions done in accordance with previous issues because Change 07 of the service bulletin contains additional actions. The commenter states that the only difference in Change 07 is that it mentions the new APU exhaust silencer P/N 4503801C. The commenter also points out that AD 2004-23-09, amendment 39-13864 (69 FR 65535), mandates the modification of the APU exhaust silencer to P/N 4503801C. Thus, the commenter requests that operators be given credit for previous issues of the service bulletin.

We agree to revise paragraph (i) of the final rule to reference EMBRAER Service Bulletin 145-49-0009, Change 09, dated April 12, 2005, which is the latest revision. The procedures in Change 09 of the service bulletin are essentially the same as those in Change 07 of the service bulletin. We have also added Change 03 through Change 08 of the service bulletin to paragraph (k) of the final rule to state that actions accomplished before the effective date of this AD per those revisions of the service bulletin are acceptable for compliance with the corresponding requirements of this final rule.

Request To Allow Previous Alternative Methods of Compliance (AMOCs) To Be Approved for Paragraphs (g) and (h)

One commenter requests that AMOC paragraph (l)(2) of the NPRM be revised to allow previous AMOCs to be approved for paragraphs (g) and (h) (in addition to paragraph (f)). The commenter states that the modifications to the APU inlet and exhaust already approved as AMOCs for AD 2001-10-01 ensure a positive pressure differential from forward to aft through the compartment, preventing any exhaust flame from propagating forward into the APU compartment. The commenter understands that the AMOCs are also terminating action for paragraphs (g) and (h), not requiring additional action from the operators.

We do not agree to revise paragraph (l)(3) of the final rule (specified as paragraph (l)(2) in the NPRM). Not all existing AMOCs for AD 2001-10-01 are terminating action for paragraphs (g) and (h). The existing AMOCs have various configurations and service bulletins that are acceptable for compliance with just the revisions, with the revisions and part of the terminating action, or with the terminating action. We have determined that the best way to handle such circumstances is for operators to request an AMOC in accordance with paragraph (l) of the final rule, rather than increasing the complexity of the AD by addressing each existing AMOC's unique situation. We have not revised the final rule in this regard.

Request To Revise NPRM To Reference P/Ns or Configurations and Service Bulletins That Could Be AMOCs

Two commenters request that the NPRM be revised to reference P/Ns or configurations and service bulletins that could be AMOCs. One commenter references multiple AMOCs for AD 2001-10-01 that would be acceptable for compliance for (f), (g), and (h) of the NPRM. The commenter suggests eliminating the reference to the service bulletin in paragraph (h) and listing all acceptable P/Ns for the raised-type APU air inlet frame and revising paragraph (i) of the NPRM to reference either the exhaust silencer or the extended or new exhaust pipes. The commenter contends these changes would address the unsafe condition.

The other commenter notes that the correct configuration of the airplane can be achieved through various revisions of several service bulletins and includes several AMOCs for AD 2001-10-01. This commenter suggests that the NPRM reference the part number 145-48999-401 or 145-52452-401 (or later approved part numbers) and a silencer measurement of 1300 millimeters on C14 APU equipped aircraft. As an alternative to these changes, the commenters suggest that the NPRM should list all configurations and service bulletin versions that are an optional means of terminating the NPRM. The commenter states that either one of its suggestions allow operators to operate their aircraft without having to incur additional and excessive expenses.

We disagree with the request to revise the final rule to reference P/Ns or configurations and service bulletins that could be AMOCs. As stated in the response to the previous comment, due to the number and complexity of AMOCs for AD 2001-10-01 and the revisions to the various service bulletins, we cannot list every configuration that could be terminating action for paragraph (g) and/or paragraph (h) of the final rule. We also cannot list part numbers because terminating action must be done in a method approved by us or in accordance with service information we have reviewed. However, operators may request an AMOC in accordance with paragraph (l) of the final rule. We have not revised the final rule in this regard.

Request To Determine if All U.S. Operators Are in Compliance

One commenter suggests that U.S. operators be polled to find out if any operator is flying airplanes without the desired configuration. The commenter states that if all operators' airplanes are in the desired configuration, then the NPRM may be withdrawn. The commenter notes that this suggestion has been done on other NPRMs prior to this one.

We do not agree with the commenter. We have not received confirmation that all U.S. operators are in compliance with the requirements of the final rule. Even if the current U.S.-registered fleet is in compliance with the requirements of the final rule, the issuance of the rule is still necessary to ensure that any affected airplane imported and placed on the U.S. register in the future will be required to be in compliance as well. Unless the manufacturer advises us that all of the affected airplanes worldwide have been modified, it is possible that an airplane could be imported to the U.S. in the future without being in compliance with the final rule.

Additional Change to Applicability

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

Explanation of Changes to Final Rule

We have also revised certain references to the service bulletins in the final rule to clarify that the actions are done in accordance with the accomplishment instructions of the service bulletins.

We have also made minor editorial changes to the format of the tables in the final rule.

Clarification of AMOC Paragraph

We have revised this final rule to clarify the appropriate procedure for notifying the principal inspector before using any approved AMOC on any airplane to which the AMOC applies.

Conclusion

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

Costs of Compliance

The following table, using an estimated labor rate of \$65 per work hour, provides the estimated costs for U.S. operators to comply with this AD.

Action	ESTIMATED COSTS				
	Work hours	Parts	Cost per airplane	Number of U.S.- registered airplanes	Fleet cost
Installation of placard (required by AD 2001-10-01)	1	None	\$65	290	\$18,850.
Terminating action (new action)	4	\$1,514	1,774	290	514,460.
Concurrent action (new action)	6	\$38,500	38,890	290	11,278,100.
Optional installation of APU air inlet and placard (new optional action).	2	397	527	290	Up to 152,830.

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 removing amendment 39-12226 (66 FR 24049, May 11, 2001) and by adding the following new airworthiness directive (AD):

AIRWORTHINESS DIRECTIVE



Aircraft Certification Service
Washington, DC

U.S. Department
of Transportation
**Federal Aviation
Administration**

We post ADs on the internet at www.faa.gov/aircraft/safety/alerts/

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Title 14 of the Code of Federal Regulations (14 CFR) part 39, applies to an aircraft model of which our records indicate you may be the registered owner. Airworthiness Directives affect aviation safety and are regulations which require immediate attention. You are cautioned that no person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of the Airworthiness Directive (reference 14 CFR part 39, subpart 39.3).

2005-24-02 Empresa Brasileira De Aeronautica S.A. (EMBRAER): Amendment 39-14382.
Docket No. FAA-2005-20011; Directorate Identifier 2003-NM-22-AD.

Effective Date

- (a) This AD becomes effective December 28, 2005.

Affected ADs

- (b) This AD supersedes AD 2001-10-01.

Applicability

(c) This AD applies to EMBRAER Model EMB-135BJ, -135ER, -135KE, -135KL, and -135LR airplanes; and Model EMB-145, -145ER, -145MR, -145LR, -145XR, -145MP, and -145EP airplanes; certificated in any category; equipped with Hamilton Sundstrand auxiliary power unit (APU) Model T-62T-40C14 (APS 500R).

Unsafe Condition

(d) This AD was prompted by the airplane manufacturer developing modifications that revise or eliminate the need for restrictions to in-flight APU starts. We are issuing this AD to prevent flame backflow into the APU compartment through the eductor during in-flight APU starts, which could result in fire in the APU 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.

Requirements of AD 2001-10-01 and New Note

Airplane Flight Manual (AFM) Revision

(f) Within 25 flight hours or 10 days after May 29, 2001 (the effective date of AD 2001-10-01), whichever occurs first, accomplish the actions required by paragraphs (f)(1) and (f)(2) of this AD.

- (1) Install a placard on or near the APU start/stop switch panel that reads:

"CAUTION: IN-FLIGHT APU STARTS ARE PROHIBITED"

Note 1: Installing a placard in accordance with EMBRAER Alert Service Bulletin 145-49-A017, dated April 12, 2001, is acceptable for compliance with the action required by paragraph (f)(1) of this AD.

(2) Revise the Limitations section of the AFM to include the information on the placard, as specified in paragraph (f)(1) of this AD, and to limit APU starts to ground conditions only. This may be accomplished by inserting a copy of this AD in the AFM.

Note 2: Because APU starts are prohibited in flight when an engine-driven generator is inoperative, the APU must be started on the ground in order to dispatch, and the APU must be kept operational for the entire flight.

Terminating Requirements of This AD and Optional Action

Optional New Limitations for APU Starts

(g) Doing the actions specified in paragraphs (g)(1) and (g)(2) of this AD in accordance with the Accomplishment Instructions of EMBRAER Service Bulletin 145-49-0017, Change 01, dated June 7, 2001, terminates the requirements of paragraph (f) of this AD.

(1) Measure the gap between the APU and the APU exhaust silencer, install a flush-type APU air inlet frame, and install or replace, as applicable, the placard on or near the APU start/stop switch panel with a placard that reads:

"CAUTION: IN-FLIGHT APU STARTS ARE LIMITED TO FLIGHT ENVELOPE UP TO 15KFT/320KIAS (NORMAL APU STARTS) OR 15KFT/200KIAS (BATTERY SUPPORT ONLY)"

(2) Revise the Limitations section of the AFM to include the information on the placard specified in paragraph (g)(1) of this AD to limit APU starts. This may be accomplished by inserting a copy of this AD in the AFM. Remove any existing copy of AD 2001-10-01 from the AFM.

Terminating Action for This AD

(h) Within 8,000 flight hours after the effective date of this AD, measure the gap between the APU and the APU exhaust silencer, install a raised-type APU air inlet frame, remove any placard on or near the APU start/stop switch panel that limits APU starts, and reidentify the APU cowling, in accordance with the Accomplishment Instructions of EMBRAER Service Bulletin 145-49-0018, Change 04, dated November 26, 2002, except as provided by paragraph (j) of this AD. Doing the actions in paragraph (h) of this AD terminates the requirements of paragraphs (f) and (g) of this AD, and any copy of AD 2001-10-01 or this AD may be removed from the AFM.

Prior to or Concurrent Requirements

(i) Prior to or concurrently with the actions specified in paragraphs (g) and (h) of this AD, install an APU silencer in accordance with the Accomplishment Instructions of EMBRAER Service Bulletin 145-49-0009, Change 09, dated April 12, 2005.

Contact the FAA or Departamento de Aviacao Civil (DAC)

(j) If, during the actions specified in paragraphs (g) and (h) of this AD, any measurement exceeds the limits specified in EMBRAER Service Bulletin 145-49-0017, Change 01, dated June 7, 2001; or EMBRAER Service Bulletin 145-49-0018, Change 04, dated November 26, 2002; as applicable; and the service bulletin specifies to contact EMBRAER: Before further flight, repair per a method approved by either the Manager, International Branch, ANM-116, Transport Airplane Directorate, FAA; or the DAC (or its delegated agent).

Actions Accomplished According to Previous Issue of Service Bulletin

(k) Actions accomplished before the effective date of this AD according to the service bulletins listed in Table 1 of this AD are considered acceptable for compliance with the corresponding actions specified in this AD.

TABLE 1.—SERVICE BULLETINS ACCEPTABLE FOR COMPLIANCE

EMBRAER service bulletin	Change level	Date
145-49-0009	03	May 15, 2001.
145-49-0009	04	July 5, 2001.
145-49-0009	05	October 1, 2001.
145-49-0009	06	January 3, 2002.
145-49-0009	07	September 1, 2002.
145-49-0009	08	September 1, 2003.
145-49-0017	Original	May 15, 2001.
145-49-0018	03	January 3, 2002.

Alternative Methods of Compliance (AMOCs)

(1)(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 14 CFR 39.19 on any airplane to which the AMOC applies, notify the appropriate principal inspector in the FAA Flight Standards Certificate Holding District Office.

(3) AMOCs approved previously in accordance with AD 2001-10-01, amendment 39-12226, are approved as AMOCs for the corresponding requirements in paragraph (f) of this AD.

Related Information

(m) Brazilian airworthiness directive 2001-04-02R2, dated June 29, 2001, also addresses the subject of this AD.

Material Incorporated by Reference

(n) You must use the service information specified in Table 2 of this AD 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 2.—MATERIAL INCORPORATED BY REFERENCE

EMBRAER service bulletin	Change level	Date
145-49-0009	09	April 12, 2005.
145-49-0017	01	June 7, 2001.
145-49-0018	04	November 26, 2002.

EMBRAER Service Bulletin 145-49-0017, Change 01, dated June 7, 2001, contains the following effective pages:

Page No.	Change level shown on page	Date shown on page
1, 2	01	June 7, 2001.
3-10	Original	May 15, 2001.

EMBRAER Service Bulletin 145-49-0018, Change 04, dated November 26, 2002, contains the following effective pages:

Page No.	Change level shown on page	Date shown on page
1, 2	04	November 26, 2002.
3-14	03	January 3, 2002.

Issued in Renton, Washington, on October 31, 2005.

Ali Bahrami,
 Manager, Transport Airplane Directorate, Aircraft Certification Service.
 [FR Doc. 05-22972 Filed 11-22-05; 8:45 am]
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