

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 97-NM-231-AD; Amendment 39-10311; AD 98-03-19]

RIN 2120-AA64

Airworthiness Directives; Empresa Brasileira de Aeronautica, S.A. (EMBRAER), Model EMB-120 Series Airplanes

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule.

SUMMARY: This amendment adopts a new airworthiness directive (AD), applicable to certain EMBRAER Model EMB-120 series airplanes, that requires deactivation of certain circuit breakers, and a revision to the Airplane Flight Manual (AFM) to provide operational procedures to prevent loss of electrical power following an engine flameout. This AD also requires modifications of the electrical system, which terminate the requirement for the AFM revision and allow reactivation of the circuit breakers. This amendment is prompted by the issuance of mandatory continued airworthiness information by a foreign civil airworthiness authority. The actions specified by this AD are intended to prevent generator overload conditions that could result in loss of electrical power and failure of certain flight and landing control systems, and to prevent power interruption to the attitude heading reference system (AHRS) that could result in the display of erroneous heading information.

DATES: Effective March 18, 1998.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of March 18, 1998.

ADDRESSES: The service information referenced in this AD may be obtained from Empresa Brasileira de Aeronautica, S.A. (EMBRAER), P.O. Box 343—CEP 12.225, Sao Jose dos Campos—SP, Brazil. This information may be examined at the Federal Aviation Administration (FAA), Transport Airplane Directorate, Rules Docket, 1601 Lind Avenue, SW., Renton, Washington; or at FAA, Small Airplane Directorate, Atlanta Aircraft Certification Office, One Crown Center, 1895 Phoenix Boulevard, Suite 450, Atlanta, Georgia; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

FOR FURTHER INFORMATION CONTACT: John W. McGraw, Aerospace Engineer, Systems and Flight Test Branch, ACE-116A, FAA, Atlanta Aircraft Certification Office, One Crown Center, 1895 Phoenix Boulevard, suite 450, Atlanta, Georgia 30349; telephone (770) 703-6098; fax (770) 703-6097.

SUPPLEMENTARY INFORMATION: A proposal to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) to include an airworthiness directive (AD) that is applicable to certain EMBRAER Model EMB-120 series airplanes was published in the **Federal Register** on November 28, 1997 (62 FR 63288). That action proposed to require deactivation of certain circuit breakers, and a revision to the Airplane Flight Manual (AFM) to provide operational procedures to prevent loss of electrical power following an engine flameout. That action also proposed to require modifications of the electrical system, which would terminate the requirement for the AFM revision and allow reactivation of the circuit breakers.

Comments

Interested persons have been afforded an opportunity to participate in the making of this amendment. Due consideration has been given to the single comment received.

The commenter supports the proposed rule.

Conclusion

After careful review of the available data, including the comment noted above, the FAA has determined that air safety and the public interest require the adoption of the rule as proposed.

Cost Impact

The FAA estimates that 227 airplanes of U.S. registry will be affected by this AD.

It will take approximately 1 work hour per airplane to accomplish the required AFM revisions, and that the average labor rate is \$60 per work hour. Based on these figures, the cost impact of the AFM revisions required by this AD on U.S. operators is estimated to be \$13,620, or \$60 per airplane.

It will take approximately 90 work hours per airplane to accomplish the required modifications at an average labor rate of \$60 per work hour. Required parts will cost approximately \$4,150 per airplane. Based on these figures, the cost impact of the modifications required by this AD on U.S. operators is estimated to be \$2,167,850, or \$9,550 per airplane.

The cost impact figures discussed above are based on assumptions that no operator has yet accomplished any of

the requirements of this AD action, and that no operator would accomplish those actions in the future if this AD were not adopted. However, the FAA has been advised that 43 U.S. registered airplanes are in compliance in accordance with the requirements of this AD. Therefore, the future economic cost impact of this rule on U.S. operators is now \$11,040 for accomplishment of the AFM revisions, and \$1,757,200 for accomplishment of the modifications.

Regulatory Impact

The regulations adopted herein will not have substantial direct effects 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. Therefore, in accordance with Executive Order 12612, it is determined that this final rule does not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

For the reasons discussed above, I certify that this action (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. A final evaluation has been prepared for this action and it is contained in the Rules Docket. A copy of it may be obtained from the Rules Docket at the location provided under the caption **ADDRESSES**.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

Adoption of the Amendment

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration amends part 39 of the Federal Aviation Regulations (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. Section 39.13 is amended by adding the following new airworthiness directive:

98-03-19 Empresa Brasileira De Aeronautica, S.A. (Embraer):

Amendment 39-10311. Docket 97-NM-231-AD.

Applicability: Model EMB-120, EMB-120RT, and EMB-120ER series airplanes; up to and including serial number 120291; certificated in any category.

Note 1: This AD applies to each airplane identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For airplanes that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (d) of this AD.

The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

Compliance: Required as indicated, unless accomplished previously.

To prevent generator overload conditions that could result in loss of electrical power and failure of certain flight and landing control systems, and to prevent power interruption to the attitude heading reference system (AHRS) that could result in the display of erroneous heading information, accomplish the following:

(a) For airplanes not equipped with an auxiliary power unit (APU); except serial numbers 120004, 120006 through 120024 inclusive, 120026 through 120030 inclusive, 120033 through 120035 inclusive, 120037, and 120040; on which Part I, II, or III of EMBRAER Service Bulletin 120-24-0008, Change 03, dated August 19, 1994, or Change

04, dated October 3, 1995, has not been accomplished: Within 3 days after the effective date of this AD, accomplish paragraphs (a)(1), (a)(2), and (a)(3) of this AD.

(1) Trip (pull open) circuit breakers (CB) 534 (auxiliary generator 2 bus control) and CB 535 (auxiliary generator 1 bus control) located in the right-hand direct current (DC) relay box and left-hand DC relay box, respectively.

(2) Install circuit breaker collars to prevent the circuit breakers from closing.

(3) Install, near CB 534 and CB 535, a placard or tag with the following wording: "Do not close CB 534 or CB 535."

(b) For all airplanes: Within 30 days after the effective date of this AD, accomplish paragraphs (b)(1), (b)(2), and (b)(3) of this AD.

(1) Revise the Abnormal Procedures section of the FAA-approved Airplane Flight Manual (AFM) to include the following. This may be accomplished by inserting a copy of this AD into the AFM.

“SECTION III—ABNORMAL PROCEDURES:
ENGINE FAILURE

ONE ENGINE INOPERATIVE APPROACH AND LANDING

If auxiliary power unit (APU) is not available

Electrical Load REDUCE TO BELOW 400 AMPS

At least the following systems should be turned off: windshield heating, propeller de-ice, gasper fans, recirculation fans, logo-type lights, and taxi lights.

CAUTION

Should an unexpected electrical power loss occur during a rejected takeoff or landing run, remember:

- Emergency brake will be available
- Below 45 knots (KT), turn anti-skid off to recover one normal brake pair (inboard or outboard).

ELECTRICAL FAILURE

SHORT CIRCUIT IN THE RELAY BOX DIRECT CURRENT (DC) BUS 1

—GEN 1 OFF BUS, BUS 1 OFF, EMERG BUS OFF, CENTRAL BUS OFF, BATT OFF BUS and inverter 2 INOP lights illuminated on the electrical panel.

Note: In some cases, the CENTRAL BUS OFF light may not illuminate.

- ELEC light illuminated on the multiple alarm panel.
- CAUTION light flashing.

Caution: DO NOT TRY TO RESET THE ELECTRICAL SYSTEM.

Electrical Emergency Switch EMERG
Altitude AT OR BELOW 25,000 FT

Airplane is limited to 25,000 ft since the left engine bleed is closed due to loss of the electrical power.

The engines or APU airstart and electrical crossfeed are not possible.

The equipment connected to the relay box DC BUS 1, DC BUS 1, radio master DC buses 1B and 1C are out. Land as soon as practical.

Note:

- For airplanes Pre-Mod SB 120-24-0008, the AHRS 1 and the equipment connected to the radio master DC BUS 1A are out too.
- For airplanes Post-Mod SB 120-33-0033 or S/N 120.273 and on:
 - The emergency lights will be automatically turned on when the electrical system is in emergency operating mode.
 - The emergency lights must be turned off, in order to save the emergency light batteries.
 - The emergency lights must be turned on during approach or when necessary."

(2) Revise the Normal Procedures section of the FAA-approved AFM to include the following. This may be accomplished by inserting a copy of this AD into the AFM.

“SECTION IV—NORMAL PROCEDURES:

BEFORE TAKEOFF

If APU is available

APU Generator ON

Takeoff must be carried out with APU generator connected to the central DC bus, thus providing another source to avoid overload should one engine flame out.

If APU is not available

Electrical Load REDUCE TO BELOW 400 AMPS

At least the following systems should be turned off: windshield heating, propeller de-ice, gasper fans, recirculation fans, logo-type lights, and taxi lights.

AFTER TAKEOFF

- If APU is available
- APU AS REQUIRED
- If APU is not available
- Electrical load RESTORE
- Windshield heating AS REQUIRED
- Emergency lights switch OFF, then ARM

APPROACH

- If APU is available
- APU Generator ON

Approach and landing must be carried out with APU generator connected to the central DC bus.

BEFORE LANDING

- If APU is not available
- Electrical Load REDUCE TO BELOW 400 AMPS

At least the following systems should be turned off: windshield heating, propeller de-ice, gasper fans, recirculation fans, logo-type lights, and taxi lights.

CAUTION: Do not set electrical emergency switch to emergency position during approach or landing.”

(3) Revise the Limitations section (Section II) of the FAA-approved AFM to include the following. This may be accomplished by inserting a copy of this AD into the AFM.

“Both starter/generators must operate normally prior to flight. The APU generator must operate normally prior to flight in known or forecast icing conditions. [Note: This supersedes any relief provided by the Master Minimum Equipment List (M MEL).]”

(c) Within 12 months after the effective date of this AD, accomplish paragraphs (c)(1) and (c)(2) of this AD, as applicable.

(1) For all airplanes except serial numbers 120004, 120006 through 120024 inclusive, 120026 through 120030 inclusive, 120033 through 120035 inclusive, 120037, and 120040; on which Part I, II, or III of EMBRAER Service Bulletin 120-24-0008, Change 03, dated August 19, 1994, or Change

04, dated October 3, 1995; has not been accomplished: Modify the electrical system in accordance with Part IV of EMBRAER Service Bulletin 120-24-0008, Change 04, dated October 3, 1995. After this modification is accomplished, the modification required by paragraph (a) of this AD may be removed and the affected circuit breakers reactivated.

(2) For all airplanes: Modify the electrical system in accordance with EMBRAER Service Bulletin 120-24-0051, Change 04, dated March 8, 1995. After this modification is accomplished, the AFM revisions required by paragraph (b) of this AD may be removed from the AFM.

(d) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, Atlanta

Aircraft Certification Office (ACO), FAA, Small Airplane Directorate. Operators shall submit their requests through an appropriate FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, Atlanta ACO.

Note 2: Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the Atlanta ACO.

(e) Special flight permits may be issued in accordance with sections 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the airplane to a location where the requirements of this AD can be accomplished.

(f) The actions shall be done in accordance with the following EMBRAER service bulletins, which contain the specified effective pages:

Service bulletin referenced and date	Page No.	Revision level shown on page	Date shown on page
120-24-0008, Change 04, October 3, 1995	1-4	04	Oct. 3, 1995.
	5-64	03	Aug. 19, 1994.
120-24-0051, Change 04, March 8, 1995	1-4, 41-46, 59, 60, 89-92	04	Mar. 8, 1995.
	5-40, 47-58, 61-88, 93-103	03	Nov. 3, 1994.

This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be obtained from Empresa Brasileira de Aeronautica, S.A. (EMBRAER), P.O. Box 343—CEP 12.225, Sao Jose dos Campos—SP, Brazil. Copies may be inspected at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington; or at the FAA, Small Airplane Directorate, Atlanta Aircraft Certification Office, One Crown Center, 1895 Phoenix Boulevard, suite 450, Atlanta, Georgia; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

Note 3: The subject of this AD is addressed in Brazilian airworthiness directives (DAE) 93-24-01, dated December 31, 1993; 94-03-

01R1, dated December 10, 1994, and 93-12-01R1, dated December 12, 1994.

(g) This amendment becomes effective on March 18, 1998.

Issued in Renton, Washington, on January 30, 1998.

Darrell M. Pederson,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.
[FR Doc. 98-2826 Filed 2-10-98; 8:45 am]

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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 97-NM-264-AD; Amendment 39-10322; AD 98-04-09]

RIN 2120-AA64

Airworthiness Directives; Fokker Model F28 Mark 0070 and Mark 0100 Series Airplanes

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule.