

**DEPARTMENT OF TRANSPORTATION****Federal Aviation Administration****14 CFR Part 39**

[Docket No. 98–NM–261–AD; Amendment 39–11315; AD 99–19–28]

RIN 2120–AA64

**Airworthiness Directives; Empresa Brasileira de Aeronautica S.A. (EMBRAER) Model EMB–120RT and –120ER 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–120RT and –120ER series airplanes, that requires repetitive detailed visual inspections to detect discrepancies of the brake assemblies on the main landing gear (MLG), and replacement of the brake assemblies with new or serviceable brake assemblies, if necessary. This amendment is prompted by reports of fatigue cracking or splitting of the brake stator disk at the thermal expansion slots. The actions specified by this AD are intended to prevent failure of the brake assemblies of the MLG due to cracking or splitting of the stator disk, which could result in loss of brake effectiveness and could cause the airplane to leave the runway surface.

**DATES:** Effective October 20, 1999.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of October 20, 1999.

**ADDRESSES:** The service information referenced in this AD may be obtained from BFGoodrich, Aircraft Wheels and Brakes, P.O. Box 340, Troy, Ohio, 45373. This information may be examined at the Federal Aviation Administration (FAA), Transport Airplane Directorate, Rules Docket, 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.

**FOR FURTHER INFORMATION CONTACT:** Rob Capezzuto, Aerospace Engineer, Systems and Flight Test Branch, ACE–116A, FAA, Small Airplane Directorate, Atlanta Aircraft Certification Office, One Crown Center, 1895 Phoenix Boulevard, suite 450, Atlanta, Georgia

30349; telephone (770) 703–6071; 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–120RT and –120ER series airplanes was published in the **Federal Register** on October 14, 1998 (63 FR 55059). That action proposed to require repetitive visual inspections to detect discrepancies of the brake assemblies on the main landing gear (MLG), and replacement of the brake assemblies with new brake assemblies, if necessary.

**Comments**

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

**Request to Withdraw Proposed AD**

- One commenter, the manufacturer, states that it discussed with the Brazilian airworthiness authority the “cracked/splitted stator brakes” that were impairing the expected service life of the brakes of Model EMB–120 series airplanes. Upon request by the Brazilian airworthiness authority, the manufacturer incorporated the inspections specified by BFGoodrich Service Bulletins 2–1585–32–1 and 2–1479–32–2 into the “EMB–120 Maintenance Review Board (MRB)” document, temporary revision No. 3. The commenter contends that, since the MRB is an FAA-approved document applicable to all U.S.-registered airplanes and includes the same inspection procedures as the service bulletins, issuance of the proposed AD would be a duplication and, therefore, is unnecessary.

The FAA does not concur. Although the MRB is an FAA-approved document, the procedures specified in that document are recommended (rather than mandatory) for U.S. operators. The FAA finds that accomplishment of the inspections as part of a recommended action in the MRB report would not ensure an acceptable level of safety. In light of this and the identified unsafe condition, the FAA has determined that issuance of this AD is necessary in order to mandate repetitive detailed visual inspections for discrepancies of the brake assemblies on the MLG in paragraph (a) of this AD.

- One commenter states that the proposed rule is not justified because the actions required do not effectively prevent brake rotor failure or promote safety. The commenter suggests that additional research needs to be

accomplished to determine answers to the following questions. Why are some operators having problems with brake rotors when others, such as the largest operator of Model EMB–120 series airplanes in the world, are not? Is the problem of rotor breakage associated with landing cycles, or is it associated with brake rotor over-temperature situations? Have there been any runway excursions or passenger injuries as a result of brake rotor failure on Model EMB–120 series airplanes?

The FAA does not concur that the proposed AD is not justified. BFGoodrich’s investigation of the brake stator rotors indicates that fatigue cracking began to occur between 600 and 1,000 flight hours, which clearly shows that a service difficulty does exist with the rotors. To address this problem, BFGoodrich issued Service Bulletins 2–1585–32–1 and 2–1479–32–2, both Revision 1, dated June 17, 1998. Although the exact cause of the cracking is unknown at this time, BFGoodrich has informed the FAA that the cracking and splitting [of the brake stator disks] are due to overheating and thermal distortion of the stator disks. The FAA considers that the number of landing cycles and over-temperature conditions are related to the identified unsafe condition. Although no runway excursions or passenger injuries have been reported as a result of the identified unsafe condition to date, the FAA has determined that the procedures required by this AD are necessary to prevent an unsafe condition from occurring and to ensure continued operational safety. No change to the final rule is necessary in this regard.

**Request to Increase the Compliance Time for the Inspections**

Three commenters request that the compliance times for the initial and repetitive inspections be increased.

One commenter requests revising the initial inspection in paragraph (a) of the proposed AD to “within 400 hours after the effective date of this AD” and repeating the inspections thereafter “at an interval not to exceed 400 hours.” The commenter contends that such an extension of the compliance time would allow accomplishment of these inspection requirements during an operator’s regularly scheduled “A” checks. The commenter adds that some operators do not have certified inspectors at remote line stations to support a mandatory inspection requirement to accomplish the repetitive inspections at each wheel change, although it is preferred to have

line mechanics inspect the brakes at each wheel removal.

Another commenter states that the repetitive inspection interval required by the proposed AD of "300 landings" would require very labor intensive and costly tracking and planning, which would make operators prone to "overfly" errors. The commenter contends that repetitive inspection intervals should include the option of using airframe hours and should be based on an operator's existing maintenance/inspection program, as determined by each operator's continuing analysis and surveillance system. Based on a sampling of COEX brake removal data due to stator/disc breakage, an "A-check" interval of 400 hours would provide an equivalent level of safety for our fleet.

Another commenter states that a "300 cycle re-inspection requirement" is impractical and does not increase safety. There is no documented time at which cracks appear, nor is there any documentation of crack propagation rates. In addition, the "300 cycle interval" at each wheel change required by the proposed AD appears to be arbitrary with no supporting data.

The FAA concurs with the commenters' requests to extend the compliance time for the inspections. Based on information provided by one of the commenters, the FAA recognizes that "400 flight hours" corresponds more closely to the interval representative of most of the affected operators' normal maintenance schedules, where special equipment and trained maintenance personnel will be available if necessary. The FAA does not consider that this extension will adversely affect safety. Paragraph (a) of the final rule has been changed to specify the compliance times for the initial detailed visual inspection as: "Within 400 flight hours after the effective date of this AD," and the repetitive inspections [in paragraphs (a) and (b)] as: "at an interval not to exceed 400 flight hours."

#### **Request to Change Brake Replacement Requirement**

Three commenters request changing the proposed AD to require replacement of the brake assembly with a "serviceable" rather than a "new" brake assembly. One commenter contends that it is doubtful the brake manufacturer can maintain production levels to support Model EMB-120 series airplanes with new replacement units. Another commenter contends that there is no justification for requiring a new part to be installed as a replacement because, in every instance, a

"serviceable" part should be acceptable for replacement.

The FAA concurs that the replacement of discrepant brake assemblies with serviceable parts is acceptable. The FAA has provided operators with the option of replacing any discrepant brake assemblies with either a new or serviceable brake assembly. This option provides greater flexibility to the operators in meeting the requirements of this AD and alleviates any problems regarding parts availability, while still providing an acceptable level of safety for the fleet. The FAA has revised the preamble and paragraph (b) of the final rule accordingly.

#### **Request to Consider Adding Brake Assemblies to the Applicability**

One commenter requests that the FAA consider whether the applicability of the proposed AD should include brake assemblies, part numbers (P/N) 2-1585 and 2-1479-1, that have been modified with parts manufacturer approval (PMA) heat sink components.

The FAA finds that this AD would apply to airplanes equipped with brake assemblies having part number (P/N) 2-1585 or 2-1479-1, if those assemblies have been modified with PMA heat sink components and if the PMA approval was based on identity. Such components are identical to the original part in materials and dimensions and, therefore, may be subject to the same identified unsafe condition. However, investigation reveals that the only known PMA's to these brake assemblies were obtained through test and computation. Because there are no known PMA's to these brake assemblies that have been obtained through identity, no change to the applicability of the final rule is necessary.

#### **Request to Revise the Preamble of the Proposal**

One commenter requests revising the Summary of the proposed AD by clarifying that the brake stator disk is located at the "thermal expansion slots" rather than at the "cut-out slots." The FAA concurs and has changed the Summary of the final rule accordingly.

That same commenter also requests revising the "Discussion" paragraph of the proposed AD to clarify that the cause of the cracking and splitting are the result of overheat and thermal distortion of the stator disks, although the exact cause of these conditions have not been determined at this time. The FAA recognizes that the suggested change provides improved technical accuracy. However, since the

"Discussion" paragraph of the preamble to the NPRM is not restated in the final rule, no change to the final rule is necessary.

That same commenter also requests revising the "Explanation of Relevant Service Information" paragraph of the proposed AD to change one of the discrepancies listed in that paragraph from "wear of plates" to "excessive distortion of the wear plates." The FAA acknowledges that the suggested change improves technical accuracy. Even though the referenced paragraph does not appear in the final rule, the FAA considers that the suggested change is appropriate for paragraph (a) of the final rule and has changed that paragraph accordingly.

#### **Request to Revise the Cost Impact in the Proposed AD**

One commenter requests revising the Cost Impact paragraph of the proposed AD. The commenter states that the referenced service bulletins estimate that the inspection at a tire change would be 15 minutes per brake, or one hour per airplane. However, if the inspections were not accomplished at a tire change, additional time and cost (approximately 2 hours per airplane) would be required to jack the airplane and remove the wheel/tire assembly to enable the inspection.

The FAA does not concur. As explained earlier in this AD, no additional time would be required for the inspections because the compliance times are extended in the final rule, which should allow the operator to perform the inspection during a tire change. No change to the final rule was necessary in this regard.

#### **Differences Between Service Bulletin and This AD**

Operators should note that BFGoodrich Service Bulletins 2-1585-32-1 and 2-1479-32-2, both Revision 1, dated June 17, 1998, specify an "examination" of the brake assembly and a "visual examination" of each stator disk expansion slot. However, this final rule requires a "detailed visual inspection" to determine the existence of any discrepancies of the brake assemblies on the MLG. A note has been added to the final rule to define that inspection.

#### **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 with the changes previously described. The FAA has determined that these changes will

neither increase the economic burden on any operator nor increase the scope of the AD.

### Interim Action

This is considered to be interim action until final action is identified, at which time the FAA may consider further rulemaking.

### Cost Impact

The FAA estimates that 227 Model EMB-120RT and -120ER series airplanes of U.S. registry will be affected by this AD, that it will take approximately 1 work hour per airplane to accomplish the required inspection, and that the average labor rate is \$60 per work hour. Based on these figures, the cost impact of the AD on U.S. operators is estimated to be \$13,620, or \$60 per airplane, per inspection cycle.

The cost impact figure discussed above is 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.

### 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:

#### 99-19-28 Empresa Brasileira De Aeronautica S.A. (EMBRAER):

Amendment 39-11315. Docket 98-NM-261-AD.

**Applicability:** Model EMB-120RT and -120ER series airplanes, equipped with BFGoodrich brake assemblies having part number (P/N) 2-1585 or 2-1479-1; 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 failure of the brake assemblies of the main landing gear (MLG) due to cracking or splitting of the stator disk, which could result in loss of brake effectiveness and could cause the airplane to leave the runway surface, accomplish the following:

(a) Within 400 flight hours after the effective date of this AD, perform a detailed visual inspection for discrepancies (e.g., locking or hanging up, broken or damaged stators, and excessive distortion of the wear plates) of the brake assemblies on the MLG, in accordance with paragraph (a)(1) or (a)(2) of this AD, as applicable. Repeat the inspections thereafter at intervals not to exceed 400 flight hours.

(1) For airplanes equipped with BFGoodrich main brake assemblies having P/N 2-1479-1: Inspect in accordance with BFGoodrich Service Bulletin 2-1479-32-2, Revision 1, dated June 17, 1998.

(2) For airplanes equipped with BFGoodrich main brake assemblies having P/N 2-1585: Inspect in accordance with BFGoodrich Service Bulletin 2-1585-32-1, Revision 1, dated June 17, 1998.

**Note 2:** For the purposes of this AD, a detailed visual inspection is defined as: "An intensive visual examination of a specific structural area, system, installation, or

assembly to detect damage, failure, or irregularity. Available lighting is normally supplemented with a direct source of good lighting at intensity deemed appropriate by the inspector. Inspection aids such as mirror, magnifying lenses, etc., may be used. Surface cleaning and elaborate access procedures may be required."

(b) If any discrepancy is detected during any inspection required by paragraph (a) of this AD, prior to further flight, replace the brake assembly with a new or serviceable brake assembly, in accordance with section 32-41-05 of EMBRAER EMB-120 Brasilia Maintenance Manual, dated April 30, 1992. Repeat the inspections required by paragraph (a) of this AD thereafter at intervals not to exceed 400 flight hours.

(c) Within 10 days after accomplishing any inspection required by this AD, if a discrepant brake assembly is detected, submit a report of the inspection results to BFGoodrich, Aircraft Wheels and Brakes, P.O. Box 340 Troy, Ohio, 45373. Information collection requirements contained in this regulation have been approved by the Office of Management and Budget (OMB) under the provisions of the Paperwork Reduction Act of 1980 (44 U.S.C. 3501 *et seq.*) and have been assigned OMB Control Number 2120-0056.

### Alternative Methods of Compliance

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

### Special Flight Permits

(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.

### Incorporation by Reference

(f) Except as provided by paragraph (b) of this AD, the inspections and replacement shall be done in accordance with BFGoodrich Service Bulletin 2-1479-32-2, Revision 1, dated June 17, 1998, and BFGoodrich Service Bulletin 2-1585-32-1, Revision 1, dated June 17, 1998, as applicable. 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 BFGoodrich, Aircraft Wheels and Brakes, P.O. Box 340, Troy, Ohio 45373. 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.

(g) This amendment becomes effective on October 20, 1999.

Issued in Renton, Washington, on September 2, 1999.

**Dorenda D. Baker,**

*Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.*

[FR Doc. 99-23473 Filed 9-14-99; 8:45 am]

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## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

#### 14 CFR Part 39

[Docket No. 98-NM-278-AD; Amendment 39-11316; AD 99-19-29]

RIN 2120-AA64

#### Airworthiness Directives; Boeing Model 767 Series Airplanes

**AGENCY:** Federal Aviation Administration, DOT.

**ACTION:** Final rule.

**SUMMARY:** This amendment adopts a new airworthiness directive (AD), applicable to certain Boeing Model 767 series airplanes, that requires repetitive inspections of certain H-11 tension bolts at each side-of-body kick-load fitting and on the lower splice plate (both located on the wing rear spar) to detect damaged or broken bolts; and follow-on actions, if necessary. This amendment also requires eventual replacement of the existing bolts with new, improved bolts, which constitutes terminating action for the repetitive inspections. This amendment is prompted by a report that an operator found two broken H-11 tension bolts on the side-of-body kick-load fitting on one airplane. The actions specified by this AD are intended to prevent cracking of the bolts due to stress corrosion, which could result in reduced structural integrity of the wing-to-body joint structure.

**DATES:** Effective October 20, 1999.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of October 20, 1999.

**ADDRESSES:** The service information referenced in this AD may be obtained from Boeing Commercial Airplane Group, P.O. Box 3707, Seattle, Washington 98124-2207. This information may be examined at the Federal Aviation Administration (FAA), Transport Airplane Directorate, Rules Docket, 1601 Lind Avenue, SW., Renton, Washington; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

#### FOR FURTHER INFORMATION CONTACT:

James G. Rehr, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Transport Airplane Directorate, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98055-4056; telephone (425) 227-2783; fax (425) 227-1181.

#### 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 Boeing Model 767 series airplanes was published in the **Federal Register** on November 23, 1998 (63 FR 64657). That action proposed to require repetitive inspections of certain H-11 tension bolts at each side-of-body kick-load fitting and on the lower splice plate (both located on the wing rear spar) to detect damaged, broken, or improperly sealed bolts; and follow-on actions, if necessary. That action also proposed to require eventual replacement of the existing bolts with new, improved bolts, which constitutes terminating action for the repetitive inspections.

#### Comments

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

Two commenters support the proposed rule, and one commenter does not object to the proposed rule.

#### Editorial Changes to the Final Rule

The FAA has determined that it is necessary to clarify the detailed visual inspection of paragraph (a)(1) of the requirements of this AD. The FAA has added the words "of the bolts," to further clarify the inspection area. The final rule has been changed accordingly.

#### Request to Delete Certain Descriptive Language

One commenter, the manufacturer, requests that the FAA delete the words "improperly sealed" from paragraphs (a) and (b) of the proposed AD. The commenter states that because the most significant influence of the H-11 bolt fracture is the presence of high pre-load, which cannot be determined by inspection, any anomalies in the bolt sealant will have no effect on the bolt fracture, unless the bolt is highly pre-loaded. The commenter also suggests that using the condition of the H-11 bolt sealant as a guide for bolt replacement will cause unnecessary, unscheduled airplane down time and confusion, as it is likely that improperly sealed bolts will be found. The commenter further adds that a clear definition of an

"improperly sealed bolt" is not provided in either the Boeing Service Bulletin or the Notice of Proposed Rulemaking (NPRM).

The FAA concurs with the request to delete certain descriptive language of the AD, as requested by the commenter. The FAA has revised this language throughout the final rule.

#### Request to Revise the Compliance Time for the Terminating Action

One commenter requests that the FAA revise the proposed compliance time for the terminating action from 6,000 flight cycles to 9,000 flight cycles. The commenter states that the issue of H-11 bolts fracture is more dependent on calendar time rather than flight cycles. This additional allowance of time would provide high cycle usage operators an equivalent of 48 months calendar time that is provided for low cycle usage operators.

The FAA concurs with this request, and has revised paragraph (c) of the final rule accordingly.

#### Explanation of Change Made to Proposal

The FAA has added a note to the final rule to clarify the definition of a detailed visual inspection.

#### Conclusion

After careful review of the available data, including the comments noted above, the FAA has determined that air safety and the public interest require the adoption of the rule with the changes previously described. The FAA has determined that these changes will neither increase the economic burden on any operator nor increase the scope of the AD.

#### Cost Impact

There are approximately 177 Model 767 series airplanes of the affected design in the worldwide fleet. The FAA estimates that 70 airplanes of U.S. registry will be affected by this AD.

It will take approximately 2 work hours per airplane to accomplish the required inspection of the kick-load fitting, at an average labor rate of \$60 per work hour. Based on these figures, the cost impact of the inspection of the kick-load fitting required by this AD on U.S. operators is estimated to be \$8,400, or \$120 per airplane, per inspection cycle.

It will take approximately 23 work hours per airplane to accomplish the required inspection of the splice plate, at an average labor rate of \$60 per work hour. Based on these figures, the cost impact of the inspection of the splice plate required by this AD on U.S.