

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

[Docket No. FAA-2004-18564; Directorate Identifier 2004-NM-16-AD]

RIN 2120-AA64

**Airworthiness Directives; Empresa Brasileira de Aeronautica S.A. (EMBRAER) Model EMB-135 and -145 Series Airplanes**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Notice of proposed rulemaking (NPRM).

**SUMMARY:** The FAA proposes to adopt a new airworthiness directive (AD) for certain Model EMB-135 and -145 series airplanes. This proposed AD would require modifying the total air temperature (TAT) sensor heating system. This proposed AD is prompted by a report that the fully automated digital electronic control (FADEC) unit failed to compensate for ice accretion on the engine fan blades, which was caused by a false temperature signal from the TAT sensor to the FADEC. We are proposing this AD to prevent failure of the TAT sensor, which could result in insufficient thrust either to take off or, if coupled with the loss of an engine during takeoff, could result in the inability to abort the takeoff in a safe manner, and consequent reduced controllability of the airplane.

**DATES:** We must receive comments on this proposed AD by August 9, 2004.

**ADDRESSES:** Use one of the following addresses to submit comments on this proposed AD.

- DOT Docket Web site: Go to <http://dms.dot.gov> and follow the instructions for sending your comments electronically.

- Government-wide rulemaking Web site: Go to <http://www.regulations.gov> and follow the instructions for sending your comments electronically.

- Mail: Docket Management Facility, U.S. Department of Transportation, 400 Seventh Street, SW., Nassif Building, room PL-401, Washington, DC 20590.

- By Fax: (202) 493-2251.

- Hand Delivery: Room PL-401 on the plaza level of the Nassif Building, 400 Seventh Street, SW., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

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

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

**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:**

**Docket Management System (DMS)**

The FAA has implemented new procedures for maintaining AD dockets electronically. As of May 17, 2004, new AD actions are posted on DMS and assigned a docket number. We track each action and assign a corresponding directorate identifier. The DMS AD docket number is in the form "Docket No. FAA-2004-99999." The Transport Airplane Directorate identifier is in the form "Directorate Identifier 2004-NM-999-AD." Each DMS AD docket also lists the directorate identifier ("Old Docket Number") as a cross-reference for searching purposes.

**Comments Invited**

We invite you to submit any written relevant data, views, or arguments regarding this proposed AD. Send your comments to an address listed under **ADDRESSES**. Include "Docket No. FAA-2004-18564; Directorate Identifier 2004-NM-16-AD" at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of the proposed AD. We will consider all comments submitted by the closing date and may amend the proposed AD in light of those comments.

We will post all comments we receive, without change, to <http://dms.dot.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact with FAA personnel concerning this proposed AD. Using the search function of our docket Web site, anyone can find and read the comments in any of our dockets, including the name of the individual who sent the comment (or signed the comment on behalf of an association, business, labor union, etc.). You can review the DOT's complete Privacy Act Statement in the **Federal Register** published on April 11, 2000 (65 FR 19477-78), or you may visit <http://dms.dot.gov>.

We are reviewing the writing style we currently use in regulatory documents. We are interested in your comments on whether the style of this document is clear, and your suggestions to improve the clarity of our communications that affect you. You can get more information about plain language at <http://www.faa.gov/language> and <http://www.plainlanguage.gov>.

**Examining the Docket**

You can examine the AD docket 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 DOT street address stated in the **ADDRESSES** section. Comments will be available in the AD docket shortly after the DMS receives them.

**Discussion**

The Departamento de Aviacao Civil (DAC), which is the airworthiness authority for Brazil, notified us that an unsafe condition may exist on certain Model EMB-135 and -145 series airplanes. The DAC advises that, during a flight test, the fully automated digital electronic control (FADEC) unit failed to increase the engine thrust during takeoff to compensate for ice accretion (buildup) on the engine fan blades. Investigators found that the failure happened because the total air temperature (TAT) sensor heating element was operated excessively on the ground. The TAT sensor then sent a false temperature signal to the FADEC. This false signal indicated that the ambient (outside air) temperature was higher than the actual temperature reading. If an airplane is taking off in ambient temperatures that are low enough to lead to ice accretion on the engine fan blades, it is possible that the FADEC would not receive the true temperature reading and, therefore, would fail to compensate for the ice accretion. Insufficient thrust could result in failure to take off, or, if coupled with the loss of an engine during takeoff, could result in the inability to abort the takeoff in a safe manner, and consequent reduced controllability of the airplane.

**Relevant Service Information**

EMBRAER has issued Service Bulletin 145-30-0028, Revision 08, dated August 20, 2003. The service bulletin describes procedures for modifying the TAT sensor heating system. The modification includes installing new sockets and relays, changing certain

electrical connections, connecting wires to the new relays, stowing and insulating certain wires, testing the electrical connections for continuity, and doing an operational test of the TAT sensor heating system. We have determined that accomplishing the actions specified in the service information will adequately address the unsafe condition.

The DAC mandated the service information and issued Brazilian airworthiness directive 2004-01-02, dated January 27, 2004, to ensure the continued airworthiness of these airplanes in Brazil.

### FAA's Determination and Requirements of the Proposed AD

These airplane models are manufactured in Brazil and are type certificated for operation in the United States under the provisions of § 21.29 of the Federal Aviation Regulations (14 CFR 21.29) and the applicable bilateral airworthiness agreement. Pursuant to this bilateral airworthiness agreement, the DAC has kept the FAA informed of the situation described above. We have examined the DAC's findings, evaluated all pertinent information, and determined that AD action is necessary

for products of this type design that are certificated for operation in the United States.

Therefore, we are proposing this AD, which would require modifying the TAT sensor heating system. The proposed AD would require using the service information described previously to perform these actions.

### Costs of Compliance

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

Action	Work hours	Average labor rate per hour	Parts	Cost per airplane	Number of U.S.-registered airplanes	Fleet cost
Modify the TAT sensor heating system ...	8	\$65	\$443	\$963	434	\$417,942

### Regulatory Findings

We have determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would 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 the proposed regulation:

1. Is not a "significant regulatory action" under Executive Order 12866;
2. Is not a "significant rule" under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); 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 proposed AD. 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, Safety.

### The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

### PART 39—AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

**Authority:** 49 U.S.C. 106(g), 40113, 44701.

### § 39.13 [Amended]

2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

**Empresa Brasileira de Aeronautica S.A. (EMBRAER):** Docket No. FAA-2004-18564; Directorate Identifier 2004-NM-16-AD.

### Comments Due Date

(a) The Federal Aviation Administration must receive comments on this AD action by August 9, 2004.

### Affected ADs

- (b) None.

### Applicability

(c) This AD applies to Model EMB-135 and -145 series airplanes; as listed in EMBRAER Service Bulletin 145-30-0028, Revision 08, dated August 20, 2003; certificated in any category.

### Unsafe Condition

(d) This AD was prompted by a report that the fully automated digital electronic control (FADEC) unit failed to compensate for ice accretion on the engine fan blades, which was caused by a false temperature signal from the total air temperature (TAT) sensor to the FADEC. We are issuing this AD to prevent failure of the TAT sensor, which could result in insufficient thrust either to take off or, if coupled with the loss of an engine during takeoff, could result in the inability to abort the takeoff in a safe manner, and consequent reduced controllability of the airplane.

### 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.

### Modification

(f) Within 90 days after the effective date of this AD: Modify the TAT sensor heating system in accordance with the

Accomplishment Instructions of EMBRAER Service Bulletin 145-30-0028, Revision 08, dated August 20, 2003.

### Modifications Done According to Previous Revisions of the Service Bulletin

(g) Modifications done before the effective date of this AD in accordance with the revisions of the service bulletin in Table 1 of this AD are acceptable for compliance with the corresponding action in this AD.

TABLE 1—PREVIOUS REVISIONS OF THE SERVICE BULLETIN

EMBRAER service bulletin	Revision	Date
145-30-0028	07	April 10, 2003.
145-30-0028	06	Sept. 26, 2001.
145-30-0028	05	May 24, 2001.
145-30-0028	04	March 13, 2001.

### Alternative Methods of Compliance (AMOCs)

(h) The Manager, 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.

### Related Information

(i) Brazilian airworthiness directive 2004-01-02, dated January 27, 2004, also addresses the subject of this AD.

Issued in Renton, Washington, on June 30, 2004.

**Kalene C. Yanamura,**

*Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.*  
[FR Doc. 04-15517 Filed 7-7-04; 8:45 am]

**BILLING CODE 4910-13-P**