

**Note 2:** The subject of this AD is addressed in emergency Israeli airworthiness directive 52-00-12-15, dated January 2, 2001.

#### Effective Date

(e) This amendment becomes effective on February 20, 2001.

Issued in Renton, Washington, on January 29, 2001.

**Donald L. Riggins,**

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

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## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

#### 14 CFR Part 39

[Docket No. 2001-NM-16-AD; Amendment 39-12101; AD 2001-02-51]

**RIN 2120-AA64**

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

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

**ACTION:** Final rule; request for comments.

**SUMMARY:** This document publishes in the **Federal Register** an amendment adopting airworthiness directive (AD) 2001-02-51 that was sent previously to all known U.S. owners and operators of EMBRAER Model EMB-145 and EMB-135 series airplanes by individual notices. This AD requires revising the FAA-approved airplane flight manual and installing placards to alert the flight crew to the maximum speed for airplane retrimming after takeoff and during the climb phase. This action is prompted by issuance of mandatory continuing airworthiness information by a foreign airworthiness authority. The actions specified by this AD are intended to prevent high pitch control forces, which could result in possible loss of control of the airplane.

**DATES:** Effective February 7, 2001, to all persons except those persons to whom it was made immediately effective by emergency AD 2001-02-51, issued January 19, 2001, which contained the requirements of this amendment.

Comments for inclusion in the Rules Docket must be received on or before March 5, 2001.

**ADDRESSES:** Submit comments in triplicate to the Federal Aviation Administration (FAA), Transport Airplane Directorate, ANM-114,

Attention: Rules Docket No. 2001-NM-16-AD, 1601 Lind Avenue, SW., Renton, Washington 98055-4056. Comments may be inspected at this location between 9:00 a.m. and 3:00 p.m., Monday through Friday, except Federal holidays. Comments may be submitted via fax to (425) 227-1232. Comments may also be sent via the Internet using the following address: *9-anm-iarcomment@faa.gov*. Comments sent via fax or the Internet must contain "Docket No. 2001-NM-16-AD" in the subject line and need not be submitted in triplicate. Comments sent via the Internet as attached electronic files must be formatted in Microsoft Word 97 for Windows or ASCII text.

The applicable service information 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 FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington; or at the FAA, Atlanta Aircraft Certification Office, One Crown Center, 1895 Phoenix Boulevard, suite 450, Atlanta, Georgia.

#### **FOR FURTHER INFORMATION CONTACT:**

Carla Worthey, Program Manager, Program Management and Services Branch, ACE-118A, FAA, Atlanta Aircraft Certification Office, One Crown Center, 1895 Phoenix Boulevard, suite 450, Atlanta, Georgia 30349; telephone (770) 703-6062; fax (770) 703-6097.

**SUPPLEMENTARY INFORMATION:** On January 19, 2001, the FAA issued emergency AD 2001-02-51, which is applicable to certain EMBRAER Model EMB-145 and EMB-135 series airplanes.

That action was prompted by reports of approximately 10 incidents involving the temporary loss of pitch trim command after takeoff and during the climb phase. On these airplanes, longitudinal trim is controlled by positioning the horizontal stabilizer. The actuator for the horizontal stabilizer has been identified by the manufacturer and the Departamento de Aviacao Civil (DAC), which is the airworthiness authority for Brazil, as inadequate and the likely cause of the pitch trim problem. If the pilot fails to trim before reaching a certain speed, airloads may overpower the actuator, and the horizontal stabilizer may fail to move in response to a pitch trim command from the flight crew. Currently, the crew would receive no indication of this type of pitch trim failure, except for extremely high pitch control forces. This condition, if not corrected, could

result in possible loss of control of the airplane.

#### **Explanation of Relevant Service Information**

EMBRAER has issued Alert Service Bulletin 145-27-A077, dated January 8, 2001, which describes procedures for the installation of two placards to alert the flight crew to the maximum speed for airplane retrimming after takeoff and during the climb phase.

EMBRAER has also issued EMB145 Airplane Flight Manual 145/1153, Revision 43, dated January 11, 2001, which provides information for the flight crew concerning the maximum speed for airplane retrimming after takeoff and during the climb phase.

The DAC has classified this service bulletin and the AFM revision as mandatory and issued Brazilian airworthiness directive 2001-01-01, dated January 18, 2001, in order to ensure the continued airworthiness of these airplanes in Brazil.

#### **FAA's Conclusions**

These airplane models are manufactured in Brazil and are type certificated for operation in the United States under the provisions of section 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. The FAA has examined the findings of the DAC, reviewed all available information, and determined that AD action is necessary for products of this type design that are certificated for operation in the United States.

#### **Explanation of the Requirements of the Rule**

Since the unsafe condition described is likely to exist or develop on other airplanes of the same type design registered in the United States, the FAA issued emergency AD 2001-02-51 to prevent high pitch control forces, which could result in possible loss of control of the airplane. The AD requires revising the FAA-approved airplane flight manual and installing placards to alert the flight crew to the maximum speed for airplane retrimming after takeoff and during the climb phase. The actions are required to be accomplished in accordance with the service bulletin previously described.

Since it was found that immediate corrective action was required, notice and opportunity for prior public comment thereon were impracticable and contrary to the public interest, and

good cause existed to make the AD effective immediately by individual notices issued on January 19, 2001, to all known U.S. owners and operators of EMBRAER Model EMB-145 and EMB-135 series airplanes. These conditions still exist, and the AD is hereby published in the **Federal Register** as an amendment to section 39.13 of the Federal Aviation Regulations (14 CFR 39.13) to make it effective as to all persons.

#### Comments Invited

Although this action is in the form of a final rule that involves requirements affecting flight safety and, thus, was not preceded by notice and an opportunity for public comment, comments are invited on this rule. Interested persons are invited to comment on this rule by submitting such written data, views, or arguments as they may desire. Communications shall identify the Rules Docket number and be submitted in triplicate to the address specified under the caption **ADDRESSES**. All communications received on or before the closing date for comments will be considered, and this rule may be amended in light of the comments received. Factual information that supports the commenter's ideas and suggestions is extremely helpful in evaluating the effectiveness of the AD action and determining whether additional rulemaking action would be needed.

Comments are specifically invited on the overall regulatory, economic, environmental, and energy aspects of the rule that might suggest a need to modify the rule. All comments submitted will be available, both before and after the closing date for comments, in the Rules Docket for examination by interested persons. A report that

summarizes each FAA-public contact concerned with the substance of this AD will be filed in the Rules Docket.

Commenters wishing the FAA to acknowledge receipt of their comments submitted in response to this rule must submit a self-addressed, stamped postcard on which the following statement is made: "Comments to Docket Number 2001-NM-16-AD." The postcard will be date stamped and returned to the commenter.

#### Regulatory Impact

The regulations adopted herein 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. Therefore, it is determined that this final rule does not have federalism implications under Executive Order 13132.

The FAA has determined that this regulation is an emergency regulation that must be issued immediately to correct an unsafe condition in aircraft, and that it is not a "significant regulatory action" under Executive Order 12866. It has been determined further that this action involves an emergency regulation under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979). If it is determined that this emergency regulation otherwise would be significant under DOT Regulatory Policies and Procedures, a final regulatory evaluation will be prepared and placed in the Rules Docket. A copy of it, if filed, 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, 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:

#### 2001-02-51 Empresa Brasileira de Aeronautica S.A. (EMBRAER):

Amendment 39-12101. Docket 2001-NM-16-AD.

**Applicability:** Model EMB-145 and EMB-135 series airplanes, certificated in any category; having any serial number listed below:

145004 through 145103 inclusive  
145105 through 145121 inclusive  
145123 through 145139 inclusive  
145141 through 145153 inclusive  
145155 through 145189 inclusive  
145191 through 145256 inclusive  
145258 through 145262 inclusive  
145264 through 145349 inclusive  
145351 through 145362 inclusive  
145364  
145366 through 145369 inclusive

**Compliance:** Required as indicated, unless accomplished previously.

To prevent high pitch control forces, which could result in possible loss of control of the airplane, accomplish the following:

#### AFM Revision

(a) Within 3 days after the effective date of this AD, revise the FAA-approved Airplane Flight Manual (AFM), as specified by paragraphs (a)(1), (a)(2), (a)(3), and (a)(4) of this AD. This may be accomplished by inserting a copy of this AD into the AFM.

(1) Revise the Limitations Section of the AFM, under "FLIGHT CONTROLS," to include the following.

#### "PITCH TRIM

Maximum Airspeed after Takeoff/During Climb without Retrimming ..... 160 KIAS"

(2) Revise the Emergency Procedures Section of the AFM, under "PITCH TRIM INOPERATIVE," to delete the current information and replace it with the following:

#### "PITCH TRIM INOPERATIVE

EICAS WARNING: PIT TRIM 1(2) INOP (may be presented)

EICAS CAUTION: AUTO TRIM FAIL (may be presented)

If at least one Message is presented:

Affected Pitch Trim System ..... OFF  
Continue the flight with the remaining Pitch Trim System.

If both Pitch Trim Systems are inoperative:

Pitch Trim Main System ..... OFF  
Pitch Trim Back Up System ..... OFF  
Consider landing at the nearest suitable airport.

If no Message is presented:

Pitch Trim Command ..... CHECK ALL SWITCHES  
If any Pitch Trim command is reestablished:

Continue the flight with the remaining Pitch Trim System.

NOTE: When Main Pitch Trim System is INOP, Autopilot is not available.

WARNING: IF PITCH TRIM COMMAND IS NOT REESTABLISHED, DO NOT OPEN SPEEDBRAKE.

If pitch trim command is not reestablished and the airplane presents a NOSE UP tendency:

Airspeed ..... REDUCE

Airspeed reduction alleviates control column forces and may permit Pitch Trim command to be recovered.

NOTE: Turning the airplane and extending the landing gear helps to maintain minimum airspeed with unwanted pitch up tendency.

If it is necessary to reduce airspeed below 180 KIAS (or 200 KIAS in icing conditions), extend flaps to 9° (at 20,000 ft maximum).

If it is necessary to reduce airspeed below 160 KIAS, extend flaps to 22°

Pitch Trim Command ..... CHECK ALL SWITCHES

If pitch trim is recovered, retrim the airplane and proceed with flight normally.

If pitch trim is not recovered:

Consider landing at the nearest suitable airport.

Approach and landing configuration:

Landing Gear ..... DOWN

Flaps ..... 22°

Airspeed ..... V<sub>REF</sub> 45 + 10 KIAS

CAUTION: TO DETERMINE THE MINIMUM SUITABLE LANDING DISTANCE, MULTIPLY THE UNFACTORED LANDING DISTANCE FOR FLAPS 45° BY 1.27.

If pitch trim command is not reestablished and the airplane presents a NOSE DOWN tendency:

Airspeed ..... REDUCE AS REQUIRED

Below 250 KIAS:

Flaps (at 20,000 ft maximum) ..... 9°

Below 200 KIAS:

Flaps ..... 22°

Approach and landing configuration:

Landing Gear ..... DOWN

NOTE: Gear extension should be delayed as long as possible.

Flaps ..... 22°

Airspeed ..... V<sub>REF</sub> 45 + 25 KIAS

CAUTION: TO DETERMINE THE MINIMUM SUITABLE LANDING DISTANCE, MULTIPLY THE UNFACTORED LANDING DISTANCE FOR FLAPS 45° BY 1.44.

(3) Revise the Normal Procedures Section of the AFM, under the "BEFORE START" checklist, to delete the current information and insert the following:

"Trims ..... CKD/SET

Actuate the pilot and copilot's Pitch Trim Switches and the backup pitch trim switch nose up and then nose down, and check correct indication on the EICAS. Hold trim input to verify that the trim motion stops after approximately 3 seconds. Set the pitch trim to the units required for takeoff. Set the roll and yaw trims to zero.

PITCH TRIM UNITS .....	8 .....	7 .....	6 .....	5 .....	4"
CG POSITION (%) .....	LESS THAN 25 .....	30 .....	35 .....	40 .....	43

(4) In the Normal Procedures Section of the AFM, under the "AFTER TAKEOFF" checklist, add the following:

"Pitch Trim ..... AS REQUIRED

Keep the airplane trimmed to avoid excessive loads on the Horizontal Stabilizer Actuator (HSA). The airplane should be trimmed before 160 KIAS."

**Note 1:** Incorporation of EMB145 AFM 145/1153, Revision 43, dated January 11, 2001, is also acceptable for compliance with the requirements of paragraph (a) of this AD.

**Placard Installation**

(b) Within 3 days after the effective date of this AD, install placards P/N 145-46718-001 at two positions on the main control panel within the pilot's primary field of view.

**Note 2:** Installation per EMBRAER Alert Service Bulletin 145-27-A077, dated January 8, 2001, is also acceptable for compliance with the requirements of paragraph (b) of this AD.

**Alternative Methods of Compliance**

(c) 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. Operators shall submit their requests through an appropriate FAA Principal Operations 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**

(d) 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.

**Note 4:** The subject of this AD is addressed in Brazilian emergency airworthiness directive 2001-01-01, dated January 18, 2001.

**Effective Date**

(e) This amendment becomes effective on February 7, 2001, to all persons except those persons to whom it was made immediately effective by emergency AD 2001-02-51, issued January 19, 2001, which contained the requirements of this amendment.

Issued in Renton, Washington, on January 26, 2001.

**Donald L. Riggins,**  
*Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.*  
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