



AGÊNCIA NACIONAL DE AVIAÇÃO CIVIL – BRASIL

BRAZILIAN AIRWORTHINESS DIRECTIVE

AD No.: 2006-09-03R1

Effective Date: 04 Jan. 2007

The following Brazilian Airworthiness Directive (AD), issued by the Agência Nacional de Aviação Civil (ANAC) in accordance with provisions of Chapter IV, Title III of Código Brasileiro de Aeronáutica - Law No. 7,565 dated 19 December 1986 - and Regulamento Brasileiro de Homologação Aeronáutica (RBHA) 39, applies to all aircraft registered in the Registro Aeronáutico Brasileiro. No person may operate an aircraft to which this AD applies, unless it has previously complied with the requirements established herein.

AD No. 2006-09-03R1 - EMBRAER - Amendment 39-1164.

APPLICABILITY:

This Airworthiness Directive is applicable to all Embraer EMB-145() and EMB-135() aircraft models in operation, except aircraft of serial numbers 14500921, 14500928, 14500932, 14500949, 14500958, 14500971, 14500973 and up, which will have in-factory modification incorporated.

CANCELLATION / REVISION:

This AD cancels and supersedes the AD No. 2006-09-03 – Amdt 39-1151, dated 30 Oct. 2006, and is being issued to correct its applicability, some revision numbers of Service Bulletins, and to better explain its Part VI requirements as well.

REASON:

It has been found the occurrence of engine anti-ice system valve failure, where the valve spring seat has broken and obstructed the anti-ice system venturi tube. Aircraft dispatch with that failure may be allowed by the operator Minimum Equipment List (MEL), since the engine anti-ice system valve be locked in the OPEN position. However, there is no readily available means to make sure the anti-ice system tubing is free of debris, allowing unrestricted hot airflow to the piccolo tube on the engine inlet lip. Therefore, should the aircraft encounter icing conditions, ice may accrete in the engine inlet lip and be ingested through the air inlet, resulting in possible engine damage and flame-out.

Since this condition affects flight safety, a corrective action is required. Thus, sufficient reason exists to request compliance with this AD in the indicated time limit.

REQUIRED ACTION:

Inspection of the engine anti-icing system valves and tubes, and, if necessary, replacement of the engine anti-icing system valves.

COMPLIANCE:

Required as indicated below, unless Embraer Service Bulletins Nos. 145-30-0044 Rev. 01 or 145LEG-30-0018 Rev. 02, or further revisions approved by the ANAC, have already been accomplished.

PART I - Within the next 500 flight hours or 3 calendar months after 30 Oct. 2006, the effective date of the original issue of this AD, whichever occurs first, carry out a general visual inspection (GVI) of both LH and RH engine anti-ice system valves to determine their P/N.

- (a) If any engine anti-ice system valve with P/N C146009-2 is found, no immediate action is required at this time.
- (b) If any engine anti-ice system valve with P/N C146009-3 is found, remove it and carry out a detailed inspection (DET) regarding its integrity, and carry out a special detailed inspection (SDI) in the corresponding engine anti-ice system tubes, according to the detailed instructions and procedures described in the Embraer Service Bulletins Nos. 145-30-0049, original issue, or 145LEG-30-0016, original issue, or further revisions approved by the ANAC.

(1) If the valve is damaged, as shown in the Embraer Service Bulletins Nos. 145-30-0049, original issue, or 145LEG-30-0016, original issue, or further revisions approved by the ANAC, discard it and replace it by another one bearing P/N C146009-2, C146009-3 or C146009-4.

(2) If the valve is not damaged, re-install it or install another one bearing P/N C146009-2, C146009-3 or C146009-4.

(c) If any engine anti-ice system valve with P/N C146009-4 is found, no immediate action is required at this time. In this case, Parts II, III, IV, VII and VIII of this AD are not applicable. However, Parts V and VI of this AD must be accomplished.

PART II - Within the next 1500 flight hours or 9 calendar months after after 30 Oct. 2006, the effective date of the original issue of this AD, whichever occurs first, and thereafter at intervals that do not exceed 1000 flight hours or 6 calendar months, whichever occurs first, carry out a detailed inspection (DET) on both LH and RH engine anti-ice system valves bearing P/N C146009-2 or C146009-3 and a special detailed inspection (SDI) in the corresponding engine anti-ice system tubes, according to the detailed instructions and procedures described in the Embraer Service Bulletins Nos. 145-30-0049, original issue, or 145LEG-30-0016, original issue, or further revisions approved by the ANAC, accomplishing the items (a) and (b) below.

(a) If the valve is damaged, as shown in the Embraer Service Bulletins Nos. 145-30-0049, original issue, or 145LEG-30-0016, original issue, or further revisions approved by the ANAC, discard it and replace it by another one bearing P/N C146009-2, C146009-3 or C146009-4.

(b) If the valve is not damaged, re-install it or install another one bearing P/N C146009-2, C146009-3 or C146009-4.

PART III - Any engine anti-ice system valve with P/N C146009-2 or C146009-3, that will be installed in the aircraft at a time that is not concurrent with the accomplishment of Parts I or II of this AD, must undergo a detailed inspection (DET) as for its integrity, according to the detailed instructions and procedures described in the Embraer Service Bulletins Nos. 145-30-0049, original issue, or 145LEG-30-0016, original issue, or further revisions approved by the ANAC, and additionally adhere to the criteria (a) and (b) below.

(a) If the valve is damaged, discard it and replace it by another one bearing P/N C146009-2, C146009-3 or C146009-4.

(b) If the valve is not damaged, its utilization is permitted within the applicable limitations and criteria set forth by this AD.

PART IV - Any engine anti-ice system tubes that will be installed on the aircraft at a time that is not concurrent with the accomplishment of Parts I or II of this AD, must undergo a special detailed inspection (SDI), according to the detailed instructions and procedures described in the Embraer Service Bulletins Nos. 145-30-0049, original issue, or 145LEG-30-0016, original issue, or further revisions approved by the ANAC.

PART V - If any engine anti-ice system valve with P/N C146009-4 has been found during the inspection required by item (c) of Part I of this AD, proceed according to items (a) and (b) below within the next 1500 flight hours or 9 calendar months after 30 Oct. 2006, the effective date of the original issue of the this AD, whichever occurs first:

(a) Verify if the valve was installed according to the detailed instructions and procedures described in the Embraer Service Bulletins Nos. 145-30-0044 Rev. 01 or 145LEG-30-0018 Rev. 02, or further revisions approved by the ANAC. In that case no further action is required.

(b) If the valve was installed according to the detailed instructions and procedures described in the Embraer Service Bulletin No. 145-30-0044, original issue, or 145LEG-30-0018, original issue or Rev. 01, carry out a special detailed inspection (SDI) in the corresponding engine anti-ice system tubes, according to the detailed instructions and procedures described in the Embraer Service Bulletins Nos. 145-30-0049, original issue, or 145LEG-30-0016, original issue, or further revisions approved by the ANAC.

PART VI - Before aircraft dispatch with one or two engine anti-ice system valves inoperative (MMEL 30-21-01), carry out a detailed inspection (DET) in the affected engine anti-ice system valves, and a special detailed inspection (SDI) in the corresponding engine anti-ice system tubes according to the detailed instructions and procedures described in the Embraer Service Bulletins Nos. 145-30-0049, original issue, or 145LEG-30-0016, original issue, or further revisions approved by the ANAC, accomplishing Part II of this AD, unless:

- (a) Valves with P/N C146009-4 have been previously installed according to the detailed instructions and procedures described in the Embraer Service Bulletin No. 145-30-0044, original issue, or 145LEG-30-0018, original issue or Rev. 01, and additionally Part V of this AD has been accomplished; or
- (b) Valves with P/N C146009-4 have been previously installed according to the detailed instructions and procedures described in the Embraer Service Bulletins Nos. 145-30-0044 Rev. 01 or 145LEG-30-0018 Rev. 02, or further revisions approved by the ANAC.

PART VII - Within the next 2500 flight hours or 12 calendar months after 30 Oct. 2006, the effective date of the original issue of this AD, whichever occurs first, install engine anti-ice system valves bearing P/N C146009-4 in the LH and RH engine positions replacing those with P/N C146009-3 according to the detailed instructions and procedures described in the Embraer Service Bulletins Nos. 145-30-0044 Rev. 01 or 145LEG-30-0018 Rev. 02, or further revisions approved by the ANAC.

PART VIII - Within the next 6000 flight hours or 30 calendar months after 30 Oct. 2006, the effective date of the original issue of this AD, whichever occurs first, install engine anti-ice system valves bearing P/N C146009-4 in the LH and RH engine positions replacing those with P/N C146009-2 according to the detailed instructions and procedures described in the Embraer Service Bulletins Nos. 145-30-0044 Rev. 01, or 145LEG-30-0018, Rev. 02, or further revisions approved by the ANAC.

NOTE 1: The installation of engine anti-ice system valves bearing P/N C146009-4 according to the detailed instructions and procedures described in the Embraer Service Bulletins Nos. 145-30-0044 Rev.01 or 145LEG-30-0018 Rev. 02, or further revisions approved by the ANAC, constitutes a terminal action for this AD, in lieu of the repetitive inspections required by Part II of this AD.

NOTE 2: For the purpose of this AD, a general visual inspection (GVI) is: "A visual examination of an interior or exterior area, installation or assembly to detect obvious damage, failure or irregularity. This level of inspection is made from within touching distance, unless otherwise specified. A mirror may be necessary to enhance visual access to all exposed surfaces in the inspection area. This level of inspection is made under normally available lighting conditions such as daylight, hangar lighting, flashlight or drop-light, and may require removal or opening of access panels or doors. Stands, ladders or platforms may be required to gain proximity to the area being checked."

NOTE 3: For the purpose of this AD, a detailed inspection (DET) is: "An intensive examination of a specific item, installation or assembly to detect damage, failure or irregularity. Available lighting is normally supplemented with a direct source of good lighting at an intensity deemed appropriate. Inspection aids such as mirrors, magnifying lenses, etc., may be necessary. Surface cleaning and elaborate access procedures may be required."

NOTE 4: For the purpose of this AD, a special detailed inspection (SDI) is: "An intensive examination of a specific item, installation, or assembly to detect damage, failure or irregularity. The examination is likely to make extensive use of specialized inspections, techniques and/or equipments. Intricate cleaning and substantial access or disassembly procedure may be required."

The detailed instructions and procedures to accomplish this AD are described in the Embraer Service Bulletins Nos. 145-30-0049, original issue, 145LEG-30-0016, original issue, 145-30-0044 Rev.01, or 145LEG-30-0018 Rev.02, or further revisions approved by the ANAC.

Record compliance with this AD in the applicable maintenance log book.

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NOTE: Original in Portuguese language signed and available in the files of the Aeronautical Products Certification Branch (GGCP) of the National Agency of Civil Aviation (ANAC).