



AGÊNCIA NACIONAL DE AVIAÇÃO CIVIL – BRAZIL

BRAZILIAN AIRWORTHINESS DIRECTIVE

AD No.: 2005-09-02R2

Effective Date: 10 May 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. 2005-09-02R2 - EMBRAER - Amendment 39-1166.

APPLICABILITY:

This Airworthiness Directive is applicable to all Embraer EMB-145() and EMB-135() aircraft models in operation.

CANCELLATION / REVISION:

This AD cancels and supersedes the AD No. 2005-09-02R1 – Amdt 39-1099, dated 03 Nov. 2005, and is being issued to include updated procedures for the repetitive inspections and a terminating action for the repetitive inspections.

REASON:

It has been found, after reports of rudder vibration, the occurrence of wear in the rudder-II attachment flange bushings that progressed over the rudder-II upper, intermediate, and lower hinge fittings, and also the occurrence of excessive freeplay on the rudder-II lower control rod clevis end-to-rod attachment. The failure of multiple hinges can result in flutter on the rudder-II and subsequent structural failure. The failure of the control rods can result in jamming of the rudder-II.

Since this condition may occur in other airplanes of the same type and 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 and modification of the rudder-II skin, hinge fittings and control rods assembly; replacement of the rod end washers in the rudder-II control rods (both rods, one end per rod); and installation of springs and washers in the rudder-II hinge fittings.

COMPLIANCE:

Required as indicated below, unless already accomplished.

PART I - For aircraft that have reports of vibration from the tail section or rudder pedals over the last 120 flight hours or 100 flight cycles, whichever is shorter, perform within the next 20 flight hours or 20 flight cycles after 22 Sep. 2005, the effective date of the original issue of this AD, whichever occurs first, a detailed visual inspection (DET) on the rudder-II skin, attachment fittings and control rods, looking for cracks, loose parts, wear or damage. If any discrepancy is detected on the rudder-II skin, attachment fittings or control rods, perform, before the next flight, the dimensional inspection according to the instructions of Embraer Service Bulletins Nos. 145-55-A036 Rev. 1 or 145LEG-55-A010 original issue, or further revisions approved by the ANAC. Before next flight, repair any damage found and install washers at all rudder-II hinge fittings and control rod assembly, according to the instructions of Embraer Service Bulletins Nos. 145-55-0034 original issue, 145-55-0035 original issue, 145LEG-55-0008 original issue, or 145LEG-55-0009 original issue, or further revisions approved by the ANAC.

PART II - For aircraft that do not have reports of vibration from the tail section or rudder pedals over the last 120 flight hours or 100 flight cycles, whichever is shorter, perform within the next 600 flight hours or 500 flight cycles after 22 Sep. 2005, the effective date of the original issue of this AD, the DET of the rudder-II skin, attachment fittings and control rods, looking for cracks, loose parts, wear or damage, as required at PART I above.

NOTE: For aircraft with less than 1900 total flight hours at 22 Sep. 2005, the effective date of the original issue of this AD, the inspection required by Part II above can be delayed until the aircraft accumulates 2500 total flight hours.

PART III - For aircraft that, after 22 Sep. 2005, the effective date of the original issue of this AD, have a report of vibration from the tail section or rudder pedals, perform the detailed visual inspection of the rudder-II skin, attachment fittings and control rods, looking for cracks, loose parts, wear or damage, as required at PART I above, within the next 20 flight hours or 20 flight cycles, whichever is shorter.

PART IV - Repeat the inspection required by Parts I, II or III above at intervals no longer than 2500 flight hours.

PART V - After the effective date of revision 2 of this AD, Parts I, II, III and IV must be accomplished according to the instructions of Embraer Service Bulletins Nos. 145-55-A036 Rev. 3 or 145LEG-55-A010 Rev. 02, or further revisions approved by ANAC. Repair any damage found and install washers at all rudder-II hinge fittings and control rod assembly, according to the instructions of Embraer Service Bulletins Nos. 145-55-0034 original issue, 145-55-0035 original issue, 145LEG-55-0008 original issue, or 145LEG-55-0009 original issue, or further revisions approved by ANAC.

PART VI - Within the next 5500 flight hours or 36 calendar months after the effective date of revision 2 of this AD, whichever occurs first, replace the locking tab washers on the rudder-II control rods and install springs on the rudder-II hinge assemblies. Re-identify the upper and lower rudder-II control rods according to the detailed instructions and procedures described in the Embraer Service Bulletin No. 145-55-0038 original issue or 145LEG-55-0011 original issue, or further revisions approved by ANAC. The accomplishment of this Part VI constitutes a terminating action for the requirements of this AD.

NOTE: 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 elaborated access procedures may be required."

The detailed instructions and procedures to accomplish this AD are described in the Embraer Service Bulletins Nos. 145-55-A036 Rev. 3, 145-55-0034 original issue, 145-55-0035 original issue and 145-55-0038 original issue, or 145LEG-55-A010 Rev. 2, 145LEG-55-0008 original issue, 145LEG-55-0009 original issue and 145LEG-55-0011 original issue, 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 Civil Aviation Agency (ANAC).