



## Boletim Especial de Aeronavegabilidade (*Special Airworthiness Bulletin*)

**ATA:** 30 - Ice and Rain Protection

**BEA** Nº 2019-02

**Subject:** Electrical wiring terminations at the receptacles of Pitot #1, Pitot #2, Pitot #3, TAT #1, and TAT #2 relays  
**Date:** April 25th, 2019

### **Introduction:**

This Special Airworthiness Bulletin (BEA) is a revision of BEA 2017-03 and advises owners and operators of Embraer S.A. Model EMB-145 airplanes about the detailed inspection of the electrical wiring terminations at the receptacles of Pitot #1, Pitot #2, Pitot #3, TAT #1, and TAT #2 relays specified in Maintenance Review Board Report (MRBR) Task 20-00-00-220-014-A00 (AMM task 05-40-13-200-802-A).

This bulletin is informative, and the recommendations are not mandatory. Until this time, there is no airworthiness concern that would warrant an Airworthiness Directive (AD) according to Regulamento Brasileiro de Aviação Civil (RBAC) nº 39.

**Manufacturer:** Embraer S.A.

**Affected Aeronautic Product:** Embraer S.A. model EMB-145, EMB-145ER, EMB-145EU, EMB-145EP, EMB145LR, EMB145MR, EMB-145LU, EMB-135ER, EMB-135BJ, EMB-135LR, EMB145MP, EMB-145MK, EMB-135KE, EMB135KL, and EMB-145XR airplanes.

### **Background:**

ANAC has issued Airworthiness Directives (ADs) 2005-08-04R1 and 2007-11-04R1 regarding the socket contacts of Pitot #1, Pitot #2, Pitot #3, TAT #1, and TAT #2 current sensor relays, due to occurrences of bad contact and smoke into the flight deck. These ADs require inspection of the relays, receptacles, and the replacement of certain socket contacts with improved ones having Part Number M39029/92-536. ANAC AD 2005-08-04R1 also requires re-routing and replacing the direct-vision windowsill drain hoses, in the area near the relay boxes, with others made of improved material.

Since then, ANAC has also issued BEA 2017-03 bringing attention to the electrical wiring terminations at the receptacles of Pitot #1 (K0053), TAT #1 (K0064), Pitot #2 (K0054), TAT #2 (K0494), and Pitot #3 (K0057) current sensor relays, and Pitot #3 (K0058) relay, for degradation (heat damages, discoloration), insulation dryness, and cracking when performing the General Visual Inspection (GVI) specified in Maintenance Review Board Report (MRBR) Task 53-Z223-214-001- A00.

Following the issuance of the ADs and BEA, further in-service experience has shown cases of bad contact and heat damages on the wiring terminations at the receptacle of Pitot #3 (K0058) relay.

## **Recommendations:**

ANAC recommends all owners and operators to be aware of and perform the new detailed inspection Maintenance Review Board Report (MRBR) Task 20-00-00-220-014-A00 (AMM task 05-40-13-200-802-A) created to address this issue, which inspects electrical wiring terminations at the receptacles of Pitot #1, Pitot #2, Pitot #3, TAT #1, and TAT #2 relays for signs of damage, adequate installation, chafing and general condition.

If any discrepancy is identified during the performance of this new task, please submit a Service Difficulties Report (SDR) to Embraer.

## **Reference documents:**

- 1) Embraer S.A. Report No. 145-MS-079 - ELECTRICAL WIRING INTERCONNECTION SYSTEM – FAA PART 26 AND ANAC RBAC N° 26 SUBPARTE B – SOURCE DOCUMENT.
- 2) Embraer S.A. SWPM-145/( ) – STANDARD WIRING PRACTICES MANUAL – CHAPTER 20-00-03 – STANDARD PRACTICES.
- 3) Embraer S.A. SNL 145-30-0016 - PITOT 3 CURRENT SENSOR - REPLACEMENT OF SOCKET PIN.
- 4) Embraer S.A. SNL 145-30-0016 - PITOT 3 CURRENT SENSOR - REPLACEMENT OF SOCKET PIN.
- 5) Embraer S.A. Service Bulletin (SB) 145-30-0041 – ICE AND RAIN PROTECTION – REPLACEMENT OF THE DIRECT-VISION WINDOWSILL DRAIN HOSES.
- 6) Embraer S.A. Service Bulletin (SB) 145-30-0050 - ICE AND RAIN PROTECTION – REPLACEMENT OF THE SOCKET CONTACTS OF THE PITOT 3 CURRENT SENSOR RELAY.
- 7) Embraer S.A. Service Bulletin (SB) 145-30-0052 - ICE AND RAIN PROTECTION – REPLACEMENT OF SOCKET CONTACTS OF PITOT 1/2 AND TAT 1/2 CURRENT SENSOR RELAY.
- 8) Embraer S.A. Service Bulletin (SB) 145LEG-30-0011 - ICE AND RAIN PROTECTION – REPLACEMENT OF THE DIRECT-VISION WINDOWSILL DRAIN HOSES.
- 9) Embraer S.A. Service Bulletin (SB) 145LEG-30-0017 - ICE AND RAIN PROTECTION – REPLACEMENT OF THE SOCKET CONTACTS OF THE PITOT 3 CURRENT SENSOR RELAY.
- 10) Embraer S.A. Service Bulletin (SB) 145LEG-30-0019 - ICE AND RAIN PROTECTION – REPLACEMENT OF SOCKET CONTACTS OF PITOT 1/2 AND TAT 1/2 CURRENT SENSOR RELAY.

11) ANAC Airworthiness Directive (AD) 2005-08-04R1 – Amendment 39-1144, effective date 27 July 2006.

12) ANAC Airworthiness Directive (AD) 2007-11-04R1 – Amendment 39-1224, effective date 21 December 2007.

13) ANAC Special Airworthiness Bulletin (BEA) 2017-03, dated 20 December 2017.

**For further information contact**

Agência Nacional de Aviação Civil (ANAC)  
Gerência Geral de Certificação de Produto Aeronáutico (GGCP)  
Rua Laurent Martins, 209, Jardim Esplanada II  
12242-431 – São José dos Campos - SP.  
Phone: 55 12 3203-6600  
E-mail: [pac@anac.gov.br](mailto:pac@anac.gov.br)

**For related service information contact**

EMBRAER - S.A.  
EFTC - Service Bulletin Engineering  
Av. Brigadeiro Faria Lima, 2170  
São José dos Campos - SP - 12227-901  
BRASIL  
Fax: + 55 12 3927-6600 (ext. 1624)  
e-mail: [fleet.reliability@embraer.com.br](mailto:fleet.reliability@embraer.com.br)