



Special Airworthiness Bulletin

BEA 2026-01

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AT 30 – Ice and Rain Protection – Replacement of Pitot #3 Heater Wiring

This Special Airworthiness Bulletin (BEA – *Boletim Especial de Aeronavegabilidade*) is a revision of SAB 2019-04R1 and recommends that owners and operators of Embraer S.A. EMB-145 and EMB-135BJ aircraft incorporate Embraer Service Bulletins SB145-30-0058 and SB145LEG-30-0024, respectively, which provide instructions for replacing the Pitot #3 heating circuit wiring, from 16 AWG to 12 AWG, as well as additional actions included in the “Recommendations” section below.

Service Bulletins SB145-30-0058 and SB145LEG-30-0024, which are the subject of this SAB, refer to the first part of the complete solution (the second part of the solution will be addressed in due course, when available) to be implemented in order to align the Pitot #3 circuit wiring with the electrical protection capacity of its associated circuit breaker and with the power rating of the pitot heater.

This document contains recommendations of an informative and non-mandatory nature; therefore, at this time, the issuance of an Airworthiness Directive in accordance with the requirements of Brazilian Civil Aviation Regulation (RBAC) No. 39 is not justified.

Applicability:

Embraer S.A. airplane models 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:

It has been found the occurrence of smoke in the flight deck originated from Pitot 1/2 and TAT 1/2 current sensor relays and their respective sockets, caused by poor electrical contacts

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between those relays and their sockets. There has also been found the occurrence of overheating of the Pitot #3 heating relay socket contact pins.

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 (Part Number (P/N) 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.

After issuing the ADs, 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 the Maintenance Review Board Report (MRBR) Task 53-Z223-214-001-A00.

ANAC has also issued BEA 2019-02 informing about the new detailed inspection (DET) 20-00-00-220-014-A00 of the Maintenance Review Board Report (MRBR) (AMM task 05-40-13-200-802-A) with more complete inspection information to address this issue.

Finally, ANAC issued BEA 2019-04, revisions 0 and 1, correcting the task numbers related to the Embraer S.A. model EMB-135BJ (Legacy 650 and Legacy 600), incorrectly informed in BEA 2019-02 as being the same as the other affected models (Revision 0), and correcting the EMBRAER contact information that was incorrect in the original revision of BEA 2019-04 (Revision 1).

Recommendation(s):

ANAC recommends all owners and operators to replace Pitot #3 heater wiring of 16 AWG gauge with 12 AWG, updating associated sockets, and reidentifying components as required, as well as replacing contact pins A1 and C1 of Pitot #3 relay socket XK1237 in accordance with Embraer Service Bulletins 145-30-0058, Revision 0, dated October 01st, 2025, and 145LEG-30-0024, Revision 0, dated November 06th, 2025.

References:

1. Embraer S.A. Report No. 145-MS-079 - ELECTRICAL WIRING INTERCONNECTION SYSTEM – FAA PART 26 AND ANAC RBAC Nº 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. Service Bulletin (SB) 145-30-0041 – ICE AND RAIN PROTECTION – REPLACEMENT OF THE DIRECT-VISION WINDOWSILL DRAIN HOSES.
5. 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.
6. 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.

7. Embraer S.A. Service Bulletin (SB) 145LEG-30-0011 - ICE AND RAIN PROTECTION – REPLACEMENT OF THE DIRECT-VISION WINDOWSILL DRAIN HOSES.
8. 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.
9. 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.
10. ANAC Airworthiness Directive (AD) 2005-08-04R1 – Amendment 39-1144, effective date 27 July 2006.
11. ANAC Airworthiness Directive (AD) 2007-11-04R1 – Amendment 39-1224, effective date 21 December 2007.
12. ANAC Special Airworthiness Bulletin (BEA) 2017-03, dated 20 of December 2017.
13. ANAC Special Airworthiness Bulletin (BEA) 2019-02, dated 25 of April 2019.
14. ANAC Special Airworthiness Bulletin (BEA) 2019-04, Revision 0, dated 02 of August 2019 and Revision 1, dated 14 of October 2019.
15. Embraer S.A. Service Bulletin (SB) 145-30-0058 - ICE AND RAIN PROTECTION - REPLACEMENT OF PITOT 3 HEATER WIRING.
16. Embraer S.A. Service Bulletin (SB) 145LEG-30-0024 - ICE AND RAIN PROTECTION - REPLACEMENT OF PITOT 3 HEATER WIRING.