

Subject: ice and rain protection – Static Heating System – Operational Check

Purpose

To advise owners and operators of EMBRAER EMB-500 airplanes about the latest revised information of AMM TASK 30-30-00-710-801-A – Pitot and Static Heating System – Operational Check and AMM TASK 30-30-00-710-802-A – Static Heating System – Operational Check.

Background

During a re-assessment of Air Data Sensors Heating System, a hidden failure mode of static port heater has been found. A non annunciated loss of static port heater, associated with ice accretion on the static port may result in misleading barometric altitude and airspeed information on both primary flight displays. The Standby instrument is not affected by this failure mode. This reduces the ability of the flight crew to recognize the correct barometric altitude and airspeed indication among primary flight displays and Standby instrument.

Analysis

Each LH and RH static port is dual, having two ports and two heaters. In this latent failure mode, one heater fails without indication. Since both static ports are thermically coupled, if one heater fails, the other heater is capable to maintain both static ports heated therefore, there are no immediate consequences and the current maintenance task is appropriated to identify and correct a failure of one heater before the remaining heater fails. If this failure mode occurs on both static ports of

LH or RH static port LRU, losing heating for both ports, it can result in iced-over static ports with no annunciation.

The hidden failure of the static port heating is detected by the Scheduled Maintenance Task 30-31-00-001 - Operational Check of Pitot, Static, AOA and P-Static Heating @ 24 MO, located in Chapter 5 of the AMM, which is supported by maintenance procedures AMM TASK 30-30-00-710-801-A – Pitot and Static Heating System – Operational Check and, AMM TASK 30-30-00-710-802-A – Static Heating System – Operational Check. The accomplishment of the AMM TASK 30-30-00-710-802-A identifies and corrects this failure mode.

Recommended Actions

In order to detect and correct a latent failure of the static port heater, the ANAC recommends that all owners and operators of Embraer EMB-500 airplanes accomplish the AMM TASK 30-31-00-001 – Operational Check of Pitot, Static, AOA and P-Static Heating at the specified time interval (at each 24 months) in accordance with the following revised procedures:

- AMM Page block 30-30-00/500 – Pitot and Static – Adjustment/Test;
- AMM TASK 30-30-00-710-801-A – Pitot and Static Heating System – Operational Check; and,
- AMM TASK 30-30-00-710-802-A – Static Heating System – Operational Check.

In addition, the ANAC recommends that the maintenance documents be revised to include these documents, as specified in the Embraer SNL 500-30-0002, dated January 16th, 2012:

Applicability

This Flight Alert applies to all owners and operators of Embraer S.A. EMB-500 airplanes.

Contact

For additional information regarding this subject please contact the Aeronautical Product Certification Branch (Gerência-Geral de Certificação de Produtos Aeronáuticos – GGCP) by phone at 55 (12) 3797-2525, by Fax at 55 (12) 3797-2330 or via e-mail at pac@anac.gov.br.