Special Airworthiness Bulletin

ANAC
NATIONAL CIVIL AVIATION AGENCY - BRAZIL

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ATA 30 – OPERATION IN ICING CONDITIONS

This Special Airworthiness Bulletin (BEA) is intended to provide guidance to training centers, operators and owners of the Embraer EMB-500 aircraft regarding the ice protection system.

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

Applicability

Embraer airplanes model EMB-500.

Background

Events have occurred involving Embraer EMB-500 airplanes in which the wing and horizontal stabilizer de-ice system (WINGSTAB de-ice) was erroneously left OFF, even while operating in icing conditions. With the wing and stabilizer de-ice system is ON, the angle-of-attack thresholds for stall warning and protection system activation are lower, and the corresponding speeds are higher. Consequently, approach and landing speeds are higher. Leaving the system OFF, contrary to the procedures established by the manufacturer, compromises operational safety, as it may lead to a stall without any warning.

Although the identified events were associated with failure to follow the procedures established by the manufacturer, it was determined that additional information would be beneficial to help flight crews verify that the airplane is free of ice contamination and that the system may be selected OFF.

The limitations and normal procedures section of the EMB-500 Airplane Flight Manual state that, during descent and approach, pilots must assess whether icing conditions may exist. If the Total Air Temperature (TAT) is below 10°C and visible moisture is present, the engine ice protection system must be turned ON. At the first sign of ice accretion on any part of the airplane, or when the TAT is below 5°C and visible moisture is present, the engine, windshield, wing, and stabilizer protection systems must be turned ON.

The system must remain ON until both conditions below are satisfied:

- The airplane has exited icing conditions; and
- The flight crew is certain that all ice has been removed from the airplane.

The airplane is considered to be out of icing conditions when:

- The ambient temperature (TAT) in flight is above 10°C, or there is no visible moisture; and
- The unprotected (outermost) area of the windshield is free of ice.

Ice is considered to have been removed from the airplane if:

- The ice protection system has been operated continuously without failure while the airplane was operating in icing conditions; and
- The wings are free of ice, including both protected and unprotected areas. There must be no residual ice in these areas.

If it is not possible to ensure that the airplane is free of ice, the system must remain ON and performance must be calculated for icing conditions.

Recommendations:

ANAC recommends that training centers, owners, and operators of the affected airplane:

- ***Disseminate the information contained in this BEA;***
- ***Review the information contained in Embraer General Publication GP-8143, "Phenom 100/300 – Landing Procedure Best Practices and Recommendations," Revision 01, dated September 23, 2025, especially Section 3 – Fundamental Factors; and***
- ***Keep the protection system activated and calculate performance for icing conditions if it is not possible to confirm that the aircraft is free of ice***

Reference:

Embraer General Publication GP-8143 "Phenom 100/300 – Landing Procedure Best Practices and Recommendations", revision 01, dated 23 September 2025.

Para mais informações contatar:
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