



ATA 31 – Indicating/Recording Systems: Load 7.5 version for PRIMUS EPIC field- loadable software system.

This Special Airworthiness Bulletin (BEA) is intended to alert the civil aviation community about a possible hazard to install a previous version of LOAD 7.5 PRIMUS EPIC software.

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

Applicability:

EMBRAER S.A. airplanes model ERJ 190-300 and 190-400, all serial numbers.

Description:

According to the manufacturer, the PRIMUS EPIC software LOAD 7.5 with Part Number (P/N) PS60003155-0105 presents some systems improvements and corrections for EMBRAER ERJ 190-300 and ERJ 190-400 airplanes.

The main issues addressed on this software version is:

1. Activation of the engine fan speed synchronization function between LH and RH engines to reduce noise during climb flight phase.
2. Correction of Archive_EOF file generation with 6k parameters.
3. Fix for uncommanded selection on Primary Flight Display (PFD).
4. Reduction of the debounce time making the Crew Alerting System (CAS) message "ENG TLA NOT TOGA" activation faster.
5. Improvement of autothrottle performance during approach.
6. This version, or its higher versions, allows new optional features with the applicable service documents as the Autoland and the Steep Approach operations.

In addition to the improvements above, this software version also fixes a possible unsafe condition related with a barometric pressure setting inadvertently changed, with no

input from the flight crew, and a change in the altimeter values on both PFD of the airplane, without an adequate input for the flight crew. This situation may cause an erroneous altitude information presented on both PFD and may result in altitude mismanagement or spatial disorientation of the flight crew, with consequent deviation from the intended altitude and risk of loss of the airplane control, risk of air collision due to an inadequate air traffic separation, or risk of a Controlled Flight Into Terrain (CFIT).

The above scenario was eliminated for EMBRAER ERJ 170-100/-200 airplanes through ANAC Airworthiness Directive (AD) 2022-05-03, for EMBRAER ERJ 190-100/-200 airplanes through ANAC AD 2022-05-04 and for EMBRAER EMB-505 airplanes through the ANAC AD 2023-04-01. However, at this time, the EMBRAER ERJ 190-300 and ERJ 190-400 affected fleet was small, and the problem could be tracked on time and therefore, no mandating action was necessary, because all the affected airplanes were modified.

Recommendations:

After the PRIMUS EPIC software LOAD 7.5, or higher version, installation; do not reinstall any previous version to LOAD 7.5 (LOAD 7.0 or earlier), since once this is done, the airplane will be again susceptible to the above described scenario.

1. For airplane owners, operators and certified maintenance organizations: After the PRIMUS EPIC software LOAD 7.5, or higher versions installation, on airplanes ERJ 190-300 and ERJ 190-400, all serial numbers; do not reinstall a previous version to LOAD 7.5.
2. For EMBRAER S.A.: Establish procedures to prevent the previous versions of LOAD 7.5 of PRIMUS EPIC software from being made available for ERJ 190-300 and ERJ 190-400 airplanes owners and operators.

References:

EMBRAER Service Bulletin (SB) No. 190E2-31-0007, revision 02, dated October 24, 2023.

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