



Boletim Especial de Aeronavegabilidade *(Special Airworthiness Bulletin)*

ATA/JASC: 22 – Auto Flight

BEA Nº 2016-01

Subject:

Date: April 13, 2016.

**Yaw Damper Fail Due to Unreliable or
Unavailable GPS Signal**

Introduction:

This *Boletim Especial de Aeronavegabilidade* advises owners and operators of Embraer S.A model EMB-505 airplanes about a degraded AHRS performance in case of unreliable or unavailable GPS Signal.

This document has information and not mandatory recommendations, therefore, until this time there is no reason to issue an Airworthiness Directive in accordance with Regulamento Brasileiro da Aviação Civil (RBAC) Nº 39 requirements.

Manufacturer: Embraer S.A.

Affected Aeronautic Product: Embraer S.A model EMB-505 airplanes (Phenom 300), all serial numbers.

Background:

We have received an occurrence report of simultaneously loss GPS 1 and 2 signal during FMS navigation in cruise flight followed by GPS HSI 1 and 2 failure indication, AHRS 1 and 2 FAULT and, after a few minutes, SWPS FAULT, VENTRAL RUD FAIL, YD FAIL, AP FAIL, CAS messages associated with an unexpected Dutch roll behavior at high airspeeds.

Further investigation revealed GPS constellation signal instability in the flight area (NOTAM 02/17 in Oakland FIR) leading to loss of both GPS information data.

The AHRS continuously calculates and applies attitude and heading measurement updates to correct gyro-integrated attitude and heading during flight maneuvers and, in normal operation, the AHRS relies upon GPS, air data system and magnetic field measurements supplied by the magnetometer to maintain primary AHRS operation mode.

Recommendations:

To avoid a series of CAS messages that may result in an emergency descent and cause disruption in the airspace, the following operational procedure is recommended to be accomplished immediately.

If any CAUTION CAS message is displayed, follow the associated QRH procedure.

AHRS 1 FAULT and AHRS 2 FAULT

If the CAS messages AHRS 1 FAULT and AHRS 2 FAULT are displayed simultaneously on the EICAS, proceed as follow:

Airspeed..... MAX 240 KIAS / 0.63 M

Reference:

Embraer S.A. Operational Bulletin (OB) 505-002/16, original issue, dated April 13, 2016.

For further information please contact:

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