AGÊNCIA NACIONAL DE AVIAÇÃO CIVIL - BRAZIL

BRAZILIAN AIRWORTHINESS DIRECTIVE

AD No.: 2020-07-01  Effective Date: 15 Jul. 2020

The following Brazilian Airworthiness Directive (AD), issued by the Agência Nacional de Aviação Civil (ANAC) in accordance with provisions of Chapter IV, Title III of Código Brasileiro de Aeronáutica - Law No. 7,565 dated 19 December 1986 - and Regulamento Brasileiro da Aviação Civil (RBAC) 39, applies to all aircraft registered in the Registro Aeronáutico Brasileiro. No person may operate an aircraft to which this AD applies, unless it has previously complied with the requirements established herein.

AD No. 2020-07-01 - YABORÃ / 39-1465.

APPLICABILITY:
(a) This Airworthiness Directive (AD) is applicable to Yaborã Indústria Aeronáutica S.A. airplanes model ERJ 190-400 equipped with FADEC software version 9.5.6 or previous version.

CANCELLATION / REVISION:
Not applicable.

REASON:

It has been found the occurrence of in-flight shutdown (IFSD) in an engine model with a similar hardware of PW1900. Similarities in type design make the PW1900 engines, which are installed in the airplane model ERJ 190-400, susceptible to the same unsafe condition. The IFSD events were caused by failure in the low-pressure compressor rotor 1 and operation in high altitude at high thrust settings is a contributor. The unsafe condition, if not addressed, could result in uncontained release of the LPC R1 with damage to the engine, damage to the airplane, and loss of control of the airplane.

Since this condition may occur in other airplane of the same type and affects flight safety, a corrective action is required. Thus, sufficient reason exists to request compliance with this AD in the indicated time limit.

REQUIRED ACTION:

To modify the Airplane Flight Manual – AFM to incorporate a new limitation and to modify the normal procedures section in the AFM, to limit the engine N1 setting for flights above 33000 ft.

COMPLIANCE:

(b) Within 30 days from the effective date of this AD:

(1) Amend the applicable AFM, section 2 – “LIMITATIONS”, block 2-40 “POWER PLANT”, to incorporate the following limitation:
Engine operating limits

Above 33000 ft, the maximum N1 setting is 96% N1.

Note: This new operating limit is just applicable to normal operations.

During emergency or abnormal operational conditions the above limitation is not applicable.

(2) Amend the applicable AFM, section 3 – “NORMAL PROCEDURES” to climb and cruise phases of flight be performed with CLB2 mode for flights above 33000 ft, according to the following procedure:

**CLIMB**

At 10000 ft AFE:

MCDU ………………………………………… PRESS TRS BUTTON

- On the LSK 2R, verify or select CLB2 as active climb thrust mode;
- Select CLB2 on the LSK 4L. This action reverts from AUTO to MANUAL rating selection.

**CAUTION:** MAINTAINING CLB 2 RATING THROUGH ALL THE FLIGHT WILL LIMIT THE AUTOTHROTTLE OPERATION. IF THE AUTOTHROTTLE IS DISENGAGED, ABOVE 33000 FT MAINTAIN N1 BELOW 96%

Figure 1 – MCDU configuration after accomplishing the procedure

(c) The AFM alteration required by this AD may be accomplished by inserting a copy of this AD into the Aircraft Flight Manual.

(d) Interim action

This AD is considered an interim action. ANAC may consider further mandatory actions resulted from the investigation into the failures in the engine model with similar type design of PW1900.
(e) Alternative method of compliance (AMOCs)

A different method or a different compliance time, with the requirements of this AD, may be used if approved by the General Manager of the Aeronautical Product Certification Branch (Gerência-Geral de Certificação de Produtos Aeronáuticos – GGCP).

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APPROVAL:

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Airworthiness Superintendent
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NOTE: Original in Portuguese language signed and available in the files of the Aeronautical Products Certification Branch (GGCP) of the National Civil Aviation Agency (ANAC).

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