



**AGÊNCIA NACIONAL DE AVIAÇÃO CIVIL - BRAZIL**

## **BRAZILIAN AIRWORTHINESS DIRECTIVE**

**AD No.: 2024-05-02**

**Effective Date: 21 Jul. 2024**

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. 2024-05-02 - (BOEING) / 39-1553.**

#### **APPLICABILITY:**

**(a)** This Airworthiness Directive (AD) applies to BOEING airplane models 737-300, 737-400, 737-500, 737-600, 737-700 and 737-800, all serial numbers.

#### **CANCELLATION / REVISION:**

Not applicable.

#### **REASON:**

The reason for this AD is the finding of potential interference in radio altimeters from wireless broadband operations in the 3,300 MHz to 3,700 MHz frequency band (5G C-Band). During takeoffs or landings, as a result of this interference, certain airplane systems may not properly function, resulting in increased flightcrew workload while on approach with the flight director, autothrottle, or autopilot engaged. The increased flightcrew workload could lead to reduced ability of the flightcrew to maintain safe flight and landing of the airplane.

Since this condition may occur in other airplanes and affects flight safety, corrective action is required. Thus, sufficient reason exists to mandate compliance with this AD in the indicated time limit.

#### **REQUIRED ACTION:**

Airplane Flight Manual (AFM) Revision

#### **COMPLIANCE:**

Required as indicated below, unless already accomplished.

#### **(b) Airplane Flight Manual Revision**

**(1)** For airplanes identified in paragraph **(a)** of this AD, that do not meet

the criteria for a “radio altimeter tolerant aircraft”, as established by PORTARIA No. 14.318/SAR, de 10 de abril de 2024, or further Portaria that supersedes it, within 10 days after the effective date of this AD, revise the Limitations Section of the existing AFM to include the following information:

**Radio Altimeter 5G C-Band Interference, Approach, Landing, and Go-Around**

Due to the presence of 5G C-Band wireless broadband interference, the following limitations are required to dispatch or release to airports, and approach, landing, and go-around on runways, in the Brazilian airspace.

**Approach, Landing, and Go-Around**

Operators must use the **Radio Altimeter 5G C-Band Interference, Approach, Landing, and Go-Around** procedure.

**(2)** For airplanes models 737-300, 737-400, and 737-500 identified in paragraph **(a)** of this AD, that do not meet the criteria for a “radio altimeter tolerant aircraft”, as established by PORTARIA No. 14.318/SAR, de 10 de abril de 2024, or further Portaria that supersedes it, within 10 days after the effective date of this AD, revise the Operating Procedures Section of the existing AFM to include the following information:

**Radio Altimeter 5G C-Band Interference, Approach, Landing, and Go-Around**

**ILS Approaches**

For ILS approaches other than CAT I AR, CAT II, and CAT III, during any ILS approach with autopilot engaged or flight director ON, execute a go-around for any of the following conditions, unless the runway environment is in sight and a manual, visual landing can be accomplished:

- If the flight director automatically retracts from view, or
- If the pitch guidance indicates FLARE mode prematurely, or
- If the autothrottle retards to IDLE prematurely.

**During Go-Around and Missed Approach**

If a go-around is required, ensure thrust is increased to go-around power. Do not use flight director, autopilot, or autothrottles until reaching a safe altitude. TOGA mode may not be available. Autopilot may not be available. Monitor pitch and roll modes for engagement.

**(3)** For airplanes models 737-600, 737-700, and 737-800 identified in paragraph **(a)** of this AD, that do not meet the criteria for a “radio altimeter tolerant aircraft”, as established by PORTARIA No. 14.318/SAR, de 10 de abril de 2024, or further Portaria that supersedes it, within 10 days after the effective date of this AD, revise the Operating Procedures Section of the existing AFM to include the following information:

## **Radio Altimeter 5G C-Band Interference, Approach, Landing, and Go-Around**

### **ILS Approaches**

For ILS approaches other than CAT I AR, CAT II, and CAT III, during any ILS (and GLS if installed) approach with autopilot engaged or flight director ON, execute a go-around for any of the following conditions, unless the runway environment is in sight and a manual, visual landing can be accomplished:

- If the flight director automatically retracts from view, or
- If the pitch guidance indicates FLARE mode prematurely, or
- If the autothrottle retards to IDLE prematurely.

### **Landing**

Adjust operational (time of arrival) landing distance for manual speedbrakes.

Automatic speedbrake deployment may not occur after touchdowns.

### **During Go-Around and Missed Approach**

If go-around is required, ensure thrust is increased to go-around power. Do not use flight director, autopilot, or autothrottles until reaching a safe altitude, TOGA mode may not be available. Autopilot may not be available. Monitor pitch and roll modes for engagement.

**NOTE 1:** The AFM alteration required by this AD may be accomplished by inserting a copy of this AD into the Aircraft Flight Manual.

**NOTE 2:** For this AD, a “radio altimeter tolerant aircraft” is the one for which ANAC accepts that the combination airplane-radio altimeter is sufficient to demonstrate tolerance to the limits specified in PORTARIA No. 14.318/SAR, de 10 de abril de 2024, or further Portaria that supersedes it.

**(4)** For airplanes identified in paragraph **(a)** of this AD, that are defined as “radio altimeter tolerant aircraft”, according to the established by PORTARIA No. 14.318/SAR, de 10 de abril de 2024, or further Portaria that supersedes it, no action is required by paragraph **(b)**.

### **(c) Terminating Action to the AFM Revision**

Modification of a “non-radio altimeter tolerant aircraft” to a “radio altimeter tolerant aircraft”, according to PORTARIA No. 14.318/SAR, de 10 de abril de 2024, or further Portaria that supersedes it, terminates the AFM revision required by paragraphs **(b)(1)**, and **(b)(2)** or **(b)(3)** of this AD, as applicable. After modification to a “radio altimeter tolerant aircraft”, according to PORTARIA No. 14.318/SAR, de 10 de abril de 2024, or further Portaria that supersedes it, remove the AFM revision required by paragraphs **(b)(1)**, and **(b)(2)** or **(b)(3)** of this AD, as applicable.

### **(d) Compliance with PORTARIA N° 14.318/SAR, de 10 de abril de 2024, or further Portaria that supersedes it.**

For the purpose of this AD, the acceptance of the combination airplane - radio altimeter as a “radio altimeter tolerant aircraft” depends on evidence provided to demonstrate the tolerance limits established in PORTARIA No. 14.318/SAR, de 10 de abril de 2024, or further Portaria that supersedes it. These data should be submitted to ANAC through the e-mail 5g@anac.gov.br. The acceptance by ANAC of the airplane-radio altimeter combination as “radio altimeter tolerant aircraft” will be

indicated through an ANAC Ofício to the operator or manufacturer, or an ANAC Portaria listing the configurations accepted by ANAC as "radio altimeter tolerant aircraft".

**(e) Reporting of events**

Report any anomalies in the radio altimeter to ANAC through the email 5g@anac.gov.br, providing the following information:

- (i) Date
- (ii) Aircraft and radio altimeter model
- (iii) Phase of flight
- (iv) Location where the anomaly occurred
- (v) Transient or permanent anomaly

**(f) Alternative methods of compliance (AMOCs).**

A different method or a different compliance time from the requirements of this AD may be used if approved by the Manager of the Continuing Airworthiness Technical Branch (GTAC) of ANAC.

Record compliance with this AD in the applicable maintenance log book.

**CONTACT:**

For additional technical information, contact:

National Civil Aviation Agency (ANAC)  
Continuing Airworthiness Technical Branch (GTAC)  
Rua Doutor Orlando Feirabend Filho, nº 230  
Centro Empresarial Aquáriu – Torre B – 14º ao 18º andares  
Parque Residencial Aquáriu  
CEP 12246-190 – São José dos Campos – SP.  
E-mail: pac@anac.gov.br

**APPROVAL:**

ROBERTO JOSÉ SILVEIRA HONORATO  
Head of Airworthiness Department  
ANAC

**NOTA:** Original in Portuguese language signed and available in the files of the Continuing Airworthiness Technical Branch (GTAC) of the National Civil Aviation Agency (ANAC).