



# Special Airworthiness Bulletin

BEA 2023-06

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## 5G Operation in Brazil

This Special Airworthiness Bulletin (BEA) is intended to alert rotorcraft owners, operators, and pilots regarding the 5G operation in Brazil and possible anomalies in the radio altimeters caused by interference, such as loss or erroneous functioning.

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:

**All rotorcraft in operation in Brazil**

### Description:

In 2021, ANAC became aware of international studies regarding the risk of 5G signal interference on radio altimeters and its potential effects on aircraft and rotorcraft. In May 2021, ANAC began interactions with ANATEL to seek a common understanding of the required mitigations for the Brazilian environment, to ensure safe coexistence between Aeronautical Radio Navigation Services and the 5G Personal Mobile Service in C-Band.

ANAC has been working with ANATEL since then and has also interacted on this subject with civil aviation authorities and telecommunication authorities from other countries, as well as with aircraft and rotorcraft manufacturers and operators.

Studies related to transport and commuter aircraft operations resulted in the establishment of the limitations imposed by ANATEL ATO nº 9064, of June 28<sup>th</sup>, 2022, which is considered risk mitigation for the interference identified in the Brazilian environment, according to data available at this moment.

The radio altimeter is also an important instrument for rotorcraft. It provides direct information on the height above the terrain, and it is more accurate than the barometric altimeter. For this reason, it is used when information on the height above the ground must be accurate, such as in automatic hover flights and low-altitude operations. The radio altimeter can provide height

above-ground data for takeoff and landings for Category A and B operations. Anomalies in the information can lead to unexpected rotorcraft maneuvers.

At this moment, no unsafe condition has been found by ANAC and the issuance of an Airworthiness Directive is not justified. However, this topic continues to be the subject of study and discussions, and new actions may be taken by ANAC in the future.

### Recommendation(s):

ANAC recommends that rotorcraft owners, operators, and pilots to:

- a. Use barometric altitude information for landings and take-offs in Category A and B operations whenever possible, where the Takeoff Decision Point (TDP) or Landing Decision Point (LDP) is defined for the operation.
- b. Use barometric altitude information in automatic hover flights, whenever possible.
- c. Report to ANAC via e-mail address [pac@anac.gov.br](mailto:pac@anac.gov.br) if there is suspected interference with the rotorcraft's radio altimeter equipment during operation, especially at low altitude, which may be related to the operation of the 5G signal, including in the report as much information as possible about the location of the event, as well as the effects on the rotorcraft.
- d. If portable electronic devices compatible with 5G technology are carried in the rotorcraft's cabin or cockpit, keep them switched off or in "airplane" mode during operation. For essential communications, such as during Search and Rescue operations, use alternatives, such as communication devices with 3G or 4G technologies

### Reference:

1. Regulamento Brasileiro da Aviação Civil no 39, emenda no 00, DIRETRIZES DE AERONAVEGABILIDADE

2. ATO ANATEL Nº 9064, DE 28 DE JUNHO DE 2022

[https://sei.anatel.gov.br/sei/publicacoes/controlador\\_publicacoes.php?acao=publicacao\\_visualizar&id\\_documento=9850633&id\\_orgao\\_publicacao=0](https://sei.anatel.gov.br/sei/publicacoes/controlador_publicacoes.php?acao=publicacao_visualizar&id_documento=9850633&id_orgao_publicacao=0)

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