



GT - Runway Safety

Safety Enhancement Revision

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Safety Enhancement

BCAST – GT-RS - SE 02 rev.01

Review of Runway Markings in the Brazilian Context and Raising Awareness of the Importance of the Touchdown Point for Landing Performance

Action of Safety Enhancement

Safety Enhancement Actions: Recommend the adoption of mitigation measures related to this topic, aiming to reduce the risk of runway excursions.

Those responsible for the action

Party(ies) responsible for implementation:

- ☒ Airlines
- ☐ Industry associations
- ☒ BCAST
- ☐ DECEA
- ☐ Research organizations
- ☐ Unions
- ☐ Manufacturers
- ☒ ANAC
- ☒ Other (specify): BGAST; BAIST, Airport Operators



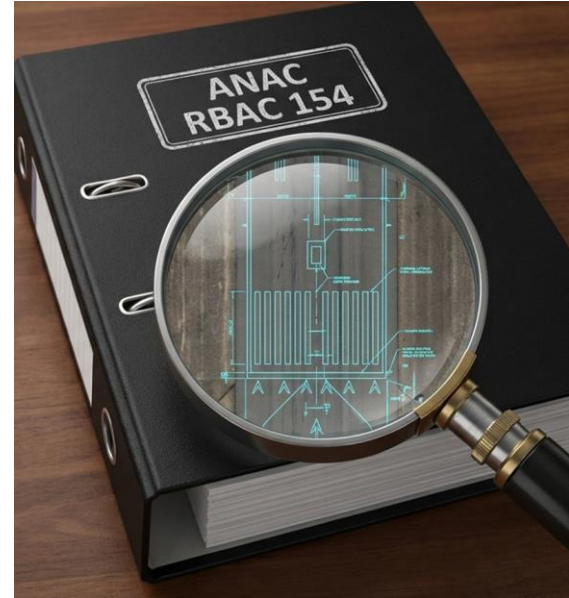
The main focus of the review

Runway Markings

Context

Beyond the issues surrounding operational compliance with touchdown within runway markings, it is necessary to note that the markings themselves contain inconsistencies regarding Brazilian regulations. Furthermore, there are gaps in the relevant RBAC (Brazilian Civil Aviation Regulation) that allow for the shifting of the aiming point without a corresponding adjustment of other runway markings, as observed below:

RBAC No. 154 establishes that, for runways equipped with visual approach slope indicator systems (PAPI), the start of the aiming point marking must coincide with the origin of the visual approach slope, as stipulated in section 154.303(e)(2)(i).



Context

However, at various Brazilian airports, a practice is observed of repositioning solely the aiming point marking to align with the PAPI, without making corresponding adjustments to other runway markings, the layout of which is also linked to the landing distance available and the aiming point's position.

This partial solution creates a non-standardized visual configuration in which the primary approach aids lack coherence with one another, contradicting the systemic concept envisioned by the regulation.

Context

In addition to the perceptual impact on the pilot during the final stages of the approach, this condition creates a potential misalignment between the visual reference actually presented by the runway and the officially published Landing Distance Available (LDA). In practice, shifting the aiming point tends to induce touchdown further down the runway, thereby reducing the remaining distance available for deceleration, all without any formal change to the declared LDA or published aeronautical data.

This scenario creates a discrepancy between the operationally perceived infrastructure and the parameters used in landing performance calculations, potentially compromising the assumptions made by flight crews and operators—particularly during operations with reduced performance margins.



Context

From an operational safety perspective, this condition request a more in-depth regulatory assessment, given that mere compliance regarding the positioning of the aiming point does not guarantee the functional integrity of the visual reference system or the alignment of performance data with the conditions actually encountered by the pilot.

As airport operators continue to view this scenario through the lens of regulatory compliance, part of this SE (Rev. 01) aims to advance regulatory discussions with the agency—with which initial meetings on the subject have already taken place.



Recommendations

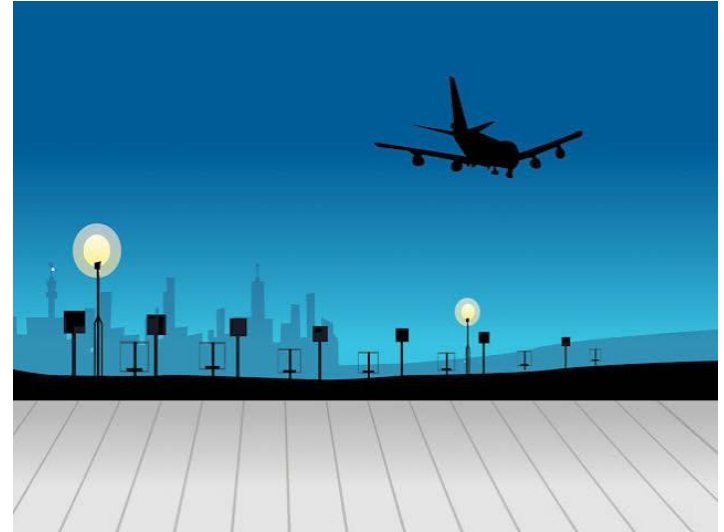
Based on GT-RE Information Bulletin 02 (2018, revised in 2021): "We Need to Talk About the Touchdown Point." The review of the Safety Enhancement, considering the Brazilian context of Runway Marks, recommends:

Promoting a review of this topic with the regulatory agency and airport operators, based on:

- Initial meetings with the regulatory agency to present the Brazilian scenario and challenges;
- Defining an agenda with ANAC to discuss regulatory improvements regarding runway markings;
- Developing or incorporating amendments—via an Supplementary Instruction (IS)—to make the regulations more effective;
- Engaging with airport operators, based on airport infrastructure regulations, to address issues involving inconsistent and/or repositioned runway markings;

Airlines

Airlines shall be responsible for:
Keeping their manuals and training programs updated to include concepts regarding runway markings, the aiming point, landing performance, and the recommended touchdown zone. In the event of regulatory changes that may entail modifications to runway markings, keeping flight crews updated on the context of these changes and specific details regarding any potential transition.



ANAC

It is the responsibility of ANAC to:

- Assess the possibility of incorporating modifications to current standards and regulations to facilitate and/or promote the harmonization of the implementation of mitigation strategies for the identified scenarios.

Possible solution: A repositioning of RBAC 154, based on a supplementary instruction (IS), to make the regulation clearer and more restrictive, ensuring commonality in runway markings.



GT-RS

The GT-RS is responsible for:

- Recurring monitoring of company statistics/indicators regarding events related to the Runway Excursion risk category.
- Compiling and maintaining up-to-date lists of locations with a prevalence of occurrences involving the scenarios mentioned above (validated during GT-RS meetings).
- Promoting cooperation regarding the subject of this document.



BCAST

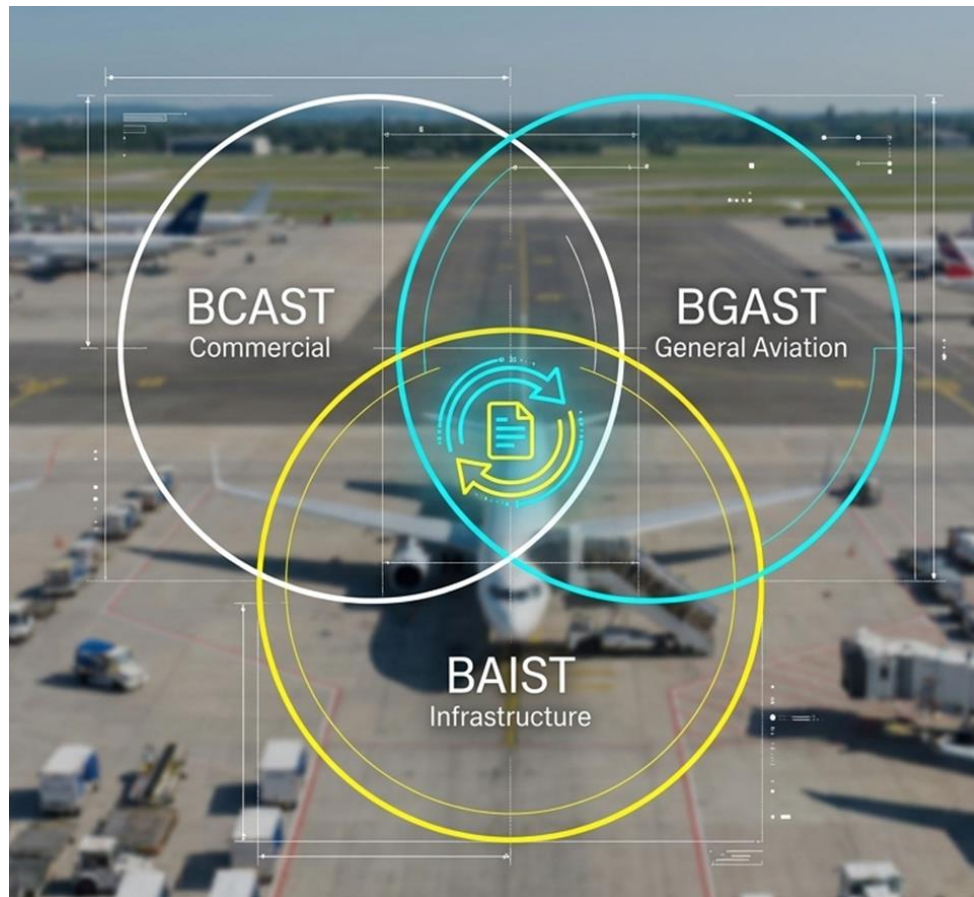
Brazilian Commercial
Aviation Safety Team

Challenges

Potential Obstacles:

- Wide variety of touchdown zone markings found at Brazilian airports.
- Defining touchdown point limit values, taking into account the performance characteristics and limitations of the various aircraft operated by airlines.
- Delays in technical and regulatory studies conducted by regulatory agency regarding amendments to current standards, should it be necessary to adjust existing RBAC rules.





Thank You!

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