



**Twentieth Meeting of the CAR/SAM Regional Planning and Implementation Group
(GREPECAS/20)**

Salvador, Brazil, 16 – 18 November 2022

Agenda Item 4: Reports of the GREPECAS Contributory Bodies: Scrutiny Working Group (GTE), Latin American and Caribbean Association of Airfield Pavements (ALACPA), CAR/SAM Regional Bird/Wildlife Hazard Prevention Committee (CARSAMPAF) and Data Analysis Working Group (DAWG)

REPORT OF THE SCRUTINY WORKING GROUP

(Presented by the GTE Rapporteur)

EXECUTIVE SUMMARY

The GREPECAS Scrutiny Working Group (GTE) has continued to develop a critical task to ensure that the safety of the Reduced Vertical Separation Minimum (RVSM) airspace of the Caribbean and South American regions remains within the acceptable level.

The GTE, in coordination with the CAR/SAM Monitoring Agency (CARSAMMA), evolved to generate safety data for the decision-making of States and service providers in the CAR/SAM Regions.

Action:	Suggested actions are presented in Section 4.
<i>Strategic Objectives:</i>	<ul style="list-style-type: none"> Air Navigation Capacity and Efficiency
<i>References:</i>	<ul style="list-style-type: none"> GTE 22 Report

1. Introduction

1.1 Since the implementation of the Reduced Vertical Separation Minimum (RVSM) between flight levels 290 and 410 inclusive, the Scrutiny Working Group (GTE), in conjunction with the Caribbean and South American Monitoring Agency (CARSAMMA), has been working in the continuous monitoring of the performance of the system, as well as in the safety assessments, in compliance with the provisions of ICAO Documents 9937 and 9574.

2. Scope

2.1 This working paper covers the activities carried out by the GTE during the period **2021-2022** and the result of the RVSM airspace operational safety performance analysis for 2021.

3. Discussion

3.1 Between **2021-2022**, the GTE held a face-to-face meeting and a series of virtual meetings, including Focal Points (POC) instruction seminar; These activities are part of the responsibilities of the GTE to guarantee the monitoring of RVSM airspace in the CAR/SAM Regions.

3.2 From September 26 to 30, 2022, the twenty-second meeting of the GTE was held in Mexico City, attended by 10 States/Territories of the CAR/SAM Regions and 3 International Organizations, with a total of 43 delegates. It is valid to remind the States of the importance of the focal points (POCs) participation in the GTE meetings.

3.3 The GTE 22 agenda included the election of the Group's Rapporteur; the GTE elected Mrs. Diana Luque Salcedo (Colombia) as the new Rapporteur of the GTE. The GTE's Terms of Reference will be reviewed to address the Rapporteur's periodicity and the possibility of a regional alternation.

3.4 The results of the Vertical Collision Risk assessments - CRM (Collision Risk Model) in the 2017-2021 period show that the operations in RVSM airspace have remained within the acceptable safety level of 5×10^{-9} fatal accidents by flight or by loss of standard vertical separation of 1,000 ft. (See Fig. I in the **Appendix**).

3.5 Although the COVID-19 pandemic considerably reduced traffic volumes in 2020 and 2021, it also impacted ATC personnel reduced by distancing measures and by the number of infected people in control centers; this contributed to an increase in LHD events (Large Hight Deviation) during 2021. The trend analysis showed significant increases in the number of events, especially in the Guayaquil and Panama FIRs. (See Fig.II in the Appendix).

3.6 During 2021, of the 520 reports received and validated by CARSAMMA, 206 events corresponded to Bogotá FIR and 59 events to Barranquilla FIR, representing 60.6% of all validated reports. Other FIRs with a significant number of events were Lima - 28 events, Guayaquil - 26 events, Curaçao - 23 events, and Central America 22 events. The total of events of all the FIRs mentioned is 74.0% of the CAR/SAM region. (See Fig. 3). It is important to note that the trend in LHDs of the FIRs mentioned above has been maintained during the last three years. It is essential to take immediate corrective actions are taken.

3.7 Considering the significant number of events involving the FIRs mentioned in paragraphs 3.4 and 3.5, the implementation of specific action plans that identify and address the root causes of these events is recommended, which should include bilateral and multilateral meetings between the Points of Contact (POC) with support from the ICAO NACC and SAM Offices. The interaction of different technical areas is essential, as high-level support to mitigate the risk in these airspaces.

3.8 Code E events related to coordination errors between air traffic services **constitute 95% of the LHDs** reported in the CAR/SAM Regions. These data demonstrate the need to improve coordination between adjacent ATC units.

3.9 Some events of 2021 were related to coordination failure due to technical issues of the transfer equipment (AMHS or the AIDC). One of the failures refers to the aircraft departing from airports close to the FIRs border, which are coordinated by AIDC with the final authorized flight level; as they are climbing, this causes a negotiation between the AIDC systems, calculating the crossing level and sending a new message to the accepting Area Control Center (ACC) that is rejected. This situation has caused multiple LHD reports to the Barranquilla FIR by Panama. Coordinated work has been initiated to address this flaw.

3.10 A situation that has affected the airspace monitoring process is the states' change of the Points of Contact (POC) without informing CARSAMMA and the ICAO offices. New Points of Contact assume the function without receiving adequate training on the methodology for evaluating an event and the procedures established in the Points of Contact manual. In 2021, this situation caused an FIR from the SAM region to report a significant number of events to CARSAMMA, which were unknown by the adjacent FIRs. During the GTE 22, It was decided that the States would update the POC information annually using the official CARSAMMA form.

3.11 As part of the GTE 22 agreements, CARSAMMA will organize quarterly teleconferences to provide feedback on LHD events to verify the validity and identify safety trends or situations that require immediate action. The GTE must amend its terms of reference and the manual of points of contact accredited to CARSAMMA to specify the validation period with the adjacent ACCs for the LHDs received before being sent to CARSAMMA.

3.12 Since 2020, it has been implemented the flight plan audit process with the cooperation of the States monthly sending the FPLs, and the support of CARSAMMA in the analysis. This audit process has allowed the identification of many aircraft flying in the RVSM airspace without having a record of their capabilities to use that airspace segment.

3.13 One of the points discussed during GTE 22 refers to the validation and coordination of events at the border between the Caribbean and North American regions, agreeing that the POCs must validate those events by sending the notification to the points of contact of the facilities ATS and NAARMO. The LHD information will be forwarded to CARSAMMA as specified in the procedures.

3.14 The collaboration of the GREPECAS Scrutiny Working Group (GTE) and the Regional Aviation Safety Group-Pan American (RASG-PA) has strengthened. During GTE 22 was discussed the terms of reference that will serve as a framework for this collaborative work.

3.15 It is important to recognize the excellent work carried out by CARSAMMA, which has strengthened the agency's team and improved internal procedures to continue supporting the CAR/SAM RVSM airspace monitoring process.

4. Suggested actions

4.1 The Meeting is invited to:

- a) support the necessary actions to reduce the LHD events in the CAR/SAM Regions, with special attention to the Barranquilla, Bogotá, Central America, Curazao, Guayaquil, Lima, and Panama FIRs;
- b) recommend to the States/International Organizations of the CAR/SAM Regions to continue with the implementation of the AIDC, and where it has been installed, effectively attend to the necessary improvements for its proper functioning, as well as the exchange of RADAR data, as a mechanism to reduce the number of LHD events;
- c) request the States, Territories, and International Organizations to keep the Points of Contact (POC) accredited to CARSAMMA updated, as well as provide the necessary training for the correct performance of their functions; and
- d) suggest any additional action deemed necessary.

APPENDIX

Figure I shows a table with the results of the CRM evaluations in the 2017-2021 period, indicating that operations in RVSM airspace have remained within the acceptable safety level of 5×10^{-9} fatal accidents per flight or for loss of standard vertical separation of 1,000 ft.

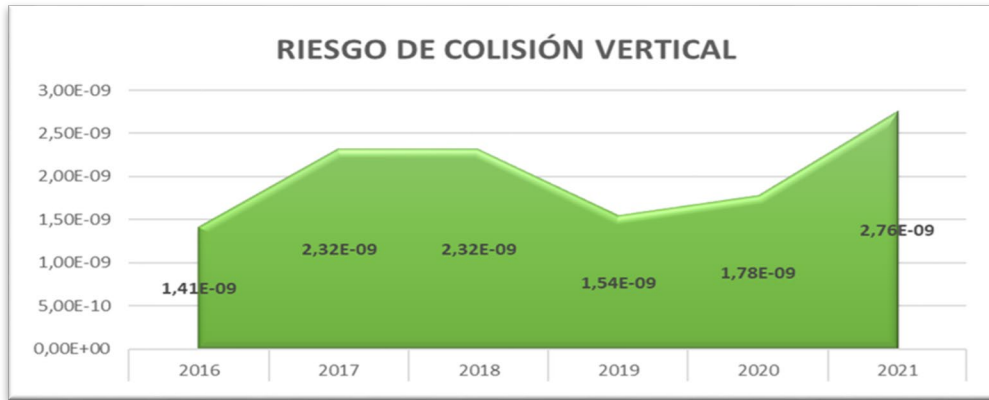


Fig I

Figure II compares the number of failures between 2020 and 2021.

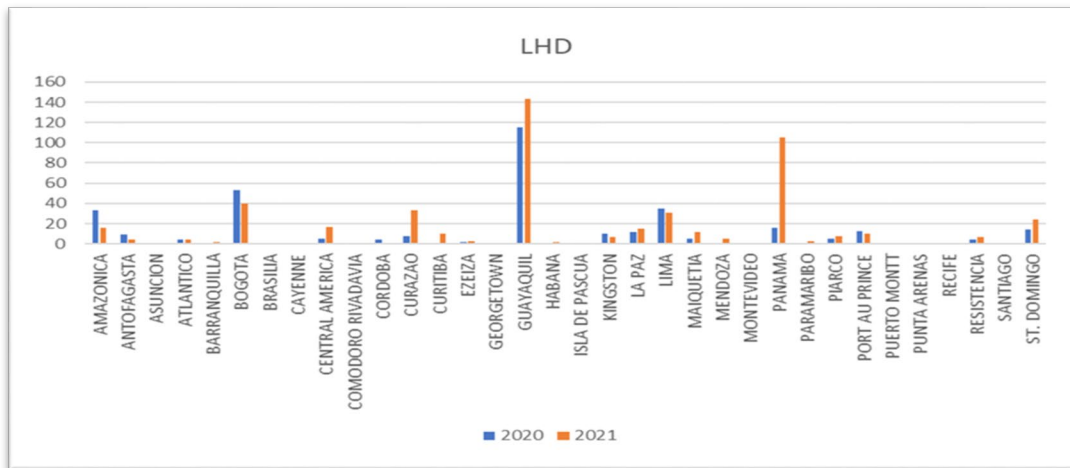


Fig. II

Figure III shows the eleven FIRs that presented the highest number of reports and the points where the failures occurred.

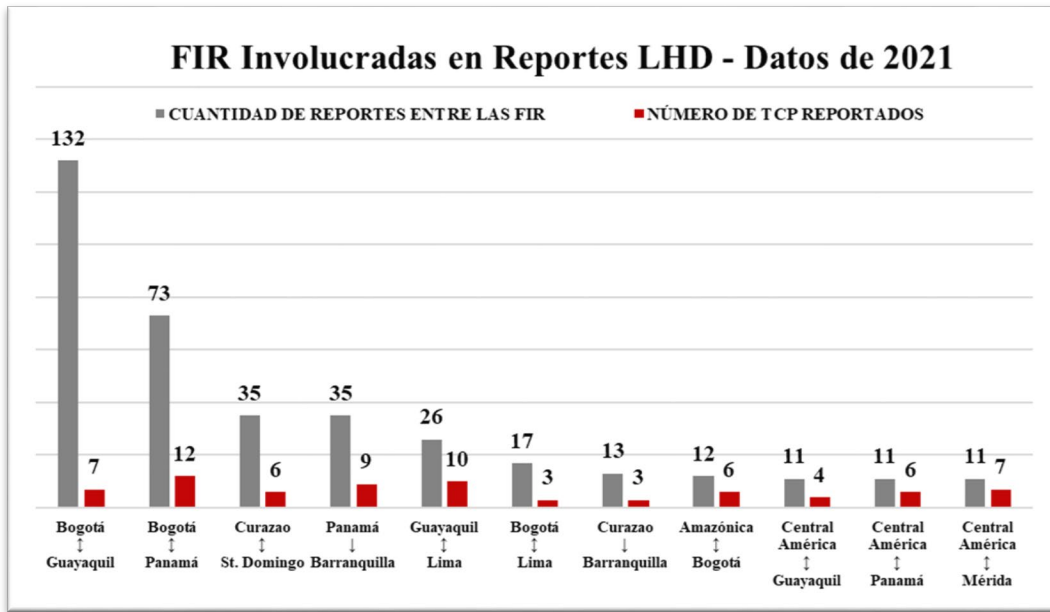


Fig. III