



Agenda Item 3: Performance framework for Regional Air Navigation Planning and Implementation

REPORT OF THE SCRUTINY WORKING GROUP (GTE)

(Presented by the Rapporteur of the Scrutiny Working Group (GTE))

SUMMARY

This working paper presents the report of the CAR/SAM Scrutiny group (GTE) so that GREPECAS may prepare its future work plan.

REFERENCES:

- Final Report of the GTE/8 Meeting
- Final Report of the GTE/9 Meeting
- Final Report of the GTE/10 Meeting
- CAR/SAM RVSM GTE Reference guide

1. Introduction

1.1 Since the decision was made to implement reduced vertical separation minima (RVSM) in the CAR/SAM Regions, the Scrutiny Working Group (GTE) has made an analysis of large-height deviations (LHD) to assess the Target Level of Safety (TLS), as established in ICAO Doc 9574 with support from GREPECAS.

1.2 Part of this process is carried out by the CAR/SAM Regional Monitoring Agency (CARSAMMA), as the responsible body for performance monitoring of the system. The work of the GTE is based on the CAR/SAM RVSM Scrutiny Working Group Reference Guide and the monitoring method of CARSAMMA approved by GREPECAS.

1.3 The objective of the GTE is to analyse large-height deviations and an estimated time that an aircraft flies at a non-authorized height. This estimate is used to calculate the operational risk after RVSM implementation.

1.4 The GTE analyses the technical risk (affected by the reliability and aircraft avionic precision) and operational risk (affected by operational errors and in-flight contingencies) in the development of safety oversight. Criteria established helps to determine whether an altitude event reported qualifies or not as LHD.

1.5 Once a LHD is classified, data is reviewed to identify trends in safety performance. If an adverse trend exists the GTE formulates recommendations to reduce or mitigate the effect of such trends as part of RVSM implementation. The Group gathers periodically to analyse the performance after implementation and make sure that operational errors are kept to the minimum.

1.6 This information is used to ensure that the airspace being analysed continues to comply with the target level of desired safety of 5.0×10^{-9} fatal accidents per aircraft flight hour, which is necessary for RVSM operations continuity. From this evaluation process, suggested recommendations can be made for procedures or other mitigating strategies to reduce the occurrence of large-height deviations.

1.7 It must be noted that GREPECAS previously recommended corrective actions for the short and mid-term, contained in Conclusion 15/36 “Measures to reduce operational errors in ATC coordination cycle between adjacent ACCs”. Because of this, States and International Organizations were encouraged to implement a safety management system (SMS) and, as technology permits, to implement data communications between ATS facilities (AIDC) in a gradual manner.

2. Analysis

2.1 The GTE met in ten occasions, where all 90m (300 ft) large-height deviations (LHD) were analysed, as per the reports received by CARSAMMA. The GTE analysed all occurrences of 90m (300 ft) or more large-height deviations (LHD) reported to CARSAMMA since RVSM implementation until June of 2010.

2.2 The GTE/10 analysed a total of 456 reports for CAR and SAM regions reported during the period of 1 January 2010 through 30 June 2010. A summary of reported events and GTE analysis is included in **Appendix A**.

2.3 As a result of the GTE activities, it was found that M and N errors are still one of the two main categories, representing approximately between 94% and 97% of the LHDs reported. When analysing categories of events, the analysis reflects that errors are not caused by RVSM operation, and that the main contributory factor is common aircraft transfer procedures from one ATC unit to another. The evaluation proves that that the risk of collision for any of the regions is less than the TLS of 5.0×10^{-9} reference of fatal accidents per aircraft flight hour.

2.4 In this respect, it must be noted that many letters of operational agreement (LOA) between ACCs contain the coordination procedures, radar and non-radar, to transfer communications of aircraft and in some cases, communication of aircraft will be transferred FIVE (5) minutes before the estimated hour in which the aircraft shall reach a transference point.

2.5 GTE also emphasized the need for obtaining accurate data and highlighted the importance of reporting LHD's to the Safety Management System (SMS) in the ATC units. The Meeting recognized the necessity of Air Navigation Service Providers (ANSPs) to conduct safety assessments of all ATS incident and ATC errors based on ICAO SMS provisions.

2.6 It was noted that several events were considered NON-LHDs when aircraft involved, was about 20NM in the adjacent FIR within radar coverage, equivalent to 3 minutes prior communication's establishment. The percentage of these events was 26.8% (122 of the 456 events). Figure 2 provides a summary of the rate of occurrence of large height deviations at the top reported positions.

2.7 In view of the above, the meeting should support that States take the corresponding actions so that adjacent ACCs review the letters of agreement so that, if such were the case, they incorporate such procedure. Likewise, radar data sharing plan and gradual implementation for ATS interfacility data communications (AIDC) messages.

2.8 The goal of the monitoring activity is to ensure that RVSM airspace operations do not generate an increase in collision risk due to such events, and that total vertical risk does not exceed target levels of safety. The GTE has recognized that altitude deviations generated by operational errors and in-flight contingencies occur in the whole airspace, regardless of minimum separation. Therefore actions to reduce the risk should not be exclusive for RVSM airspace.

2.9 The GTE/10 Meeting noted that several bilateral and multilateral meetings took place to address adverse trends identified between two or more FIRS.

2.10 According to GREPECAS Conclusion 15/36 , a bilateral meeting between Trinidad and Tobago and Venezuela took place in September 2010, a trilateral meeting between Dominican Republic, Santo Domingo ACC, San Juan CERAP and Miami ARTCC took place; a multilateral meeting between Haiti, Netherlands Antilles and Dominican Republic convened in September 2010 and a multilateral meeting between Argentina and Brazil. The purpose of the meetings was to reduce the occurrence of operational errors and large height deviations within the relevant airspace.

2.11 The meetings reviewed and evaluated the number of incidents reported within the airspace and also addressed communication issues between the respective States and ATS and letters of Agreement between the facilities were updated.

2.12 The GTE emphasized the benefits of conducting multilateral meetings and discussions and the effect such discussions have on increasing safety, reducing operational errors and promoting communication between facilities. The Group encouraged participants to continue to promote bilateral/multilateral discussions between them to further increase safety within the CAR/SAM Region.

2.13 The Group unanimously elected Mr. Johann Estrada Pelletier from the Dominican Republic as the new CAR/SAM GTE Rapporteur and thanked Mr. Walton for his dedication and ability to lead the Group in a positive direction, emphasizing the progress achieved under his leadership.

APPENDIX A

SUMMARY OF REPORTED EVENTS AND GTE ANALYSIS

Figure 1

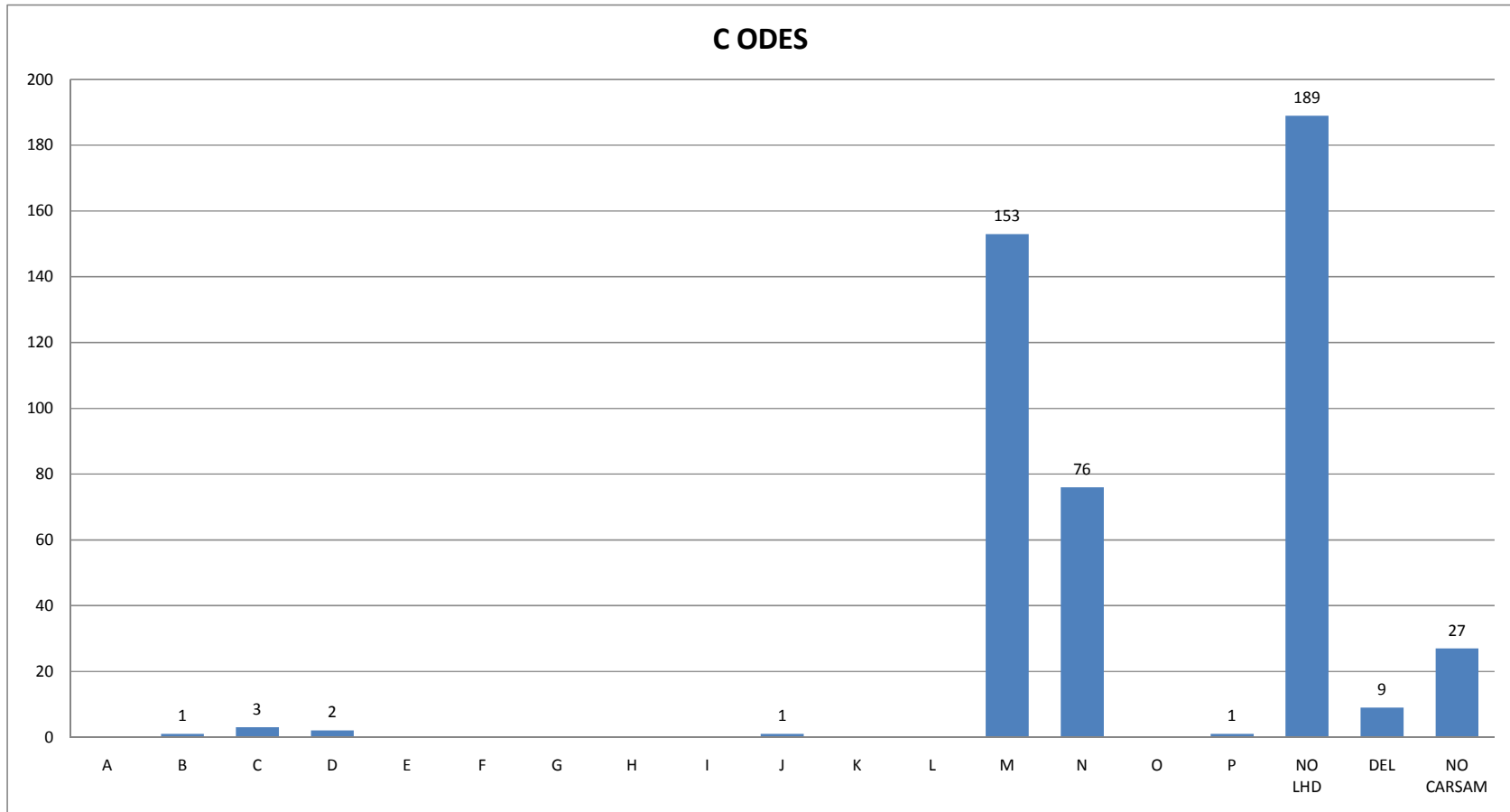
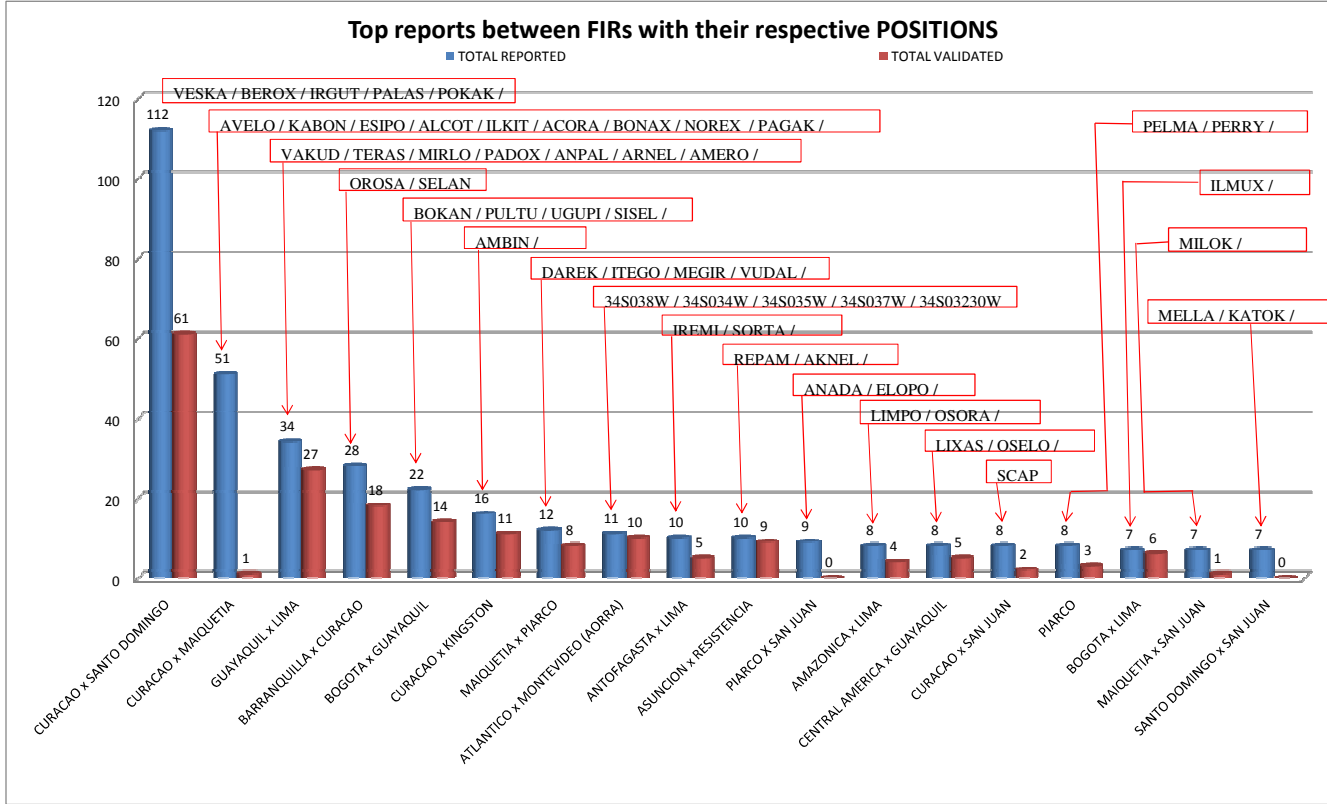


Figure 2



APPENDIX B

TERMS OF REFERENCE OF THE CAR/SAM RVSM SCRUTINY WORKING GROUP (GTE)

- a. Convene a meeting as needed with experts in, air traffic control, aircraft operations and maintenance, regulation and certification of aircrafts, in order to analyze data and risk modeling of large height deviations (LHD) space of 300 ft or greater reported to the Regional Monitoring Agency;
- b. analyze and evaluate large height deviations (LHD) and produce an estimate of flight time away from the cleared flying level to be used as an estimate of risk by the Regional Monitoring Agency according to ICAO Doc 9574;
- c. identify large height deviation trends and to recommend remedial actions in order to improve safety;
- d. report results to GREPECAS mechanism
- e. accomplish other tasks as recommended by GREPECAS; and
- f. participate in the Regional Aviation Safety Group – Pan American (RASG-PA) to harmonize regional safety initiatives.

Composition: Curaçao, Dominican Republic, Mexico, Peru, United States, CARSAMMA, COCESNA, IATA, IFALPA and IFATCA as well as other CAR/SAM States who wish to participate.

RAPPORTEUR: Johann Estrada (Dominican Republic)

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