



Agenda Item 1: Analysis of the results obtained at the GTE/9 Meeting at the Piarco and Maiquetía FIRs boundaries

LHDs IN PIARCO AND MAIQUETIA FIRs

(Presented by the Secretariat)

Summary

Under this agenda item, the meeting will take note of large-height deviations produced in the airspace of the Flight Information Regions involved and the error prevention programme in the communications cycle between adjacent ACCs as approved by GREPECAS. Also, some metrics are proposed for analysis by the Meeting.

References:

- GTE/9 Report
- GREPECAS/12 Report
- GREPECAS/15 Report

ICAO Strategic objectives

Strategic Objective C *Environmental Protection*

Strategic Objective D *Efficiency*

1 Background

1.1 The Scrutiny Working Group (GTE) was created within the framework of the CAR/SAM Regional Planning and Implementation Group (GREPECAS), and has the main objective to analyse 300 feet or greater large-height deviations (LHD), coordinate with the CAR/SAM Regional Monitoring Agency (CARSAMMA), LHD collection and data revision, identify LHD tendencies, and recommend corrective actions to improve safety, and inform GREPECAS, on the results through the CNS/ATM Subgroup.

1.2 The Ninth Meeting of the GTE (GTE/9) was carried out during the week of 8 to 12 March, where CARSAMMA presented LHD events reported, corresponding to the period 1 July to 31 December 2009. A total of 433 LHD reported in the CAR and SAM Regions were presented for analysis by the meeting. For the analysis, the methodology approved by the GTE, and the necessary parameter values to carry out the risk assessment in the concerned airspace, were used.

1.3 Within this task, the meeting reviewed, among other data, the estimated flight time in each one of the reports, flight levels crossed and revised the causes of each one of those deviations. These values are used to estimate the operational risk of operations carried out in the RVSM airspace in charge of CARSAMMA.

1.4 Figure 1 provides a summary of the Error Codes assigned for all those events that were analysed. As it may be noticed, Categories M (error in the transition message between ATC units) and N (negative transference received from the transferring ATC unit), continue to be the main errors identified, which represent 94% of the LHD reported and validated.

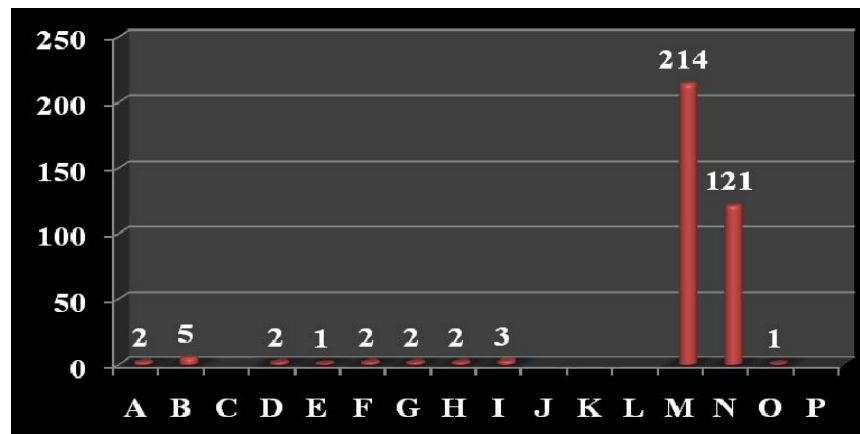


Figura 1 Resumen de Códigos de Error
Figure 1 Summary of Error Codes

1.5 Figure 2 provides the percentages of LHD occurrence in the reporting points most affected by these events. As you may notice, in figure 2, the addition of the reports from reporting points most affected reach a 42% from the total.

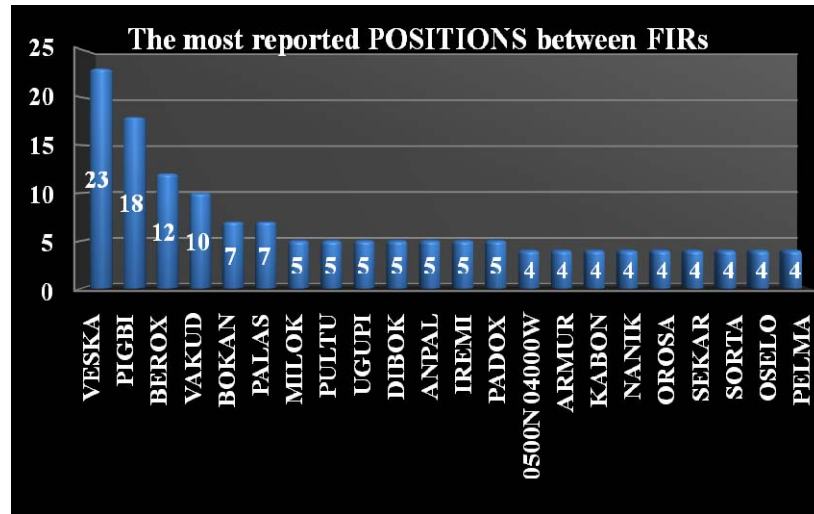


Figura 1 Tasa de Ocurrencias LHD por Posición – Las 22 posiciones principales
Figure 2 Rate of LHD Occurrence by Position - Top 22 Positions

2 Discussion

2.1 As it may be noticed, during the Meeting, an increase of large-height deviations (LHD) was identified in the airspace involving the Piarco and Maiquetía FIRs. These LHDs do not have origin in failures in the aircraft equipment, but in the flight coordination errors in the referred area, which considerably increases the total risk in the CAR/SAM Regions.

2.2 Also, the GTE/9 Meeting formulated Conclusion GTE/9-1, encouraging States to take the pertinent actions to reduce coordination errors between adjacent ACCs, as shown below:

Conclusion GTE/9-1 *Actions to be adopted to reduce coordination errors between adjacent ACCs*

That CAR/SAM International Organizations, in addition to the error programme in the communication cycle between adjacent ACCs, take into account the following matters:

- a) *Develop training programmes for air traffic controllers, and to include the importance of air traffic coordination between ATC units within the curricula of basic courses;*

- b) *Carry out a revision of letters of agreement between ACCs, so as to contemplate the inclusion of procedures and mechanisms for information exchange of coordination incidents among ATC units; and*
- c) *Include the implementation technology that permits automatic coordination between ATS units within the development plans.*

2.3 The programme to reduce operational errors in the ATC coordination loop between adjacent ACCs, as approved by Conclusion 15/36 is shown as **Appendix A** to this working paper.

2.4 Piarco and Maiquetía ACCs have in place a letter of operational agreement (LOA), where procedures for exchange of information between both area control centres have been established. They also have aeronautical fixed service communications, and aeronautical mobile service communications, which enable fast and safe communications between these ACCs, as well as between these facilities and aircraft operating in the airspace under analysis.

2.5 In view of the above, there would be no reason for errors in the transference of information from flights between ATC units; therefore, States involved are encouraged to take actions, if not already taken, for implementation of measures that enable reduction in operational errors identified.

2.6 In order to measure the impact of the actions that should be taken, the following metrics are proposed to be implemented:

- a) ATS letter of agreement between ACCs, revised and updated, responding to the current air traffic requirements and safety, and if appropriate, duly equipped and applied;
- b) Reduction in the number of incidents and LHD related with the lack of air traffic coordination within the Piarco and Maiquetía FIRs, as follows:
 - 40% after the first year of the present bilateral coordination meeting.
 - 80% during the second year; and
 - 100% in the third year.

3 **Suggested action**

3.1 The Meeting is invited to:

- a) take note of the information provided;
- b) review the error prevention programme shown in **Appendix A** to this working paper; and
- c) approve the metrics to measure the resolution level to the deficiencies identified shown in paragraph 2.6 above.

APPENDIX A

ERROR PREVENTION PROGRAMME IN THE COMMUNICATIONS BETWEEN ADJACENT ACCs

There are many initiatives that can be pursued to prevent operational errors from occurring. However, there are five primary areas, which can directly contribute to its prevention: **communications, phraseology, supervision, teamwork, and ATC proficiency**. In an effort to accomplish the goal of reducing communication errors between adjacent Area Control Centres and thus reduce or minimize the occurrence of large-height deviations, the following objectives should be included in the prevention programme:

The ATS authority shall:

- a) identify individual, procedural, and/or equipment deficiencies used in air traffic services;
- b) promptly correct individual, procedural, and/or equipment deficiencies which affect coordinations with adjacent and ATS units. This can be achieved through:
 - guidance on procedures to be followed;
 - implementation of read-back/hear-back programmes;
 - training in the filling of LHD forms;
 - increase and/or closer monitoring of ATCOs performance;
 - immediate coordination programme after a re-authorization or change in flight level;
 - changes in procedures and/or corrections/amendments of equipment.
- c) communicate performance expectations to ATS supervisors and controllers;
- d) ensure the ATS unit maintains a summary of and have information letters on operational errors, causal factors and trends, and incorporate them into training;
- e) monitor and evaluate voice recordings (all ATS operational personnel);
- f) take initiatives to improve communications among all ATS personnel to create an atmosphere conducive to sharing information;
- g) exercise strict monitoring in ATC units;
- h) ATS supervisors should:
 - communicate performance expectations to controllers, stressing the importance of operational control position discipline, awareness, teamwork, the use of proper phraseology, proper coordination procedures, control position relief briefings and utilization of a position relief checklist;
 - take prompt follow-up actions when controller performance does not meet with expectations;
 - inform on individual and team accountability, and the consequences for not meeting expectations;

- provide efficient and consistent oversight of the ATS unit operation, and use effective resource management to ensure proper and timely assignment of personnel to promote the safe, orderly, and expeditious handling of air traffic;
 - ensure that distractions and noise levels in the ATS unit are kept at a minimum;
 - require all personnel to maintain a high degree of professionalism, teamwork, control position discipline, and awareness at all times in the ATS unit environment; and require that each controller knows, applies, and adheres to the appropriate requirements in the performance of his/her operational duties and responsibilities;
 - promote an open flow of communications with all ATS personnel, allowing them to provide input to programme;
 - place emphasis on hear-back/read-back errors during team meetings.
- i) ATC personnel should:
- apply read-back/hear-back procedures when carrying out ATC coordinations;
 - keep ATS supervisors advised of traffic problems and equipment limitations;
 - make suggestions for ATS unit improvements and/or prevention of operational errors;
 - maintain situational awareness;
 - extend the extra effort to assist busier control position(s);
 - continuously review their own operating techniques and ATS unit procedures to effect the highest quality of performance;
 - promptly report all ATS incidents to the operational supervisor or other appropriate ATS authority for proper follow-up investigation;
 - utilize memory aids.

VOICE RECORDING EVALUATIONS

Voice recording reviews should be conducted to ensure proper phraseology, good operating practices, and adherence to the standards set forth in ICAO provisions, and national/local directives and practices. Voice recording reviews should be conducted as follows:

- a) the ATS unit should ensure that voice recording reviews are conducted at least semi-annually on all ATS operational personnel;
- b) the ATS supervisor should review the voice recording, document comments and develop an action plan for documenting performance deficiencies; and
- c) the ATS supervisor and the controller should review and discuss the voice recording.

Actions suggested as short term solution

- a) That States, authorities and International Organizations continue their excellent compliance with the LHD requirements to report CARSAMMA on a monthly basis, and
- b) That States, authorities and International Organizations distribute a copy of category “M”, Error messages in ATC unit to ATC unit in transference messages and category “N”, messages (“No ATC unit transference message was received”), received from transitioning ATC-unit LHD reports only to the adjacent ACC involved in addition to CARSAMMA.
- c) When a trend is identified from shared reports, the States, Territories, and International Organizations shall share information and shall meet on a bilateral basis to develop a solution to the cause of the identified LHD.
- d) Since some ACCs adjoin international oceanic airspace, ICAO NACC and SAM Regional Offices are requested to advise the corresponding adjacent ICAO regional Offices (EUR/NAT, WACAF) that said LHD report will be forthcoming from the adjacent ACC and urge positive interaction with reporting CAR/SAM unit.

Supported suggested actions as a medium term solution:

- a) In an effort to eliminate the largest contributing LHD error category “M”, the solution is to implement a quality management programme based upon safety management concepts outlined in Annex 11 amendment 44.
- b) The “*Progressive implementation of ATS interfacility data communications (AIDC)*” will enhance the safety of the airspace and would reduce category “M” error. However, it is a medium term project incurring a large expense and hereby encourages that the CAR/SAM Regions States begin arrangements to submit to the World Bank an application for sufficient monies to enhance such implementation systems. The Meeting recalled that the AIDC is seen within the Automation Task Force Program and therefore is not required another action at this point.

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