



Cuestión 4

del Orden del día: Revisión de los asuntos pendientes del ATM/CNS/SG, ATM/COMM, CNS/COMM y respectivos Grupos de Tarea, con el fin de tomarlos en consideración en el programa de trabajo del Subgrupo CNS/ATM

INFORME DEL GRUPO DE TRABAJO DE ESCRUTINIO (GTE)

(Presentada por el Relator del Grupo de Tarea de Escrutinio (GTE))

RESUMEN

Esta nota de estudio presenta el informe del Grupo de Trabajo de Escrutinio (GTE) de las Regiones CAR/SAM, a fin de que el Subgrupo CNS/ATM elabore su futuro plan de trabajo.

Referencias:

- Informe final de la sexta reunión/taller del Grupo de Trabajo de Escrutinio (GTE/6);
- Informe final de la séptima reunión/taller del Grupo de Trabajo de Escrutinio (GTE/7);
- Informe final de la octava reunión/taller del Grupo de Trabajo de Escrutinio (GTE/8); y
- Guía de Referencia del Grupo de Trabajo de Escrutinio RVSM de las Regiones del Caribe y Sudamérica.

1. Introducción

1.1 Desde que se tomó la decisión de implantar la separación vertical mínima reducida (RVSM) en las Regiones CAR/SAM, el Grupo de Trabajo de Escrutinio (GTE) ha llevado un análisis de las grandes desviaciones de altitud (LHD) para evaluar el Nivel de Seguridad Deseado (TLS), tal como lo establece el Doc 9574 de la OACI.

1.2 Parte del proceso lo lleva a cabo la Agencia Regional de Monitoreo para las Regiones CAR/SAM (CARSAMMA), como responsable del monitoreo de la performance del sistema. La Guía de Referencia del Grupo de Trabajo de Escrutinio RVSM de las Regiones del Caribe y Sudamérica y el método de monitoreo de la CARSAMMA se encuentran en la página web de esta última.

1.3 El objetivo del GTE es el analizar los informes de grandes desviaciones de altitud y un cálculo del tiempo que la aeronave vuela a una altitud no autorizada. Este estimado es utilizado para calcular el riesgo operacional después de la implantación de la RVSM.

1.4 El GTE analiza tanto el riesgo técnico (afectado por la confiabilidad y precisión de la aviónica de la aeronave) como el riesgo operacional (afectado por el elemento humano) en el desarrollo de la evaluación de la seguridad operacional. Los criterios establecidos ayudan a determinar si un evento de altitud reportado califica como una LHD.

1.5 Una vez que se determina LHD los datos son revisados para identificar tendencias en la performance. De existir alguna tendencia adversa, el GTE formula recomendaciones para reducir o mitigar el efecto de dichas tendencias como parte de la implantación RVSM. El Grupo se reunirá para analizar el historial de performance posterior a la implantación y asegurarse que los errores operacionales se mantengan al mínimo.

1.6 Esta información es utilizada para garantizar que el espacio aéreo que se está analizando sigue cumpliendo los requisitos del nivel de seguridad operacional deseado, el cual es necesario para la continuidad de las operaciones RVSM. De este proceso pueden surgir procedimientos u otras estrategias de mitigación para reducir la ocurrencia de grandes desviaciones de altitud.

1.7 Se debe recordar que el GREPECAS recomendó acciones correctivas para el corto y mediano plazo contenidas en la Conclusión 15/36, “Medidas para reducir los errores operacionales en el ciclo de coordinación ATC entre ACC adyacentes”. El GREPECAS alentó a los Estados y Organizaciones Internacionales a implantar un sistema de gestión de la seguridad operacional y, en la medida que la tecnología lo permita, a implantar la comunicación de datos entre instalaciones ATS (AIDC) en forma gradual.

2. **Revisión**

2.1 El GTE se reunió en ocho ocasiones donde analizó todas las ocurrencias de grandes desviaciones de altitud de 90m (300ft) según los reportes recibidos por la CARSAMMA. El GTE analizó todas las ocurrencias de grandes desviaciones de altitud de 90m (300ft) ó más reportadas a la CARSAMMA entre septiembre de 2008 y diciembre de 2009. En el **Apéndice** a esta nota de estudio se incluye el reporte de la octava reunión del GTE con los resultados de los análisis realizados.

2.2 El GTE encontró que los errores M y N siguen siendo las dos principales categorías representando aproximadamente el 97% de las LHD reportadas. Al analizar las categorías de eventos, se muestra que los errores no son causados por la operación RVSM, sino que el principal factor contribuyente son los procedimientos comunes de transferencia de aeronaves de una dependencia ATC a otra.

2.3 Los análisis anteriores revelaron que una cantidad significativa de eventos LHD categorizados como “M” y “N”, aproximadamente el 20%, corresponden a los puntos de notificación VESKA y BEROX.

2.4 A este respecto, la reunión recordó que muchas cartas de acuerdo operacional (LOA) entre los ACC contienen los procedimientos de coordinación, radar y no-radar, para transferir las comunicaciones de la aeronave. En algunos casos las comunicaciones de una aeronave serán transferidas CINCO (5) minutos antes de la hora en que se estima que la aeronave llegará al punto de transferencia en la ruta ATS.

2.5 En vista de lo anterior, la reunión apoyo que los Estados deberían tomar las acciones correspondientes para que los ACC adyacentes revisen las cartas de acuerdo para que, de ser el caso, revisen e incorporen dicho procedimiento. De igual manera, se debería revisar los planes de compartición de datos radar e implantación gradual para intercambio de datos entre dependencias ATC (AID).

2.6 A la luz de todo lo anterior, la Reunión debería examinar el Apéndice a esta nota de estudio, con miras a elaborar un Programa de Trabajo para el futuro Subgrupo CNS/ATM, así como también emitir comentarios y de ser el caso, a fin de mejorar la seguridad operacional en las Regiones CAR/SAM.

3. **Acción sugerida**

3.1 Se invita a la Reunión a:

- a) tomar nota de la información contenida en esta nota;
- b) alentar a los Estados, Territorios y Organizaciones Internacionales a que apoyen las medidas esbozadas en la Conclusión 15/36 del GREPECAS, "*Medidas para reducir los errores operacionales en el ciclo de coordinación ATC entre ACC adyacentes*"; y
- c) alentar a los Estados, Territorios y Organizaciones Internacionales a enviar representantes a las reuniones del GTE programadas en las Regiones CAR y SAM.

APPENDIX

Eighth Meeting of the Grupo de Trabajo de Escrutinio (GTE/8) (Port of Spain, Trinidad, from 26-28 January 2010)

REPORT

1. HISTORY OF THE MEETING

1.1. PLACE AND DURATION OF THE MEETING

1.1.1. The Eighth Meeting of the Grupo de Trabajo de Escrutinio (GTE/8) was held at the Crown Plaza Hotel in Port of Spain, Trinidad, from 26-28 January 2010.

1.2. OPENING CEREMONY AND OTHER MATTERS

1.2.1. Mr. Madison Walton, Rapporteur of the GTE, greeted the participants, and emphasized the importance of the issues to be addressed as well as notable adverse trends that have been identified within the Regions. Mr. Walton specifically noted facility-to-facility coordination issues and urged the Group to consider this trend when evaluating reports of large height deviations and determining proposed remedial actions.

1.2.2. Mr. Samuel Lampkin, Manager Air Traffic Services Trinidad and Tobago Civil Aviation Authority, and host of the meeting welcomed the participants highlighting the importance of the work to be accomplished and its positive effect on the reduction of risk in the airspace of the Regions.

1.3. SCHEDULE, ORGANIZATION, WORKING METHODS, OFFICERS AND SECRETARIAT

1.3.1. The Meeting agreed to hold its sessions from 0800 to 1500 hours, with appropriate breaks. The work was done with the Meeting as a Single Committee. Mr. Madison Walton, delegate from United States and Rapporteur, served as Chairman of the Meeting.

1.4. WORKING LANGUAGES

1.4.1. The working languages of the Meeting were Spanish and English.

1.5. AGENDA

The following agenda was adopted.

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|----------------|--|
| Agenda Item 1: | History of RVSM, Regional Monitoring Agencies and Scrutiny Groups
a) Roles and responsibilities
b) Overview of Target Levels of Safety |
| Agenda Item 2: | GTE Overview – CARSAMMA & Rapporteur
a) Terms of Reference
b) Background
c) Composition
d) Objectives |

- e) Methodology
- f) Reporting

Agenda Item 3: Large Height Deviation (LHD) Analysis – CARSAMMA

- a) Application of GTE methodology to LHD events
- b) Summarize parameter values
- c) Identify operational trends from data base

Agenda Item 4: Other business

1.6. ATTENDANCE

1.6.1. The meeting was attended by 20 participants. A list of the participants is included in **Attachment A**.

2. Agenda Item 1: History of RVSM, Regional Monitoring Agencies and Scrutiny Groups

2.1. The meeting reviewed the need for system performance monitoring, historical development of Regional Monitoring Agencies (RMA) and recalled the roles and responsibilities of CARSAMMA, the responsible RMA for the Caribbean and South American Regions.

2.2. In addition, the meeting reviewed the ICAO accepted target level of safety (TLS) for airspace in which Reduced Vertical Separation Minimum (RVSM) is implemented and the effect of large height deviations (LHD) on the outcome of collision risk calculations.

3. Agenda Item 2: GTE Overview – CARSAMMA & Rapporteur

3.1. The meeting reviewed the GTE composition and Terms of Reference (TOR as endorsed by GREPECAS).

4. Agenda Item 3: Large Height Deviation (LHD) Analysis – CARSAMMA

4.1. **Major Ricardo**, Manager of CARSAMMA, presented all events reported during the period of 1 January 2009 through 30 June 2009. A total of 317 reports were submitted from CAR and SAM Regions. The Meeting analyzed each event and, with expert judgment, determined parameter values necessary for collision risk estimation. A summary of reported events and GTE analysis is included in **Attachment B**.

4.2. The following chart provides a summary of the categories assigned to each event. The top two categories, M and N, account for approximately 97% of the reported LHDs.

Chart here

4.3. The following chart provided a summary of the rate of occurrence of large height deviations at the top reported positions. The top six reporting points account for approximately 40% of all large height deviations. Most notably, the reporting point VESKA and related reporting points such as BEROX account for more than 20% of the reported LHDs.

Chart here

4.4. Analysis revealed that an adverse trend involving ATC-to-ATC coordination errors between the Curacao and Santo (St.) Domingo FIRs specifically over the VESKA reporting point previously identified during GTE/6 has not been resolved. Please refer to Figure 1 Reporting Point VESKA and Surrounding FIRs.

4.4.1. The situation also involves the Haiti FIR. Aircraft transitioning through the Port au Prince FIR to the Curacao FIR also transition through the St. Domingo FIR for a short period of time. In many cases, Haiti provided a revised boundary crossing time estimate for a particular aircraft over VESKA to St. Domingo, by the time St. Domingo coordinates the revised estimate to Curacao the aircraft has already entered Curacao's airspace. This results in a significant variation between the time of the boundary crossing and the time expected into the Curacao FIR. It was noted that Haiti often provides multiple time estimate revisions for aircraft passing through St. Domingo to Curacao. This could be a workload issue.

4.4.2. This issue should be investigated further through CARSAMMA and ICAO, keeping in mind that the operating speed of current aircraft and predominant traffic flow could require changes to existing agreements in order to reduce the risk on a systematic level. Remedial action, if necessary, will be recommended upon the conclusion of the investigation.

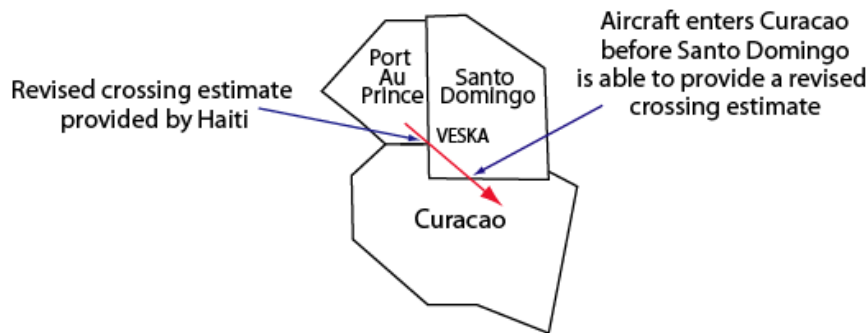


Figure 2 Reporting Point VESKA and Surrounding FIRs

4.5. GTE analysis also revealed an error of significant duration that warrants specialized attention. It was reported that on the 23rd of March 2009 a B763 flew through the Atlantico FIR without initiating any contact. The summary of the report follows: “The mentioned traffic flew without making any contact with ATLANTICO ACC. The flight duration was 4 hours and forty minutes. We got to know about what had happened because the air traffic controller of ASCENSION TWR informed the arrival time.”

4.6. While reviewing event reports, it was determined there was confusion regarding the definition and application of the Error Code I “ATC system loop error; (e.g. pilot misunderstands clearance message or ATC issues incorrect clearance)” and that clarification is required to facilitate accurate application of the error code for future analyses. The Rapporteur reminded the Group that accurate assignment of Error Codes is essential to effectively identify adverse trends and that the Group, upon common agreement, may amend existing error codes or add additional error codes as needed to enhance GTE analysis. Further more, it was agreed that the table of Error Codes included in the “Caribbean and South American RVSM Grupo de Trabajo de Escrutinio (CAR/SAM RVSM GTE) Reference Guide” will be updated accordingly.

4.7. It was further noted that many reports lacked details, specifically a comprehensive summary, necessary to accurately assign parameter values. The Group agreed it would appeal to ICAO to urge States, Regions and International Territories to accurately report vertical events including as much detail as possible.

4.8. In addition, GTE analysis revealed that the availability of radar surveillance in the area in which an LHD occurred greatly minimized the duration value of the event. The greatest exposure to risk is the amount of time spent “straight and level” at a flight level other than the cleared flight level, otherwise termed “duration.” Since it is necessary to accurately assess each event accordingly; it was agreed that a new field should be added to the CARSAMMA Altitude Deviation Form to include radar availability status.

4.9. CARSAMMA reported that a proposal was presented to the Fourth All RMA Coordination Meeting to rename the existing Altitude Deviation Form so that users would not limit its use only to deviations which entailed movement in the vertical dimension and to consider the provision of radar information such as field #6: “Radar- yes/no-if yes, which FL was seen”. The Meeting recalled that although category type “N” events contribute to LHD analyses, a physical large height deviation does not occur. The meeting supported CARSAMMA’s proposal and concluded that it is within CARSAMMA’s authority to implement amendments to the Altitude Deviation Form.

4.10. The Group also reviewed reporting trends and noted that some facilities are reporting their own errors in support of enhancing safety for the Region. In light of this encouraging trend, the Group agreed to urge service providers to participate in error reporting. While encouraging error reporting, the Group continues to emphasize that error reports received for the purposes of large height deviation analysis are confidential and used for safety purposes only.

4.11. The Group noted several events reported to CARSAMMA were applicable to adjacent oceanic regions. 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.

4.12. Upon conclusion of report evaluation, the GTE noted that for the eighth meeting in a row the primary cause of reported LHD in the CARSAM Region is categories “M”, error in ATC unit to ATC unit in transition message, and “N”, Negative transfer received from transitioning ATC-unit.

4.12.1. In an effort to eliminate errors associated with the largest contributing LHD error categories, States, Territories and International Organizations are reminded of the action from the Fifteenth Meeting of the CAR/SAM Regional Planning and Implementation Group (GREPECAS/15) that encouraged *urgent action* to wit:

CONCLUSION 15/36 - MEASURES TO REDUCE OPERATIONAL ERRORS IN THE ATC COORDINATION LOOP BETWEEN ADJACENT ACCs

That taking into account the impact of operational errors in the ATC coordination loop between adjacent ACCs on air operations safety:

- a) CAR/SAM States/Territories/International Organizations apply, on an urgent basis among other measures, the programme for the prevention of errors in the coordination loop between adjacent ACCs described in Attachment B to this part of

the Report in order to reduce LHDs caused by errors in traffic coordination messages between ATC units to achieve an acceptable target level of safety;

- b) CAR/SAM States/Territories/International Organizations gradually implement the interface for data exchange among ATC units (AIDC); and
- c) ICAO coordinate, provides assistance, and conduct follow-up on the implementation of these corrective measures.

4.13. The Group would like to congratulate the States, Authorities and International Territories for their effort in submitting the monthly LHD reports. Compliance with this request has improved with each meeting.

INSERT RECOMMENDED ACTION