



International Civil Aviation Organization

**The Second Meeting of the Regional Airspace Safety Monitoring Advisory Group
(RASMAG/2)**

Bangkok, Thailand, 4 – 8 October 2004

Agenda Item 5: Review regional and global airspace planning and implementation developments and provision of airspace safety monitoring services

**REVIEW OF THE OUTCOMES OF THE TWENTY-SECOND MEETING OF THE RVSM
TASK FORCE ON THE OPERATION OF DIFFERENT RVSM FLIGHT LEVEL
ORIENTATION SCHEMES IN THE ASIA/PACIFIC REGION**

(Presented by the Secretariat)

SUMMARY

This paper presents a summary of the report of the Twenty-second Meeting of the RVSM Task Force (RVSM/TF/22), which carried out a review of the flight level orientation schemes (FLOS) operating in the West Pacific and South China Sea (WPAC/SCS) airspace and adjacent airspaces, in particular in the Bay of Bengal and North-East Asia areas where a different FLOS applied.

1 INTRODUCTION

1.1 The RVSM/TF/22 meeting was held on 24-28 September 2004 at the Asia/Pacific Regional Office, Bangkok to review the operation of two different FLOS, i.e. modified single alternate and single alternate used in the WPAC/SCS area and adjacent airspaces of the Bay of Bengal area. In the next phase of RVSM implementation being planned by Japan and the Republic of Korea in the second half of 2005, the single alternate FLOS would also be adopted.

1.2 It was noted that the RVSM/TF/18 meeting (90-day and one-year post implementation review meeting, June-July 2003) reviewed the application of the two different FLOS in adjacent RVSM. However, RVSM/TF/18 agreed that before any decision to change the FLOS, the States concerned should undertake a detailed study to support any change. This would include the necessary safety assessments relating to RVSM operations. Until the studies were completed, RVSM/TF/18 decided to continue with the modified single alternate FLOS.

1.3 The establishment of the modified single alternate FLOS for the WPAC/SCS areas was agreed at the RVSM/TF/9 meeting (January 2001) for the implementation of RVSM on the revised ATS route structure for the South China Sea area. At RVSM/TF/9, IATA had proposed an alternative flight level orientation scheme to the single alternate scheme under consideration for the initial phase of RVSM implementation. Under the proposed scheme, the six parallel uni-directional routes (viz, L642, M771, N892, L625, N884 and M767) would operate the EVEN flight levels, viz, FL320, FL340, FL360 and FL380. For the bi-directional crossing tracks, the level assignment would be the corresponding ODD eastbound levels (FL330, FL370 and FL410) and westbound levels (FL310, FL350 and FL390). The arrangement adopted by the RVSM/TF/9 was called the modified single alternate FLOS.

2. DISCUSSION

2.1 RVSM/TF/22 recognized that the selection of the RVSM modified single alternate FLOS for the WPAC/SCS airspace provided for the optimum arrangement of flight levels for the South China Sea uni-directional parallel route structure, which has a number of crossing bi-directional routes. Further, the modified single alternate FLOS provided for a high level of safety of operations with the crossing routes by using a combination of ODD flight levels, which were vertically separated from the parallel routes using EVEN levels. This arrangement was compatible at the time with the conventional flight level orientation scheme (CVSM) being used in adjacent non-RVSM airspaces. Transition areas were established to change between the flight level orientation schemes.

2.2 The RVSM/TF/22 meeting noted that the Special ATS Coordination Meeting on Transition Procedures (SCM/Transition, September 2003) had recognized that some States had expressed concerns over transition problems that would arise when RVSM was implemented in the Bay of Bengal and Beyond area on 27 November 2003 where the single alternate FLOS would be used. This would result in additional transition problems with the modified single alternate FLOS being used in the adjacent airspace of the WPAC/SCS area. The Task Force also noted that the transition requirements would increase when RVSM was implemented by Japan and the Republic of Korea in 2005.

2.3 The RVSM/TF/20 meeting (October 2003), which made the decision to go ahead with RVSM implementation in the Bay of Bengal and Beyond area on 27 November 2003, recognizing the transition issues that would arise, made provision to hold the RVSM/TF/22 meeting to review the RVSM FLOS for the WPAC/SCS area.

2.4 RVSM/TF/22 discussed in detail the benefits and success of the introduction of the SCS routes and implementation of RVSM with the operation of the modified single alternate FLOS. It was agreed that before any change was effected to the current flight level scheme, any replacement system would be required to demonstrate that it was equally safe and efficient. This would be subject to the full ICAO process of a safety analysis including calculations of the established target level of safety (TLS). The meeting also agreed that sub-regional modeling and/or simulation exercise should be carried out to support any change to the WPAC/SCS FLOS.

2.5 MAAR provided an update of reported LHD occurrences in the RVSM airspaces submitted by the concerned States in both the WPAC/SCS and Bay of Bengal and Beyond areas. The information provided summarized the number of LHD occurrences and LHD duration experienced between January 2003 and July 2004. Based on this information, it was found that the LHD occurrences were more significant in the WPAC/SCS. The majority of the LHD causes in the Asia Region, especially in the WPAC/SCS airspace, were the “Error in ATC-unit to ATC-unit transition message (category M)”, followed by the “Negative transfer received from transitioning ATC-unit (category N)”. The RVSM/TF/22 requested MAAR to examine the LHDs in greater detail with a view to establishing the primary cause of the operational errors. It was considered that the categories M and N description should be amended to reflect that errors were related to a transfer of control message. In this regard, MAAR was requested to review this matter and to coordinate with PARMO and RASMAG.

Review of need to harmonize the current FLOS

2.6 The RVSM/TF/22 meeting reviewed the basic principles that had been adopted for the implementation of RVSM in the WPAC/SCS area. This included the following:

- a) implement and maintain a fail-safe system of operations;
- b) alleviate congestion on international traffic flows;
- c) reduce ground delays at major airports;
- d) minimize the need for transition of aircraft;
- e) enhance the overall management of traffic, in particular major traffic flows;
and
- f) any changes to flight level assignment arrangements to take into account environmental considerations in respect to fuel consumption.

2.7 RVSM/TF/22 agreed that any modification to the FLOS for the WPAC/SCS area should be planned to coincide with the implementation of RVSM in Japan and the Republic of Korea, in order to avoid too many changes to operations in the region. Japan informed the meeting that the implementation of RVSM in Japan and the Republic of Korea could be delayed for 3 to 4 months from the original date of 9 June 2005. Japan would coordinate with the Republic of Korea and confirm the revised implementation date. ICAO would subsequently notify the States and international organizations of the RVSM Task Force.

2.8 The Task Force reviewed proposals submitted by the Philippine and Thailand for flight level assignment, taking into account the comments of the States and international organizations present. Recognizing the need to maintain safety, efficiency and regularity of operations in the WPAC/SCS area, the Task Force developed a provisional revised plan for the assignment of levels and corresponding No-PDC procedures. The proposed flight allocation and No-PDC levels for each route category (the routes were categorized under the Philippine proposal for ease of reference) agreed by the Task Force was as follows:

- Class I – Both ways: FL310, FL320, FL350, FL360, FL390, FL400
- Class II – Eastbound: FL290, FL330, FL370, FL410
Westbound: FL280, FL300, FL340, FL380
- Class III – Eastbound: FL310, FL350, FL390
Westbound: FL320, FL360, FL400
- Class IV – All flight levels in the RVSM flight level band subject to bilateral agreement between FIRs to avoid ‘bunching effect’

2.9 The proposed assignment of levels for the large scale weather deviation on the parallel routes agreed were as follows:

- Northbound: FL310, FL350, FL390
- Southbound: FL320, FL360, FL400

2.10 A chart showing details of the proposed changes to the WOPAC/SCS FLOS is provided in the Appendix to this paper.

2.11 The RVSM/TF/22 meeting agreed that key issues relating to the FLOS for the WPAC/SCS area would have to be addressed before any change could be made. It was emphasized that in accordance with ICAO’s safety management provisions in Annex 11, detailed safety

assessments would need to be carried out by the States concerned. Also, MAAR would be required to undertake a safety assessment of the proposed FLOS for RVSM operations. In this regard, the traffic sample data previously collected for July 2004 in connection with the updating of the overall safety assessment for RVSM operations in the WPAC/SCS area, as agreed at RVSM/TF/18, would be used for this purpose.

RVSM/TF/22 Action Plan

2.12 The Task Force developed an Action Plan of critical activities that had to be completed to facilitate the changes in the FLOS. This would encompass the following:

- Review of operational factors relating to the FLOS
- Review of traffic movement data for the WPAC/SCS area
- Revised assignment of cruising levels
- Revised No-PDC procedures
- Identification of transition areas
- Development of transition procedures
- Completion of simulation trials
- Completion of safety assessments by ATS providers as part of SMS
- Completion of safety assessments by MAAR
- Completion of modeling of traffic flows
- Completion of controller training
- Publication of relevant documents
- Completion of amendments to Letters of Agreement

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) review the outcome of the RVSM/TF/22 proposing a change to the flight level assignment to the modified single alternate FLOS for the WPAC/SCS area; and
- b) consider issues arising areas and any appropriate follow up action by RASMAG.

— END —

Appendix to RASMAG/2-WP/7
Provisional Revised Plan for Assignment of RVSM Levels for WPAC/SCS

