International Civil Aviation Organization

Fourteenth Meeting of the APANPIRG ATM/AIS/SAR Sub-Group (ATM/AIS/SAR/SG/14)

Bangkok, Thailand, 28 June – 2 July 2004

Agenda Item 4: Consider problems and make specific recommendations concerning the provision of ATM/AIS/SAR in the Asia/Pacific Region

CLASSIFICATION OF AIRSPACE IN RVSM/RNP AIRSPACE

(Presented by the Secretariat)

SUMMARY

The paper discusses the need to ensure that the provision of Annex 2, which requires that VFR operations shall not be authorized in airspace where a vertical separation minimum of 300 m (1 000 ft) is applied. Also, consideration should be given to restricting VFR flights from operating in RNP airspace where reduced horizontal separation is applied.

1. INTRODUCTION

1.1 Reduced Vertical Separation Minimum (RVSM) was successfully introduced in the Pacific Region, the Western Pacific/South China Sea area, and the area south of the Himalayas and over the Bay of Bengal and beyond in February 2000, February 2002 and November 2003, respectively.

1.2 Attention should be drawn to some requirements which have not been met in certain RVSM airspaces. Annex 2 – *Rules of the Air* provides in Chapter 4 that "Authorization for VFR flights to operate above FL290 shall not be granted in areas where a vertical separation minimum of 300 m (1 000 ft) is applied above FL 290" (paragraph 4.5 refers).

1.3 It should be noted that the Table a) of Appendix 3 to Annex 2 does not include VFR flight altitudes above FL 290.

1.4 Required Navigation Performance (RNP) 10 and the introduction of reduced horizontal separation (50 and 60NM) has been widely implemented in the oceanic airspace in the Asia/Pacific Region.

1.5 ICAO Standards and Recommended Practices do not explicitly provide for airspace classification in regard to RVSM and RNP designated airspace.

2. DISCUSSION

2.1 The Council of ICAO resolved, in adopting Annex 2 in April 1948 and Amendment 1 to the said Annex in November 1951, that the Annex constitutes *Rules relating to the flight and manoeuvre of aircraft* within the meaning of Article 12 of the Convention. Over the high seas, therefore, these rules apply without exception.

2.2 For sovereignty airspace where the rules of the air shall apply to the extent that they do not conflict with the rules published by the State having jurisdiction, the States are encouraged to take action in line with the intent of the Annex 2. In this regard, for sovereignty airspace, Annex 2 provisions should be incorporated in the national rules published by the State having jurisdiction.

2.3 Annex 11 – *Air Traffic Services* (Chapter 2) stipulates the requirement for the classification of airspace in accordance with Class A to G requirements. States shall select those airspace classes appropriate to the operational requirements for the provision of ATS and flight operations in designated airspace. It should be noted that Class A airspace is the airspace where "IFR flights only are permitted, all flights are provided with air traffic control services and are separated from each other". While there is no direct link between the RVSM airspace and the classification of airspace in Annex 11, Class A airspace should be utilized to align with the intent of the Annex 2 in regard to RVSM airspace.

2.4 In regard to RNP specified for an airspace or ATS routes, as in the case of RVSM, there is no explicit requirement in ICAO documentation to apply a specific airspace classification. As RNP is applied in both RVSM and non-RVSM airspace, and Annex 2 does not refer to RNP airspace, a broader interpretation could be applied as to the appropriate class of airspace to be specified. However, in cases where RNP is used as the basis to apply reduced horizontal separation, which is subject to safety assessments being performed using collision risk models, e.g. for applying 30 and 50 NM lateral separation, all aircraft operating in such airspace should be under an air traffic control service and provided with separation. Further, the collision risk models used assumes that all aircraft are approved for the appropriate RNP type and are separated by ATC. Annex 2 (Chapter 4) precludes VFR flights from operating above FL200 unless authorized by the appropriate ATS authority. Permitting VFR aircraft to operate in RNP airspace where reduced separation applies would negate the validity of the collision risk models unless the VFR aircraft were operating under RNP requirements and ATC separation service. In this regard, only Class A and B would be appropriate. However, in this context, a VFR aircraft would have to operate as if it were IFR, therefore, there does not appear to be any valid operational reason why a VFR aircraft should be permitted to operate in RNP airspace where the foregoing conditions apply.

2.5 In recognition that RNP is applied in airspace to reduce aircraft separation in accordance with strict and ongoing safety assessment criteria and that the nature of VFR flight generally excludes meeting the navigation accuracy required for RNP, consideration should be given to excluding VFR from operating in such airspace. Accordingly, Class A airspace should be used.

2.6 An important aspect of flight operations where reduced vertical and horizontal separation is applied, is the requirement to monitor aircraft height-keeping and navigation performance. Also, in the event that aircraft are unable to maintain the requirements specified in the respective operational approvals, ATC would be required to apply an alternate form of separation and have the ability to intervene within the time parameters specified by the appropriate safety assessment. The operation of VFR flights in such an airspace could compromise the safety of the ATM system and should not be permitted.

2.7 In view of the above discussion, the meeting is invited to consider formulation of draft conclusions for consideration by APANPIRG/15 as follows:

Draft Conclusion 14/xx - Classification of Airspace in RVSM airspace

That, with a view to ensure safety in RVSM airspace between FL290 and FL410 inclusive where no VFR flight levels are permitted, the airspace should be classified as Class A.

Draft Conclusion 14/xx - Classification of Airspace in RNP airspace

That, where RNP is specified for an airspace or ATS route (s) and used as the basis to reduce aircraft separation requiring safety assessments to be performed using collision risk models and ongoing monitoring, VFR operations should not be permitted and the airspace classified as Class A.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) note the information provided in this paper;

b) consider the appropriate classification of airspace for RVSM and RNP airspace; and

c) adopt the proposed draft conclusions to restrict VFR operations and to use Class A for RVSM and RNP airspace.
