

INTERNATIONAL CIVIL AVIATION ORGANIZATION  
ASIA AND PACIFIC OFFICE



**REPORT OF THE THIRD MEETING OF THE ATS ROUTE NETWORK REVIEW  
TASK FORCE (ARNR/TF/3) AND THE TWELFTH MEETING OF THE SOUTH-EAST ASIA  
ATS COORDINATION GROUP (SEACG/12)**

Bangkok, Thailand, 2 to 6 May 2005

The views expressed in this Report should be taken as those of the  
Meeting and not of the Organization

Approved by the Meeting  
and Published by the ICAO Asia and Pacific Regional Office

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## **PART I – HISTORY OF THE MEETING**

### **1. Introduction**

1.1 The Third Meeting of the ATS Route Network Review Task Force (ARNR/TF/3) and the Twelfth Meeting of the South-East Asia ATS Coordination Group (SEACG/12) were held consecutively at the Kotaite Wing, ICAO Asia and Pacific Regional Office, Bangkok, Thailand. The ARNR/TF/3 was held between 2 and 3 May 2005, and the SEACG/12 meeting was held from 3 to 6 May 2005.

### **2. Attendance**

2.1 The meeting was attended by 45 participants from Bangladesh, Brunei Darussalam, Cambodia, China, Hong Kong China, India, Indonesia, Japan, Lao PDR, Myanmar, Philippines, Republic of Korea, Singapore, Thailand, Viet Nam and IATA. A list of participants is at **Attachment 1**.

### **3. Officers and Secretariat**

3.1 Mr. Peter Leung, Chief Air Traffic Control Officer, Civil Aviation Department, Hong Kong, China, continued as Chairman of the Task Force. Mr. David J. Moores, Regional Officer ATM from the ICAO Asia and Pacific Regional Office, acted as the Moderator and Secretary for the ARNR/TF/3 and SEACG/12 meetings. He was assisted by Mr. Kyotaro Harano and Mr. Andrew H. Tiede, Regional Officers ATM.

### **4. Opening of the Meeting**

4.1 Mr. Peter Leung, the Chairman for ARNR/TF, warmly welcomed the delegates of the meeting and briefly described the outcome from the previous two Task Force meetings. He mentioned that he anticipated that this meeting should be the last one for the Task Force, and that a recommendation would be required to be submitted to the ATM/AIS/SAR Sub-Group and Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG) to adopt the ATS Route Catalogue and to take over any subsequent actions. He thanked the delegates for their excellent effort and contribution made to the work of the Task Force and in particular for developing the Catalogue.

4.2 Mr. David Moores, on behalf of Mr. Lalit B. Shah, Regional Director, ICAO Asia and Pacific Region welcomed the participants to Bangkok and the Regional Office. He explained that due to resource constraints of the Regional Office, a substantial number of ATM meetings had been scheduled in the first half of the year to take advantage of three ATM officers being available, and this had required meetings to be combined to fit them in. On this occasion, the ARNR/TF/3 meeting had been combined with SEACG/12. Following his retirement on 13 May 2005, one ATM post at the Bangkok Office would be removed. This would result in a significant increased workload for the two remaining ATM officers and the number of ATM meetings would need to be limited in the future. The situation was unlikely to improve in the foreseeable future, and it was highly regretted that this handicap was likely to have an adverse affect on the ATM Section being able to sustain a full ATM work programme. Unfortunately, this situation comes at a time when major implementation projects were underway, such as the introduction of ADS/CPDLC and reduced horizontal separation, air traffic flow management, ATS route development, airspace safety management, follow-up to RVSM implementation and the expansion of the Universal Safety Audit Oversight Programme. In addition, the AIS post had been disestablished some years ago adding to the ATM workload.

4.3 Mr. Moores commented on the good progress made by the ARNR/TF to develop the Asia/Pacific ATS Route Catalogue as a supplement to the Asia/Pacific Basic Air Navigation Plan (BANP). It was expected that this would greatly assist States, users and the Regional Office with route planning and management. SEACG/12 would need to address the issue of establishing a safety monitoring organization for the South China Sea route structure and application of reduced horizontal separation. This was an important safety requirement and updating the safety assessment for the airspace was now long overdue. As this was his last meeting for the Regional Office before his retirement, Mr. Moores expressed his appreciation and thanks to colleagues and representatives of States and International Organizations who have participated in the ATM work of this Office during his time in service here since 2001.

## 5. **Documentation and Working Language**

5.1 The working language of the meeting and the language for all documentation were in English. Nine (9) Working Papers and one (1) Information Paper were presented to the ARNR/TF/3 meeting and fourteen (14) Working Papers and five (5) Information Papers were presented to the SEACG/12 meeting. The list of papers is shown at **Attachment 2**.

**ARNR/TF/3**

## REPORT OF THE ARNR/TF/3 MEETING

### Agenda Item 1: Adoption of Agenda

1.1 The meeting adopted the following Agenda for the meeting:

- Agenda Item 1: Adoption of Provisional Agenda
- Agenda Item 2: Review of ATS Route Network of the Asia and Pacific Regions
- Agenda Item 3: Consider route requirements
- Agenda Item 4: Amendment proposals to the Asia/Pacific BANP, Part VIII, Table ATS1
- Agenda Item 5: Development of the Asia and Pacific Route Catalogue Document
- Agenda Item 6: Development of the ATS Route Master Database
- Agenda Item 7: Any other business

### Agenda Item 2: Review of ATS Route Network of the Asia and Pacific Regions

#### Realignment and Establishment of New ATS Routes in the Vientiane FIR

2.1 The meeting noted that Lao PDR was considering requirements for new ATS routes for the air transport industry. Four ATS routes were proposed to be realigned and one new ATS route was proposed to be established as follows (see chart attached at **Appendix A** to this Report):

#### REALIGNMENT

- B202 Pakse – VEPAM (in the Ho Chi Minh FIR)
- B218 Vientiane – Luang Prabang – Dienbien (in the Hanoi FIR), to delete B465A
- B346 Bangkok – Luang Prabang – SAGAG
- R474 Vientiane – NOHET – LAVOS, to be straightened and bypass the reporting points of TABOK and NONGHET

#### NEW ESTABLISHMENT

- SEA 1 Luang Prabang – NOHET (Southwest of NONGHET) – Vinh (in the Hanoi FIR)

2.2 The meeting was informed by Lao PDR that the implementation of B218, B346 and R474 had been agreed among States. B202 and SEA 1 were requested by the States concerned for which coordination had not started.

2.3 The meeting noted that B465A, which was established between Luan Prabang and Dienbien was not an appropriate designator due to there being an ATS route requirement for B465 in the BANP. The meeting considered that retaining B465A may lead to confusion. The meeting recognized that B346 had been in place for some time but the BANP did not require this route. The proposed realignment of R474 would provide direct routing between Vientiane and LAVOS by bypassing TABOK and NONGHET.

2.4 Based on the above, the Secretariat commented as follows:

B218 The proposed change to the route designator B465A to B218 should be replaced by a new designator to be assigned by the Regional Office. The designator B218, currently in use, should not be assigned to another route, as this would be confusing to operators and the routing for B218 should be kept unchanged. .

B346 This route requirement was not listed in the BANP. Lao PDR agreed to submit an amendment proposal to the BANP to include B346.

R474 As the route requirement for R474 in the BANP does not list TABOK and NONGHET, Lao PDR could implement the direct routing without amending the BANP. In this regard, an AIP Amendment should be published at least two AIRAC cycles before the implementation.

2.5 The meeting also noted that Lao PDR would start coordination with States concerned on routes B202 and SEA 1. The meeting appreciated the initiatives taken by Lao PDR to improve the route structure within the Vientiane FIR.

2.6 Based on the Secretariat's comment, Viet Nam would closely coordinate with the States concerned to revise the designator of B465A, realign R474 and for implementation of the SEA 1 between Luang Prabang – NOHET – Vinh – ASSAD.

### **Agenda Item 3: Consider route requirements**

3.1 The meeting noted that APANPIRG/15 (Bangkok, 23 – 27 August 2004) reviewed and updated its List of Deficiencies in the ATM/AIS/SAR fields in the Asia Pacific Region. The List of Deficiencies recorded 30 route-related entries, mainly as priority 'B' status. These deficiencies had been assigned by APANPIRG/15 to ARNR/TF for review and follow-up action

3.2 It was recalled that ARNR/TF/1 (Bangkok, 6 – 10 September 2004) examined the ATS Route deficiencies contained on the List of Deficiencies, and noted some progress had been made by the States concerned to address these deficiencies.

3.3 It was recalled that ARNR/TF/2 (Bangkok, 14 – 18 February 2005) noted that all routes contained on the APANPIRG List of Deficiencies would be reviewed and action taken by ARNR/TF, and full details would be provided on the status of the routes, action being taken, and regular updates would be provided as appropriate. These routes have been included in the draft ATS Route Catalogue, which would be submitted to APANPIRG/16 for approval. ARNR/TF/2 considered that, the fact that a route was not implemented or partially implemented, should not be considered as a deficiency, as the reasons for this were not safety-related. ARNR/TF/2 recognized that, in some cases, the requirement for a route had been established a long time ago and circumstances had since changed. There were also cases that routes could not be implemented for a variety of reasons beyond the capability of the ATS provider to overcome.

3.4 The meeting also noted that ARNR/TF/2 agreed that the Catalogue fully captured all these circumstances and there was no longer a need to retain them on the List of Deficiencies. Accordingly, the meeting agreed to recommend through ATM/AIS/SAR/SG/15 that APANPIRG/16 should delete them from the List.

**Agenda Item 4: Amendment proposals to the Asia/Pacific BANP, Part VIII, Table ATSI**

4.1 The meeting noted that the amendments to the BANP were an ongoing process to reflect operational needs. Thirteen amendment proposals were developed in 2003 and eleven amendment proposals in 2004. Seventeen amendments were developed so far in 2005, two of which had been approved.

4.2 Also, the meeting noted that publication of the Air Navigation Plan in hard-copy format was last completed in 1996. In 2001, the ICAO Council approved the current style of two volumes, i.e. the BANP and the *Facilities and Services Implementation Document (FASID)*. The First Edition of the BANP was published in soft-copy format at that time, however to date it had not been published in paper format.

4.3 In light of the foregoing, the Secretariat developed a table showing the current status of the amendment proposals which had been made after the finalization of the First Edition of the BANP in 2000. Seventeen amendment proposals relating to ATS route requirements were developed and eight of the proposals had been approved so far since 2000.

4.4 The meeting considered that the publication of the BANP in paper format was urgently needed by States. In this regard, the Secretariat informed the meeting that the publication work was being undertaken by ICAO Headquarters, and it was understood that the hold-up was related to producing the electronic charts of the ATS routes. It was hoped that the document would be ready for publication later this year. Also, there had been delays to progressing the EMARSSH routes amendment and the BANP had not yet been amended. These routes should be included in the ATS charts, and it was considered best to wait until the BANP amendment proposal had been approved before publishing the new version of APAC Air Navigation Plan.

4.5 China reported that they had submitted amendment proposals to the Regional Office and noted that the proposals had not been listed in the table which the Secretariat provided. The Secretariat reported that the list contained the amendment proposals for which the amendment process had begun and the APAC reference numbers had been assigned. The Secretariat agreed to include in the table all the amendment proposals which had been received by the Regional Office so far with a reference number assigned. The updated table showing the current status of the 17 amendment proposals and amendment proposals received by the Regional Office so far is provided in **Appendix B** to this report.

4.6 Japan queried the reason for R466 to be deleted from ASIA/PAC BANP by APAC 04/10. The Secretariat responded that the route requirement between Yuzhno-Sakhalinsk and ANIMO was totally contained within the airspace of the Russian Federation. ANIMO was on the FIR boundary between Yuzhno-Sakhalinsk and Tokyo FIRs and did not extend into the Asia/Pacific Region, therefore, the route only needed to be recorded in the EUR ANP.

4.7 Cambodia advised the meeting that pursuant to APAC 05/7, they would hold a meeting with Thailand to develop an amendment proposal.

**Agenda Item 5: Development of the Asia and Pacific Route Catalogue Document**

5.1 The meeting recalled that ARNR/TF/2 had agreed to finalize the Asia and Pacific Route Catalogue at ARNR/TF/3. Based on the suggestion from a State at ARNR/TF/2, the Secretariat included a foreword to the Catalogue on the purpose and the history of the document, and relationship with the BANP. It had also been suggested that a flow chart showing the amendment procedures for the Catalogue would be useful and these had been included.

5.2 The meeting was informed that that a regional plan evolved from the recommendations of a Regional Air Navigation Meeting (RAN), as approved or modified by the Council or Air Navigation Commission under delegated authority. In between RAN meetings, amendment of the ANP was carried out by correspondence and was based on Assembly Resolution A33-14, Appendix K. The meeting also noted that the amendment process was laid out in procedures agreed to by the Council of ICAO, and contained in the Regional Office Manual. In this regard, the Regional Office was responsible to manage the amendment process. To submit an amendment proposal concerning ATS routes in the BANP, these may be originated by a State, group of States, recognized International Organizations by the Council, and the Secretary General of ICAO.

5.3 In considering the role of the Catalogue, it was intended that this should be an informal supplementary document to the BANP containing consolidated material from the BANP and related documents, to serve as an aid to States and users for route planning purposes. As such, the Catalogue did not replace the BANP or provide material to be used in an operational context. It was noted that the Catalogue was primarily a one stop information document on what routes were contained in the BANP, status on implementation and amendment, and future route requirements of States and users intended for planning purposes.

5.4 In regard to some ATS routes that had been implemented partially or not implemented totally, it had been suggested at ARNR/TF/2 that cross-referencing would be useful to States and users. In this regard, it was further noted that ATS routes partially implemented were contained in both Chapter 1: *Routes in BANP – Implemented* and Chapter 2: *Routes in BANP – Not Implemented*, and cross-references were indicated in Chapter 1. ATS routes not implemented totally were contained in Chapter 3: *Routes Implemented – Not in the BANP/or Not in Accordance with the BANP*, and cross-references were indicated in Chapter 1.

5.5 Also, the meeting noted that in considering updating and amendment of the Catalogue, as the document was meant to be an aid to users, it should be a living document and the amendment process should be kept at an informal level. All the material in Chapters 1, 2 and 3 in respect to the BANP, were developed and amended in accordance with established procedures. In this regard, the meeting agreed that the Catalogue simply recorded the current status of the routes in the BANP and did not require any formal approval to be included in the Catalogue, therefore it could be left to the Regional Office to update.

5.6 However, in regard to material in Chapters 4 and 5, this would require some additional prior approval process and not simply submitted to the Regional Office on an ad hoc basis by the originator (s). For the material to be placed in the Chapters 4 and 5 of the Catalogue, it was suggested that a State (s), a recognized International Organization and/or the related State/ICAO ATS coordination group should be the approving body. States would submit their route proposals in accordance with established ICAO procedures. In the case of route proposals by IATA member airlines, these would be submitted to IATA for processing in accordance with their established practices. For airlines not IATA members, proposals should be submitted to the States concerned who would then consider the amendment proposal. In all cases, the Regional Office would update the Catalogue as appropriate.

5.7 In the first instance, as the Catalogue was a product of the work of the ARNR/TF established by APANPIRG, its status would need to be decided by APANPIRG, and the means by which it was amended be delegated by APANPIRG to the Regional Office or by some other agreed procedure determined by APANPIRG. Accordingly, the ARNR/TF should make an appropriate recommendation to APANPIRG through ATM/AIS/SAR Sub-Group. The meeting considered a recommendation to APANPIRG/16 through the 15<sup>th</sup> Meeting of the ATM/AIS/SAR Sub-Group to adopt the Catalogue as a supplement to the BANP, and agreed on the status and method of amending the document.

5.8 The meeting reviewed the draft Catalogue *Foreword* including the flow charts on *Amendments to the Catalogue*. The meeting finalized the layout and content structure to be included in the Catalogue.

5.9 The Foreword, Amendment of the BANP and Catalogue and Amendment Record are attached as **Appendix C** to this Report. The document was distributed to participants by CD.

5.10 The meeting updated the Catalogue and included additional routes presented and agreed to at this meeting. The meeting agreed to recommend to APANPIRG/16 that the Catalogue be adopted as a supplement to the BANP and be managed by the Regional Office and to be published on the ICAO Asia/Pacific website ([www.icao.int/apac](http://www.icao.int/apac)).

#### **Agenda Item 6: Development of the ATS Route Master Database**

6.1 The meeting was advised that APANPIRG/15 had tasked ARNR/TF to thoroughly review and update the ATS routes in the BANP, prepare the master database of the routes that had been implemented, update the five-letter name-codes and co-ordinates that had been assigned to the significant points on the ATS routes, and undertake a study of future route requirements.

6.2 At ARNR/TF/1, the participating States were requested to submit data on ATS routes and significant points in their FIRs. ARNR/TF/2 was advised by the Secretariat that only ten States had submitted the requested data. ARNR/TF/2 urged States to provide the data, which was essential to ensure that the BANP entries and Route Catalogue details accurately recorded the routes implemented by States.

6.3 With regard to the latitude/longitude data, India raised a question concerning how accurate the coordinates should be in the BANP. Some significant points were provided with one digit below a decimal point and others had two digits below a decimal point. The Secretary advised that Appendix 5 of Annex 11 – *Air Traffic Services* provided the aeronautical data quality requirements for en-route nav aids and fixes, holding and STAR/SID points, and these were required to meet an accuracy of 100 m. On the other hand, the BANP was not an operational document but a regional planning document, and as such, the BANP was not required to record 100 m accuracy. By established practice, the BANP used one digit below a decimal point and this should be applied to the Catalogue entries, as ultimately these were intended to become BANP amendment proposals.

6.4 Japan informed the meeting that APANPIRG/10 (August-September 1999, Bangkok) formulated Conclusion 10/2 that FIR boundary way-points should be coordinated with adjacent States to ensure uniform data to be promulgated as follows:

#### ***Conclusion 10/2 – Uniform Promulgation of FIR Boundary Way-Points***

*That, States review their aeronautical materials and that of their adjacent States and, through co-ordination with adjacent States, ensure uniform promulgation of FIR boundary way-points using WGS-84 as the basis of the Datum.*

6.5 The meeting agreed that data should be formatted in WGS-84 and in the following way: degree, minute and one decimal point, e.g. 01234.5N 12345.6E.

6.6 IATA raised a question concerning whether the master database should be maintained considering the laborious work required by the Regional Office and the need to compile accurate data in view of there being widely available commercial sources of this data. The meeting agreed that, as the data required was provided in the Catalogue, there was no longer a need for the Regional Office to compile and maintain a separate master database, and therefore, it could be discontinued.

6.7 Japan was of the opinion that APANPIRG/14 (August 2003, Bangkok) had agreed that there was a need to prepare the master database of the routes and the reason for discontinuation of the master database should be reported to the ATM/AIS/SAR/SG/15 and APANPIRG/16. The meeting agreed to submit the outcome of this meeting to the ATM/AIS/SAR/SG/15 and APANPIRG/16 and an action item was included in the ARNR/TF Action Plan. .

#### **Agenda Item 7: Any other business**

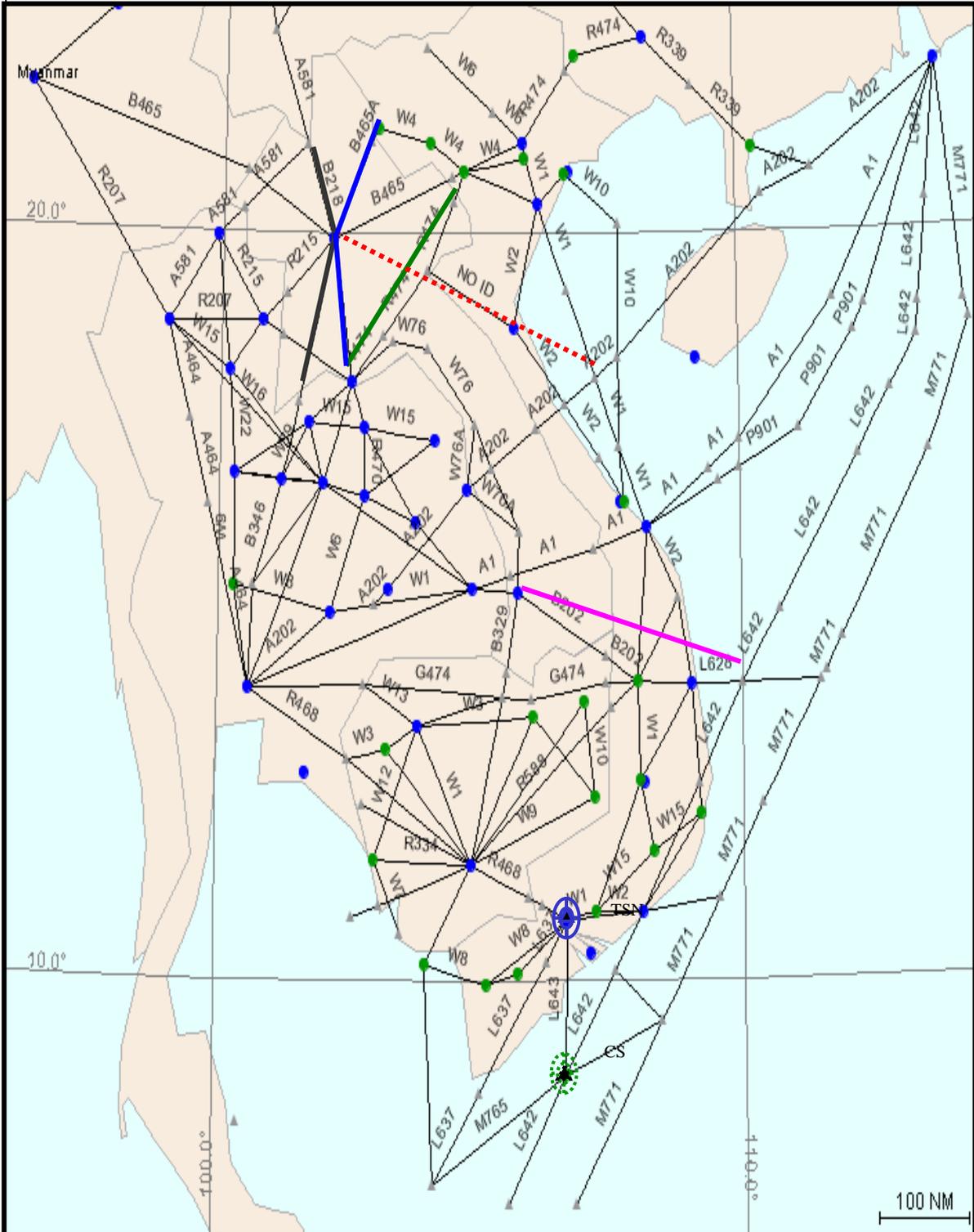
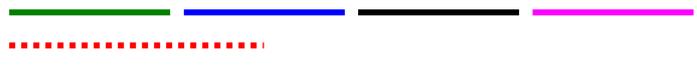
7.1 The meeting developed the ARNR/TF Action Plan as attached in **Appendix D** to this Report.

7.2 The meeting agreed that the ARNR/TF had met the Terms of Reference established by APANPIRG/15 and its work had been substantially completed. The output of the Task Force was consolidated in an APAC ATS Route Catalogue which provided a comprehensive and detailed listing of ATS route requirements and implementation status in the Asia/Pacific region. The routes contained on the APANPIRG List of Deficiencies have been incorporated in the Catalogue and the status recorded, which would facilitate future follow-up action. Any outstanding matters could be adequately dealt with by the Regional Office and through correspondence, and there was no need for a further meeting before APANPIRG/16. Accordingly, the meeting agreed to recommend to APANPIRG/16 that the ARNR/TF be disbanded. Following the disbanding of the ARNR/TF, it was expected that APANPIRG would refer any outstanding work to the appropriate ICAO/State ATS coordination groups and Regional Office.

7.3 The Chairman expressed appreciation to the Task Force for having completed the work in a timely manner and producing the ATS Route Catalogue, which should be of considerable benefit to States, ICAO and Users.

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**ATS ROUTES REALIGNMENT:**  
**NEW ESTABLISHMENT:**



ARNR/TF/3  
Appendix B to the Report

**OUTSTANDING AMENDMENTS OF ASIA/PAC BANP ATS ROUTE REQUIREMENT**

Reference	Brief Description	Proposer	Date of Receipt	HQ for Comments	Date of Circulation to States	Closing Date for Comments	Date of Submission to HQ	Date of Approval	Notification to States	Remarks
APAC 99/1-ATS	ATS Routes A218, B328, B330, B331, B334 and B480	China	24/2/99	N/A	6/10/99	26/11/99	12/1/00	26/1/00	01/2/00	Editorial error in BANP: A218 was approved from Harbin, not Beijing. China is coordinating with Russia to delete the error.
APAC 99/4-ATS	ATS Routes A459, A466, B345, B457, G452, G598, G669, R328, R331, R462 and UL425	India	29/4/99 consolidating APAC97/11 and 98/1	N/A	24/1/01	09/3/01	23/3/01	12/4/01	19/4/01	Waiting for the Second Edition.
APAC 99/10-ATS	CNS/ATM route L888 in China	China	7/7/99	17/9/99 HQ comments 22/11/99 and 10/1/00						Awaiting from China clarification and detailed information 19/1/00; request made again 16/3/00, further request made 10/5/00
APAC 00/1-ATS (revised)	ATS Routes B588, G334, G461, R218 and R597	Indonesia, Malaysia and Philippines	10/1/00 combining APAC 99/2 and 99/3	N/A	03/8/00	22/9/00	8/12/00	10/1/01	15/1/01	Waiting for the Second Edition

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Reference	Brief Description	Proposer	Date of Receipt	HQ for Comments	Date of Circulation to States	Closing Date for Comments	Date of Submission to HQ	Date of Approval	Notification to States	Remarks
APAC 04/3-ATS/SAR/AIS	G211 is deleted and A341 is amended.	Malaysia	29/3/04	23/4/04	28/5/04	15/7/04	19/7/04	3/8/04	9/8/04	Waiting for the Second Edition
APAC 04/7-ATS/AIS/SAR	UM551	India	22/6/04	N/A	27/1/05	18/3/05	28/3/05	12/4/05	15/4/05	Waiting for the Second Edition
APAC 04/10-ATS/AIS/SAR	The route segment YUZHNO-SAKHALINSK and ANIMO of R466 lies within Yuzhno-Sakhalinsk FIR and should be deleted from ASIA/PAC BANP	Russian Federation								
APAC 04/11-ATS/AIS/SAR	L644 and M772.  Deletion of Column 3 of Table ATS 1.	Hong Kong, Indonesia, Malaysia, Philippines, Singapore, and Viet Nam.  RAN/3	N/A  19/4/93	N/A	13/12/04	13/1/05	18/1/05			
APAC 05/3-ATS	B345	China and Nepal	23/12/04	N/A	26/1/05	18/3/05	24/3/05	7/4/05	11/4/05	Waiting for the Second Edition
APAC 05/4-ATS/AIS/SAR	P761	India	16/12/04	N/A	27/1/05	18/3/05	30/3/05	14/4/05	18/4/05	Waiting for the Second Edition

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Reference	Brief Description	Proposer	Date of Receipt	HQ for Comments	Date of Circulation to States	Closing Date for Comments	Date of Submission to HQ	Date of Approval	Notification to States	Remarks
APAC 05/5-ATS/AIS/SAR	Restructuring routes within Jakarta and Ujung Pandang FIRs: A211, L504, M522, M635, M768, M774, N645, N875, P648	Indonesia	6/9/04	N/A	28/2/05	8/4/05	15/4/05			
APAC 05/6-ATS/AIS/SAR	M512	Sri Lanka								
APAC 05/7-ATS/AIS/SAR	Requirement for a more direct route R345 between Vientiane and Phnom Penh	Cambodia and Thailand								
APAC 05/8-ATS/AIS/SAR	R575	Cambodia Lao PDR Thailand, and Viet Nam								
APAC 05/9-ATS/AIS/SAR	Requirement for a more direct route R588 and R589 within the Bangkok, Ho Chi Minh and Phnom Penh FIRs	Cambodia Thailand								

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Reference	Brief Description	Proposer	Date of Receipt	HQ for Comments	Date of Circulation to States	Closing Date for Comments	Date of Submission to HQ	Date of Approval	Notification to States	Remarks
APAC 05/17-ATS/AIS/SAR	EMARSSH Routes: A1, A217, A330, A349, A465, B457, B579, G462, G465, R203, R328, R460, R460E, R460W, L301, L301A, L333, L507, L515, L645, L759, L759N, L759S, M300, UM501, M638, M770, M770A, N563, N571, N519, N877, N895, N895E, N895W, P318N, P318S, P570, P574, P628, P646 and P762	APANPIRG/11 Conclusion 11/10								
APAC 05/18-ATS/AIS/SAR		China and Hong Kong, China	6/2/05	N/A						
APAC 05/19-ATS/AIS/SAR		China	6/2/05	N/A						
APAC 05/20-ATS/AIS/SAR		Papua New Guinea	13/4/05	N/A						
APAC 05/21-ATS/AIS/SAR	G589	Republic of Korea	19/4/05	N/A						

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Reference	Brief Description	Proposer	Date of Receipt	HQ for Comments	Date of Circulation to States	Closing Date for Comments	Date of Submission to HQ	Date of Approval	Notification to States	Remarks
APAC 05/22-ATS/AIS/SAR	N519	India	11/2/05	N/A						
APAC 05/23-ATS/AIS/SAR	M638	India	11/2/05	N/A						
APAC 05/24-ATS/AIS/SAR	R593	India and Oman	11/2/05	N/A						

N/A: Not applicable

After the First Edition was published, 24 proposals were developed; 8 proposals have been approved and 16 amendments are pending or ongoing.

----- End -----

## Foreword

The ICAO Asia and Pacific Air Navigation Plan (Doc 9673) Volume I, Basic ANP (BANP) contains ATS route requirements which were developed by the Third Asia and Pacific Regional Air Navigation Meeting (Bangkok, May 1993). The requirements have been revised (including additions and deletions) from time to time to reflect current operational needs. There is also an ongoing need to revise and update these requirements and amend the BANP.

The Fourteenth Meeting of the *Asia Pacific Air Navigation Planning and Implementation Regional Group* (APANPIRG/14) held on 4 – 8 August 2004 under Conclusion 14/5 established the ATS Route Network Review Task Force (ARNR/TF) to review the Asia and Pacific ATS route network as contained in the BANP, determine present and future route requirements, and revise the BANP as appropriate. To facilitate the amendment process and keep track of route implementation and future requirements, and with the objective of providing more up to date information on route developments, the ARNR/TF prepared the *Asia and Pacific ATS Route Catalogue* as a supplement to the BANP.

APANPIRG/16 held on 22 – 26 August 2005, recognizing the value of a consolidated reference document for the regional ATS routes and future route requirements of States and airspace users, adopted the Catalogue under Conclusion 16/xx. This document is intended to be a living document supplementing the BANP and to be maintained by the Asia and Pacific Regional Office.

The Catalogue consists of the following five chapters:

- Chapter 1: Routes in BANP – Implemented
- Chapter 2: Routes in BANP – Not Implemented
- Chapter 3: Routes Implemented – Not in the BANP/or Not in Accordance with the BANP
- Chapter 4: Future Requirements – States
- Chapter 5: Future Requirements – Users

Chapter 1 lists ATS routes which have been implemented in accordance with the BANP. This chapter will be regularly updated as amendments to the BANP are approved and implemented.

Chapter 2 lists ATS routes which are contained in the BANP but have not been implemented in accordance with BANP requirements. This Chapter is intended for use as reference material to facilitate the resolution of any outstanding matters in order to fully implement or revise the routes.

Chapter 3 lists ATS routes which are not contained in the BANP but have been implemented by States. This Chapter contains information in relation to routes that have been subject to a BANP amendment proposal and implemented prior to the proposal being approved by ICAO. Routes are also included that have been implemented by States and not subject to an amendment proposal. The purpose of this Chapter is to temporarily record route information, and States would be expected to take appropriate action to ensure alignment of implemented routes with the BANP.

Chapters 4 and 5 list ATS routes proposed by States and International Organizations respectively. These routes have not been included in the BANP or implemented. The material in these Chapters is intended to be used as a basis for developing BANP amendment proposals, and to provide information on route planning developments which would form the basis for future proposals.

The material in Chapter 4 is organized in two parts: Part A contains those routes that have been agreed among States concerned and are to be processed as amendment proposals. Part B provides information on States' route requests that are subject to further coordination and agreement.

The material in Chapter 5 is organized in two parts: Part A contains those routes that have been agreed by States concerned and are to be processed as amendment proposals. Part B provides information on users' route requests that are subject to further coordination and agreement.

*Note:— As the Asia and Pacific ATS Route Catalogue is intended for use as a supplement to the BANP, it does not replace the BANP nor should it be used as an operational document. Its primary purpose is to assist States and airspace users by providing more up to date information, to develop and maintain the ATS routes in the Asia and Pacific Region.*

## **Amendments to the BANP and Catalogue**

A Contracting State or recognized International Organization identifying a need for a new route requirement to be included in the BANP or to change an existing route contained in the BANP, may submit an amendment proposal to the Secretary General for approval by the President of the Council in accordance with established procedures summarized below.

Appropriately presented and documented proposals to amend the BANP are submitted to the ICAO Secretary General through the Regional Office and circulated to States and International Organizations for comment. Once all parties concerned agree to the proposal, the Secretary General will submit the proposal to the President of the Council for approval. The Regional Office will inform States and international organizations concerned of the approval and the BANP will be amended accordingly.

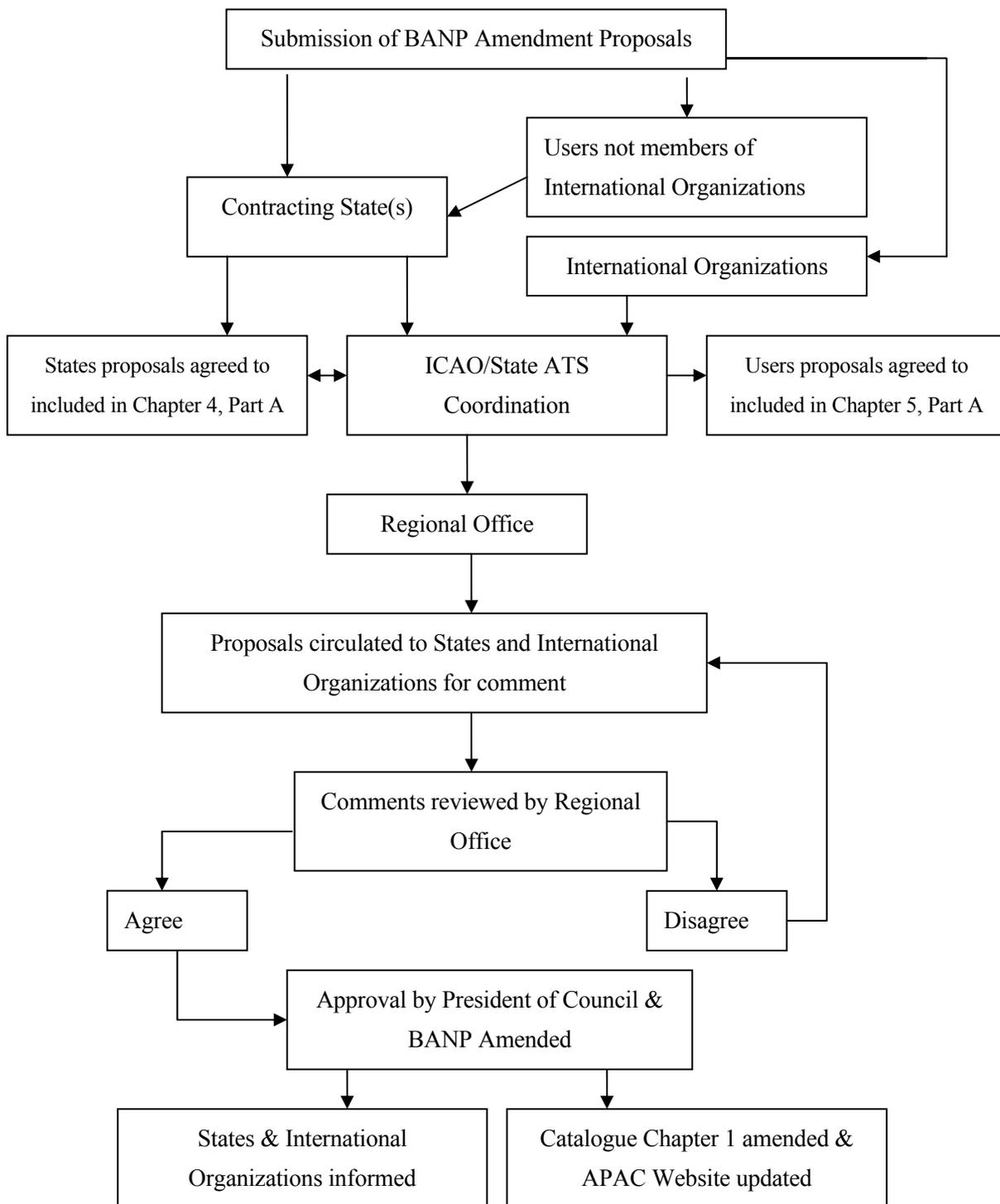
The Regional Office, who is responsible for maintaining the Catalogue, will up date the document from time to time as amendment proposals are progressed and approved, and to include new route requirements of States and Users.

Chapter 1 will be amended by the Regional Office subsequent to approval of an amendment to the BANP by the President of the Council. The amendment will be indicated by a vertical line in the margin of the Catalogue, and the revision number and date shown on the cover page of the document, which is posted on the ICAO APAC website (<http://www.icao.int/apac>).

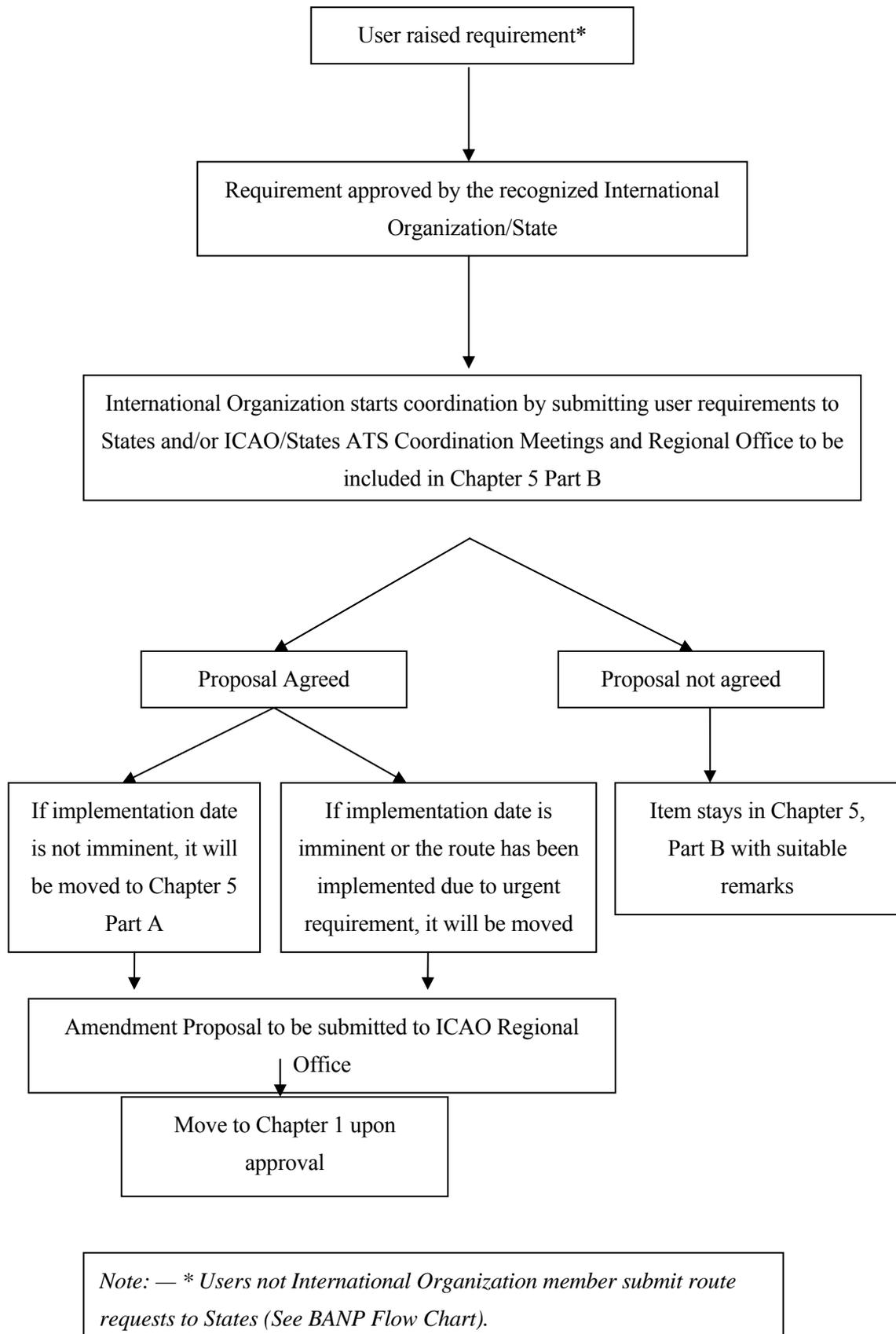
Chapters 4 and 5, Part A are amended based on route requirements submitted by States and International Organizations that have been agreed by the parties concerned to be included in the BANP and subject to amendment proposals. On approval by ICAO, the proposals to be incorporated in the BANP would be transferred to Chapter 1. Other route requests submitted by States and Users that have not been agreed to and are subject to further coordination between the parties concerned are contained in Part B to the respective Chapters. These routes are normally coordinated between States or through ICAO/State ATS coordination meetings and/or by correspondence. Users who are not a member of a qualifying International Organization submit their route requests to the appropriate State (s) and these would be recorded in Chapter 4.

The flow charts below describe the processes for amending the BANP and Catalogue.

**BANP AMENDMENT PROCESS**



**FLOW CHART FOR CHAPTER 5**



### Amendment Record

Version/Amendment Number	Date	Amended by	Comments
0.1	14 February 2005		ARNR/TF/2 developed the draft version.
0.2	5 May 2005	ARNR/TF/3	Finalized the format following contribution from the members.

### ARNR/TF — ACTION PLAN

IMMEDIATE: Action to be taken immediately after the conclusion of the meeting

MID TERM: Action to be taken within six months

LONG TERM: Action to be taken within one year

	<b>ACTION ITEM</b>	<b>TIME FRAME</b>	<b>RESPONSIBLE PARTY</b>	<b>STATUS</b>	<b>REMARKS</b>
1.	<b>ATS route-related entries to be deleted from APANPIRG List of Deficiencies</b>	MID TERM (APANPIRG/16)	Regional Office	OPEN	<p>Raised at ARNR/TF/2</p> <p>The Route Catalogue fully captured all the status of the ATS routes and there was no longer a need to retain them on the List of Deficiencies.</p> <p>Regional Office to submit a proposal to delete these listings to ATM/AIS/SAR/SG/15 and APANPIRG /16.</p>
2.	<b>States/Users to continue to submit route requests to the Regional Office and ATM/AIS/SAR/SG/15 to be included in the draft Catalogue (Ver 0.3).</b>	MID TERM (June 2005)	All States Users Regional Office	OPEN	<p>Raised at ARNR/TF/3</p> <p>Draft Route Catalogue to be updated by the Regional Office for presentation to ATM/AIS/SAR/SG/15 (25-29 July 2005)</p>
3.	<b>Review draft Catalogue (Ver 0.2) content and layout and update the Regional Office.</b>	MID TERM (June 2005)	All States Users	OPEN	<p>Raised at ARNR/TF/3</p> <p>Regional Office to submit revised document to ATM/AIS/SAR/SG/15 and APANPIRG/16 for adoption.</p>

ARNR/TF/3  
Appendix D to the Report

	<b>ACTION ITEM</b>	<b>TIME FRAME</b>	<b>RESPONSIBLE PARTY</b>	<b>STATUS</b>	<b>REMARKS</b>
4.	<b>Draft Catalogue to be reviewed by ATM/AIS/SAR/SG/15 with recommendation that APANPIRG/16 adopt the Catalogue to supplement BANP.</b>	MID TERM (25 July 2005)	Regional Office	OPEN	Raised at ARNR/TF/3
5.	<b>States/Users to continue ATS route development and coordinate through State/ICAO ATS coordination meeting as appropriate and update the Catalogue.</b>	LONG TERM (June 2006)	All States, Users Regional Office	OPEN	Raised at ARNR/TF/3  Information on route requirements to be included in the Catalogue and revisions posted on the APAC website ( <a href="http://www.icao.int/apac">http://www.icao.int/apac</a> ) periodically by the Regional Office.
6.	<b>Development of Regional ATS Route Master Database to be discontinued</b>	IMMEDIATE	Regional Office	OPEN	Raised at ARNR/TF/3  Route data was available through commercial sources and submissions by States and Users to the Catalogue would adequately provide the required route data.  Regional Office to check with AIS/MAP, ICAO Headquarters on availability of route coordinates and waypoints.
7.	<b>The assignment of regional five-letter name-codes to be done through an automated web-based system and to be accessed directly by States.</b>	IMMEDIATE	Regional Office	OPEN	Raised at ARNR/TF/3  Regional Office coordinates with the ICAO EUR/NAT Office, Paris to consider using the system in use in Europe and by the MID Region.

ARNR/TF/3  
Appendix D to the Report

	<b>ACTION ITEM</b>	<b>TIME FRAME</b>	<b>RESPONSIBLE PARTY</b>	<b>STATUS</b>	<b>REMARKS</b>
8.	<b>The EUR/NAT Office to be invited to make a presentation to the ATM/AIS/SAR/SG/15 on the automated five-letter name-code system they are using.</b>	IMMEDIATE	Regional Office	OPEN	<p>Raised by ARNR/TF/3</p> <p>Considering limited ICAO resources, using an automated system to replace the manual system being used by the APAC Office, would significantly enhance efficiency by permitting States to make code selection online.</p> <p>Potential errors would be reduced contributing to safety.</p>
9.	<b>APANPIRG/16 to be recommended to disband the ARNR/TF.</b>	MID TERM (25 July 2005)	Regional Office	OPEN	<p>Raised by ARNR/TF/3</p> <p>The primary work of preparing the ATS Route Catalogue has been completed by ARNR/TF TF/3. Outstanding tasks to be referred to appropriate bodies.</p>

**SEACG/12**

## **REPORT OF THE SEACG/12 MEETING**

### **Agenda Item 1: Adoption of Agenda**

1.1 The meeting adopted the following agenda as the Agenda for the meeting:

- Agenda Item 1: Adoption of Provisional Agenda
- Agenda Item 2: Review status of recommended actions as agreed at the SEACG/11 Meeting
- Agenda Item 3: Review current operations across South-East Asia and identify problem areas
- Agenda Item 4: Review use of No-prior departure coordination (No-PDC) procedures
- Agenda Item 5: Implementation of the new CNS/ATM systems in the Region
- Agenda Item 6: Develop a coordinated plan for implementation of actions agreed by the meeting
- Agenda Item 7: Any other business
- Agenda Item 8: Date and venue for the SEACG/13 meeting

### **Agenda Item 2: Review status of recommended actions as agreed at the SEACG/11 Meeting**

2.1 The meeting reviewed and updated the Action Plan arising from SEACG/11 (May 2004, Bangkok). The results of the review are included in **Appendix A** to this Report.

### **Agenda Item 3: Review current operations across South-East Asia and identify problem areas**

#### **Review of the Air Navigation Deficiencies in the ATM/AIS/SAR Fields in the Asia/Pacific Region**

3.1 The meeting was provided with the List of Deficiencies updated by APANPIRG/15 on Air Navigation Deficiencies in the ATM/AIS/SAR Fields in the Asia Pacific Region, and States were invited to review the list and notify the Regional Office by official correspondence of any amendments, corrections or deletions to the listing.

3.2 The meeting noted that the Deficiency List would be substantially reduced as a result of the work of the ARNR/TF, whereby the ATS routes listed, which were not safety-related, would be included in the Catalogue from which follow-up action would be taken by States and the ATS coordination groups as appropriate. The meeting further noted that ARNR/TF/3 recommended to APANPIRG/16 that these routes be removed from the List. In regard to the other items, there were few outstanding items affecting SEACG States.

3.3 In regard to WGS-84, Cambodia informed the meeting that full conversion to WGS-84 was expected to be completed in 2006. The Philippines reported that all main airports had been converted

and their work was ongoing and should be completed in the near future. China advised that they were considering introduction of RNP procedures at some airports and using WGS-84.

3.4 IATA advised the meeting that WGS-84 was a basic aircraft operating requirement mandated by ICAO in Annex 15 and other related Annexes. It should be noted that the latest generation of aircraft such as the Airbus A380 and Boeing 787 were equipped with advanced avionics including moving maps and runway alert systems dependent upon WGS-84. States were urged to ensure that their major airports and international routes were converted to WGS-84.

3.5 In regard to Advisory Service being provided on a few ATS routes or segments thereof, which lie beyond RVSM airspace in the Mumbai FIR, India informed that modernisation of HF facilities at Mumbai had been partially completed. It was expected that by the end of year 2005 or early 2006, CPDLC should also be available and at that time provision of ATC services beyond RVSM airspace should be feasible.

3.6 Regarding airspace classification, Japan advised that there were still some oceanic areas not classified and work was ongoing. Viet Nam advised that work was underway to classify their airspace and this was expected to be completed in 2005/2006.

3.7 In regard to the AIP format, Lao PDR advised that their AIP would be completed later this year. Myanmar advised that their AIP had been completed in 2002 and had since been published.

3.8 Concerning SAR capability, Cambodia advised that they met Annex 12 requirements and a SAR agreement had been established with Viet Nam. Agreements with Lao PDR and Thailand were under development.

3.9 The meeting was reminded by the Secretariat that to remove an item from the Deficiency List, ICAO required official notification by the States concerned to the Regional Office.

#### **Review of safety assessment for implementation and post-implementation of RVSM in the Western Pacific/South China Sea (WPAC/SCS) area**

3.10 The meeting was presented with information by the Secretariat on the work carried out by the Regional Monitoring Agency (RMA), APARMO who had conducted a safety assessment of the planned RVSM implementation on 21 February 2002 in the WPAC/SCS area. The technical and operational risk assessed by APARMO, i.e. the risk due to all causes was equal to  $1.2 \times 10^{-9}$  fatal accidents per flight hour, which was well below the required TLS value of  $5 \times 10^{-9}$  fatal accidents per flight hour.

3.11 At the one-year review meeting carried out by RVSM/TF/18 (June/July 2003, Bangkok), it was recorded that MAAR had taken over full responsibility as the Asia Region RMA from APARMO on 2 September 2003. The RVSM/TF had noted that in MAAR's safety report there had been an increase in large height deviations (LHDs) in the transition areas involving the modified single alternate and the single alternate FLOSs. Although the TLS had not been infringed, RVSM/TF/18 agreed that the States concerned in the Asia Region should review current ATC operations and put measures in place to reduce such operational errors.

3.12 With the completion of the one-year review, the RVSM/TF was no longer involved with RVSM operations in this area, therefore, SEACG was required to continue to provide oversight of RVSM matters. In the future, this meeting would be kept up to date on RVSM issues. Also, the RASMAG reviewed the RVSM RMA activities in the Asia/Pacific Region, and matters related to RVSM in the South-East Asia area would be referred to this meeting.

### **Review of the application of RVSM FLOS for the WPAC/SCS airspace**

3.13 The Secretariat updated the meeting on progress by the RVSM/TF to address the application of the RVSM flight level orientation scheme in the WPAC/SCS area. The meeting was reminded that a modified single alternate FLOS had been adopted for use in the SCS since the implementation of RVSM in February 2002 in order to simplify ATC and flight operations in the SCS. With the introduction of RVSM in the Bay of Bengal area in November 2003 and the proposed implementation in the Incheon, Naha and Tokyo FIRs in September 2005, where the single alternate FLOS would be used, some States responsible for the WPAC/SCS airspaces had expressed concern at RVSM/TF/18 regarding additional difficulties controllers would face carrying out transition procedures between the two RVSM FLOS systems.

3.14 Recognizing the need to maintain safety, efficiency and regularity of operations in the WPAC/SCS area, RVSM/TF/22 (September 2004, Bangkok) had developed a provisional revised plan for the assignment of RVSM levels and corresponding No-PDC procedures.

3.15 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. In accordance with the ICAO 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.

3.16 To conduct the safety assessment, States had been requested by RVSM/TF/22 to collect traffic sample data for July 2004 and submit this to MAAR along with the monthly LHD reports, essential to completing the safety assessment. It was anticipated that the safety assessment would be reviewed by the RVSM/TF/26 FLOS review meeting scheduled on 25-29 April 2005. However, in spite of frequent reminders by MAAR and a State letter issued by the Regional Office, several States responsible for significant portions of the airspace concerned failed to submit the required data in time for MAAR to complete the safety assessment to be reviewed at the RVSM/TF26 review meeting. Consequently, the RVSM/TF/26 FLOS review meeting had to be postponed and had been planned as RVSM/TF/27 (RVSM/TF/26 has become the Japan/ROK Go/No-Go meeting) on 5-9 September 2005.

3.17 The Secretariat reiterated that RVSM implementation and ongoing operations were contingent upon RVSM airspaces in the region meeting the TLS of  $5 \times 10^{-9}$  fatal accidents per aircraft flight hour due to all causes of risk in the vertical dimension established by APANPIRG for the Asia/Pacific Region (MID/ASIA *Regional Supplementary Procedures* (Doc 7030) refers.)

3.18 Hong Kong, China expressed concern over the number of changes that had taken place in the SCS airspace in recent years with the introduction of the revised SCS route structure and reduced lateral separation in 2001 followed by RVSM in 2002. Each airspace change requires training to be conducted for their controllers and this was no easy task to schedule and carry out controller conversion training within a short period of time. Too many changes at short notice was extremely disruptive and impacted adversely on staff morale. Already, the Japan and Republic of Korea RVSM implementation schedule had changed from June 2005 to November 2005, and at RVSM/TF 25 in Incheon on 21-25 March 2005 the date was revised to 29 September 2005. Hong Kong, China found it difficult to keep readjusting their training schedule.

3.19 With the RVSM FLOS meeting being scheduled shortly before the Japan/ROK implementation on 29 September 2005, Hong Kong, China considered that it would not be viable to complete all activities related to the RVSM FLOS change. They would not be able to implement any proposed changes to the SCS FLOS until some time after that date. It was suggested that any change to the SCS FLOS should be delayed until after the 90-day review meeting of the Japan/ROK RVSM implementation

3.20 The meeting recognized the difficulties of coping with frequent changes to the operational environment and agreed that a period of stability should be allowed for after the Japan/ROK implementation and recommended to the RVSM/TF to postpone the FLOS review meeting until after the 90-day review which would be held in January 2006.

3.21 IATA advised the meeting that there were increasing number of aircraft types presently operating or would enter service by 2007 that should be taken into account to expand the RVSM flight level band. These types are as follows: A350, A380, B747-400, B767, B777 and B787. Also, it should be noted these aircraft have an operating ceiling up to FL450. In addition, these aircraft were likely to require flight levels above FL410 especially during long-haul or ultra-long-haul operations. The meeting agreed that ICAO should study the feasibility of expanding the RVSM flight level band to cater for these aircraft. The Regional Office would bring this matter to the attention of ICAO Headquarters.

#### **Review of RVSM implementation Japan/ Republic of Korea**

3.22 The meeting was updated by the Secretariat on progress towards the implementation of RVSM in the Incheon FIR and the domestic portions of the Tokyo and Naha FIRs scheduled for 29 September 2005. In this regard, RVSM/TF/25 and the Sixth RVSM Seminar had been held consecutively on 21 to 25 March 2005 in Incheon, Republic of Korea.

#### Republic of Korea (ROK)

3.23 The ROK had agreed to implement RVSM simultaneously with Japan and the date had been revised from the initial date of 9 June 2005, to 24 November 2005 and currently to 29 September 2005. A proposed amendment to the *Regional Supplementary Procedures*, MID/ASIA/RAC, paragraph 7.5.1 to incorporate the Incheon FIR in the list of RVSM applicable airspace was being processed by the Regional Office and would be circulated shortly to States and international organizations for comment.

3.24 Subsequent to the RVSM/TF/25 meeting, the Secretariat advised that the proposal had been submitted to ICAO Headquarters on 15 March 2005 for approval and this was pending.

3.25 The RVSM/TF/25 meeting was provided with a thorough briefing on the Republic of Korea's airspace structure and restrictions necessary to accommodate military operations. RVSM would be implemented in all controlled airspace in the Incheon FIR between FL290 and FL410 (inclusive) except for Special Use Airspace (SUAs) and some airway segments to be used as transition areas. The transition areas would be established on ATS route segments adjoining the Pyongyang and Shanghai FIRs (Non-RVSM airspaces) to facilitate the safe and efficient transition of aircraft.

#### Japan

3.26 JCAB confirmed to RVSM/TF/25 that the single alternate FLOS would be used for domestic RVSM operations and non-standard levels would not be used due to traffic density and the traffic flow patterns. Japan had substantially completed their preparations for implementation.

#### A593/B576 FLAS Arrangements

3.27 During RVSM/TF/25, the meeting recognized the need to decide on a suitable flight level allocation scheme to be used on A593 (east/west) and crossing route B576 (north/south) in the Incheon FIR. As the Shanghai FIR operated under the China metric system and was non-RVSM airspace, transition was presently necessary from CVSM to China metric for westbound flights.

3.28 In regard to the transition procedures on A593, the meeting requested that China, Japan and ROK review the procedures with a view to simplifying the level changes by adopting a transition from RVSM to China metric without first having to change to a CVSM level.

3.29 The meeting was reminded of the transition procedures that had been adopted between China and Myanmar for the Kunming and Yangon FIRs. At first, a “double” transition procedure had been implemented whereby aircraft changed from China metric to CVSM levels and then to RVSM levels and vice versa. This had proved to be too complicated and operational inefficient, and was revised to a single transition from China metric to RVSM and vice versa. It was recommended that this approach should be adopted.

3.30 Subsequent to RVSM/TF/25, ROK advised that Japan and the Republic of Korea had agreed to the flight level assignment for A593 and B576 which provided a basis for implementing RVSM. The flight level allocation to be applied would be as follows:

A593	E (Japan)	250, 290, 410
	E (Korea)	270, 330, 370
	W (Japan)	240, 280, 390
	W (Korea)	260, 320*, 340*
B576	N (Korea)	270, 310, 330, 350, 370
	S (Korea)	260, 320, 340, 360

#### Readiness of Aircraft

3.31 In regard to aircraft and operator readiness for RVSM operations on the domestic and international routes in the Incheon, Naha and Tokyo FIRs, almost 90 percent were RVSM-approved, and in the case of Korean fleets, they were 100 percent RVSM approved. There were some aircraft of airlines in Japan that were progressing RVSM approval and these would be finalized before implementation of RVSM.

#### Safety assessment

3.32 The meeting noted that MAAR had conducted the RVSM safety assessment on behalf of PARMO (the responsible RMA) who was unable to do the work due to US domestic RVSM implementation, and reported that the preliminary estimates of the total risks for the RVSM implementation in Japan (domestic portion) and ROK was  $3.09 \times 10^{-9}$  well below the overall TLS  $5.0 \times 10^{-9}$  fatal accidents per aircraft flight hour.

#### A593/B576 RVSM safety considerations

3.33 In regard to the RVSM arrangements for A593 and B576, IATA commented that they had concerns over the safety of operations on A593 under the control of two controlling authorities, Fukuoka ACC for the portion east of SADLI and crossing route B576 controlled by Incheon ACC, and especially in the area of the crossing point NIRAT. With two controlling authorities for the same airspace, this complicated ATC and did not conform to normal practice of a single ATS provider for the same airspace.

3.34 In regard to the above, Japan advised the meeting that the arrangements for the airspace were agreed about 20 years ago between the States concerned under the auspices of ICAO to resolve non-operational problems that existed at the time. The record to date has shown that there had not been a single major incident in all that time which compromised safety, and operating procedures were in place as detailed in the respective State AIPs.

3.35 IATA drew attention to the Jeppesen chart of the area, which did not provide information regarding the crossing point that aircraft were under the control of two separate ATC units. The meeting suggested that IATA should bring this to the attention of Jeppesen.

3.36 IATA requested that the States concerned consider including a reference in their respective AIP to the contingency procedures in Doc 7030 which applied to this airspace. Also, it was the view of IATA that the contingency procedures should be reviewed to address the problem of aircraft operating under two ATC units and on separate frequencies along A593 and B576.

3.37 The meeting recognized the issues described above and the factors that led to the airspace arrangements which were beyond the scope of this meeting to deal with. The States concerned were well aware of the situation and this matter was the responsibility of the States concerned and could not be pursued further at this meeting. IATA advised that they had placed this matter on their list of shortcomings and deficiencies and would address the matter at an appropriate forum in the future.

### **State Contingency Planning**

3.38 The meeting was informed by the Secretariat of the ICAO provisions with regard to the requirements for States to have in place contingency measures for application in the event of disruptions to ATS and associated services. This matter was now of particular relevance in light of recent events such as the 11 September 2001 tragedy in the United States, airspace closures due to military conflict, industrial action and the December 2004 tsunami disaster in Asia. States were reminded of the ICAO provisions and that they should review their overall national contingency arrangements taking into account lessons learnt by States involved.

3.39 ICAO provided the *Guidelines for Contingency Measures for Application in the Event of Disruptions of Air Traffic Services and Related Supporting Services* in June 1984. The approved guidelines were subsequently included in the *Air Traffic Services Planning Manual* (Doc 9426), Part II, Section 1, Chapter 1, paragraph 1.3.

3.40 Amendments to Annexes 11 and 15 were considered necessary in order to promote timely contingency planning and application as well as to provide for a variety of circumstances affecting the safety and regularity of international civil aircraft operations. Accordingly, amendments were incorporated, effective 27 November 2003, which introduced a Standard in Annex 11 (paragraph 2.28 refers) for States to develop and promulgate contingency plans, and introduced a provision to Annex 15 – *Aeronautical Information Services* (paragraphs 5.1.1.1 w) and x) refer) regarding the promulgation by NOTAM of contingency measures and material in Annex 11, Attachment D - *Material Relating to Contingency Measures*.

3.41 In its review of State contingency matters, APANPIRG/13 (September 2002, Bangkok) was presented with a framework which had been developed by a State, that laid out the steps in the development of a State Contingency Plan. APANPIRG/13 urged States to use this document in association with their State Y2K Contingency Plans, in the development of State Contingency Plans where this had not already been completed, and endorsed an extension of the target date for completion until the end of 2003.

3.42 The meeting was also advised of APANPIRG/13's consideration of instances in which restricted airspace had been declared (11 September 2001 terrorist attacks) or was about to be declared (State industrial action) over the high seas that had an impact on the provision of air traffic services to international civil operations. The meeting was advised that while the closing of airspace was a State's decision in their sovereign airspace, the closure of air space over the high seas was in breach of the Convention on International Civil Aviation. Consequently, APANPIRG/13 formulated Conclusion 13/8 urging States to review, amend or develop contingency plans that would address these matters.

### Survey of State Contingency Planning Arrangements

3.43 The meeting was reminded that APANPIRG/12 (August 2001, Bangkok), under Conclusion 12/6, had called for a survey of States in the Asia/Pacific Region to determine the status of contingency planning and the extent to which contingency plans were exchanged between neighbouring States. The survey had been delayed on a number of occasions due to resource limitations at the Regional Office. However, during discussions at APANPIRG/15 (August 2004, Bangkok), the Regional Office agreed that the survey would be carried out and the results reported to APANPIRG/16.

3.44 During March 2005, ICAO State Letter AP029/05 (ATM) notifying the conduct of a survey of State contingency planning arrangements was transmitted to States of the Asia and Pacific Region. The State letter requested that States respond to the State letter and provide information as requested to the Regional Office not later than 30 June 2005.

3.45 Subsequent to 30 June 2005, the Regional Office would collate the information received from States in response to the survey, with a view to providing appropriate reporting of the status of State contingency planning arrangements to APANPIRG/16.

### **Regional Airspace Safety Monitoring Advisory Group (RASMAG)**

3.46 The meeting was updated by the Secretariat on the outcomes of RASMAG/2 held on 4–8 October 2004. The meeting recalled that the RASMAG was established by APANPIRG/14 (2003, Conclusion 14/48 refers) to provide a regional body mainly made up of safety management experts drawn from the regional monitoring agencies and States involved in these activities. RASMAG meets bi-annually and reports to APANPIRG on the outcomes of safety monitoring activities. It would also advise States, when requested, on the setting up of airspace safety monitor services.

3.47 In regard to its reporting procedures, RASMAG had agreed to an annual review of safety assessments to verify that the TLS was being met for all international airspaces in the Asia/Pacific region where this was required. The results of this review would be reported annually to APANPIRG.

3.48 RASMAG/2 had reviewed the requirements for providing safety management services for the ATS routes and airspaces in the Asia/Pacific region. It had been determined that a number of areas were not being provided with these services and the updating of safety assessments had not been done for some time. The SCS area was one of the areas affected.

3.49 RASMAG/2 called upon those States responsible to establish the required safety management services and undertake the safety assessment updates as soon as practicable.

### RASMAG Safety Seminar

3.50 The meeting was advised that RASMAG/2 agreed that a safety seminar should be convened for 3 days coincident with the next planned RASMAG meeting during the second quarter of 2005 (RASMAG/3, 6-10 June 2005). The aim of the seminar would be to provide information and guidance to States within the region in relation to safety management systems in general; the need for safety assessments and safety monitoring of various implementation activities; and information on organizations that could provide the expertise to assist States with implementing safety processes. Additionally, the workshop would provide guidance on State responsibilities to provide data to relevant monitoring agencies and how best to provide this data. The meeting agreed that the workshop should be open to all States within the Region and that States identified as most needing assistance should be encouraged by RASMAG member States to attend.

3.51 The Secretariat advised that the RASMAG Safety Seminar had been scheduled for 3 days from 8 to 10 June, 2005 at the Regional Office, immediately following the RASMAG/3 meeting on the 6 and 7 June. As this was likely to be the only regional opportunity available for some time, States were urged to attend what was expected to be a very practical and useful seminar.

#### RASMAG reporting requirements

3.52 In order to ensure that RASMAG was able to meet its requirement to provide an annual report to APANPIRG, RASMAG/2 agreed that as the month of December routinely experienced high traffic levels, this should be adopted as the standard sample period for traffic sample data collection throughout the MAAR, PARMO and Airservices Australia RMA (AsAR) areas of responsibility, commencing from December 2005. Traffic sample data collected in December would be submitted to the RMAs by the end of January, allowing analysis and report preparation by the RMAs in order to update RASMAG in April/May and allow time for RASMAG to prepare an update for APANPIRG in August/September each year.

3.53 In order to minimize the impact on States of the need to collect traffic sample data, the meeting considered that efforts should be made to align the arrangements for the collection of horizontal traffic sample data information with the RVSM data collection, resulting in all required data being collected simultaneously during the December sampling.

#### **Establishment of a Safety Monitoring Agency (SMA)**

3.54 The meeting recalled that at RASMAG/1 (April 2004), it was agreed that it was necessary to establish safety monitoring agencies to undertake safety management programmes for the application of data link services and related horizontal separation minima. The SCS area had been identified as requiring a safety monitoring agency to be established for the safety assessment of the RNP 10 route structure and reduced horizontal separation, and application of data link services.

3.55 In considering what organizations could provide SMA services, it was noted that to date monitoring for RVSM, reduced horizontal separation minima, data link services, and the performance of safety assessments had been carried out by a few specialized teams made up of technical experts and contractors supporting States within the region. The Secretariat drew attention to the requirement that States were responsible for the provision of safety services for their FIRs, noting that commercial service providers could be employed by a State or group of States to provide regional airspace safety monitoring agency services.

3.56 Hong Kong, China queried whether contracting services to commercial companies was endorsed by ICAO, as such services would be subject to commercial considerations, and it was possible that companies could go out of business at short notice or not renew contracts. This could raise questions about the availability of essential information and safety data. The Secretariat drew attention to the many areas within the air navigation services where commercial companies operated and this included a number of critical areas of service provision such as communications, satellite services, AIS provision, etc. It was the responsibility of States to ensure adequate arrangements existed to protect sensitive safety data and provision of essential services. In principal, there were no barriers for commercial companies to provide such services. As States bore sole responsibility for the air navigation services, they could provide these services themselves. However, it was recognized that there were commercial vulnerabilities and as Hong Kong, China suggested, this should be part of a risk assessment exercise when planning these activities.

3.57 The Secretariat presented information to the meeting on behalf of commercial provider CSSI, regarding its interest in assuming the duties and responsibilities associated with the provision of airspace monitoring in connection with RNP-based horizontal separation minima. The meeting was informed of CSSI's capabilities and experience as they related to the region's need for safety monitoring.

CSSI specialized in system analysis and engineering, application development, information technology, and technical program management. Its principal clients include the Federal Aviation Administration (FAA), the National Aeronautics and Safety Administration (NASA), and the U.S. Department of Defense (DoD).

3.58 The meeting also was advised that CSSI had been an active participant in ICAO regional and safety forums, which developed RNP requirements and the associated criteria for establishing separation minima based on RNP and RVSM.

3.59 CSSI had indicated that its current capabilities and prior experience allowed it to immediately fulfill the roles and responsibilities of the SMA, and was willing to start work as soon as Asia/Pacific States may require. As CSSI was a commercial company, it would be necessary to charge for its services.

3.60 The Secretariat advised the meeting that AEROTHAI, who had been appointed by APANPIRG to operate the RVSM regional monitoring agency (RMA) for the Asia Region was also interested in providing SMA services for the Bay of Bengal area. In addition to their RMA activities, AEROTHAI was studying the issues concerning the setting up of SMA services for the safety assessment work and monitoring activities related to the horizontal plane (i.e. RNP 10 and 50 NM lateral and longitudinal separation), and to include consideration of future separation reduction of 30 NM based on ADS and RNP 4. AEROTHAI expected to present information to the RASMAG/3 meeting to be held on 6-10 June 2005 in this regard.

3.61 In regard to the funding of SMA services, Thailand had advised that they would also study this matter further. At this stage, it was not possible to determine how the cost of providing SMA services would be met or if funding would be required in the future. Thailand would update the RASMAG/3 meeting on its position.

3.62 The Secretariat reminded the meeting that ICAO provisions required that implementation of specified reduced separation minima, e.g. 50 NM lateral and longitudinal separation using RNP 10, and 30 NM horizontal separation based on ADS using RNP 4, required a TLS to be established for the airspace and safety assessments including collision risk modelling performed prior to implementation and periodically for ongoing operations.

#### **Safety assessment for RNP10 Operations in the SCS area**

3.63 In regard to the need to establish safety assessment services for implement of RNP 10 operations in the SCS in November 2001, a safety analysis was carried out in order to confirm that the navigation accuracy and other safety considerations expected to be achieved would meet the agreed TLS of  $5 \times 10^{-9}$  fatal accidents per flight hour. As this task required mathematical expertise that was not generally available within the South China Sea ATS Route Structure Implementation Task Force, assistance from Australia to carry out the safety assessment was requested.

3.64 In October 2001, ICAO Regional Office was informed that safety assessment conducted by Airservices Australia concluded that the lateral collision risk would be less than the TLS of  $5 \times 10^{-9}$  fatal accidents per flight hour, provided agreed weather deviation procedures were followed. Accordingly, all the States concerned were notified of this result by ICAO letter AP-ATM0584 dated 26 October 2001.

3.65 SCS/TF/7 (January 2002) noted that the results of this safety assessment suggested that a new traffic movement sample should be collected to complete the safety assessment once the revised route structure had been implemented because the traffic data used for this preliminary assessment did not reflect the revised route structure. This was particularly important to enable a safety assessment for a 50

NM lateral route spacing to be carried out which was under consideration. The Task Force agreed that a further safety assessment for RNP 10 operations in the revised South China Sea ATS route structure based on the actual traffic movement should be conducted.

3.66 SCS/TF/8 (December 2002) endorsed the position described above. Follow-up action on this matter was expected to be taken by SEACG/11(May 2004). In this regard, SEACG/11 considered the matter and added an action item to the SEACG Action Plan, noting that MAAR and Airservices Australia were in consultation about setting up an SMA capable of doing this work.

3.67 APANPIRG/15 noted that SEACG/11 had agreed to update the safety assessment in relation to the implementation on 1 November 2001 of RNP 10 and 60 NM lateral separation on the South China Sea routes. APANPIRG/15 also noted that RASMAG/1 had identified a need for a safety monitoring group to be responsible for safety assessment activities, and that there would be a need to designate such a safety organization for the SCS area.

3.68 The Secretariat pointed out that ongoing safety monitoring services and updating of safety assessments had not been put in place for the SCS route structure RNP 10 routes where 60 NM route spacing was applied. As no updated safety assessment had been undertaken since implementation of the route system in November 2001, a review of the safety assessment was long overdue.

3.69 The meeting noting the background to the present situation agreed that setting up of safety monitoring services was essential and this would be given priority. As RASMAG was the body with appropriate expertise, the meeting requested RASMAG's assistance. Detailed information was required on the cost of setting up and operating a SMA. The main area of interest was regarding the cost issue and arrangements to obtain funding. It was felt that the overall cost would be less than that for an RMA and in the case of the SCS airspace which was relatively small and involved a few States, the cost would not be significant and could be readily funded.

3.70 The Secretariat advised that ICAO through the Air Transport Bureau had the expertise to assist States set up an organization and provide for its funding. There were a number of examples where this had been done, which had been presented to the FIT-BOB and FIT-SEA meetings. To take the next step, States were requested to consider pursuing this at ATM/AIS/SAR/SG/15 (July 2005). At ATM/AIS/SAR/SG/15, the Regional Officer Air Transport could be made available to assist. The meeting agreed to follow-up at ATM/AIS/SAR/SG/15. AEROTHAI was also requested to clarify their intentions to provide SMA services for the South-East Asia area, and if they were interested, to provide details of any cost recovery required and business plan. Thailand advised that they would be reporting to RASMAG/3 on this matter.

#### **Combined FIT-SEA/2, FIT-BOB/5, ADS/CPDLC Seminar and ATFM/TF/1**

3.71 The Secretariat updated the meeting on the Combined Meetings of the Fifth FANS Implementation Team – Bay of Bengal (FIT-BOB/5), the Second FANS Implementation Team – South East Asia (FIT-SEA/2), the First Air Traffic Flow Management Task Force (ATFM/TF/1) and an ADS/CPDLC Seminar held on 18 to 22 April 2005.

#### **ADS/CPDLC Seminar**

3.72 The meeting was updated on the outcome of the seminar held at the FIT-SEA/2 and FIT-BOB/5 meeting on 18-19 April 2005 at the Regional Office. The FIT-BOB/4 meeting (held in conjunction with BBACG/15 in September 2004) considered that an ADS/CPDLC seminar would be an effective way to educate ATS providers and operators in the region about ADS/CPDLC operations. In planning the seminar, the Regional Office considered that the members of the FIT-SEA could also benefit from the conduct of a seminar and scheduled the seminar accordingly.

3.73 The seminar was attended by 48 participants from 14 States, 2 international organizations and 1 data link service provider. The seminar considered 15 presentations on technical, operational and safety aspects of operating ADS and CPDLC in an ATC environment. A CD-ROM of the seminar was produced and distributed to all participants.

### **Combined FIT-SEA/2 & FIT-BOB/5 Meetings**

#### Review FANS-1/A Operations Manual (FOM)

3.74 The combined FIT meeting reviewed the status of the FANS-1/A Operations Manual (FOM), noting that APANPIRG/15 under Conclusion 15/7 had authorized the use of the FOM as the basis for regional ADS/CPDLC operations, in conjunction with the relevant ICAO provisions.

3.75 The Regional Office had supported a proposal to amalgamate the FOM and the North Atlantic guidance material and work has commenced under the auspices of the ICAO EUR/NAT Office in order to produce a joint document. It is expected that an initial draft document will be circulated for preliminary comment during the 3<sup>rd</sup> quarter 2005.

#### Update of FIT-SEA

3.76 The Combined FIT-SEA/2 and FIT-BOB/5 meetings noted that the two principal ATS providers for the non-radar airspace over the SCS area where ADS/CPDLC was needed were the Philippines and Viet Nam. The Philippines had advised that there had been unavoidable delays in obtaining ADS and CDPLC equipment and the implementation date had slipped from 2007 to 2010.

3.77 The Secretariat suggested at the FIT meeting that there needed to be a renewed effort on the part of States and ICAO to address the timely implementation of the regional CNS/ATM plan and give suitable priority to providing the data link services. The meeting agreed that the Regional Office should bring this to the attention of States, and in view of the growth in traffic in the region and the safety and environmental concerns being expressed, to request that they give priority to funding the necessary ATM improvements.

3.78 The Philippines advised the meeting that the information provided to the Combined FIT-SEA/2 and FIT-BOB/5 meetings was not accurate and their CNS/ATM project and ATM system upgrade already started this year. ADS and CDPLC was expected to be completed as planned in 2007.

3.79 In regard to the Manila FIR, the Philippines advised that 40 percent of their airspace was outside radar coverage and ADS and CPDLC would be significant enhancements. Also, they were considering implementing ADS-B to cover gaps in radar coverage over the Philippines.

3.80 Viet Nam advised that most of their airspace was under radar coverage. They would update the status of ADS and CPDLC introduction in the Ho Chi Minh FIR at future meetings.

#### Establishment of the Central Reporting Agency (CRA) for the South-East Asia area

3.81 Japan informed the combined FIT meetings that in follow-up to FIT-SEA/1 (May 2004, Bangkok) CRA Japan had confirmed that it would be willing to provide the CRA services for the FIT-SEA and requested the meeting to consider this offer. The provision of CRA services would be an extension of the existing CRA Japan activities in the Tokyo FIR as aircraft were operating from the Tokyo FIR to the South-East Asia area. This would also provide continuous CRA services across this geographical area.

3.82 CRA Japan advised FIT that initially there would be no charge for setting up and operating the CRA, but consideration would need to be given for funding its ongoing service, and this matter should be taken into account in the CRA funding discussions in due course.

3.83 The FIT meeting noted that it was the intent of CRA Japan to undertake the role of FIT-SEA CRA until the FIT-SEA established a formal CRA. The Philippines, Singapore, IATA and IFALPA thanked CRA Japan for their offer to set up the CRA and the preparation work that they had done, and supported the proposal. The Secretariat also expressed its appreciation and endorsed CRA Japan's proposal.

3.84 In regard to the formalities to establish the CRA, the Secretariat advised the combined FIT meetings that this was a matter for the States concerned to decide as they were responsible for the provision of the CRA services. In this case, as CRA Japan was an established CRA, the States could all agree through the FIT-SEA to appoint CRA Japan. The Secretariat also advised that acceptance of the offer of FIT-SEA CRA services by the CRA Japan would not require a formal approval of APANPIRG. However, it would be necessary to obtain the cooperation of the aircraft manufacturers and data link service providers and in this regard the Secretariat was requested to confirm their participation at future FIT-SEA meetings.

3.85 CRA Japan advised that at the next FIT-SEA meeting it would be necessary to confirm the role of the CRA, clarify who were the FIT-SEA members and their roles, and put in place the procedures and process for operating the CRA. The Secretariat suggested that if possible, the preparation by CRA Japan of these documents prior to RASMAG/3 (June 2005) would permit RASMAG to review and provide feedback in regard to the proposals. In the meantime, the CRA Japan advised that they were willing to start work with Singapore on any problem reports that they had experienced as they were the only State presently operating ADS and CPDLC services in the area. Singapore agreed to provide these reports to the CRA Japan.

3.86 In regard to State endorsement of CRA Japan providing the CRA services, Viet Nam requested that the Regional Office inform CAAV officially of the financial, technical and operational aspects of the CRA. Indonesia also requested that their DGCA be apprised of this. The Secretariat agreed to inform both States of the details described above and to seek their position on CRA Japan's offer.

#### Bay of Bengal ADS/CPDLC Operational Trial

3.87 The Combined FIT meetings were updated on progress with the Bay of Bengal ADS/CPDLC operational trial, which India commenced in February 2004. Their ground system had already reached a level of stability where failures were now very infrequent. Unfortunately, the number of participating airlines had not increased significantly. Although the trial was proceeding well, India reported that they were not yet ready to consider the introduction of reduced separation provisions, but were planning to introduce further ADS/CPDLC trial operations in the Mumbai and Delhi FIRs commencing in late 2005 or early 2006.

3.88 Sri Lanka advised FIT that they were overcoming staff limitations and equipment unserviceability issues and would rejoin the trial in May 2005.

#### Establishment of the CRA for the Bay of Bengal Airspace

3.89 IATA was pleased to advise the Combined FIT meetings that they were at the final stage of reaching agreement with Boeing for the provision of CRA services in the Bay of Bengal and expected that a contract would be signed by the end of April 2005. IATA provided details of the contract with Boeing and how the funding mechanism would work. All users of the data link services would be required to pay for the CRA services and a single charge would be levied on airlines by IATA in accordance with agreements with the States concerned.

3.90 States would not bear any expense in this process and would not be required to participate in the invoicing and collection of charges other than providing the data and publishing their AIP Supplements. However, to bring the CRA into operation, it would be necessary for IATA also to enter into a formal arrangement with the States concerned to ensure provision of the necessary data and to enable IATA to collect charges from the users of the data link services.

3.91 In light of the imminent commencement of CRA services for the FIT-BOB and the proposed expansion during late 2005/early 2006 of the Bay of Bengal ADS/CPDLC trial to include the Delhi, Mumbai and Colombo FIRs, the meeting agreed that FIT-SEA members would benefit from participation at the next FIT-BOB meeting. And the next meeting would also be combined with FIT-BOB/6.

### **First Air Traffic Flow Management Task Force Meeting (ATFM/TF/1)**

#### Establishment of the ATFM/TF

3.92 Recent meetings of APANPIRG, the BBACG and the RVSM/TF had all recognized a need to improve the overall management of traffic flows across the Bay of Bengal area. APANPIRG/15 (August 2004) had noted the considerable efforts being made by States to collaborate together with IATA to improve the ATFM over the Bay of Bengal area, and encouraged all parties to continue their efforts and to take into account the benefits to be derived from ATM automated systems.

3.93 A Special Coordination Meeting – Bay of Bengal (SCM-BOB) called for by RVSM/TF/24 (November 2004) was held in conjunction with BBACG/16 during 31 January – 4 February 2004. The SCM-BOB agreed that a dedicated Air Traffic Flow Management Task Force (ATFM/TF) should be established under BBACG to plan and develop an ATFM service for the Bay of Bengal and South Asia.

#### ATFM Phased Implementation

3.94 The SCM-BOB agreed that the first priority of the Task Force should be towards resolving the immediate problems encountered by westbound traffic operating across the Bay of Bengal to Europe during the night time period. The SCM-BOB drafted Terms of Reference (TOR) for the ATFM/TF that included the implementation of ATFM in this context by the third quarter of 2005.

3.95 In order to meet the objectives described in the TOR, the SCM-BOB adopted a phased implementation programme as per the following:

- Phase One: Flights planning to transit the Kabul FIR
- Phase Two: Other international flights crossing the Bay of Bengal and/or South and South East Asia areas
- Phase Three: Future planning for increased traffic within the Bay of Bengal and South and South East Asia areas

#### ATS route and airspace developments

3.96 Viet Nam advised that in accordance with the agreement among Cambodia, Thailand and Viet Nam, the responsibility for air navigation services provision in the southern portion of the Bangkok AOR within the Phnom Penh FIR was delegated to Civil Aviation Authority of Viet Nam. The transfer process had been carried out smoothly and there had been close coordination.

3.97 Viet Nam advised that they had the intention to upgrade domestic route W1 to an international route for the upper airspace as this route was being used extensively by international flights. In this regard, the Secretariat agreed to assign an ATS route designator to W1.

3.98 Viet Nam advised the meeting that they had the intention to upgrade their domestic routes. Viet Nam advised the meeting that they would closely coordinate with the Regional Office, Lao PDR, Cambodia and other adjacent States in implementing new ATS routes or revising certain current routes as addressed at ARNR/TF/3.

3.99 Viet Nam requested that the States concerned consider improving the routing between Hanoi – Kunming and Hanoi – Hong Kong. In the latter case, flights operating via the existing ATS route network suffered significant operational disadvantages due to direct routing not being available. In this regard, Viet Nam kindly proposed as follows:

- a) the parties concerned to further consider to open new direct routes; and
- b) the parties concerned to consider using ATS route A202 for traffic routing from Hanoi to destinations beyond Hong Kong (consideration should be given to making this an exception due to geographical reasons for an interim period).

3.100 China advised that they noted Viet Nam's request which had been recorded in the draft ATS Route Catalogue. Because of the small number of traffic and cost/benefit considerations, these routes could not be implemented at present.

3.101 The meeting drew attention to the need to consider what action would be taken and by whom on the State and User route requirements contained in the draft Catalogue Chapters 4 and 5. The Secretariat advised that the Catalogue should show the coordination process and who would be responsible for taking follow-up action. In some cases route implementation would be a matter for State to progress and others would require ATS coordination groups to be convened or to be referred to existing groups such as BBACG and SEACG. The Catalogue would be reviewed by the Secretariat to identify the implementation and coordination process.

3.102 In regard to Viet Nam's request, as these routes were in the draft Catalogue, the SEACG would follow-up by reviewing all routes applicable to this region at its future meetings.

#### **Agenda Item 4: Review use of No-prior departure coordination (No-PDC) procedures**

4.1 The meeting recalled that No-PDC had been in place to facilitate the flow of departure traffic from airports in the WPAC/SCS area. This procedure allocated flight levels to airports and departures would be released without coordination cleared to these flight levels. Before adopting the No-PDC arrangement, the ACC of the departure airport would coordinate one by one with the downstream ACC and this ACC coordinated with the next ACC. This was a complicated and time consuming process and resulted in departure delays. The No-PDC arrangement was designed to overcome this problem.

4.2 IATA reported to the meeting that the No-PDC procedures were often being used too rigidly and some departing flights ended up unable to operate at more optimum levels. In some cases, pilots requested a higher level but were rejected just because the level was not a No-PDC level.

4.3 The No-PDC procedures were developed to facilitate the departure flow and once flights were airborne level assignment should be accorded flexibly based on the traffic situation prevailing at the

time. The meeting recognized that there were few ATS providers in the region that had automated ATM systems that could provide real time information or pre-departure information at a regional level on traffic flow and requirements for level assignment. The BBACG States had been investigating establishing an ATFM system for the Bay of Bengal area and beyond as reported above. The meeting agreed that the SEACG States should similarly study the need for an ATFM system, and consideration should be given to include requirements for ATFM in their ATM development plans.

4.4 In regard to the above, Japan advised the meeting of efforts by Japan Civil Aviation Bureau (JCAB) to develop an ATFM system for Japan located at Fukuoka. The first stage of development was brought into service in 1994 with the opening of the Fukuoka ATFM Center. Development of this system was ongoing, and the next stage was to implement the ATM Centre (ATMC) which would come into service this year. The ATMC would include an ATFM function initially for the domestic airport traffic flows and later to include the oceanic airspace. The meeting expressed interest in this activity and requested that Japan keep the meeting informed of progress as this was the first major ATFM implementation in this region.

4.5 The meeting recognized that the primary problem of utilizing available flight levels in a flexible and dynamic manner was the lack of timely information of the traffic picture and traffic flows. Therefore, as traffic continued to increase, it would be even more difficult to manage flight level assignment efficiently in a mainly manual system. It was timely that this matter was now under discussion and action needed to be taken by States to plan for future traffic growth and to improve upon the present flight level assignment arrangements. Accordingly, the meeting requested States to nominate a contact person in the appropriate area of expertise to be part of a regional study of this issue. At the next SEACG meeting in the 2<sup>nd</sup> quarter of 2006, consideration should be given to establishing an ATFM plan for the South-East Asia area.

4.6 The meeting agreed that the viable solution to the issues raised above was to employ an automated system which enhanced ATC capability, and this should be accorded appropriate priority.

## **Agenda Item 5: Implementation of the new CNS/ATM systems in the Region**

### **Guidelines for the implementation of RNP operations**

5.1 The Secretariat informed the meeting that ICAO had noted that there existed, in a global sense, a number of different perspectives in relation to several aspects of required navigation performance (RNP). In particular, the naming conventions associated with RNP had led to some confusion regarding concepts, terminology and definitions. Consequently, divergences in regional implementations had resulted in a lack of harmonization between RNP applications in different areas of the world.

5.2 In order to address the lack of global harmonization resulting from the differing RNP naming conventions, the ICAO Secretariat, with the assistance of the ICAO RNP and Special Operational Requirements Study Group (RNPSORSG), had commenced work on developing guidelines aimed at ensuring a common global understanding of RNP, and the relationship between RNP and area navigation (RNAV) system functionality. The draft guidelines introduce the terminologies and associated concepts of Basic RNAV (BRNAV), Continental RNAV (CRNAV) and Terminal RNAV (TRNAV), which incorporate existing situations in regard to RNP5, USRNAV type A, USRNAV type B and P-RNAV nomenclature. At the current stage of development, the guidelines focus primarily on the enroute phase of flight and need further development in regard to the approach phase of flight.

5.3 It is anticipated that the development of amendment proposals to relevant ICAO provisions will be accomplished later this year with an applicability date of November 2006. The *Manual*

on *Required Navigation Performance* (Doc 9613) was also being updated by the Secretariat with the assistance of the study group. In the meantime, the draft guidelines attached at **Appendix B** to this Report were intended to be used by States and within the planning and implementation regional groups (PIRGs) in anticipation of expected approval of the amendment proposals, so as to avoid further proliferation of non-harmonized RNP implementation.

#### **One Year Review - Bay of Bengal RVSM**

5.4 The Secretariat informed the meeting of the activities of RVSM/TF/24, which carried out the one-year review of the implementation of RVSM in the Bay of Bengal and Beyond area on 27 November 2003. It was noted that in some cases States had experienced a few minor issues, however no major problems were evident.

5.5 MAAR had reviewed the safety assessment and verified that the TLS of  $5 \times 10^{-9}$  fatal accidents per flight hour had been met. RVSM/TF/24 declared full RVSM operational capability for the Bay of Bengal and Beyond area since RVSM operations were progressing well and the safety level continued to be met.

5.6 RVSM/TF/24 also considered other air traffic management issues concerning the Bay of Bengal including: flexible use of RVSM flight levels, ATS route changes in Indian FIRs, improvement to the transition procedures between Yangon and Kunming FIRs, development of an ATFM plan and ATFM tools, and the adoption of RVSM phraseologies in Amendment 3 to the *Procedures of Air Navigation Services – Air Traffic Management* (PANS-ATM, Doc 4444) applicable on 25 November 2004. States were reminded to note this amendment and adopt the phraseologies, which were previously in the *Regional Supplementary Procedures*.

#### **Approval of Amendment 4 to the PANS-ATM**

5.7 The Secretariat informed the meeting that during February 2005, the ICAO Air Navigation Commission (ANC) had reviewed proposed Amendment 4 to the PANS-ATM in light of comments from States and international organizations. Subsequent to the review, ICAO had approved the amendment for applicability on 24 November 2005 and issued a State Letter (ref AN 13/2.1-05/51, dated 29 April 2005) notifying States of the nature and scope of the amendment.

5.8 In the terms of the State Letter, States were invited by the Council to implement the amended provisions of the PANS-ATM on 24 November 2005. Attention was also drawn to the requirement for States to publish in AIP a list of any significant differences that would exist on 24 November 2005 between the amended provisions of PANS-ATM and State regulations and practices.

5.9 It was noted that some States encountered difficulty obtaining State letters in a timely manner and it would assist if these were more readily available. IATA advised that they also would like to be able to access States letters as they were of considerable interest to their airline members. In this regard, IATA advised that discussions between IATA and ICAO were looking into ICAO making State letters available to the public and placing them on the ICAO website. It was anticipated that a decision would be made by ICAO shortly.

#### **Approval of Amendment 43 To Annex 11 and complementary amendments to Annex 6**

5.10 The Secretariat briefed the meeting in regard to amendments to Annex 11 and Annex 6 – *Operation of Aircraft*. On 2 March 2005, the ICAO Council adopted Amendment 43 to Annex 11 and amendments 29, 24 and 10 to Annex 6 (Parts I, II and III, respectively), prescribing 11<sup>th</sup> July 2005 as the date upon which they would become effective and 24<sup>th</sup> November 2005 as the applicability date. State

Letters, dated 24 March 2005, had been issued describing the nature and scope of the amendments to Annexes 6 and 11.

5.11 Amendment 43 to Annex 11 introduced a Standard that required States to establish a monitoring programme for aircraft height keeping performance in RVSM airspace. Complementary provisions have been added to Annex 6, which specify the responsibility of the relevant State authority to take prompt and appropriate action if the monitoring results indicate that the height keeping performance of a particular aircraft or an aircraft type group exceeded prescribed limits.

5.12 The two State letters are provided in **Appendices C and D** to this Report.

**Agenda Item 6: Develop a coordinated plan for implementation of actions agreed by the meeting**

6.1 The meeting developed an action plan for its future work programme, as shown in Appendix A to this Report.

**Agenda Item 7: Any other business**

**Special Implementation Project on ATS safety management**

7.1 The Secretariat provided information in IP/5 in regard to the establishment by the Regional Office of a Special Implementation Project (SIP) approved by the Council of ICAO to evaluate ATS safety management (including safety assessment) programmes necessary for implementation and operation of RVSM and reduced horizontal separation minima in the Asia Region.

7.2 The SIP had as its main objective to ensure that all concerned States have set up a proper mechanism to ensure the safe implementation and operation of RVSM and reduced horizontal separation in accordance with Annex 11 provisions, and to assist States as necessary, to draw up an action plan with a view to meeting their obligations thereto.

7.3 The previous Regional Office SIP conducted during late 2004 covered a number of States in the Bay of Bengal area and included consideration of operational safety matters. The 2005 SIP would focus on the South-East Asia area. Under the proposed SIP arrangements, a series of visits were being planned by the Regional Office during the first half of 2005 to Cambodia, Indonesia, Philippines and Viet Nam.

7.4 Based on the outcome of the evaluation visits to the States concerned, the SIP proposed that a regional strategy be developed to assist States to establish safety management programmes in accordance with Annex 11. This was essential for implementation of airspace changes and assurance of ongoing safety of operations of the airspaces concerned.

**Civil military coordination**

7.5 The meeting was informed by the Secretariat of the outcome of the Civil/Military Coordination Seminar held at the Regional Office in December 2004 attended by 67 civil and military participants from 12 States and 2 international organizations. This seminar had originally been intended to be held in 2002 but had to be postponed for a variety of pressing reasons. A previous Civil/Military Coordination Seminar had been held during May 1998.

7.6 The seminar had reviewed the *Asia/Pacific Regional Civil Military Co-operation Guidelines*, as contained in Part VIII 'Airspace management' of the ASIA/PAC FASID (Doc 9673, 2001), and had not identified any need to amend the existing provisions. However, the seminar urged States not to be complacent in regard to existing national provisions relating to civil/military coordination, to undertake a thorough review of current arrangements in the light of ICAO provisions and the deliberations of the seminar and to incorporate the FASID *Guidelines* in all current and future airspace planning.

7.7 The seminar had noted that effectual cooperation and coordination between civil and military agencies was essential for the safety, security and efficiency of international civil aviation and had endorsed the principle adopted by the previous regional Civil/Military seminar (1998), that of the *equitable sharing of both convenience and inconvenience* by civil and military users.

7.8 The seminar did not identify additional need for follow up sub-regional Civil/Military coordination workshops at this time and considered that workshops could always be arranged later, as and when required by prevailing circumstances.

7.9 The meeting emphasized the importance of fully engaging with the military authorities in implementation planning of airspace changes and recognized the excellent cooperation that had been achieved through the EMARSSH and RVSM projects. It was noted that in many States in the Asia Region, the military authorities controlled large portions of airspace not available for civil use. The opening up of portions of this airspace to benefit international civil flights was of a high priority and States were encouraged to foster relations with their military to seek ways to gain access to this airspace bearing in mind the ICAO principle of flexible use of airspace.

7.10 The meeting noted that there were positive indications of a number of military authorities taking an increasing interest in civil airspace requirements and there was much to be gained to encourage them to participate in ICAO forums such as this one.

#### **ICAO language proficiency requirements**

7.11 The meeting was presented with information on the new ICAO language proficiency provisions in Annexes 1, 6, 10 and 11 requiring that as of 5 March 2008, pilots, aeronautical station (radio) operators and air traffic controllers shall demonstrate the ability to speak and understand the language used for radiotelephony communications to the level specified in the language proficiency requirements of ICAO documentation. The minimum level that must be achieved by this group is Level 4.

7.12 ICAO published the *Manual on the Implementation of the ICAO Language Proficiency Requirements* (Doc 9835-AN/453) in September 2004 addressing the various training and evaluation issues related to the implementation of ICAO language proficiency provisions to assist States to comply with the provisions.

7.13 In implementing the proficiency provisions, the attention of States is drawn to considering, aspects of:

- mechanisms to identify current proficiency levels amongst operational staff;
- mechanisms for the provision of language enhancement training;
- whether to establish in-house programs for assessment and enhancement training, or utilize external language services providers;
- if using external language services providers, mechanisms to identify appropriate providers;

- numbers of pilots or controllers that can be simultaneously taken off line, and for what period of time, for assessment and/or enhancement training;
- contingency considerations in the event that insufficient staff attain Level 4 proficiency; and
- whether language proficiency tests should be introduced as part of the initial recruiting process.

7.14 Pursuant to Article 42 of the Convention on International Civil Aviation, the introduction of the new language proficiency provisions were becoming applicable progressively. As of 27 November 2003, operational staff shall demonstrate the ability to speak and understand the language used for radio telephony. Until 5 March 2008, the licensing authority of each State is permitted to determine the way in which this ability is demonstrated.

7.15 From 5 March 2008, the demonstration of the ability to speak and understand the language used for radio telephony communications shall be conducted in accordance with the holistic descriptors and rating scale published by ICAO as attachment and appendices to Annex 1.

7.16 The meeting recognized that States could be expected to undertake substantial work in the preparation and application of language testing instruments in order to assess the present ability of pilots, radio operators and air traffic controllers to meet the SARPs. Also they would have to examine issues of aviation language training aimed at enhancing the language skills of operational staff to achieve at least the minimum operational Level 4.

7.17 The Secretariat advised the meeting, that in addition to ICAO's guidance material, an education programme has been launched in the form of a series of seminars to be held in all ICAO regions. The first global seminar was held at ICAO Headquarters, Montreal in September 2004 and the first regional seminar was held at Tokyo in December 2004. The meeting noted that the Regional Office did not have particular language expertise and any further assistance to States would best be sought from ICAO Headquarters, or use made of expertise in the public or private sectors.

7.18 The meeting recognized that there was little material available on testing for language proficiency and how to retrain personnel who failed to meet the Level 4 standard or wished to achieve a higher standard. In this regard, consideration should be given by ICAO to provide additional more concise material on this subject and to develop suitable regional guidance material. This matter would be referred to the ATM/AIS/SAR/SG/15 as it had relevance regionally.

### **30/30 Implementation in the Tasman Sea**

7.19 The Secretariat provided information in IP/2 on Australia's implementation of 30/30 separation minima based on ADS and RNP/4. On 20 January 2005, following satisfactory completion of the safety review, 30 NM lateral/30 NM longitudinal separation (based on RNP4 between FANS 1/A approved aircraft) was introduced across the Honiara FIR (Solomon Islands), Nauru FIR (Republic of Nauru), Nandi FIR (Fiji) and the oceanic portions of the Brisbane FIR (Australia) and Auckland FIR (New Zealand).

7.20 The Secretariat drew the attention to this implementation, as it provided valuable information in regard to the safety management and working group processes that had been undertaken during the implementation of the reduced separation minima.

**Electronic Locator Transmitters (ELT)**

7.21 The Secretariat provided information in IP/4 of the Annex 6 amendment that defers the mandatory carriage of automatic ELTs operating simultaneously on 406 MHz and on 121.5 MHz to 1 January 2007. This had arisen because a number of States had not fully implemented the ELT requirements in their national regulations and were unable to comply with the original Annex 6 applicability date of 1 January 2005. Consequently, the Air Navigation Commission on reviewing comments from States to an amendment proposal to Annex 6, agreed to defer the applicability date, which was approved by the ICAO Council.

**Air Navigation Service Improvements**ATC Radio communication procedures

7.22 IATA raised the problem associated with pilot reporting communication procedures applied by India, Bangladesh and Myanmar as specified in their respective AIPs for routes through the Kolkata, Dhaka Yangon FIRs respectively. This matter had been previously addressed by BBACG and by a Regional Office mission to the States concerned in 2004. It had been considered that this matter should be resolved by the States and the meeting requested these States present at this meeting to take follow-up action. Accordingly, India agreed to convene a meeting of the States and to also invite IATA.

Myanmar communication developments

7.23 Myanmar updated the meeting on progress to improve their communications and surveillance systems. The project to upgrade these systems had reached the final stages, and they were pleased to report that four new RCAG stations were operating and two more would be in service by the end of this week. Also, new frequencies 126.75 Mhz would replace 133.23 MHz for the North Sector and 128.75 MHz would replace 134.2 MHz for the South sector in the Yangon FIR. In this regard, a trial would commence shortly using the new frequencies and would be notified by NOTAM. Pilots would be requested to contact Yangon ACC on the primary frequency and to test call on the new frequency.

7.24 Also, the old ACC was being relocated to the new operations block and this work would be completed on 9 May 2005. This would include providing radar signals from the Mandalay SSR to extend the Yangon ACC radar service area covering the northern portion of the Yangon FIR. The ADS and CPDLC systems were being relocated to the new operation block and they would be able to participate in the Bay of Bengal trial after the systems were brought back into service.

7.25 Recognizing the considerable difficulties in the past to implement improvements to the communications in the Yangon FIR, the meeting expressed its appreciation for the significant improvements being made by Myanmar. It was expected that this would overcome the operational difficulties that had been experienced for some time.

Indonesia's ANS improvements

7.26 Indonesia informed the meeting of progress to implement their new Makassar ACC automated ATM system (MAATS) and restructuring of their airspace and ATS routes. With the MAATS project, Indonesia also restructured its four FIRs, Jakarta, Ujung Pandang, Bali and Biak into two FIRs, Ujung Pandang and Jakarta FIRs. At the same time, ten RNP 10 routes would be implemented. Thus completing a major infrastructure and airspace reorganization.

7.27 The first phase of implementation would be carried out on 12 May when the Makassar ACC was brought into operation in the existing airspace system for a bedding in period, during which time old ATS system would continue in operation. In July, the new Makassar ACC would commence full

operations. AIP Sups have been issued. In this regard, the meeting advised that they should be reviewed to clarify the two phase implementation.

7.28 The meeting congratulated Indonesia on the significant improvements they were making to their ATS system an services.

**Agenda Item 8: Date and Venue for the SEACG/13 meeting**

**Venue for the Meeting**

8.1 The meeting agreed to hold the SEACG/13 meeting at the Regional Office during the second quarter of 2006. The Regional Office would make appropriate arrangements and advise States and international organizations in due course.

**Closing of the meeting**

8.2 Mr. Moores in closing the meeting thanked States and international organizations for their excellent cooperation and participation in addressing the matters raised at this meeting. The meeting had made substantial progress on a number of important issues. States were strongly encouraged to give priority to implementing ADS and CPDCL services. The past few years have been extremely demanding with the implementation of many major airspace projects bringing substantial benefits to the industry as well as to the environment. However, there was a pressing need for some States to improve their safety management systems to provide the essential safety services for ongoing operations of these airspace changes, which included reduction in aircraft separation. The enthusiasm and commitment of all concerned to strive for continued improvement was commendable.

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## SEACG/12 — ACTION PLAN

IMMEDIATE: Action to be taken immediately after the conclusion of the meeting

MID TERM: Action to be taken within six months

LONG TERM: Action to be taken within one year

	ACTION ITEM	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
1.	<p><b>Traffic Sample Data (TSD) to be collected for RVSM and RNP 10 safety assessments</b></p> <p>As well as traffic sample data on the SCS parallel routes, sample data is required for the crossing routes to facilitate analysis of intersecting traffic.</p>	IMMEDIATE	All SEA States, Thailand (MAAR)	OPEN	<p>Raised at SEACG/11.</p> <p>TSD required for July 2004 and submitted to MAAR by 1 September 2004.</p> <p><u>MAAR Contact details:</u> Email (preferred): <a href="mailto:maar@aerothai.co.th">maar@aerothai.co.th</a> Fax: 662 287 8155</p> <p>Address: Monitoring Agency for Asia Region (MAAR) ATS Operations Bureau, AEROTHAI 102 Ngamduplee Tungmahamek, Sathorn Bangkok 10120 Thailand.</p> <p>Traffic sample data were still required from some States and this should be provided as soon as possible and not later than end of June 2005.</p>

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	ACTION ITEM	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
2.	<b>Preparation and distribution of Traffic Sample Data (TSD) template</b>	IMMEDIATE	Thailand (MAAR)	OPEN	<p>Raised at SEACG/11.</p> <p>MAAR and Regional Office to revise the TSD template to include RVSM and RNP requirements and make template available to States.</p> <p><a href="mailto:maar@aerothai.co.th">maar@aerothai.co.th</a></p>
3.	<p><b>Update RVSM approval records for all aircraft registered by each State</b></p> <p>All States to ensure up to date records held on RVSM status of aircraft on respective registers.</p>	IMMEDIATE	All States, MAAR	OPEN	<p>Raised at SEACG/11.</p> <p>In addition to State records, RVSM status to be provided by States to MAAR.</p> <p><a href="mailto:maar@aerothai.co.th">maar@aerothai.co.th</a></p>
4.	<b>Continue to provide Large Height Deviation (LHD) reports to MAAR</b>	IMMEDIATE	All States, MAAR	OPEN	<p>Raised at SEACG/11.</p> <p>States to ensure LHD reports (including 'NIL' reports) are provided to MAAR in accordance with published reporting requirements.</p> <p><a href="mailto:maar@aerothai.co.th">maar@aerothai.co.th</a></p>
5.	<b>Participation at the RASMAG Safety Seminar</b>	IMMEDIATE	All States	OPEN	<p>Raised at SEACG/12.</p> <p>States are <b>urged</b> to attend the RASMAG Safety Seminar scheduled from 8 to 10 June 2005.</p>

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	<b>ACTION ITEM</b>	<b>TIME FRAME</b>	<b>RESPONSIBLE PARTY</b>	<b>STATUS</b>	<b>REMARKS</b>
6.	<b>Deficiencies – update APANPIRG Deficiencies Listing</b>	MID TERM (August 2004)	All SEA States, Regional Office	OPEN	<p>Raised at SEACG/11.</p> <p>States to check and confirm current status of deficiencies listing and advise Regional Office of amendments.</p> <p>Regional Office will prepare updated listing for APANPIRG/16 (August 2005).</p>
7.	<p><b>Review FLOS in SCS area</b></p> <p>Current operations utilise a modified single alternate FLOS in the SCS area, leading to transition areas to/from surrounding single alternate FLOS areas.</p>	MID TERM (1 <sup>st</sup> Qtr 2006)	All SEA States, MAAR	OPEN	<p>Raised at SEACG/11.</p> <p>The SEACG/11 decided that resolving the use of the FLOS was a high priority.</p> <p>The RVSM/TF - FLOS meeting is tentatively planned in January 2006, after the <b>90-day</b> review of Japan-Korea RVSM implementation.</p>
8.	<p><b>Proposal to establish additional ATS routes for Brunei-Middle East/Europe Flights</b></p> <p>Brunei Darussalam should discuss the suggested options for shorter routes with Royal Brunei Airlines and advise States, ICAO and IATA on the outcomes. IATA should work with these States to arrive at a viable solution.</p>	MID TERM (1 <sup>st</sup> Qtr 2006)	<p>Brunei Darussalam with</p> <p>Indonesia, Malaysia, Singapore, Thailand, Viet Nam &amp; IATA</p>	OPEN	<p>Raised at SEACG/10.</p> <p>Based on the development of the ATS Route Catalogue updated at this meeting, States will coordinate with Royal Brunei Airlines with regard to their two route proposals tabled at this meeting.</p> <p>Update provided by Brunei Darussalam at SEACG/12.</p>

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	<b>ACTION ITEM</b>	<b>TIME FRAME</b>	<b>RESPONSIBLE PARTY</b>	<b>STATUS</b>	<b>REMARKS</b>
9.	<p><b>Deletion of Requirements for A205 and G580</b></p> <p>That, Brunei Darussalam and Malaysia co-ordinate with ICAO for a necessary amendment to Asia/Pacific ANP in order to add the requirement for A205 and amend the requirement for G580 in the Asia/Pacific ANP.</p>	MID TERM (1 <sup>st</sup> Qtr 2006)	Brunei Darussalam, Malaysia, Regional Office	OPEN	<p>Raised at SEACG/10.</p> <p>Brunei Darussalam was not represented at the meeting. Malaysia reported that they would prefer to retain A205, and that the portion of G580 between BRU and VJN was replaced by B348. The Regional Office would coordinate with Brunei to progress this matter.</p> <p>An amendment to the ANP required. Regional Office will coordinate the raising of the ANP amendment.</p>
10.	<p><b>Review the airspace arrangements for ATS routes and transfer of control points in Viet Nam's airspace</b></p> <p>Viet Nam and adjacent States concerned should review and coordinate with Regional Office on the airspace arrangements for ATS routes and transfer of control points to improve the efficiency of providing air traffic control services in the Ha Noi and Ho Chi Minh FIRs.</p>	MID TERM (December 2004)	Viet Nam, adjacent States, Regional Office	OPEN	<p>Raised at SCS/TF/8.</p> <p>The SEACG/11 meeting clarified that the main issue was in regard to weather deviation on L628 and Viet Nam requested that this matter required further consideration at the next meeting. The meeting agreed to keep this item open</p> <p>SCM/3 discussed the matter. Further coordination should be considered to resolve the issues.</p>

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	ACTION ITEM	TIME FRAME	RESPONSIBLE PARTY	STATUS	REMARKS
11.	<p><b>Standardise lower limits of RNP routes in the SCS Route Structure and establish RNAV routes beneath</b></p> <p>Apply standard lower limit of FL 285 wherever possible across RNP10 routes.</p> <p>Establish RNAV routes beneath RNP routes where required.</p>	MID TERM (December 2004)	All SEA States, IATA	OPEN	<p>Raised at SEACG/11.</p> <p>RNAV routes to accommodate non-RNP10 aircraft to be established under existing SCS RNP10 routes with upper limit at FL285 where possible and required.</p> <p>Arrangements to be kept under review, changes subject to safety assessment.</p> <p>Hong Kong, China to prepare draft AIP supplement and circulate to States and IATA for comment. All States should adopt the same wording.</p>
12.	<b>Realignment studies A1/P901</b>	LONG TERM (SEACG/13)	All States concerned	OPEN	<p>Raised at SEACG/12</p> <p>China to update progress. Studies were not expected to be completed for a considerable time due to technical problems with the airspace structure in the area.</p>

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	<b>ACTION ITEM</b>	<b>TIME FRAME</b>	<b>RESPONSIBLE PARTY</b>	<b>STATUS</b>	<b>REMARKS</b>
13.	<b>Implementation of lateral offset procedures</b>	MID TERM  (SEACG/13)	All States, Regional Office	OPEN	Raised at SEACG/11.  To be actioned by all States following publication of revised ICAO guidelines for 2 NM offset procedures.  States to consider permitting lateral offset procedures to be applied in radar airspaces at the discretion of ATC, and/or specify routes transiting radar airspace where offsets may be applied.
14.	<b>Establishment of Safety Monitoring Agency (SMA) for Asia Region</b>	MID TERM (1 <sup>st</sup> Qtr 2006)	All States Regional Office	OPEN	Raised at SEACG/11.  RASMAG/3 (6-10 June 2005) to be requested to provide more details on funding and requirements to establish an SMA for the South-East Asia area.  States concerned to progress this matter at the ATM/AIS/SAR/SG/15 Meeting (22-29 June 2005) and report progress to SEACG/13 (1 <sup>st</sup> quarter 2006).
15.	<b>Establishment of Central Reporting Agency (CRA) for FIT South-East Asia</b>	MID TERM (1 <sup>st</sup> Qtr 2006)	Japan	OPEN	Raised at SEACG/11.  CRA Japan offered at FIT-SEA/2 to provide CRA services for the SCS area. States to indicate their support and Regional Office to coordinate with States and report to FIT-SEA/3 and SEACG/13.

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	<b>ACTION ITEM</b>	<b>TIME FRAME</b>	<b>RESPONSIBLE PARTY</b>	<b>STATUS</b>	<b>REMARKS</b>
16.	<b>Update on ADS/CPDCL implementation planning</b>	MID TERM (December 2004)	All SEA States	OPEN	Raised at SEACG/11.  States to update ATM/AIS/SAR/SG/15 (25-29 July 2005) on their ADS/CPDLC implementation plans with timelines for implementation.
17.	<b>Implementation of radar handover procedures</b>  States should identify areas where radar handover procedures can be applied at common FIR boundary, and implement the procedures.	LONG TERM (June 2005)	All SEA States	OPEN	Raised at SEACG/10.  The SEACG/11 meeting was advised that many States had introduced radar handover procedures. Some States identified areas where progress was still to be made and agreed to move towards radar handover procedures as soon as possible.  States to update matrix presented at SEACG/12 on procedures implemented with adjacent States
18.	<b>Implementation of RNP 10 and RNP 4 routes and reduced horizontal separation of 50 NM and 30 NM respectively</b>	LONG TERM (June 2005)	All States	OPEN	Raised at SEACG/11.  Ongoing implementation of RNP 10 routes as required and introduction of 50 NM separation.  Identify areas suitable for RNP 4 and reduction of en-route separation to 30 NM.

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	<b>ACTION ITEM</b>	<b>TIME FRAME</b>	<b>RESPONSIBLE PARTY</b>	<b>STATUS</b>	<b>REMARKS</b>
19.	<b>A202 metric cruising levels transition</b>  Consideration should be given to an alternate arrangement to the metric cruising level system for operations on A202 to facilitate flights with ceiling limitations.	LONG TERM (June 2005)	China, Hong Kong China	OPEN	Raised at SEACG/10.  China would consider this issue in its RVSM Implementation Plan.
20.	<b>Implementation of ADS-B</b>	LONG TERM (June 2005)	All States	OPEN	Raised at SEACG/11.  States to identify areas for ADS-B implementation and to notify users by AIC at earliest opportunity.
21.	<b>Provision of contact person for study of ATM automation system development</b>	LONG TERM (May 2006)	All States	OPEN	Raised at SEACG/12.  States to provide contact person for study of ATM automation system development and ATFM for SEA area.  Report to SEACG/13.
22.	<b>Study on the development of an ATM automated system for the SERA area including ATFM capability</b>	LONG TERM (May 2006)	All States	OPEN	Raised at SEACG/12.  States to consider requirements to provide ATM automated systems and update SEACG/13.

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	<b>ACTION ITEM</b>	<b>TIME FRAME</b>	<b>RESPONSIBLE PARTY</b>	<b>STATUS</b>	<b>REMARKS</b>
23.	<b>Expansion of RVSM flight level band</b>  ICAO should study the expansion of the RVSM flight level band to accommodate increasing number of aircraft requiring to operate above FL 410.	LONG TERM (SEACG/13)	ICAO	OPEN	Raised at SEACG/12  Regional Office to inform ICAO Headquarters to look into this matter and report back to SEACG/13
24.	<b>Review and implementation of the requirements included in the Route Catalogue</b>	LONG TERM (May 2006)	All States	OPEN	Raised at SEACG/12.  States to review the requirements in the Route Catalogue and consider implementations.  Report to SEACG/13
25.	<b>Provision of guidance on testing and retraining to meet the ICAO language proficiency requirement</b>	LONG TERM (May 2006)	Regional Office	OPEN	Raised at SEACG/12.  Regional Office to provide guidance on testing and retraining to meet ICAO language proficiency requirement.  Report to SEACG/13.

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## **ATTACHMENT**

### **Guidelines for uniform implementation of RNP operations**

#### **1. Introduction**

Many different perspectives within the international civil aviation community and among individual States on several aspects of required navigation performance (RNP) and, in particular, the naming convention associated with it, have led to some confusion regarding concepts, terminology and definitions. Consequently, a divergence of implementation resulted in a lack of harmonization between RNP applications. Without immediate action, the danger exists that increasing disparity with implementation will continue.

Therefore, the Secretariat, with the assistance of a study group, developed these guidelines in order to ensure a common understanding of RNP and the relationship between RNP and area navigation (RNAV) system functionality, thereby facilitating global harmonization of existing implementations and creating a basis for harmonization of future operations. The guidelines still need to be further developed for the approach phase of flight.

Development of amendment proposals to relevant ICAO provisions will be accomplished later in the year with an applicability date of November 2006. The RNP Manual (Doc 9613) is also being updated by the Secretariat with the assistance of the study group. In the meantime, these guidelines may be used with States and within the planning and implementation regional groups (PIRGs) in anticipation of expected approval so as to avoid further proliferation of RNP implementation.

#### **2. Description**

At its highest level, RNP refers to the definition of navigation performance and functional requirements for an operation and thus applies to and affects both the airspace and the aircraft. This concept is realized and used in clearly defined navigation applications. A navigation application consists of a navigation standard and an associated operating environment.

While the differences between the existing RNP Concept and its present implementation in demanding operating environments are significant, these differences are not as apparent in less demanding operating environments. Mindful that most existing continental area navigation applications are currently used in demanding operating environments and that it is reasonable to assume that such environments will need to be addressed in many of the expected future en-route and terminal airspace applications, the existing RNP Concept has been elaborated upon with a view to ensuring the maximum coherence between existing navigation standards and future navigation applications.

As such, the revised RNP Concept distinguishes between navigation standards that **do not** require containment integrity and continuity, which are to be designated as “X-RNAV” where “X” is a letter of the Roman alphabet, and those navigation standards requiring containment integrity and continuity, which are to be designated as “RNP-x”, where “x” corresponds to the navigation accuracy.

There will be an increasing demand for navigation applications that take advantage of the higher performance capabilities of aircraft (including containment continuity and integrity requirements), and that will allow for future developments, including the ability to rely upon such navigation capability for critical applications such as reduced separation minima in high-density airspace and for approach procedures.

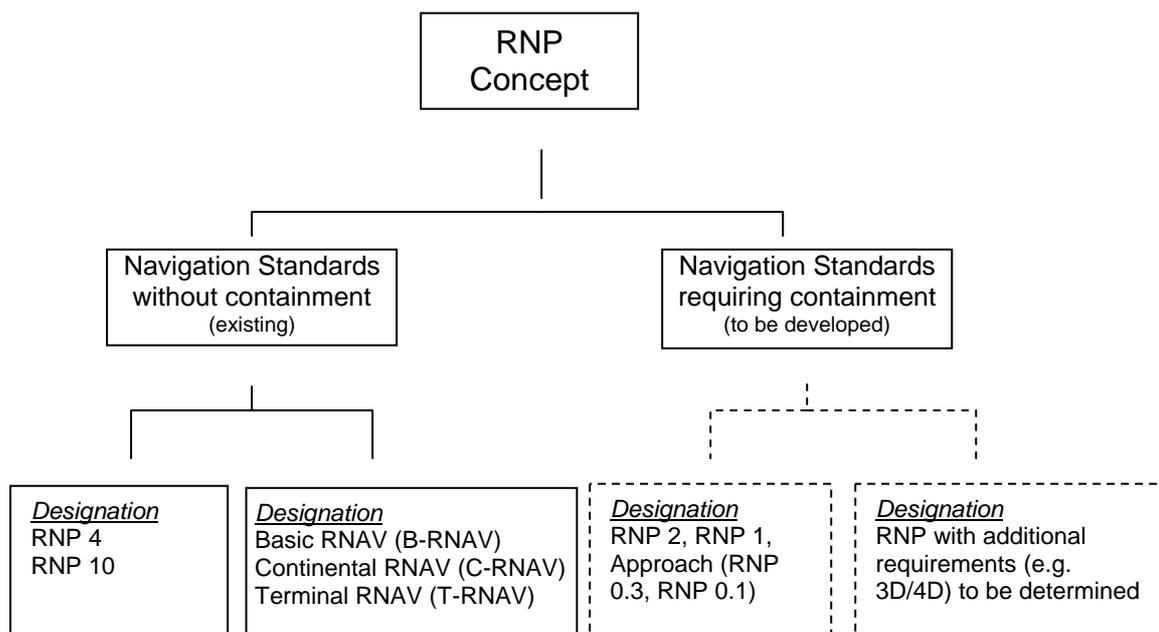


Figure 1. Overview of revised ICAO RNP Concept

**3. Areas of Application of the revised approach to RNP**

*En route-oceanic or En Route-Remote Continental.* For these areas of application, existing RNP-10 and RNP-4 navigation standards, requiring long-range navigation functionalities, fulfill operational requirements. Currently, it is not anticipated that new navigation standards for this area of application will be required.

*En Route-Continental.* Currently, two regional navigation applications without containment requirements have been established, one in Europe, called Basic-RNAV and one in the Middle East, called RNP-5. As RNP-5 is fully based on Basic-RNAV, and taking into consideration the agreement by the group that operations without containment should not be designated RNP, continental navigation applications requiring 5 NM accuracy should be designated Basic-RNAV. The navigation application in the Middle East will therefore be revised. It is envisaged that this will have little impact on operations.

*Terminal - Arrivals and departures.* To satisfy terminal airspace requirements, several regional implementations of navigation standards are currently in existence or under development (USRNAV type B and European P-RNAV). In order to ensure global interoperability, the study group agreed to harmonize these regional navigation standards under one global standard to be called Terminal-RNAV (T-RNAV). Aircraft certified to this T-RNAV navigation standard will be able to operate in airspace currently requiring either P-RNAV or US RNAV Type B. Similarly, a new navigation standard to be known as Continental RNAV (C-RNAV) is being developed for applications requiring 2 NM accuracy, that may be applied in continental en-route as well as in terminal airspace. It is expected that this navigation standard will be based on US RNAV type A.

Table 1. Operations under current situation and under new RNP concept

Area of Application	RNP value	Designation of navigation standard: Current situation	Designation of navigation standard: new RNP concept
Oceanic/Remote	10	RNP 10	RNP 10
	4	RNP 4	RNP 4
En Route - Continental	5	RNP 5 Basic RNAV	Basic RNAV
En Route - Continental and Terminal	2	USRNAV type A	Continental RNAV
Terminal	1	USRNAV type B P-RNAV	Terminal RNAV

The United States and Eurocontrol have agreed to identify ways by which it will be possible to migrate over time towards the T-RNAV standard. With immediate effect, however, any State excluding the United States or one of the ECAC member states that seeks to implement operations in their airspace using the equivalent of either the United States or European Terminal navigation standard as described in Table 1 should use the T-RNAV navigation standard which will be published in the revised RNP manual (Doc 9613). The United States and Eurocontrol have agreed that aircraft and operators approved for T-RNAV operations by their State of registry will also meet the requirements for operation in the United States USRNAV type B and European P-RNAV airspace.

*Terminal - Approach operations.* To date, approach navigation applications are sensor specific, requiring separate design for an increasing number of RNAV applications (VOR/DME, DME/DME, Basic Global Navigation Satellite System (GNSS), Satellite-Based Augmentation System (SBAS), Ground-Based Augmentation System (GBAS), etc.). This is not desirable, as it requires extensive commitment of resources for procedure development and publication, and results in operational inflexibility. Therefore, it will be required to apply the RNP concept to the approach phase of flight. Considering the criticality of this phase of flight these types of navigation applications will all require containment if operational benefits are to be achieved. The RNPSORSG is in the process of developing relevant operational requirements.



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Ref.: AN 11/1.3.18-05/28

24 March 2005

**Subject:** Adoption of Amendment 29 to Annex 6, Part I

**Action required:** a) Notify any disapproval before 11 July 2005; b) Notify any differences and compliance before 24 October 2005

Sir/Madam,

1. I have the honour to inform you that Amendment 29 to the *International Standards and Recommended Practices, Operation of Aircraft — International Commercial Air Transport — Aeroplanes* (Annex 6, Part I to the Convention on International Civil Aviation) was adopted by the Council at the eleventh meeting of its 174th Session on 9 March 2005. Copies of the Amendment, the Resolution of Adoption and Note on the Notification of Differences are being sent to you under separate cover.

2. When adopting the amendment, the Council prescribed 11 July 2005 as the date on which it will become effective, except for any part concerning which a majority of Contracting States have registered their disapproval before that date. In addition, the Council resolved that Amendment 29, to the extent it becomes effective, will be applicable on 24 November 2005.

3. Amendment 29 arises from:

- a) the Separation and Airspace Safety Panel (SASP), and in part from a Secretariat review of the *Regional Supplementary Procedures* (SUPPs, Doc 7030); and
- b) the recommendations of the sixth meeting of the Operations Panel, and the Separation and Airspace Safety Panel.

The subjects are given in the amendment to the Foreword of Annex 6, Part I, Eighth Edition, a copy of which is in Attachment A.

4. The requirement for all aircraft to hold an approval for operations in reduced vertical separation minimum (RVSM) airspace, and the responsibility of States with regard to the issuance of these approvals, are specified in Annex 6, Parts I and II — *International General Aviation — Aeroplanes*. However, the height-keeping performance criteria on which the approvals should be based have, until now, been specified only in the SUPPs of the regions which have implemented RVSM. For the approvals to be valid globally, it is necessary that all States apply the same criteria when issuing approvals. To ensure standardization, the proposed amendment adds new appendices to Parts I and II of Annex 6, containing the height-keeping performance criteria. Additionally, because monitoring of height-keeping performance was the underlying assumption on which RVSM was based, the amendment introduces new provisions in Annex 6, Parts I and II specifying the responsibility of the relevant State authority to take prompt and appropriate action if the monitoring results indicate that the height-keeping performance of a particular aircraft or an aircraft type group exceeds the prescribed limits. A complementary amendment to Annex 11 — *Air Traffic Services* requires, for airspace where RVSM is applied between FL 290 and FL 410 inclusive, the establishment of a Regional Monitoring Agency (RMA) and the sharing of data obtained through the monitoring process.

5. The amendment concerning the operation of aircraft includes the following five distinct issues that involve both safety and efficiency improvements for the operation of aircraft:

- a) under some conditions, particularly in busy terminal airspace, flight crew workload associated with single pilot operations under instrument flight rules (IFR) or at night may exceed the capability of single pilots. To address this issue, new Standards and Recommended Practices are introduced for these operations that specify additional operating requirements and equipment carriage requirements;
- b) safety and efficiency improvements afforded by the reliability of modern turbine engines enable single-engine turbine-powered aeroplanes to replace multi-engine aeroplanes for commercial operations under instrument meteorological conditions or at night. This amendment introduces new provisions relating to the operational approval of these operations which provide for safety and economic benefits to operators;
- c) the suitability and integrity of electronic navigation data products used in air navigation is vital to ensure the safety of operations. This amendment introduces new provisions for appropriate controls to be put in place by States and operators accordingly;
- d) crosswind and tailwind values specified in aeroplane flight manuals are maximum values demonstrated during certification, and are not necessarily suitable for operational purposes because they are neither operating limitations (unless stipulated in the limitations section of the flight manual) nor manufacturer guidelines. To provide an appropriate margin of safety under all operating conditions, the amendment requires operators to specify crosswind and tailwind limits in their operations manuals; and
- e) the safety and efficiency of modern flight simulators enables pilot-in-command recent experience requirements to be met in a simulator, instead of in the aeroplane. Applicable since 25 November 2004, Annex 1 — *Personnel Licensing* provides for a type rating limiting the privileges to act as a pilot only during the cruise phase of flight (cruise relief pilot). This amendment updates the recent experience requirements for

pilot-in-command and co-pilot, and introduces such requirements for cruise relief pilot accordingly.

6. In accordance with the decision of the 26th Session of the Assembly, I would like to bring to your attention the Organization's long-standing practice of providing documentation to States upon request. Accordingly, the relevant working papers on Amendment 29 to Annex 6, Part I and corresponding minutes of the Council and the Air Navigation Commission proceedings can be made available. In light of the costs involved, however, only one copy of such documents will normally be provided.

7. In conformity with the Resolution of Adoption, may I request:

- a) that before 11 July 2005 you inform me if there is any part of Amendment 29, concerning which your Government wishes to register disapproval, using the form in Attachment B for this purpose. Please note that only statements of disapproval need be registered and if you do not reply it will be assumed that you do not disapprove of the amendment;
- b) that before 24 October 2005 you inform me of the following, using the form in Attachment C for this purpose:
  - 1) any differences that will exist on 24 November 2005 between the national regulations or practices of your Government and the provisions of the whole of Annex 6, Part I, as amended by all amendments up to and including Amendment 29, and thereafter of any further differences that may arise; and
  - 2) the date or dates by which your Government will have complied with the provisions of the whole of Annex 6, Part I, as amended by all amendments up to and including Amendment 29.

8. With reference to the request in paragraph 7 a) above, it should be noted that a registration of disapproval of Amendment 29 or any part of it in accordance with Article 90 of the Convention does not constitute a notification of differences under Article 38 of the Convention. To comply with the latter provision, a separate statement is necessary if any differences do exist, as requested in paragraph 7 b) 1). It is recalled in this respect that international Standards in Annexes have a conditional binding force, to the extent that the State or States concerned have not notified any difference thereto under Article 38 of the Convention.

9. Guidance on the determination and reporting of differences is given in the Note on the Notification of Differences which, as mentioned above, is being sent to you under separate cover.

10. Please note that a detailed repetition of previously notified differences, if they continue to apply, may be avoided by stating the current validity of such differences.

11. I would appreciate it if you would also send a copy of your notifications, referred to in paragraph 7 b) above, to the ICAO Regional Director accredited to your Government.

12. As soon as practicable after the amendment becomes effective, on 11 July 2005, replacement pages incorporating Amendment 29 will be forwarded to you.

Accept, Sir/Madam, the assurances of my highest consideration.



Taïeb Chérif  
Secretary General

**Enclosures:**

- A — Amendment to the Foreword of Annex 6, Part I
- B — Form on notification of disapproval of all or part of Amendment 29 to Annex 6, Part I
- C — Form on notification of compliance with or differences from Annex 6, Part I

**Under separate cover:**

Copy of Amendment 29 to Annex 6, Part I with the associated Resolution of Adoption and Note on the Notification of Differences (to be dispatched on or about 24 March 2005)

**AMENDMENT TO THE FOREWORD OF ANNEX 6, PART I, EIGHTH EDITION**

Add the following at the end of Table A (page xx):

<i>Amendment</i>	<i>Source(s)</i>	<i>Subject</i>	<i>Adopted/Approved Effective Applicable</i>
29	Sixth meeting of the Operations Panel and the Separation and Airspace Safety Panel	<p>a) new definitions related to reduced vertical separation minimum (RVSM) operations and cruise relief pilots;</p> <p>b) new Standards 4.9.1 and 4.9.2 concerning single pilot operations under instrument flight rules (IFR) or at night;</p> <p>c) an exception to the operating limitations in 5.1.2 for approved single-engined turbine-powered aeroplanes;</p> <p>d) new Standards 5.4.1 and 5.4.2 specifying requirements for approval of commercial operations by single-engine turbine-powered aeroplanes in instrument meteorological conditions (IMC) or at night;</p> <p>e) new Standard 6.22 specifying aeroplane equipment requirements for single pilot operations under instrument flight rules (IFR) or at night;</p> <p>f) amendments to 7.2.4 regarding flight levels for reduced vertical separation minimum (RVSM) operations, and new Standards 7.2.5, 7.2.6 and 7.2.7 specifying the responsibility of the relevant State authority to take prompt and appropriate action if the monitoring results indicate that the height-keeping performance of a particular aircraft or an aircraft type group exceeds the prescribed limits;</p> <p>g) new Standards 7.4.1 and 7.4.2 concerning operator management of electronic navigation data products;</p> <p>h) amendments to Standards 9.4.1 and 9.4.2 concerning recent experience of the pilot-in-command, co-pilot and cruise relief pilot;</p>	<p>9 March 2005 11 July 2005 24 November 2005</p>

<i>Amendment</i>	<i>Source(s)</i>	<i>Subject</i>	<i>Adopted/Approved Effective Applicable</i>
		<ul style="list-style-type: none"> <li data-bbox="609 344 1208 443">i) amendments to Standards 9.4.3.5 and 9.4.3.6, concerning area, route and aerodrome qualifications of the pilot-in-command;</li> <li data-bbox="609 480 1208 617">j) new Standard 9.4.5.1 requiring States to specify requirements applicable to single pilot operations under the instrument flight rules or at night;</li> <li data-bbox="609 655 1208 821">k) a new Recommended Practice 9.4.5.2, specifying pilot-in-command experience and training requirements for single pilot operations under the instrument flight rules or at night;</li> <li data-bbox="609 858 1208 1024">l) amendments to Appendix 2, regarding the contents of operations manuals in relation to area, route and aerodrome qualifications of the pilot-in-command, and maximum crosswind and tailwind operating limits; and</li> <li data-bbox="609 1062 1208 1161">m) a new Appendix 3 regarding the height-keeping performance criteria for operations in RVSM airspace.</li> </ul>	

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**NOTIFICATION OF DISAPPROVAL OF ALL OR PART OF  
AMENDMENT 29 TO ANNEX 6, PART I**

To: The Secretary General  
International Civil Aviation Organization  
999 University Street  
Montreal, Quebec  
Canada H3C 5H7

(State) \_\_\_\_\_ hereby wishes to disapprove the following parts of  
Amendment 29 to Annex 6, Part I:

Signature \_\_\_\_\_

Date \_\_\_\_\_

*NOTES*

- 1) If you wish to disapprove all or part of Amendment 29 to Annex 6, Part I, please dispatch this notification of disapproval to reach Montreal by 11 July 2005. If it has not been received by that date it will be assumed that you do not disapprove of the amendment. **If you approve of all parts of Amendment 29, it is not necessary to return this notification of disapproval.**
- 2) This notification should not be considered a notification of compliance with or differences from Annex 6, Part I. Separate notifications on this are necessary. (See Attachment C.)
- 3) Please use extra sheets as required.

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**NOTIFICATION OF COMPLIANCE WITH OR DIFFERENCES FROM ANNEX 6, PART I  
(including all amendments up to and including Amendment 29)**

To: The Secretary General  
International Civil Aviation Organization  
999 University Street  
Montreal, Quebec  
Canada H3C 5H7

1. No differences will exist on \_\_\_\_\_ between the national regulations and/or practices of **(State)** \_\_\_\_\_ and the provisions of Annex 6, Part I including all amendments up to and including Amendment 29.

2. The following differences will exist on \_\_\_\_\_ between the regulations and/or practices of **(State)** \_\_\_\_\_ and the provisions of Annex 6, Part I, including Amendment 29: (Please see Note 3) below.)

**a) Annex Provision**  
(Please give exact paragraph reference)

**b) Details of Difference**  
(Please describe the difference precisely)

**c) Remarks**  
(Please indicate reasons for the difference)

(Please use extra sheets as required)

3. By the dates indicated below, (State) \_\_\_\_\_ will have complied with the provisions of Annex 6, Part I, including all amendments up to and including Amendment 29 for which differences have been notified in 2 above.

a) <b>Annex Provision</b> (Please give exact paragraph reference)	b) <b>Date</b>	c) <b>Comments</b>
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(Please use extra sheets as required)

Signature \_\_\_\_\_

Date \_\_\_\_\_

*NOTES*

- 1) If paragraph 1 above is applicable to you, please complete paragraph 1 and return this form to Montreal. If paragraph 2 is applicable to you, please complete paragraphs 2 and 3 and return the form to Montreal.
- 2) Please dispatch the form to reach Montreal by 24 October 2005.
- 3) A detailed repetition of previously notified differences, if they continue to apply, may be avoided by stating the current validity of such differences.
- 4) Guidance on the notification of differences from Annex 6, Part I is provided in the Note on the Notification of Differences that is being forwarded with a copy of Amendment 29 to Annex 6, Part I under separate cover.
- 5) Please send a copy of this notification to the ICAO Regional Director accredited to your Government.

— END —

**AMENDMENT No. 29**

**TO THE**

**INTERNATIONAL STANDARDS  
AND RECOMMENDED PRACTICES**

# **OPERATION OF AIRCRAFT**

**ANNEX 6**

**TO THE CONVENTION ON INTERNATIONAL CIVIL AVIATION**

**PART I**

**INTERNATIONAL COMMERCIAL AIR TRANSPORT — AEROPLANES**

The amendment to Annex 6, Part I, contained in this document was adopted by the Council of ICAO on **9 March 2005**. Such parts of this amendment as have not been disapproved by more than half of the total number of Contracting States on or before **11 July 2005** will become effective on that date and will become applicable on **24 November 2005** as specified in the Resolution of Adoption.

**MARCH 2005**

**INTERNATIONAL CIVIL AVIATION ORGANIZATION**

**AMENDMENT 29 TO THE INTERNATIONAL STANDARDS  
AND RECOMMENDED PRACTICES**

**OPERATION OF AIRCRAFT — INTERNATIONAL COMMERCIAL  
AIR TRANSPORT — AEROPLANES**

**RESOLUTION OF ADOPTION**

*The Council*

Acting in accordance with the Convention on International Civil Aviation, and particularly with the provisions of Articles 37, 54 and 90 thereof,

1. *Hereby adopts* on 9 March 2005 Amendment 29 to the International Standards and Recommended Practices contained in the document entitled *International Standards and Recommended Practices, Operation of Aircraft, Part I — International Commercial Air Transport — Aeroplanes* which for convenience is designated Annex 6, Part I to the Convention;
2. *Prescribes* 11 July 2005 as the date upon which the said Amendment shall become effective, except for any part thereof in respect of which a majority of the Contracting States have registered their disapproval with the Council before that date;
3. *Resolves* that the said Amendment or such parts thereof as have become effective shall become applicable on 24 November 2005;
4. *Requests the Secretary General:*
  - a) to notify each Contracting State immediately of the above action and immediately after 11 July 2005 of those parts of the amendment which have become effective;
  - b) to request each Contracting State:
    - 1) to notify the Organization (in accordance with the obligation imposed by Article 38 of the Convention) of the differences that will exist on 24 November 2005 between its national regulations or practices and the provisions of the Standards in the Annex as hereby amended, such notification to be made before 24 October 2005, and thereafter to notify the Organization of any further differences that arise;
    - 2) to notify the Organization before 24 October 2005 of the date or dates by which it will have complied with the provisions of the Standards in the Annex as hereby amended.
  - c) to invite each Contracting State to notify additionally any differences between its own practices and those established by the Recommended Practices, when the notification of such differences is important for the safety of air navigation, following the procedure specified in subparagraph b) above with respect to differences from Standards.

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**NOTES ON THE PRESENTATION OF THE  
AMENDMENT TO ANNEX 6, PART I**

The text of the amendment is arranged to show deleted text with a line through it and new text highlighted with grey shading, as shown below:

1. ~~Text to be deleted is shown with a line through it.~~ text to be deleted
2. New text to be inserted is highlighted with grey shading. new text to be inserted
3. ~~Text to be deleted is shown with a line through it~~ followed by the replacement text which is highlighted with grey shading. new text to replace existing text

TEXT OF AMENDMENT 29 TO THE  
INTERNATIONAL STANDARDS  
AND RECOMMENDED PRACTICES  
OPERATION OF AIRCRAFT  
ANNEX 6  
TO THE CONVENTION ON INTERNATIONAL CIVIL AVIATION  
PART I  
INTERNATIONAL COMMERCIAL AIR TRANSPORT — AEROPLANES

...

CHAPTER 1. DEFINITIONS

...

***Altimetry system error (ASE)***. The difference between the altitude indicated by the altimeter display, assuming a correct altimeter barometric setting, and the pressure altitude corresponding to the undisturbed ambient pressure.

...

***Cruise relief pilot***. A flight crew member who is assigned to perform pilot tasks during cruise flight, to allow the pilot-in-command or a co-pilot to obtain planned rest.

...

***Target level of safety (TLS)***. A generic term representing the level of risk which is considered acceptable in particular circumstances.

...

***Total vertical error (TVE)***. The vertical geometric difference between the actual pressure altitude flown by an aircraft and its assigned pressure altitude (flight level).

...

CHAPTER 4. FLIGHT OPERATIONS

...

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*Insert new 4.9 as follows:*

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**4.9 Additional requirements for single pilot operations  
under the Instrument Flight Rules (IFR) or at night**

4.9.1 An aeroplane shall not be operated under the IFR or at night by a single pilot unless approved by the State of the Operator.

4.9.2 An aeroplane shall not be operated under the IFR or at night by a single pilot unless:

- a) the flight manual does not require a flight crew of more than one;
- b) the aeroplane is propeller-driven;
- c) the maximum approved passenger seating configuration is not more than nine;
- d) the maximum certificated take-off mass does not exceed 5 700 kg;
- e) the aeroplane is equipped as described in 6.22; and
- f) the pilot-in-command has satisfied requirements of experience, training, checking and recency described in 9.4.5.

...

## CHAPTER 5. AEROPLANE PERFORMANCE OPERATING LIMITATIONS

### 5.1 General

...

5.1.2 Except as provided in 5.4, Single-engine aeroplanes shall only be operated in conditions of weather and light, and over such routes and diversions therefrom, that permit a safe forced landing to be executed in the event of engine failure.

...

### 5.4 Additional requirements for operations of single-engine turbine-powered aeroplanes at night and/or in instrument meteorological conditions (IMC)

5.4.1 In approving operations by single-engine turbine-powered aeroplanes at night and/or in IMC the State of the Operator shall ensure that the airworthiness certification of the aeroplane is appropriate and that the overall level of safety intended by the provisions of Annexes 6 and 8 is provided by:

- a) the reliability of the turbine engine;
- b) the operator's maintenance procedures, operating practices, flight dispatch procedures and crew training programmes; and
- c) equipment and other requirements provided in accordance with Appendix 3.

5.4.2 All single-engine turbine-powered aeroplanes operated at night and/or in IMC shall have an engine trend monitoring system, and those aeroplanes for which the individual Certificate of Airworthiness is first issued on or after 1 January 2005 shall have an automatic trend monitoring system.

...

CHAPTER 6. AEROPLANE INSTRUMENTS, EQUIPMENT  
AND FLIGHT DOCUMENTS

...

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*Insert new 6.22 as follows:*

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**6.22 All aeroplanes operated by a single pilot under the  
Instrument Flight Rules (IFR) or at night**

For approval in accordance with 4.9.1, all aeroplanes operated by a single pilot under the IFR or at night shall be equipped with:

- a) a serviceable autopilot that has at least altitude hold and heading select modes;
- b) a headset with a boom microphone or equivalent; and
- c) means of displaying charts that enables them to be readable in all ambient light conditions.

...

CHAPTER 7. AEROPLANE COMMUNICATION AND NAVIGATION EQUIPMENT

...

7.2 Navigation equipment

...

7.2.4 For flights in defined portions of airspace where, based on Regional Air Navigation Agreement, a reduced vertical separation minimum (RVSM) of 300 m (1 000 ft) is applied above between FL 290 and FL 410 inclusive, an aeroplane:

- a) shall be provided with equipment which is capable of:
  - 1) indicating to the flight crew the flight level being flown;
  - 2) automatically maintaining a selected flight level;
  - 3) providing an alert to the flight crew when a deviation occurs from the selected flight level. The threshold for the alert shall not exceed  $\pm 90$  m (300 ft); and
  - 4) automatically reporting pressure-altitude; and
- b) shall be authorized by the State of the Operator for operation in the airspace concerned.

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*Insert new text as follows:*

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7.2.5 Prior to granting the RVSM approval required in accordance with 7.2.4 b), the State shall be satisfied that:

- a) the vertical navigation performance capability of the aeroplane satisfies the requirements specified in Appendix 4;

- b) the operator has instituted appropriate procedures in respect of continued airworthiness (maintenance and repair) practices and programmes; and
- c) the operator has instituted appropriate flight crew procedures for operations in RVSM airspace.

*Note.* — *An RVSM approval is valid globally on the understanding that any operating procedures specific to a given region will be stated in the operations manual or appropriate crew guidance.*

7.2.6 The State of the Operator, in consultation with the State of Registry if appropriate, shall ensure that, in respect of those aeroplanes mentioned in 7.2.4, adequate provisions exist for:

- a) receiving the reports of height-keeping performance issued by the monitoring agencies established in accordance with Annex 11, 3.3.4.1; and
- b) taking immediate corrective action for individual aircraft, or aircraft type groups, identified in such reports as not complying with the height-keeping requirements for operation in airspace where RVSM is applied.

7.2.7 All States that are responsible for airspace where RVSM has been implemented, or have issued RVSM approvals to operators within their State, shall establish provisions and procedures which ensure that appropriate action will be taken in respect of aircraft and operators found to be operating in RVSM airspace without a valid RVSM approval.

*Note.* — *These provisions and procedures need to address both the situation where the aircraft in question was operating without approval in the airspace of the State, and the situation where an operator for which the State has regulatory oversight responsibility is found to be operating without the required approval in the airspace of another State.*

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End of new text.

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7.2.5-8 The aeroplane shall be sufficiently provided with navigation equipment to ensure that, in the event of the failure of one item of equipment at any stage of the flight, the remaining equipment will enable the aeroplane to navigate in accordance with 7.2.1 and where applicable 7.2.2, 7.2.3 and 7.2.4.

*Note.* — *Guidance material relating to aircraft equipment necessary for flight in airspace where a 300 m (1 000 ft) RVSM is applied above FL 290 is contained in the Manual on Implementation of a 300 m (1 000 ft) Vertical Separation Minimum Between FL 290 and FL 410 Inclusive (Doc 9574).*

...

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*Insert new 7.4 as follows:*

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#### **7.4 Electronic navigation data management**

7.4.1 An operator shall not employ electronic navigation data products that have been processed for application in the air and on the ground unless the State of the Operator has approved the operator's procedures for ensuring that the process applied and the products delivered have met acceptable standards of integrity, and that the products are compatible with the intended function of the equipment that will use them. The State of the Operator shall ensure that the operator continues to monitor both process and products.

*Note.*— Guidance relating to the processes that data suppliers may follow is contained in RTCA DO-200A/EUROCAE ED-76 and RTCA DO-201A/EUROCAE ED-77.

7.4.2 An operator shall implement procedures that ensure the timely distribution and insertion of current and unaltered electronic navigation data to all aircraft that require it.

...

## CHAPTER 9. AEROPLANE FLIGHT CREW

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*Amend* Chapter 9 as follows:

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### 9.4 Qualifications

#### 9.4.1 Recent experience — pilot-in-command and co-pilot

An operator shall not assign a pilot to act as pilot-in-command of an aeroplane unless, on that same type of aeroplane within the preceding 90 days, that pilot has made at least three take-offs and landings. pilot-in-command or a co-pilot to operate at the flight controls of an aeroplane during take-off and landing unless that pilot has operated the flight controls during at least three take-offs and landings within the preceding 90 days on the same type of aeroplane or in a flight simulator approved for the purpose.

#### 9.4.2 Recent experience — co-cruise relief pilot

An operator shall not assign a co-pilot to operate at the flight controls during take-off and landing unless, on the same type of aeroplane within the preceding 90 days, that co-pilot has operated the flight controls, as pilot-in-command or as co-pilot, during three take-offs and landings or has otherwise demonstrated competence to act as co-pilot on a flight simulator approved for the purpose.

An operator shall not assign a pilot to act in the capacity of cruise relief pilot unless, within the preceding 90 days that pilot has either:

- a) operated as a pilot-in-command, co-pilot or cruise relief pilot on the same type of aeroplane; or
- b) carried out flying skill refresher training including normal, abnormal and emergency procedures specific to cruise flight on the same type of aeroplane or in a flight simulator approved for the purpose, and has practised approach and landing procedures, where the approach and landing procedure practice may be performed as the pilot who is not flying the aeroplane.

### 9.4.3 Pilot-in-command area, route and airport aerodrome qualification

...

9.4.3.5 An operator shall not continue to utilize a pilot as a pilot-in-command on a route or within an area specified by the operator and approved by the State of the Operator unless, within the preceding 12 months, the pilot has made at least one trip between the terminal points of that route as a pilot member of the flight crew, or as a check pilot, or as an observer on in the flight deck crew compartment:

- a) within that specified area; and
- b) if appropriate, on any route where procedures associated with that route or with any aerodromes intended to be used for take-off or landing require the application of special skills or knowledge.

9.4.3.6 In the event that more than 12 months elapse in which a pilot-in-command has not made such a trip on a route in close proximity and over similar terrain, within such a specified area, route or aerodrome, and has not practised such procedures in a training device which is adequate for this purpose, prior to again serving as a pilot-in-command within that area or on that route, that pilot must requalify in accordance with 9.4.3.2 and 9.4.3.3.

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*Insert new 9.4.5 as follows:*

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### 9.4.5 Single pilot operations under the Instrument Flight Rules (IFR) or at night

9.4.5.1 The State of the Operator shall prescribe requirements of experience, recency and training applicable to single pilot operations intended to be carried out under the IFR or at night.

9.4.5.2 **Recommendation.**— *The pilot-in-command should:*

- a) *for operations under the IFR or at night, have accumulated at least 50 hours flight time on the class of aeroplane, of which at least 10 hours shall be as pilot in command;*
- b) *for operations under the IFR, have accumulated at least 25 hours flight time under the IFR on the class of aeroplane, which may form part of the 50 hours flight time in sub-paragraph a);*
- c) *for operations at night, have accumulated at least 15 hours flight time at night, which may form part of the 50 hours flight time in sub-paragraph a);*
- d) *for operations under the IFR, have acquired recent experience as a pilot engaged in a single pilot operation under the IFR of:*
  - i) *at least five IFR flights, including three instrument approaches carried out during the preceding 90 days on the class of aeroplane in the single pilot role; or*
  - ii) *an IFR instrument approach check carried out on such an aeroplane during the preceding 90 days;*

- e) *for operations at night, have made at least three take-offs and landings at night on the class of aeroplane in the single pilot role in the preceding 90 days; and*
- f) *have successfully completed training programmes that include, in addition to the requirements of 9.3, passenger briefing with respect to emergency evacuation; autopilot management; and the use of simplified in-flight documentation.*

9.4.5.3 The initial and recurrent flight training and proficiency checks indicated in 9.3.1 and 9.4.4 shall be performed by the pilot-in-command in the single pilot role on the class of aeroplane in an environment representative of the operation.

...

## APPENDIX 2. ORGANIZATION AND CONTENTS OF AN OPERATIONS MANUAL

*(See Chapter 4, 4.2.2.1)*

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*Amend Appendix 2 as follows:*

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### 1. Organization

1.1 **Recommendation.**— *An operations manual, which may be issued in separate parts corresponding to specific aspects of operations, provided in accordance with Chapter 4, 4.2.2.1 should be organized with the following structure:*

...

- c) *Areas, Routes and aerodromes; and*

...

1.2 From 1 January 2006, an operations manual, which may be issued in separate parts corresponding to specific aspects of operations, provided in accordance with Chapter 4, 4.2.2.1 shall be organized with the following structure:

...

- c) *Areas, Routes and aerodromes; and*

...

#### 2.1 General

...

- 2.1.24 *Route and destination Procedures for familiarization with areas, routes and aerodromes.*

...

#### 2.2 Aircraft Operating Information

...

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*Insert new 2.2.5 as follows:*

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2.2.5 The maximum crosswind and tailwind components for each aeroplane type operated and the reductions to be applied to these values having regard to gusts, low visibility, runway surface conditions, crew experience, use of autopilot, abnormal or emergency circumstances, or any other relevant operational factors.

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*Renumber subsequent paragraphs accordingly.*

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...

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*Insert new Appendix 3 as follows:*

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### **APPENDIX 3. ADDITIONAL REQUIREMENTS FOR APPROVED OPERATIONS BY SINGLE-ENGINE TURBINE-POWERED AEROPLANES AT NIGHT AND/OR IN INSTRUMENT METEOROLOGICAL CONDITIONS (IMC)**

*(See Chapter 5, 5.4.1)*

Airworthiness and operational requirements provided in accordance with Chapter 5, 5.4.1, shall satisfy the following:

#### **1. Turbine engine reliability**

1.1 Turbine engine reliability shall be shown to have a power loss rate of less than 1 per 100 000 engine hours.

*Note.— Power loss in this context is defined as any loss of power, the cause of which may be traced to faulty engine or engine component design or installation, including design or installation of the fuel ancillary or engine control systems. (See Attachment I).*

1.2 The operator shall be responsible for engine trend monitoring.

1.3 To minimize the probability of in-flight engine failure, the engine shall be equipped with:

- a) an ignition system that activates automatically, or is capable of being operated manually, for take-off and landing, and during flight, in visible moisture;
- b) a magnetic particle detection, or equivalent, system that monitors the engine, accessories gearbox, and reduction gearbox, and which includes a flight deck caution indication; and
- c) an emergency engine power control device that permits continuing operation of the engine through a sufficient power range to safely complete the flight in the event of any reasonably probable failure of the fuel control unit.

#### **2. Systems and equipment**

Single-engine turbine-powered aeroplanes approved to operate at night and/or in IMC shall be equipped with the following systems and equipment intended to ensure continued safe flight and to assist in achieving a safe forced landing after an engine failure, under all allowable operating conditions:

- a) two separate electrical generating systems, each one capable of supplying all probable combinations of continuous in-flight electrical loads for instruments, equipment and systems required at night and/or in IMC;
- b) a radio altimeter;
- c) an emergency electrical supply system of sufficient capacity and endurance, following loss of all generated power to, as a minimum:
  - 1) maintain the operation of all essential flight instruments, communication and navigation systems during a descent from the maximum certificated altitude in a glide configuration to the completion of a landing;
  - 2) lower the flaps and landing gear, if applicable;
  - 3) provide power to one pitot heater, which must serve an air speed indicator clearly visible to the pilot;
  - 4) provide for operation of the landing light specified in 2 j);
  - 5) provide for one engine restart, if applicable; and
  - 6) provide for the operation of the radio altimeter;
- d) two attitude indicators, powered from independent sources;
- e) a means to provide for at least one attempt at engine re-start;
- f) airborne weather radar;
- g) a certified area navigation system capable of being programmed with the positions of aerodromes and safe forced landing areas, and providing instantly available track and distance information to those locations;
- h) for passenger operations, passenger seats and mounts which meet dynamically-tested performance standards and which are fitted with a shoulder harness or a safety belt with a diagonal shoulder strap for each passenger seat;
- i) in pressurized aeroplanes, sufficient supplemental oxygen for all occupants for descent following engine failure at the maximum glide performance from the maximum certificated altitude to an altitude at which supplemental oxygen is no longer required;
- j) a landing light that is independent of the landing gear and is capable of adequately illuminating the touchdown area in a night forced landing; and
- k) an engine fire warning system.

### 3. Minimum equipment list

The State of the Operator shall require the minimum equipment list of an operator approved in accordance with Chapter 5, 5.4 to specify the operating equipment required for night and/or IMC operations, and for day/VMC operations.

### 4. Flight manual information

The flight manual shall include limitations, procedures, approval status and other information relevant to operations by single-engine turbine-powered aeroplanes at night and/or in IMC.

### 5. Event reporting

5.1 An operator approved for operations by single-engine turbine-powered aeroplanes at night and/or in IMC shall report all significant failures, malfunctions or defects to the State of the Operator who in turn will notify the State of Design.

5.2 The State of the Operator shall review the safety data and monitor the reliability information so as to be able to take any actions necessary to ensure that the intended safety level is achieved. The State of the Operator will notify major events or trends of particular concern to the appropriate Type Certificate Holder and the State of Design.

### 6. Operator planning

6.1 Operator route planning shall take account of all relevant information in the assessment of intended routes or areas of operations, including the following:

- a) the nature of the terrain to be overflown, including the potential for carrying out a safe forced landing in the event of an engine failure or major malfunction;
- b) weather information, including seasonal and other adverse meteorological influences that may affect the flight; and
- c) other criteria and limitations as specified by the State of the Operator.

6.2 An operator shall identify aerodromes or safe forced landing areas available for use in the event of engine failure, and the position of these shall be programmed into the area navigation system.

*Note 1.— A 'safe' forced landing in this context means a landing in an area at which it can reasonably be expected that it will not lead to serious injury or loss of life, even though the aeroplane may incur extensive damage.*

*Note 2.— Operation over routes and in weather conditions that permit a safe forced landing in the event of an engine failure, as specified in Chapter 5, 5.1.2, is not required by Appendix 3, 6.1 and 6.2 for aeroplanes approved in accordance with Chapter 5, 5.4. The availability of forced landing areas at all points along a route is not specified for these aeroplanes because of the very high engine reliability, additional systems and operational equipment, procedures and training requirements specified in this Appendix.*

## 7. Flight crew experience, training and checking

7.1 The State of the Operator shall prescribe the minimum flight crew experience required for night/IMC operations by single-engine turbine-powered aeroplanes.

7.2 An operator's flight crew training and checking shall be appropriate to night and/or IMC operations by single-engine turbine-powered aeroplanes, covering normal, abnormal and emergency procedures and, in particular, engine failure, including descent to a forced landing in night and/or in IMC conditions.

## 8. Route limitations over water

The State of the Operator shall apply route limitation criteria for single engine turbine-powered aeroplanes operating at night and/or in IMC on over water operations if beyond gliding distance from an area suitable for a safe forced landing/ditching having regard to the characteristics of the aeroplane, seasonal weather influences, including likely sea state and temperature, and the availability of search and rescue services.

## 9. Operator certification or validation

The operator shall demonstrate the ability to conduct operations by single-engine turbine-powered aeroplanes at night and/or in IMC through a certification and approval process specified by the State of the Operator.

*Note.* — *Guidance on the airworthiness and operational requirements is contained in Attachment I.*

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*Insert new Appendix 4 as follows:*

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### APPENDIX 4. ALTIMETRY SYSTEM PERFORMANCE REQUIREMENTS FOR OPERATIONS IN RVSM AIRSPACE

*(Note.* — *See Chapter 7, 7.2.5)*

1. In respect of groups of aeroplanes that are nominally of identical design and build with respect to all details that could influence the accuracy of height-keeping performance, the height-keeping performance capability shall be such that the total vertical error (TVE) for the group of aeroplanes shall have a mean no greater than 25 m (80 ft) in magnitude and shall have a standard deviation no greater than  $28 - 0.013z^2$  for  $0 \leq z \leq 25$  when  $z$  is the magnitude of the mean TVE in metres, or  $92 - 0.004z^2$  for  $0 \leq z \leq 80$  where  $z$  is in feet. In addition, the components of TVE shall have the following characteristics:

- a) the mean altimetry system error (ASE) of the group shall not exceed 25 m (80 ft) in magnitude;
- b) the sum of the absolute value of the mean ASE and of three standard deviations of ASE shall not exceed 75 m (245 ft); and
- c) the differences between cleared flight level and the indicated pressure altitude actually flown shall be symmetric about a mean of 0 m, with a standard deviation no greater than 13.3 m (43.7 ft), and in addition, the decrease in the frequency of differences with increasing difference magnitude shall be at least exponential.

2. In respect of aeroplanes for which the characteristics of the airframe and altimetry system fit are unique and so cannot be classified as belonging to a group of aeroplanes encompassed by paragraph 1, the height-keeping performance capability shall be such that the components of the TVE of the aeroplane have the following characteristics:

- a) the ASE of the aeroplane shall not exceed 60 m (200 ft) in magnitude under all flight conditions; and
- b) the differences between the cleared flight level and the indicated pressure altitude actually flown shall be symmetric about a mean of 0 m, with a standard deviation no greater than 13.3 m (43.7 ft), and in addition, the decrease in the frequency of differences with increasing difference magnitude shall be at least exponential.

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End of new text.

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...

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Insert new Attachment I as follows:

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**ATTACHMENT I. ADDITIONAL GUIDANCE FOR APPROVED OPERATIONS  
BY SINGLE-ENGINE TURBINE-POWERED AEROPLANES  
AT NIGHT AND/OR IN INSTRUMENT METEOROLOGICAL CONDITIONS (IMC)**

*Supplementary to Chapter 5, 5.4 and Appendix 3*

**1. Purpose and scope**

The purpose of this attachment is to give additional guidance on the airworthiness and operational requirements described in Chapter 5, 5.4 and Appendix 3, which have been designed to meet the overall level of safety intended for approved operations by single-engine turbine-powered aeroplanes at night and/or in IMC.

**2. Turbine engine reliability**

2.1 The power loss rate required in Chapter 5, 5.4.1 and Appendix 3 should be established as likely to be met based on data from commercial operations supplemented by available data from private operations in similar theatres of operation. A minimum amount of service experience is needed on which to base the judgment, and this should include at least 20 000 hours on the actual aeroplane/engine combination unless additional testing has been carried out or experience on sufficiently similar variants of the engine is available.

2.2 In assessing turbine engine reliability, evidence should be derived from a world fleet database covering as large a sample as possible of operations considered to be representative, compiled by the manufacturers and reviewed with the States of Design and the Operator. Since flight hour reporting is not mandatory for many types of operators, appropriate statistical estimates may be used to develop the engine reliability data. Data for individual operators approved for these operations including trend monitoring and event reports should also be monitored and reviewed by the State of the Operator to ensure that there is no indication that the operator's experience is unsatisfactory.

2.2.1 Engine trend monitoring should include the following:

- a) an oil consumption monitoring programme based on manufacturers' recommendations; and
- b) an engine condition monitoring programme describing the parameters to be monitored, the method of data collection and the corrective action process; this should be based on the manufacturer's recommendations. The monitoring is intended to detect turbine engine deterioration at an early stage to allow for corrective action before safe operation is affected.

2.2.2 A reliability programme should be established covering the engine and associated systems. The engine programme should include engine hours flown in the period and the in-flight shutdown rate for all causes and the unscheduled engine removal rate, both on a 12-month moving average basis. The event reporting process should cover all items relevant to the ability to operate safely at night and/or in IMC. The data should be available for use by the operator, the Type Certificate Holder and the State so as to establish that the intended reliability levels are being achieved. Any sustained adverse trend should result in an immediate evaluation by the operator in consultation with the State and manufacturer with a view to determining actions to restore the intended safety level. The operator should develop a parts control programme with

support from the manufacturer that ensures that the proper parts and configuration are maintained for single engine turbine-powered aeroplanes approved to conduct these operations. The programme includes verification that parts placed on an approved single engine turbine-powered aeroplane during parts borrowing or pooling arrangements, as well as those parts used after repair or overhaul, maintain the necessary configuration of that aeroplane for operations approved in accordance with Chapter 5, 5.4.

2.3 Power loss rate should be determined as a moving average over a specified period (e.g. a 12-month moving average if the sample is large). Power loss rate, rather than in-flight shut-down rate, has been used as it is considered to be more appropriate for a single-engine aeroplane. If a failure occurs on a multi-engined aeroplane that causes a major, but not total, loss of power on one engine, it is likely that the engine will be shut down as positive engine-out performance is still available, whereas on a single-engine aeroplane it may well be decided to make use of the residual power to stretch the glide distance.

2.4 The actual period selected should reflect the global utilization and the relevance of the experience included (e.g. early data may not be relevant due to subsequent mandatory modifications which affected the power loss rate). After the introduction of a new engine variant and whilst global utilization is relatively low, the total available experience may have to be used to try to achieve a statistically meaningful average.

### **3. Operations manual**

The operations manual should include all necessary information relevant to operations by single-engine turbine-powered aeroplanes at night and/or in IMC. This should include all of the additional equipment, procedures and training required for such operations, route and/or area of operation and aerodrome information (including planning and operating minima).

### **4. Operator certification or validation**

The certification or validation process specified by the State of the Operator should ensure the adequacy of the operator's procedures for normal, abnormal and emergency operations, including actions following engine, systems or equipment failures. In addition to the normal requirements for operator certification or validation, the following items should be addressed in relation to operations by single-engine turbine-powered aeroplanes:

- a) proof of the achieved engine reliability of the aeroplane engine combination (see Appendix 3, paragraph 1);
- b) specific and appropriate training and checking procedures including those to cover engine failure/malfunction on the ground, after take-off and en-route and descend to a forced landing from the normal cruising altitude;
- c) a maintenance programme which is extended to address the equipment and systems referred to in Appendix 3, paragraph 2;
- d) an MEL modified to address the equipment and systems necessary for operations at night and/or in IMC;
- e) planning and operating minima appropriate to the operations at night and/or in IMC;
- f) departure and arrival procedures and any route limitations;
- g) pilot qualifications and experience; and
- h) the operations manual, including limitations, emergency procedures, approved routes or areas of operation, the MEL and normal procedures related to the equipment referred to in Appendix 3, paragraph 2.

## **5. Operational and maintenance programme requirements**

5.1 Approval to undertake operations by single-engine turbine-powered aeroplanes at night and/or in IMC specified in an air operator certificate or equivalent document should include the particular airframe/engine combinations, including the current type design standard for such operations, the specific aeroplanes approved, and the areas or routes of such operations.

5.2 The operator's maintenance control manual should include a statement of certification of the additional equipment required, and of the maintenance and reliability programme for such equipment, including the engine.

## **6. Route limitations over water**

6.1 Operators of single-engine turbine-powered aeroplanes carrying out operations at night and/or in IMC should make an assessment of route limitations over water. The distance from a land mass suitable for a safe forced landing that the aeroplane may be operated should be determined, which equates to the glide distance from the cruise altitude to the safe forced landing area, following engine failure, assuming still air conditions. States may add to this an additional distance taking into account the likely prevailing conditions and type of operation. This should take into account the likely sea conditions, the survival equipment carried, the achieved engine reliability and the search and rescue services available.

6.2 Any additional distance allowed beyond the glide distance should not exceed a distance equivalent to 15 minutes at the aeroplane's normal cruise speed.

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**NOTE ON THE NOTIFICATION OF DIFFERENCES TO ANNEX 6, PART I  
AND FORM OF NOTIFICATION**

*(Prepared and issued in accordance with instructions of the Council)*

1. *Introduction*

1.1 The Assembly and the Council, when reviewing the notification of differences received in compliance with Article 38 of the Convention, have repeatedly noted that the state of such reporting is not entirely satisfactory.

1.2 With a view to achieving a more comprehensive coverage, this note is issued to facilitate the determination and reporting of such differences and to state the primary purpose of such reporting.

1.3 The primary purpose of reporting of differences is to promote safety and efficiency in air navigation by ensuring that governmental and other agencies, including operators, concerned with international civil aviation are made aware of all national rules and practices in so far as they differ from those prescribed in the ICAO Standards.

1.4 Contracting States are, therefore, requested to give particular attention to the notification before 24 October 2005 of differences with respect to Standards in Annex 6, Part I. The Council has also invited Contracting States to extend the above considerations to Recommended Practices.

1.5 Contracting States are asked to note further that it is necessary to make an explicit statement of intent to comply where such intent exists, or where such is not the intent, of the difference or differences that will exist. This statement should be made with respect to the whole of the Annex, i.e. not only to the latest amendment but to the whole Annex, including the amendment.

1.6 If previous notifications have been made in respect of this Annex, detailed repetition may be avoided, if appropriate, by stating the current validity of the earlier notification.

2. *Notification of differences to Annex 6, Part I, including Amendment 29*

2.1 Past experience has indicated that the reporting of differences to Annex 6, Part I has in some instances been too extensive since some appear merely to be a different manner of expressing the same intent.

2.2 Guidance to Contracting States in the reporting of differences to Annex 6, Part I can only be given in very general terms. Where the national regulations of States call for compliance with procedures that are not identical but essentially the same as those contained in the Annex, no difference should be reported since the details of the procedures existing are the subject of notification through the medium of aeronautical information publications. Although differences to Recommended Practices are not notifiable under Article 38 of the Convention, Contracting States are invited to notify the Organization of the differences between their national regulations and practices and any corresponding Recommended Practices contained in an Annex when the knowledge of such differences is important for the safety of air navigation. Broadly, the determination should be based on the following criteria in so far as they are applicable:

- a) When the national regulations of a Contracting State affect the operation of aircraft of other Contracting States in and above its territory:
  - 1) by imposing an obligation within the scope of an Annex which is not covered by an ICAO Standard;

- 2) by imposing an obligation different in character\* from that of the corresponding ICAO Standard;
  - 3) by being more exacting than the corresponding ICAO Standard;
  - 4) by being less protective than the corresponding ICAO Standard;
- b) When the national regulations of a Contracting State applicable to its aircraft and their maintenance, as well as to aircrew personnel, engaged in international air operations over the territory of another Contracting State:
- 1) are different in character\* from the corresponding ICAO Standard;
  - 2) are less protective than the corresponding ICAO Standard.
- c) When the facilities or services provided by a Contracting State for international air navigation:
- 1) impose an obligation or requirement for safety additional to any that may be imposed by the corresponding ICAO Standard;
  - 2) while not imposing an additional obligation, differ in principle, type or system from the corresponding ICAO Standard;
  - 3) are less protective than the corresponding ICAO Standard.

2.3 For States that have already fully reported differences from Annex 6, Part I, or have reported that no differences exist, the reporting of any further differences occasioned by the amendment should be relatively straightforward; however, attention is called to paragraph 1.5 wherein it is indicated that this statement should be made with respect to the whole of the Annex, i.e. not only to the amendment itself but to the Annex as amended.

### 3. *Form of notification of differences*

3.1 Differences should be notified in the following form:

- a) *Reference:* The number of the paragraphs or subparagraphs in Annex 6, Part I as amended which contains the Standard or Recommended Practice to which the difference relates;
- b) *Description of the difference:* Describe the difference precisely and include any additional information necessary to make its effect clear;
- c) *Remarks:* Under “Remarks” indicate any reasons for the “Difference”.

3.2 The differences notified will be recorded in a Supplement to the Annex, normally in the terms used by the Contracting State when making the notification. In the interest of making the supplement as useful as possible, please make statements as clear and concise as possible and confine remarks to

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\* The expression “different in character” in a) 2) and b) 1) would be applied to a national regulation which achieves, by other means, the same objective as that of the corresponding ICAO Standard and so cannot be classified under a) 3) or 4) and b) 2).

essential points. Comments on implementation, in accordance with paragraph 4 b) 2) of the Resolution of Adoption, should not be combined with those concerning differences.

3.3            *A pro forma* to facilitate the notification of differences is given in Attachment C to State letter AN 11/1.3.18-05/28.

— END —



International  
Civil Aviation  
Organization

Organisation  
de l'aviation civile  
internationale

Organización  
de Aviación Civil  
Internacional

Международная  
организация  
гражданской  
авиации

منظمة الطيران  
المدني الدولي

国际民用  
航空组织

Tel.: +1 (514) 954-8219 ext. 6711

Ref.: AN 13/13.1-05/37

24 March 2005

**Subject:** Adoption of Amendment 43 to Annex 11

**Action required:** a) Notify any disapproval before 11 July 2005; b) Notify any differences and compliance before 24 October 2005

Sir/Madam,

1. I have the honour to inform you that Amendment 43 to the *International Standards and Recommended Practices, Air Traffic Services* (Annex 11 to the Convention on International Civil Aviation) was adopted by the Council at the eighth meeting of its 174th Session on 2 March 2005. Copies of the Amendment, the Resolution of Adoption and Note on the Notification of Differences are being sent to you under separate cover.

2. When adopting the amendment, the Council prescribed 11 July 2005 as the date on which it will become effective, except for any part concerning which a majority of Contracting States have registered their disapproval before that date. In addition, the Council resolved that Amendment 43, to the extent it becomes effective, will be applicable on 24 November 2005.

3. Amendment 43 arises from studies by the Secretariat with a view to updating current provisions to reflect technical advancements and evolving practices in States, and also from the Aeronautical Information Services/Aeronautical Charts (AIS/MAP) Divisional Meeting (1998). The subjects are given in the amendment to the Foreword of Annex 11, Thirteenth Edition, a copy of which is in Attachment A.

4. The nature and scope of the amendment are as follows:

- a) as part of a comprehensive effort to improve runway safety, a review of related provisions was carried out and, as a result, the Note under Section 3.10 (Use of surface movement radar (SMR)) was revised and upgraded to a Recommended Practice in light of the specifications in Annex 14 — *Aerodromes* which are aimed at improving visual observation on the manoeuvring area so that air traffic controllers can provide a better service;

- b) the ability to record all air traffic control (ATC) communications is already provided for by most types of communications equipment. As these data have proven to be critical in many accident and incident investigations, thus leading to numerous safety benefits, a requirement to have them recorded wherever possible has been made. A provision that recorded data be retained for a period of at least thirty days is included in four separate paragraphs for consistency with Annex 10 — *Aeronautical Telecommunications*. Also, as many radar facilities are now capable of recording surveillance data, provisions have been upgraded to Standards;
- c) extensive amendments to Annex 1 — *Personnel Licensing*, Annex 6 — *Operation of Aircraft*, Annex 10, Annex 11 and the *Procedures for Air Navigation Services — Air Traffic Management* (PANS-ATM, Doc 4444) related to language proficiency requirements were adopted in 2003 which are expected to result in significant safety benefits in a range of aeronautical activity. An additional related paragraph in Annex 11 has been identified and amended;
- d) amendments to provisions regarding meteorological data have been updated to align them with Annex 3 — *Meteorological Service for International Air Navigation*;
- e) monitoring of aircraft height-keeping performance is one of the underlying assumptions of the safety studies on which reduced vertical separation minimum (RVSM) is based. In all regions where RVSM has been implemented, *Regional Monitoring Agencies* (RMAs) have been established by the appropriate Planning and Implementation Regional Groups (PIRGs) to undertake this function. An amendment to Annex 11 adds a requirement to establish such a monitoring programme. As a complement to this, it also adds to Annex 6 provisions specifying the responsibility of the relevant State authority to take prompt and appropriate action if the monitoring results indicate that the height-keeping performance of a particular aircraft or an aircraft type group exceeds the prescribed limits;
- f) when the provisions related to ATS safety management in Annex 11 were adopted in 2001, the date of 27 November 2003 was specified in paragraph 2.26.2 as the time from which the Standard would become applicable. Simultaneously, in order to introduce a requirement for safety management in Annex 11 applicable on 1 November 2001, a Recommended Practice was included as paragraph 2.26.3. Since the date of 27 November 2003 has passed, an editorial amendment to Standard 2.26.2 has been made and Recommended Practice 2.26.3 has been deleted; and
- g) consequential to the introduction in Annex 15 — *Aeronautical Information Services* of the common reference systems for air navigation, new definitions regarding calendar, datum and Gregorian Calendar have been included in Annex 11. Additionally, due to the introduction of electronic terrain and obstacle data specifications into Annex 15, the existing provisions in Annex 11 for obstacle data contained in Appendix 5 titled “Aeronautical data quality requirements” have been updated in order to align them with the new Annex 15 specifications. Accuracy and integrity requirements for obstacles in the terminal control area are included in Tables 1 and 2 of this Appendix.

5. In accordance with the decision of the 26th Session of the Assembly, I would like to bring to your attention the Organization's long-standing practice of providing documentation to States upon request. Accordingly, the relevant working papers on Amendment 43 to Annex 11 and corresponding minutes of the Council and the Air Navigation Commission proceedings can be made available. In light of the costs involved, however, only one copy of such documents will normally be provided.

6. In conformity with the Resolution of Adoption, may I request:

- a) that before 11 July 2005 you inform me if there is any part of Amendment 43, concerning which your Government wishes to register disapproval, using the form in Attachment B for this purpose. Please note that only statements of disapproval need be registered and if you do not reply it will be assumed that you do not disapprove of the amendment;
- b) that before 24 October 2005 you inform me of the following, using the form in Attachment C for this purpose:
  - 1) any differences that will exist on 24 November 2005 between the national regulations or practices of your Government and the provisions of the whole of Annex 11, as amended by all amendments up to and including Amendment 43, and thereafter of any further differences that may arise;
  - 2) the date or dates by which your Government will have complied with the provisions of the whole of Annex 11, as amended by all amendments up to and including Amendment 43.

7. With reference to the request in paragraph 6 a) above, it should be noted that a registration of disapproval of Amendment 43 or any part of it in accordance with Article 90 of the Convention does not constitute a notification of differences under Article 38 of the Convention. To comply with the latter provision, a separate statement is necessary if any differences do exist, as requested in paragraph 6 b) 1). It is recalled in this respect that international Standards in Annexes have a conditional binding force, to the extent that the State or States concerned have not notified any difference thereto under Article 38 of the Convention.

8. Guidance on the determination and reporting of differences is given in the Note on the Notification of Differences which, as mentioned above, is being sent to you under separate cover.

9. Please note that a detailed repetition of previously notified differences, if they continue to apply, may be avoided by stating the current validity of such differences.

10. I would appreciate it if you would also send a copy of your notifications, referred to in paragraph 6 b) above, to the ICAO Regional Director accredited to your Government.

11. As soon as practicable after the amendment becomes effective, on 11 July 2005, replacement pages incorporating Amendment 43 will be forwarded to you.

Accept, Sir/Madam, the assurances of my highest consideration.



Taïeb Chérif  
Secretary General

**Enclosures:**

- A — Amendment to the Foreword of Annex 11
- B — Form on notification of disapproval of all or part of Amendment 43 to Annex 11
- C — Form on notification of compliance with or differences from Annex 11

**Under separate cover:**

Copy of Amendment 43 to Annex 11 with the associated Resolution of Adoption and Note on the Notification of Differences (to be dispatched on or about 25 March 2005)

AMENDMENT TO THE FOREWORD OF ANNEX 11, THIRTEENTH EDITION

Add the following at the end of Table A:

<i>Amendment</i>	<i>Source(s)</i>	<i>Subject</i>	<i>Adopted/Approved Effective Applicable</i>
43	Secretariat; Aeronautical Information Services/ Aeronautical Charts (AIS/MAP) Divisional Meeting (1998)	Definitions; use of surface movement radar; ATS requirements for communications; meteorology information; height-keeping performance by aircraft; ATS safety management; electronic terrain and obstacle data.	2 March 2005 11 July 2005 24 November 2005

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**NOTIFICATION OF DISAPPROVAL OF ALL OR PART OF  
AMENDMENT 43 TO ANNEX 11**

To: The Secretary General  
International Civil Aviation Organization  
999 University Street  
Montreal, Quebec  
Canada H3C 5H7

(State) \_\_\_\_\_ hereby wishes to disapprove the following parts of  
Amendment 43 to Annex 11:

Signature \_\_\_\_\_

Date \_\_\_\_\_

*NOTES*

- 1) If you wish to disapprove all or part of Amendment 43 to Annex 11, please dispatch this notification of disapproval to reach Montreal by 11 July 2004. If it has not been received by that date it will be assumed that you do not disapprove of the amendment. **If you approve of all parts of Amendment 43, it is not necessary to return this notification of disapproval.**
- 2) This notification should not be considered a notification of compliance with or differences from Annex 11. Separate notifications on this are necessary. (See Attachment C.)
- 3) Please use extra sheets as required.

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**NOTIFICATION OF COMPLIANCE WITH OR DIFFERENCES FROM ANNEX 11  
(including all amendments up to and including Amendment 43)**

To: The Secretary General  
International Civil Aviation Organization  
999 University Street  
Montreal, Quebec  
Canada H3C 5H7

1. No differences will exist on \_\_\_\_\_ between the national regulations and/or practices of **(State)** \_\_\_\_\_ and the provisions of Annex 11, including all amendments up to and including Amendment 43.

2. The following differences will exist on \_\_\_\_\_ between the regulations and/or practices of **(State)** \_\_\_\_\_ and the provisions of Annex 11, including Amendment 43: (Please see Note 3) below.)

<b>a) Annex Provision</b> (Please give exact paragraph reference)	<b>b) Details of Difference</b> (Please describe the difference precisely)	<b>c) Remarks</b> (Please indicate reasons for the difference)
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(Please use extra sheets as required)

3. By the dates indicated below, (State) \_\_\_\_\_ will have complied with the provisions of Annex 11, including all amendments up to and including Amendment 43 for which differences have been notified in 2 above.

a) <b>Annex Provision</b> (Please give exact paragraph reference)	b) <b>Date</b>	c) <b>Comments</b>
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(Please use extra sheets as required)

Signature \_\_\_\_\_

Date \_\_\_\_\_

*NOTES*

- 1) If paragraph 1 above is applicable to you, please complete paragraph 1 and return this form to Montreal. If paragraph 2 is applicable to you, please complete paragraphs 2 and 3 and return the form to Montreal.
- 2) Please dispatch the form to reach Montreal by 24 October 2005.
- 3) A detailed repetition of previously notified differences, if they continue to apply, may be avoided by stating the current validity of such differences.
- 4) Guidance on the notification of differences from Annex 11 is provided in the Note on the Notification of Differences that is being forwarded with a copy of Amendment 43 to Annex 11 under separate cover.
- 5) Please send a copy of this notification to the ICAO Regional Director accredited to your Government.

— END —

**AMENDMENT No. 43**

**TO THE**

**INTERNATIONAL STANDARDS  
AND RECOMMENDED PRACTICES**

# **AIR TRAFFIC SERVICES**

**AIR TRAFFIC CONTROL SERVICE  
FLIGHT INFORMATION SERVICE  
ALERTING SERVICE**

**ANNEX 11**

**TO THE CONVENTION ON INTERNATIONAL CIVIL AVIATION**

The amendment to Annex 11 contained in this document was adopted by the Council of ICAO on **2 March 2005**. Such parts of this amendment as have not been disapproved by more than half of the total number of Contracting States on or before **11 July 2005** will become effective on that date and will become applicable on **24 November 2005** as specified in the Resolution of Adoption.

**MARCH 2005**

**INTERNATIONAL CIVIL AVIATION ORGANIZATION**

**AMENDMENT 43 TO THE INTERNATIONAL STANDARDS  
AND RECOMMENDED PRACTICES**

**AIR TRAFFIC SERVICES**

**RESOLUTION OF ADOPTION**

*The Council*

Acting in accordance with the Convention on International Civil Aviation, and particularly with the provisions of Articles 37, 54 and 90 thereof,

1. *Hereby adopts* on 2 March 2005 Amendment 43 to the International Standards and Recommended Practices contained in the document entitled *International Standards and Recommended Practices, Air Traffic Services* which for convenience is designated Annex 11 to the Convention;
2. *Prescribes* 11 July 2005 as the date upon which the said amendment shall become effective, except for any part thereof in respect of which a majority of the Contracting States have registered their disapproval with the Council before that date;
3. *Resolves* that the said amendment or such parts thereof as have become effective shall become applicable on 24 November 2005;
4. *Requests the Secretary General:*
  - a) to notify each Contracting State immediately of the above action and immediately after 11 July 2005 of those parts of the amendment which have become effective;
  - b) to request each Contracting State:
    - 1) to notify the Organization (in accordance with the obligation imposed by Article 38 of the Convention) of the differences that will exist on 24 November 2005 between its national regulations or practices and the provisions of the Standards in the Annex as hereby amended, such notification to be made before 24 October 2005, and thereafter to notify the Organization of any further differences that arise; and
    - 2) to notify the Organization before 24 October 2005 of the date or dates by which it will have complied with the provisions of the Standards in the Annex as hereby amended.
  - c) to invite each Contracting State to notify additionally any differences between its own practices and those established by the Recommended Practices, when the notification of such differences is important for the safety of air navigation, following the procedure specified in subparagraph b) above with respect to differences from Standards.

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**NOTES ON THE PRESENTATION OF AMENDMENT 43 TO ANNEX 11**

The text of the amendment is arranged to show deleted text with a line through it and new text highlighted with grey shading, as shown below:

1. ~~Text to be deleted is shown with a line through it.~~ text to be deleted
2. **New text to be inserted is highlighted with grey shading.** new text to be inserted
3. ~~Text to be deleted is shown with a line through it~~ followed by the replacement text which is highlighted with grey shading. new text to replace existing text

**TEXT OF AMENDMENT TO INTERNATIONAL STANDARDS AND RECOMMENDED  
PRACTICES  
AIR TRAFFIC SERVICES**

**ANNEX 11  
TO THE CONVENTION ON INTERNATIONAL CIVIL AVIATION**

**CHAPTER 1. DEFINITIONS**

...

~~**Aeronautical station (RR 51.81).** A land station in the aeronautical mobile service. In certain instances, an aeronautical station may be located, for example, on board ship or on a platform at sea.~~

...

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*Editorial Note.— Insert new definitions in alphabetical order.*

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**Calendar.** Discrete temporal reference system that provides the basis for defining temporal position to a resolution of one day (ISO 19108\*).

**Datum.** Any quantity or set of quantities that may serve as a reference or basis for the calculation of other quantities (ISO 19104\*).

**Gregorian calendar.** Calendar in general use; first introduced in 1582 to define a year that more closely approximates the tropical year than the Julian calendar (ISO 19108\*).

*Note.— In the Gregorian calendar, common years have 365 days and leap years 366 days divided into twelve sequential months.*

**Obstacle.** All fixed (whether temporary or permanent) and mobile objects, or parts thereof, that are located on an area intended for the surface movement of aircraft or that extend above a defined surface intended to protect aircraft in flight.

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\* ISO Standard 19104, *Geographic information — Terminology*

\* ISO Standard 19108, *Geographic information — Temporal schema*

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*Editorial Note.— End of new definitions.*

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## CHAPTER 2. GENERAL

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2.26.2 ~~As of 27 November 2003, t~~The acceptable level of safety and safety objectives applicable to the provision of ATS within airspaces and at aerodromes shall be established by the State or States concerned. When applicable, safety levels and safety objectives shall be established on the basis of regional air navigation agreements.

*Note.— The acceptable level of safety may be specified in qualitative or quantitative terms. The following are examples of measures which could be used to express the acceptable level of safety:*

- a) *a maximum probability of an undesirable event, such as collision, loss of separation or runway incursion;*
- b) *a maximum number of accidents per flight hour;*
- c) *a maximum number of incidents per aircraft movement;*
- d) *a maximum number of valid short-term conflict alerts (STCA) per aircraft movement.*

~~2.26.3 — **Recommendation.**— The acceptable level of safety and safety objectives applicable to the provision of ATS within airspaces and at aerodromes should be established by the State or States concerned. When applicable, safety levels and safety objectives should be established on the basis of regional air navigation agreements.~~

2.26.4 2.26.3 An ATS safety management programme shall, *inter alia*:

- a) identify actual and potential hazards and determine the need for remedial action;

...

**Renumber** subsequent paragraphs accordingly.

### 2.27 Common reference systems

#### 2.27.1 Horizontal reference system

2.27.1.1 World Geodetic System —1984 (WGS-84) shall be used as the horizontal (geodetic) reference system for air navigation. Reported aeronautical geographical coordinates (indicating latitude and longitude) shall be expressed in terms of the WGS-84 geodetic reference datum.

*Note.— Comprehensive guidance material concerning WGS-84 is contained in the World Geodetic System —1984 (WGS-84) Manual (Doc 9674).*

## 2.27.2 Vertical reference system

2.27.2.1 Mean sea level (MSL) datum, which gives the relationship of gravity-related height (elevation) to a surface known as the geoid, shall be used as the vertical reference system for air navigation.

*Note.—The geoid globally most closely approximates MSL. It is defined as the equipotential surface in the gravity field of the Earth which coincides with the undisturbed MSL extended continuously through the continents.*

## 2.27.3 Temporal reference system

2.27.3.1 The Gregorian calendar and Coordinated Universal Time (UTC) shall be used as the temporal reference system for air navigation.

2.27.3.2 When a different temporal reference system is used, this shall be indicated in GEN 2.1.2 of Aeronautical Information Publication (AIP).

...

## CHAPTER 3. AIR TRAFFIC CONTROL SERVICE

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3.3.4 Separation by an air traffic control unit shall be obtained by at least one of the following:

- a) vertical separation, obtained by assigning different levels selected from:
  - 1) the appropriate tables of cruising levels in Appendix 3 of Annex 2, or
  - 2) a modified table of cruising levels, when so prescribed in accordance with Appendix 3 of Annex 2 for flight above FL 410,

except that the correlation of levels to track as prescribed therein shall not apply whenever otherwise indicated in appropriate aeronautical information publications or air traffic control clearances;

~~—Note.— Guidance material relating to vertical separation is contained in the Manual on Implementation of a 300 m (1 000 ft) Vertical Separation Minimum Between FL 290 and FL 410 Inclusive (Doc 9574).~~

- b) horizontal separation, obtained by providing:
  - 1) longitudinal separation, by maintaining an interval between aircraft operating along the same, converging or reciprocal tracks, expressed in time or distance; or
  - 2) lateral separation, by maintaining aircraft on different routes or in different geographical areas;

- c) composite separation, consisting of a combination of vertical separation and one of the other forms of separation contained in b) above, using minima for each which may be lower than, but not less than half of, those used for each of the combined elements when applied individually. Composite separation shall only be applied on the basis of regional air navigation agreements.

*Note.— Guidance material relating to the implementation of composite lateral/vertical separation is contained in the Air Traffic Services Planning Manual (Doc 9426).*

3.3.4.1 For all airspace where a reduced vertical separation minimum of 300 m (1 000 ft) is applied between FL 290 and FL 410 inclusive, a programme shall be instituted, on a regional basis, for monitoring the height-keeping performance of aircraft operating at these levels, in order to ensure that the implementation and continued application of this vertical separation minimum meets the safety objectives. The coverage of the height-monitoring facilities provided under this programme shall be adequate to permit monitoring of the relevant aircraft types of all operators who operate in RVSM airspace.

*Note.— The number of separate monitoring programmes should be restricted to the minimum necessary to effectively provide the required services for the region.*

3.3.4.2 Arrangements shall be put in place, through inter-regional agreement, for the sharing between regions of data from monitoring programmes.

*Note.— Guidance material relating to vertical separation and monitoring of height-keeping performance is contained in the Manual on Implementation of a 300 m (1 000 ft) Vertical Separation Minimum Between FL 290 and FL 410 Inclusive (Doc 9574).*

### 3.7 Air traffic control clearances

...

3.7.3 Read-back of clearances and safety-related information

3.7.3.1 The flight crew shall read back to the air traffic controller safety-related parts of ATC clearances and instructions which are transmitted by voice. The following items shall always be read back:

...

- b) clearances and instructions to enter, land on, take off ~~on~~ from, hold short of, cross and backtrack on any runway; and

...

### 3.10 Use of surface movement radar (SMR)

*Note.— Surface movement radar (SMR) has proven to be useful in assisting with the monitoring of aircraft and vehicles on the manoeuvring area. See Annex 14, Volume I, Chapter 8 for the requirements concerning the provision of SMR and the Air Traffic Services Planning Manual (Doc 9426) for guidance on the use of SMR.*

3.10.1 **Recommendation.**— *In the absence of visual observation of all or part of the manoeuvring area or to supplement visual observation, surface movement radar (SMR) provided in accordance with the provisions of Annex 14, Volume I, or other suitable surveillance equipment, should be utilized to:*

- a) *monitor the movements of aircraft and vehicles on the manoeuvring area;*
- b) *provide directional information to pilots and vehicle drivers as necessary; and*
- c) *provide advice and assistance for the safe and efficient movement of aircraft and vehicles on the manoeuvring area.*

*Note.*— *See the Manual of Surface Movement Guidance and Control Systems (SMGCS) (Doc 9476), the Manual on Advanced-Surface Movement Guidance and Control Systems (A-SMCGS) (Doc 9830) and the Air Traffic Services Planning Manual (Doc 9426) for guidance on the use of SMR.*

...

## CHAPTER 4. FLIGHT INFORMATION SERVICE

...

### 4.3.104.3.1.4 Use of the OFIS messages in directed request/reply transmissions

When requested by the pilot, the applicable OFIS message(s) shall be transmitted by the appropriate ATS unit.

...

### 4.3.4 Voice-automatic terminal information service (Voice-ATIS) broadcasts

...

4.3.4.6 **Recommendation.**— *Pending the development and adoption of a more suitable form of speech for universal use in aeronautical radiotelephony communications,* Voice-ATIS broadcasts provided at designated aerodromes ~~designated~~ for use by international air services ~~should~~ shall be available in the English language as a minimum.

4.3.4.7 **Recommendation.**— *Where Voice-ATIS broadcasts are available in more than one language, a discrete channel should be used for each language.*

...

## CHAPTER 6. AIR TRAFFIC SERVICES REQUIREMENTS FOR COMMUNICATIONS

### 6.1 Aeronautical mobile service (air-ground communications)

#### 6.1.1 General

...

6.1.1.2 When direct pilot-controller two-way radiotelephony or data link communications are used for the provision of air traffic control service, recording facilities shall be provided on all such air-ground communication channels.

*Note.— Requirements for retention of all automatic recordings of communications in ATC are specified in Annex 10, Volume II, 3.5.1.5.*

6.1.1.3 Recordings of communications channels as required in paragraph 6.1.1.2 shall be retained for a period of at least thirty days.

...

## 6.2 Aeronautical fixed service (ground-ground communications)

...

### 6.2.1 General

6.2.1.1 Direct-speech and/or data link communications shall be used in ground-ground communications for air traffic services purposes.

*Note 1.— Indication by time of the speed with which the communication should be established is provided as a guide to communication services, particularly to determine the types of communication channels required, e.g. that “instantaneous” is intended to refer to communications which effectively provide for immediate access between controllers; “fifteen seconds” to accept switchboard operation and “five minutes” to mean methods involving retransmission.*

*Note 2.— Requirements for retention of all automatic recordings of communications in ATC are specified in Annex 10, Volume II, 3.5.1.5.*

### 6.2.2 Communications within a flight information region

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6.2.2.3 *Description of communication facilities*

...

6.2.2.3.3 **Recommendation.**—In all cases where automatic transfer of data to and/or from air traffic services computers is required, suitable facilities for automatic recording ~~should~~ shall be provided.

...

6.2.2.3.7 All facilities for direct-speech or data link communications between air traffic services units and between air traffic services units and other units described under 6.2.2.2.1 and 6.2.2.2.2 ~~appropriate military units~~ shall be provided with automatic recording.

6.2.2.3.8 Recordings of data and communications as required in 6.2.2.3.3 and 6.2.2.3.7 shall be retained for a period of at least thirty days.

~~6.2.2.3.8 **Recommendation.**—All facilities for direct-speech or data link communications required under 6.2.2.2.1 and 6.2.2.2.2 and not otherwise covered by 6.2.2.3.7 should be provided with automatic recording.~~

### 6.2.3 Communications between flight information regions

...

6.2.3.5 **Recommendation.**—In all cases where automatic exchange of data between air traffic services computers is required, suitable facilities for automatic recording ~~should~~ shall be provided.

...

6.2.3.6 Recordings of data and communications as required in 6.2.3.5 shall be retained for a period of at least thirty days.

## 6.3 Surface movement control service

### 6.3.1 Communications for the control of vehicles other than aircraft on manoeuvring areas at controlled aerodromes

...

6.3.1.2 **Recommendation.**—Where conditions warrant, separate communication channels ~~should~~ shall be provided for the control of vehicles on the manoeuvring area. Automatic recording facilities ~~should~~ shall be provided on all such channels.

6.3.1.3 Recordings of communications as required in 6.3.1.2 shall be retained for a period of at least thirty days.

*Note.*—See also Annex 10, Volume II, 3.5.1.5.

## 6.4 Aeronautical radio navigation service

### 6.4.1 Automatic recording of surveillance data

6.4.1.1 **Recommendation.**—Surveillance data from primary and secondary radar equipment or obtained through ADS or other surveillance systems, used as an aid to air traffic services, ~~should~~ shall be automatically recorded for use in accident and incident investigations, search and rescue, air traffic control and surveillance systems evaluation and training.

6.4.1.2 **Recommendation.**—Automatic recordings ~~should~~ shall be retained for a period of at least ~~fourteen~~ thirty days. When the recordings are pertinent to accident and incident investigations, they ~~should~~ shall be retained for longer periods until it is evident that they will no longer be required.

...

## CHAPTER 7. AIR TRAFFIC SERVICES REQUIREMENTS FOR INFORMATION

### 7.1 Meteorological information

#### 7.1.1 General

...

#### 7.1.2 Flight information centres and area control centres

7.1.2.1 Flight information centres and area control centres shall be supplied with SIGMET and AIRMET information, special air-reports, current meteorological reports and forecasts, particular emphasis being given to the occurrence or expected occurrence of ~~weather~~ deterioration in a weather element as soon as this can be determined. These reports and forecasts shall cover the flight information region or control area and such other areas as may be determined on the basis of regional air navigation agreements.

*Note.— For the purpose of this provision, certain changes in ~~weather~~ meteorological conditions are construed as ~~weather~~ deterioration in a weather element, although they are not ordinarily considered as such. An increase in temperature may, for example, adversely affect the operation of certain types of aircraft.*

7.1.2.2 Flight information centres and area control centres shall be provided, at suitable intervals, with current pressure data for setting altimeters, for locations specified by the flight information centre or area control centre concerned.

#### 7.1.3 Units providing approach control service

7.1.3.1 Units providing approach control service shall be supplied with current meteorological reports and forecasts for the airspace and the aerodromes with which they are concerned. Special reports and amendments to forecasts shall be communicated to the units providing approach control service as soon as they are necessary in accordance with established criteria, without waiting for the next routine report or forecast. Where multiple ~~anemometers~~ sensors are used, the ~~indicators~~ displays to which they are related shall be clearly marked to identify the runway and section of the runway monitored by each ~~anemometer~~ sensor.

*Note.— See Note following 7.1.2.1.*

7.1.3.2 Units providing approach control service shall be provided with current pressure data for setting altimeters, for locations specified by the unit providing approach control service.

7.1.3.3 Units providing approach control service for final approach, landing and take-off shall be equipped with surface wind ~~indicator(s)~~ display(s). The ~~indicator(s)~~ display(s) shall be related to the same location(s) of observation and be fed from the same ~~anemometer(s)~~ sensor(s) as the corresponding ~~indicator(s)~~ display(s) in the aerodrome control tower and in the meteorological station, where such a station exists.

7.1.3.4 Units providing approach control service for final approach, landing and take-off at aerodromes where runway visual range values are assessed by instrumental means shall be equipped with indicator(s) display(s) permitting read-out of the current runway visual range value(s). The indicator(s) display(s) shall be related to the same location(s) of observation and be fed from the same runway visual range measuring device(s) sensor(s) as the corresponding indicator(s) displays in the aerodrome control tower and in the meteorological station, where such a station exists.

7.1.3.5 **Recommendation.**— *Units providing approach control service for final approach, landing and take-off at aerodromes where the height of cloud base is assessed by instrumental means should be equipped with display(s) permitting read-out of the current value(s) of the height of cloud base. The displays should be related to the same location(s) of observations and be fed from the same sensor(s) as the corresponding display(s) in the aerodrome control tower and in the meteorological station, where such a station exists.*

~~7.1.3.5~~ 7.1.3.6 **Recommendation.**— Units providing approach control service for final approach, landing and take-off ~~should~~ shall be supplied with information on wind shear which could adversely affect aircraft on the approach or take-off paths or during circling approach.

*Note.*— *Provisions concerning the issuance of wind shear warnings and ATS requirements for meteorological information are given in Annex 3, Chapters 7, ~~and 10~~ and Appendix 6, ~~respectively~~.*

#### 7.1.4 Aerodrome control towers

...

7.1.4.3 Aerodrome control towers shall be equipped with surface wind indicator(s) display(s). The indicator(s) display(s) shall be related to the same location(s) of observation and be fed from the same anemometer(s) sensor(s) as the corresponding indicator(s) display(s) in the meteorological station, where such a station exists. Where multiple anemometers sensor(s) are used, the indicators displays to which they are related shall be clearly marked to identify the runway and section of the runway monitored by each anemometer sensor.

7.1.4.4 Aerodrome control towers at aerodromes where runway visual range values are measured by instrumental means shall be equipped with indicator(s) display(s) permitting read-out of the current runway visual range value(s). The indicator(s) display(s) shall be related to the same location(s) of observation and be fed from the same runway visual range measuring device(s) sensor(s) as the corresponding indicator(s) display(s) in the meteorological station, where such a station exists.

7.1.4.5 **Recommendation.**— *Aerodrome control towers at aerodromes where the height of cloud base is assessed by instrumental means should be equipped with display(s) permitting read-out of the current value(s) of the height of cloud base. The displays should be related to the same location(s) of observations and be fed from the same sensor(s) as the corresponding display(s) in the meteorological station, where such a station exists.*

~~7.1.4.5~~ **Recommendation.**— 7.1.4.6 Aerodrome control towers ~~should~~ shall be supplied with information on wind shear which could adversely affect aircraft on the approach or take-off paths or during circling approach and aircraft on the runway during the landing roll or take-off run.

7.1.4.6 7.1.4.7 **Recommendation.**— *Aerodrome control towers and/or other appropriate units should be supplied with information concerning meteorological conditions which could adversely affect aircraft on the ground, including parked aircraft, and the aerodrome facilities and services: aerodrome warnings.*

*Note.*— *The meteorological conditions are listed in Annex 3, Chapter 7, 7.5.2: for which aerodrome warnings are issued are listed in Annex 3, Appendix 6, 5.1.2.*

...

## APPENDIX 5. AERONAUTICAL DATA QUALITY REQUIREMENTS

**Table 1. Latitude and longitude**

Latitude and longitude	Accuracy Data type	Integrity Classification
Flight information region boundary points	2 km ( <del>1 NM</del> ) declared	$1 \times 10^{-3}$ routine
P, R, D areas area boundary points (outside CTA/CTZ boundaries)	2 km ( <del>1 NM</del> ) declared	$1 \times 10^{-3}$ routine
P, R, D areas area boundary points (inside CTA/CTZ boundaries)	100 m calculated	$1 \times 10^{-5}$ essential
CTA/CTZ boundary points	100 m calculated	$1 \times 10^{-5}$ essential
En-route nav aids and fixes, holding, STAR/SID points	100 m surveyed/calculated	$1 \times 10^{-5}$ essential
Obstacles en route in Area 1 (the entire State territory)	<del>100</del> 50 m surveyed	$1 \times 10^{-3}$ routine
Obstacles in Area 2 (the part outside the aerodrome/heliport boundary)	5 m surveyed	$1 \times 10^{-5}$ essential
Final approach fixes/points and other essential fixes/points comprising the instrument approach procedure	3 m surveyed/calculated	$1 \times 10^{-5}$ essential

*Note 1.*— *See Annex 15, Appendix 8 for graphical illustrations of obstacle data collection surfaces and criteria used to identify obstacles in the defined areas.*

*Note 2.*— *In those portions of Area 2 where flight operations are prohibited due to very high terrain or other local restrictions and/or regulations, obstacles are to be collected in accordance with the Area 1 numerical requirements specified in Annex 15, Appendix 8, Table A8-2.*

*Note 3.C* *Implementation of Annex 15 provisions 10.6.1.1 and 10.6.1.2 concerning the availability, as of 20 November 2008 and 18 November 2010, of obstacle data according to Area 1 and Area 2 specifications respectively, would be facilitated by appropriate advanced planning for the collection and processing of such data.*

**Table 2. Elevation/altitude/height**

Elevation/altitude/height	Accuracy Data type	Integrity Classification
Threshold crossing height, precision approaches	0.5 m <del>or 1 ft</del> calculated	$1 \times 10^{-8}$ critical
Obstacle clearance altitude/height (OCA/H)	as specified in PANS-OPS (Doc 8168)	$1 \times 10^{-5}$ essential
Obstacles <del>en-route</del> in Area 1 (the entire State territory), elevations	3 <del>30 m (10 ft)</del> surveyed	$1 \times 10^{-3}$ routine
Obstacles in Area 2 (the part outside the aerodrome/heliport boundary)	3 m surveyed	$1 \times 10^{-5}$ essential
Distance measuring equipment (DME), elevation	30 m (100 ft) surveyed	$1 \times 10^{-5}$ essential
Instrument approach procedures altitude	as specified in PANS-OPS (Doc 8168)	$1 \times 10^{-5}$ essential
Minimum altitudes	50 m <del>or 100 ft</del> calculated	$1 \times 10^{-3}$ routine

*Note 1.— See Annex 15, Appendix 8 for graphical illustrations of the obstacle data collection surfaces and criteria used to identify obstacles in the defined areas.*

*Note 2.— In those portions of Area 2 where flight operations are prohibited due to very high terrain or other local restrictions and/or regulations, obstacles are to be collected in accordance with the Area 1 numerical requirements specified in Annex 15, Appendix 8, Table A8-2.*

*Note 3.C Implementation of Annex 15 provisions 10.6.1.1 and 10.6.1.2 concerning the availability, as of 20 November 2008 and 18 November 2010, of obstacle data according to Area 1 and Area 2 specifications respectively, would be facilitated by appropriate advanced planning for the collection and processing of such data.*

...

**Table 5. Length/distance/dimension**

Length/distance/dimension	Accuracy Data type	Integrity Classification
Airway segments length	1/10 km <del>or 1/10 NM</del> calculated	$1 \times 10^{-3}$ routine
En-route fix formations distance	1/10 km <del>or 1/10 NM</del> calculated	$1 \times 10^{-3}$ routine
Terminal arrival/departure route segments length	1/100 km <del>or 1/100 NM</del> calculated	$1 \times 10^{-5}$ essential
Terminal and instrument approach procedure fix formations distance	1/100 km <del>or 1/100 NM</del> calculated	$1 \times 10^{-5}$ essential

**NOTE ON THE NOTIFICATION OF DIFFERENCES TO ANNEX 11  
AND FORM OF NOTIFICATION**

*(Prepared and issued in accordance with instructions of the Council)*

1. *Introduction*

1.1 The Assembly and the Council, when reviewing the notification of differences received in compliance with Article 38 of the Convention, have repeatedly noted that the state of such reporting is not entirely satisfactory.

1.2 With a view to achieving a more comprehensive coverage, this note is issued to facilitate the determination and reporting of such differences and to state the primary purpose of such reporting.

1.3 The primary purpose of reporting of differences is to promote safety and efficiency in air navigation by ensuring that governmental and other agencies, including operators, concerned with international civil aviation are made aware of all national rules and practices in so far as they differ from those prescribed in the ICAO Standards.

1.4 Contracting States are, therefore, requested to give particular attention to the notification before 24 October 2005 of differences with respect to the Standards in Annex 11. The Council has also invited Contracting States to extend the above considerations to Recommended Practices.

1.5 Contracting States are asked to note further that it is necessary to make an explicit statement of intent to comply where such intent exists, or where such is not the intent, of the difference or differences that will exist. This statement should be made with respect to the whole of the Annex, i.e. not only to the latest amendment but to the whole Annex, including the amendment.

1.6 If previous notifications have been made in respect of this Annex, detailed repetition may be avoided, if appropriate, by stating the current validity of the earlier notification.

2. *Notification of differences to Annex 11, including Amendment 43*

2.1 Past experience has indicated that the reporting of differences to Annex 11 has in some instances been too extensive since some appear merely to be a different manner of expressing the same intent.

2.2 Guidance to Contracting States in the reporting of differences to Annex 11 can only be given in very general terms. Where the national regulations of States call for compliance with procedures that are not identical but essentially the same as those contained in the Annex, no difference should be reported since the details of the procedures existing are the subject of notification through the medium of aeronautical information publications. The provisions contained in Amendment 43 affect several Recommended Practices contained in Annex 11. Although differences to Recommended Practices are not notifiable under Article 38 of the Convention, Contracting States are invited to notify the Organization of the differences between their national regulations and practices and any corresponding Recommended Practices contained in an Annex when the knowledge of such differences is important for the safety of air navigation. Broadly, the determination should be based on the following criteria in so far as they are applicable:

- a) When the national regulations of a Contracting State affect the operation of aircraft of other Contracting States in and above its territory:
  - 1) by imposing an obligation within the scope of an Annex which is not covered by an ICAO Standard;
  - 2) by imposing an obligation different in character\* from that of the corresponding ICAO Standard;

- 3) by being more exacting than the corresponding ICAO Standard;
  - 4) by being less protective than the corresponding ICAO Standard.
- b) When the national regulations of a Contracting State applicable to its aircraft and their maintenance, as well as to aircrew personnel, engaged in international air operations over the territory of another Contracting State:
- 1) are different in character\* from the corresponding ICAO Standard;
  - 2) are less protective than the corresponding ICAO Standard.
- c) When the facilities or services provided by a Contracting State for international air navigation:
- 1) impose an obligation or requirement for safety additional to any that may be imposed by the corresponding ICAO Standard;
  - 2) while not imposing an additional obligation, differ in principle, type or system from the corresponding ICAO Standard;
  - 3) are less protective than the corresponding ICAO Standard.

2.3 For States that have already fully reported differences to Annex 11, or have reported that no differences exist, the reporting of any further differences occasioned by the amendment should be relatively straightforward; however, attention is called to paragraph 1.5 wherein it is indicated that this statement should be made with respect to the whole of the Annex, i.e. not only to the amendment itself but to the Annex as amended.

### 3. *Form of notification of differences*

3.1 Differences should be notified in the following form:

- a) *Reference*: The number of the paragraphs or sub-paragraph in Annex 11 as amended which contains the Standard or Recommended Practice to which the difference relates;
- b) *Description of the difference*: Describe the difference precisely and include any additional information necessary to make its effect clear;
- c) *Remarks*: Under “Remarks” indicate any reasons for the “Difference”.

3.2 The differences notified will be recorded in a supplement to the Annex, normally in the terms used by the Contracting State when making the notification. In the interest of making the supplement as useful as possible, please make statements as clear and concise as possible and confine remarks to essential points. Comments on implementation, in accordance with paragraph 4 b) 2) of the Resolution of Adoption, should not be combined with those concerning differences.

3.3 A *pro forma* to facilitate the notification of differences is given in Attachment C of State letter AN 13/13.1-05/37.

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\* The expression “different in character” in a) 2) and b) 1) would be applied to a national regulation which achieves, by other means, the same objective as that of the corresponding ICAO Standard and so cannot be classified under a) 3) or 4) and b) 2).

# **ATTACHMENTS TO THE REPORT**

ARNR/TF/3 & SEACG/12  
Attachment 1 to the Report

**LIST OF PARTICIPANTS**

*Underlined names are Point of Contact of each State/Organization.*

*(Note: Points of Contact were appointed to facilitate coordination among States/Organizations and do not necessarily represent the State/Organization officially.)*

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ARNR/TF/3 & SEACG/12  
Attachment 1 to the Report

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### ARNR/TF/3 - LIST OF PAPERS

#### WORKING PAPERS

WP No.	Date	Agenda Item	Presented by	Subject
1	2/5/05	1	Secretariat	Provisional Agenda
2	2/5/05	2	Secretariat	Amendment Proposals of ATS Route Requirements Developed after the First Edition of <i>Basic Air Navigation Plan</i>
3	2/5/05	3	Secretariat	Review of the APANPIRG List of Deficiencies in the Air Navigation Field
4	2/5/05	5	Secretariat	Development of the Asia and Pacific ATS Route Catalogue Document
5	2/5/05	6	Secretariat	Establishment of ATS Route Master Database
6	2/5/05	2	Lao PDR	Realignment and new establishment of certain ATS routes in the Vientiane FIR
7	2/5/05	3	IATA	New User Required Routes
8	2/5/05	3	IATA	Additional User Route Requirements
9	2/5/05	3	IATA	Consolidated List of User Required Routes

#### INFORMATION PAPERS

IP No.	Date	Agenda Item	Presented by	Subject
1	14/2/05	-	Secretariat	Tentative List of Information and Working Papers

**SEACG/12 - LIST OF PAPERS**

**WORKING PAPERS**

<b>WP/No.</b>	<b>Agenda Item</b>	<b>Subject</b>	<b>Presented by</b>
1	1	Adoption of Provisional Agenda	Secretariat
2	3	Review of the Outcomes in regard to the Operation of Different RVSM Flight Level Orientation Schemes in the Asia/Pacific Region	Secretariat
3	3	Review of State Contingency Planning Requirements	Secretariat
4	5	Guidelines for the Implementation of RNP Operations	Secretariat
5	5	Approval of Amendment 4 to the PANS ATM	Secretariat
6	5	Review of the 24 <sup>th</sup> Meeting of the RVSM Task Force on the One Year Review of the Bay of Bengal RVSM Implementation	Secretariat
7	7	Language Proficiency	Secretariat
8	7	Review of Civil/Military Seminar 2004	Secretariat
9	5	Approval of Amendment 43 to Annex 11, Amendment 29 to Annex 6 Part I, Amendment 24 to Annex 6 Part 11 and Amendment 10 to Annex 6 Part III	Secretariat
10	3	Summary of the Combined Meetings of the FIT-BOB/5, FIT-SEA/2, ATFM/TF/1 and ADS/CPDLC Seminar	Secretariat
11	2, 6	Review of SEACG/11 Action Plan	Secretariat
12	3	Review of the 6 <sup>th</sup> RVSM Seminar and the 25 <sup>th</sup> Meeting of the RVSM Task Force in Regard to the Japan (Domestic) and Republic of Korea RVSM Implementation	Secretariat
13	3	Review of RASMAG/2 Meeting	Secretariat
14	7	Review of APANPIRG/15 List of Deficiencies	Secretariat

**INFORMATION PAPERS**

<b>IP/No.</b>	<b>Agenda Item</b>	<b>Subject</b>	<b>Presented by</b>
1	-	List of working and information papers	Secretariat
2	7	Implementation of 30/30 Separation Standards in Oceanic Airspace	Secretariat on behalf of Australia
3	3	CSSI, Inc.'s Interest in assuming the Duties and Responsibilities associated with the Provision of Airspace Monitoring in connection with RNP-based Horizontal-Plane Separation Minimum	Secretariat on behalf of CSSI, Inc.
4	7	Delay to the Applicability Date for Mandatory Carriage of Electronic Locator Transmitters (ELT) Operating Simultaneously on 406 and 121. MHz	Secretariat
5	7	Special Implementation Project on ATS Safety Management Programme for the Asia Region	Secretariat

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