Report of the Special Coordination Meeting to finalize arrangements for RVSM/TF Review of Western Pacific/South China Sea Flight Level Orientation Scheme (SCM RVSM FLOS) Bangkok, Thailand, 20 September 2005

1. Background

1.1 The Special Coordination Meeting to finalize arrangements for RVSM/TF Review of Western Pacific/South China Sea Flight Level Orientation Scheme (SCM RVSM FLOS) was held on 20 September 2005 at AEROTHAI Headquarters, Bangkok, Thailand. Mr. Andrew Tiede and Mr. Kyotaro Harano, Regional Officers ATM, attended the meeting on behalf of ICAO Asia and Pacific Regional Office. The meeting was also attended by Mr. Sydney Maniam (RVSM/TF Chairman) and Mr. Kuah Kong Beng (Chief Air Traffic Control Officer) from CAAS. AEROTHAI was represented by Mr. Nopadol Sangngurn (Executive Expert), Mr. Tinnagorn Choowong (ATC Manager), and Dr. Paisit Herabat, Mr. Nuttakajorn Yanpirat and Ms. Saifon Obromsook from the Monitoring Agency for the Asia Region (MAAR).

1.2 The 22nd Meeting of the RVSM Implementation Task Force (RVSM/TF/22) was held from 20 to 27 September 2004 at ICAO Asia and Pacific Office, Bangkok. The RVSM/TF/22 reviewed the modified single alternate FLOS currently used in the WPAC/SCM area and developed a new flight level allocation scheme based on proposals from the Philippines and Thailand. The RVSM/TF/22 was of view that key issues, particularly the safety assessment for the new scheme, should be addressed before any change could be made. The implementation of the new scheme, however, had been delayed for one year because of the non provision of traffic data from States and consequent inability to conduct the safety assessment.

1.3 In light of the above, the Chairman of the Task Force, Mr. Sydney Maniam, had suggested that the Chairman, Monitoring Agency for Asia Region (MAAR) and ICAO hold a Special Coordination Meeting to discuss the way forward to implement the new scheme, in advance to the RVSM/TF/28 which will be held from 24 – 28 April 2006 to finalize the new flight level arrangements. The meeting agreed to consider the following issues:

- Updates of TSD (July 2004) and Monthly LHD provided by WPAC/SCS States;
- TSD collection in December 2005 (WPAC/SCS) and November 2005 (Japan/Korea 90 day review);
- Safety oversight for WPAC/SCS RVSM implementation using current FLOS (modified single alternate) with available data;
- Revise TSD and LHD template and instructions, and the notification process to States (WPAC/SCS, BOB, and Japan/Korea);
- Summary on FLOS scenario to be assessed; and
- Meeting dates for the 90 day review of the Japan/Republic of Korea implementation and the FLOS review meeting.

2. Discussion

2.1 The Chairman of the RVSM/TF welcomed the participants and highlighted the purpose of the meeting. The meeting was held to progress the preparation by MAAR for the RVSM/TF/27 – 90 day review meeting to be held in January/February 2005 and the succeeding RVSM/TF/28 – FLOS review meeting.

2.2 The Chairman also reported that he would step down from the chairmanship by the end of 2005 due to his retirement from Civil Aviation Authority of Singapore (CAAS) in early 2006. He nominated Mr. Kuah Kong Beng (CAAS) as his interim replacement, until the matter could be considered at a full task force meeting.

2.3 The meeting thanked Mr. Manaiam for his long and dedicated service to the RVSM/TF, noting that the RVSM implementation at the end of September would complete the RVSM implementation in the international oceanic airspaces of the region. Mr. Maniam had presided over a very busy and successful period for the RVSM/TF and had provided substantive contribution to the success of the task force. The meeting wished Mr. Maniam well in his retirement.

2.4 The meeting considered the schedule for the RVSM/TF/27 and 28 meetings. MAAR advised that no delay in submission of the data from Japan and the Republic of Korea was expected. Also a new TSD template was being prepared by MAAR. In light of the above, it was agreed that the RVSM/TF/27 be held from 27 February to 1 March 2006 and the RVSM/TF/28 from 24 to 28 April 2006.

Safety Assessment Scenarios

2.5 MAAR provided the meeting with three scenarios as a basis for conducting the safety assessments for the FLOS review as follows:

a) Base case: Current FLOS in WPAC/SCS;
b) Scenario 1: Proposed FLOS change at the RVSM/TF/22; and
c) Scenario 2: Scenario 1 with minor FLOS change on A1/P901.

2.6 Base case is the current FLOS used in the WPAC/SCS area. The flight level allocation is as follows:

a) Class I (Parallel routes):

Northbound (NB)/Southbound (SB): FL 300, 320, 340, 360, 380, 400

b) Class II (Route crossing parallels):

Eastbound (EB): FL 290, 330, 370, 410
Westbound (WB): FL 310, 350, 390

c) Class III (Route not crossing parallels but crossing class II routes)

d) Class IV (Route not crossing parallel or Class II route, i.e. A1 and P901)

EB: FL 330, 370, 410
WB: FL 310, 350, 390

2.7 Scenario 1 was the FLOS change proposed at the RVSM/TF/22. The flight allocation is as follows:

a) Class I: NB/SB: FL 310, 320, 350, 360, 390, 400

b) Class II: EB: FL 290, 330, 370, 410
WB: FL 300, 340, 380

c) Class III: EB: FL 310, 350, 390
WB: FL 320, 360, 400

d) Class IV: EB: all odd levels
WB: all even levels

2.8 Scenario 2 was essentially the same as Scenario 1, but with minor changes on A1/P901. MAAR had found that heavy traffic density resulted in high passing frequency on A1/901. In order to eliminate existing transition issue while achieving acceptable capacity and risk level on A1/P901, the following FLOS on this particular route was proposed by MAAR for further considerations of the Task Force:

a) Classes I, II and III: same as in Scenario 1

b) Class IV: EB: FL 290, 310, 330, 370, 410
WB: FL 300, 340, 380, 400

2.9 MAAR advised the meeting that in Scenario 2, two flight levels were taken out for each direction of flight to reduce the passing frequency. The decision on which flight levels could be removed should be coordinated with affected States, including China, Hong Kong, China, Lao PDR, Viet Nam. The meeting agreed that the Regional Office would undertake coordination with affected States in this respect.

2.10 The Chairman noted that not all the States concerned had been present at the RVSM/TF/22 which developed the Scenario 1. Also, in order to facilitate the discussion at the RVSM/TF/28, the Chairman suggested that it would be useful to include the scenarios in the invitation letter for States to be able to consider in advance. The Regional Office agreed to advise States by letter of the different scenarios and request that States complete required safety and simulation of the scenarios as soon as possible, in preparation for RVSM/TF/28.

Traffic Sample Data (TSD) and Large Height Deviation (LHD) Reports

2.11 MAAR updated the meeting with the current status of TSD and LHD reports submitted by States as in **Appendix A** to this Report.

2.12 It was noted that one State still had not submitted data, although both MAAR and the Regional Office had reminded the State to submit the data. The Regional Office updated the meeting in regard to a recent SIP mission which had been conducted to the State in question. The State was combining four FIRs into two FIRs, and it was anticipated that it would now be possible to provide daily detailed printouts of all flights operating in the combined FIRs. The meeting was advised that in the future, TSD would be more readily available and the December 2005 TSD should be provided on time. However, it should be noted that the data RVSM TSD template provided by MAAR was not available in their ATM operational system and all the details required may not be available. In this case, it would still be necessary to manually set up the electronic data on a separate spreadsheet.

2.13 With regard to the safety assessment, ICAO further informed the meeting of the conclusions agreed at the 16th Meeting of the APANPIRG (August 2005) in respect of the work of RASMAG. The 42nd Conference of DGCAs next week would also be reminded of the importance of the submission of data. The Regional Office agreed to write to States in November to remind them of the need to submit a 30-day TSD for the period December 2005 and to ensure the correct compilation and submission of LHD reports.

Review of the LHD reports in WPAC/SCS Area

2.14 MAAR also provided the meeting with the summary of the LHD occurrences in the WPAC/SCS area. The number of LHD occurrence from January 2003 to August 2005 was 123 as shown below. The overview of the LHD is provided in **Appendix B** to this Report.

State	FIR	Total No. of LHD Occurrences	Total LHD Duration (Min)
China	Sanya AOR	44	91
	Hong Kong	44	41
Philippines	Manila	33	133
Thailand	Bangkok	2	2
Total		**123**	**267**

– END –

UPDATE OF RECEIVED TSD AND LHD REPORTS FROM WPAC/SCS STATES CONCERNED

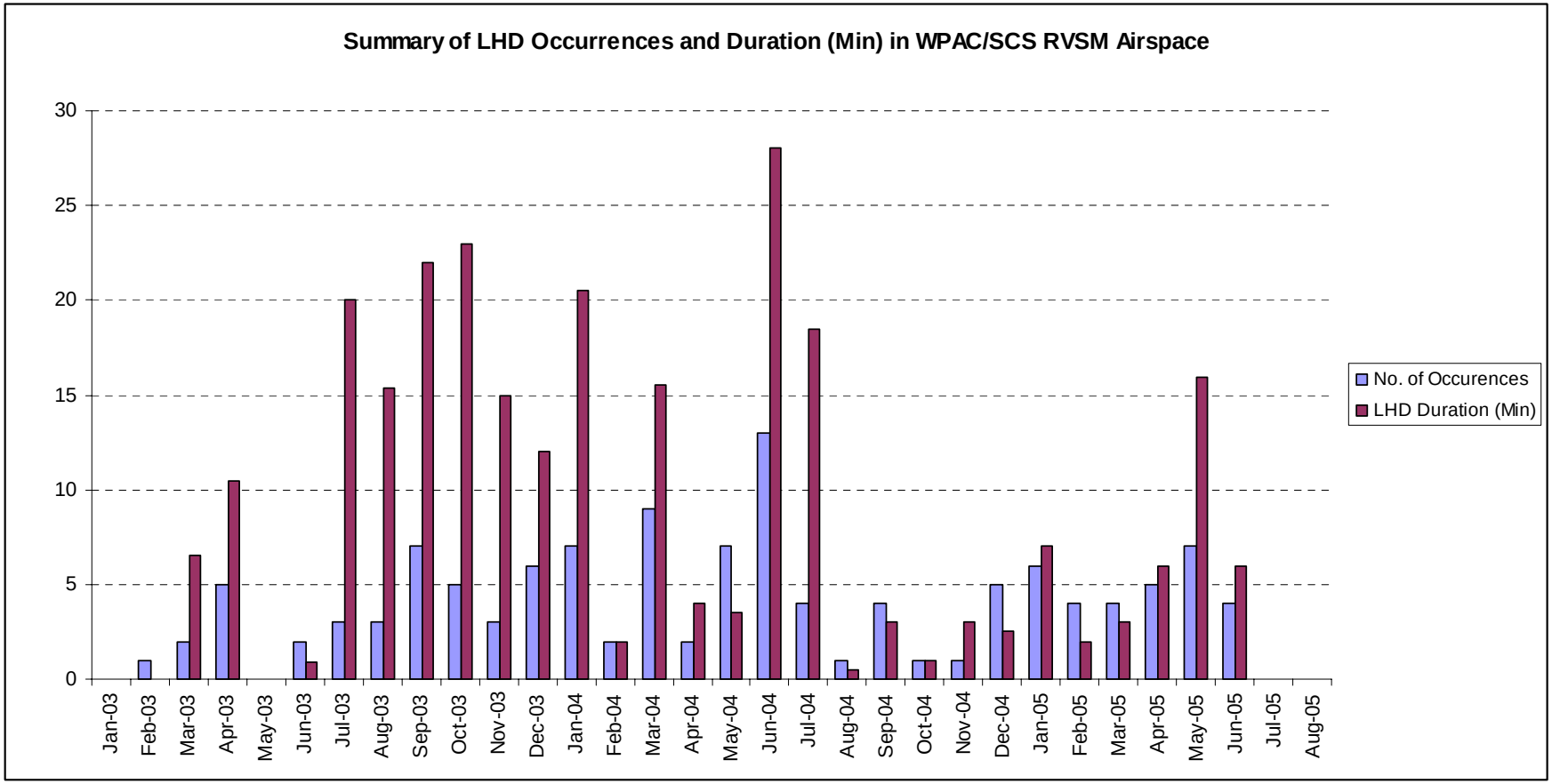
1. July-04 TSD Update (Last Update: September 2005)

State	Cambodia	China		Indonesia			Loa	Malaysia		Philp	Singapore	Thailand	Vietnam	
FIR	Phnm Penh	Sanya	HK	Bali	Jakarta	Ujung P.	Vientiane	Kota K.	Kuala L.	Manila	Singapore	Bangkok	Hanoi	Ho Chi Minh
1	X	X	X					X	X	X	X	X		X
2	X	X	X					X	X	X	X	X		X
3	X	X	X					X	X	X	X	X		X
4	X	X	X					X	X	X	X	X	X	X
5	X	X	X					X	X	X	X	X		X
6	X	X	X					X	X	X	X	X		X
7	X	X	X					X	X	X	X	X		X
8	X	X	X					X	X	X	X	X		X
9	X	X	X					X	X	X	X	X		X
10	X	X	X					X	X	X	X	X		X
11	X	X	X					X	X	X	X	X		X
12	X	X	X					X	X	X	X	X		X
13	X	X	X					X	X	X	X	X		X
14	X	X	X					X	X	X	X	X		X
15	X	X	X					X	X	X	X	X		X
16	X	X	X					X	X	X	X	X		X
17	X	X	X					X	X	X	X	X		X
18	X	X	X					X	X	X	X	X		X
19	X	X	X					X	X		X	X		X
20	X	X	X					X	X		X	X		X
21	X	X	X					X	X		X	X		X
22	X	X	X					X	X		X	X		X
23	X	X	X					X	X	X	X	X		X
24	X	X	X					X	X	X	X	X		X
25	X	X	X					X	X	X	X	X		X
26	X	X	X					X	X	X	X	X		X
27	X	X	X					X	X	X	X	X		X
28	X	X	X					X	X	X	X	X		X
29	X	X	X					X	X	X	X	X		X
30	X	X	X					X	X	X	X	X		X
31	X	X	X					X	X	X	X	X		X

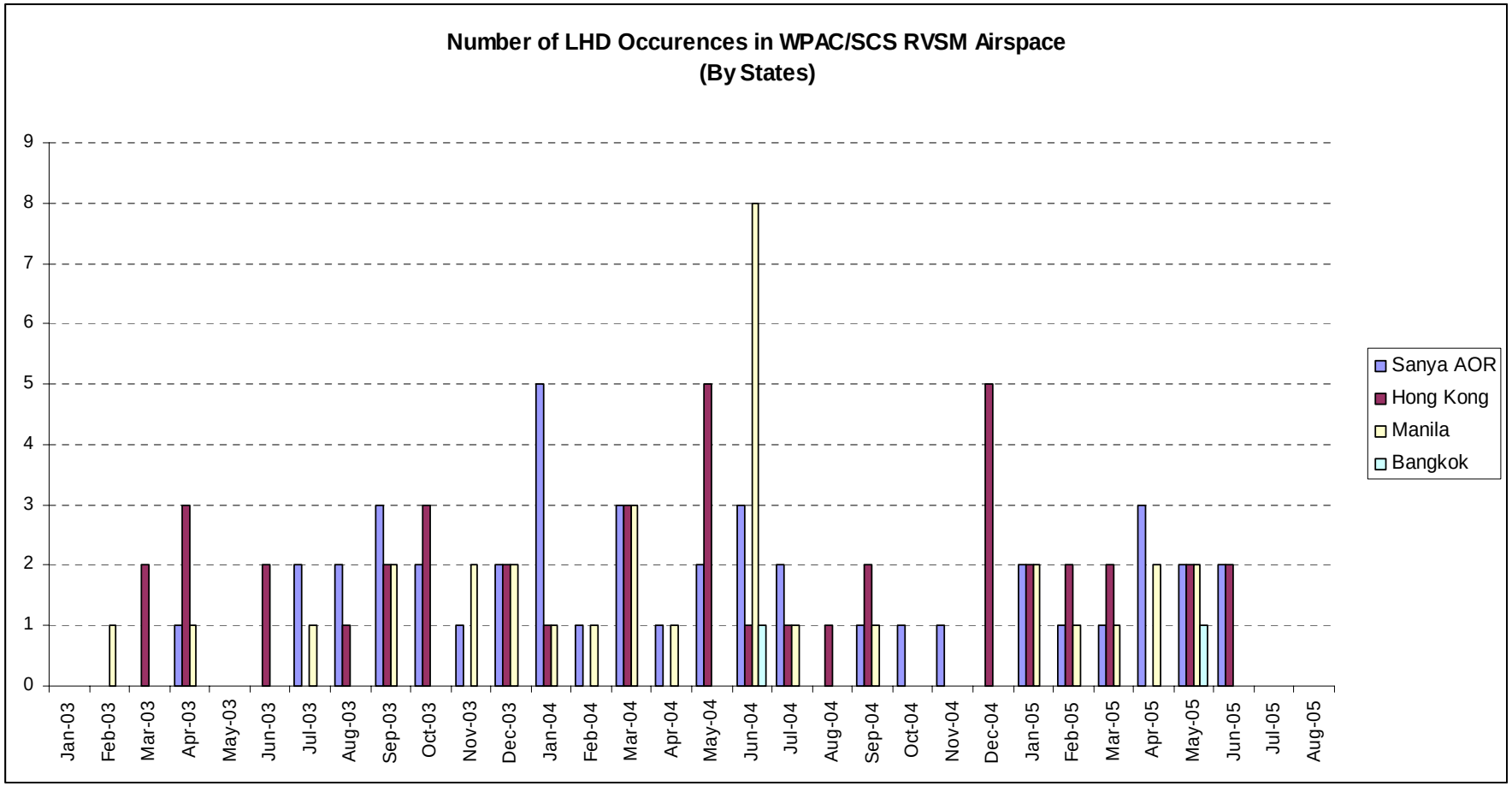
2. Monthly LHD Report Update (Last Update: September 2005)

State	Cambodia	China		Indonesia			Loa	Malaysia		Philp	Singapore	Thailand	Vietnam	
FIR	Phnm Penh	Sanya	HK	Bali	Jakarta	Ujung P.	Vientiane	Kota K.	Kuala L.	Manila	Singapore	Bangkok	Hanoi	Ho Chi Minh
2003														
Jan	X	X	X	X	X		X	X	X	X	X	X	X	X
Feb	X	X	X	X	X		X	X	X	X	X	X	X	X
Mar	X	X	X	X	X		X	X	X	X	X	X	X	X
Apr	X	X	X	X	X		X	X	X	X	X	X	X	X
May	X	X	X	X	X		X	X	X	X	X	X	X	X
Jun	X	X	X	X	X		X	X	X	X	X	X	X	X
Jul	X	X	X	X	X		X	X	X	X	X	X	X	X
Aug	X	X	X	X	X		X	X	X	X	X	X	X	X
Sep	X	X	X	X	X		X	X	X	X	X	X	X	X
Oct	X	X	X	X	X		X	X	X	X	X	X	X	X
Nov	X	X	X	X	X		X	X	X	X	X	X	X	X
Dec	X	X	X	X	X		X	X	X	X	X	X	X	X
2004														
Jan	X	X	X	X	X		X	X	X	X	X	X	X	X
Feb	X	X	X	X	X		X	X	X	X	X	X	X	X
Mar	X	X	X	X	X		X	X	X	X	X	X	X	X
Apr	X	X	X	X	X		X	X	X	X	X	X	X	X
May	X	X	X	X	X		X	X	X	X	X	X	X	X
Jun	X	X	X	X	X		X	X	X	X	X	X	X	X
Jul	X	X	X	X	X		X	X	X	X	X	X	X	X
Aug	X	X	X	X	X		X	X	X	X	X	X	X	X
Sep	X	X	X	X	X		X	X	X	X	X	X	X	X
Oct	X	X	X	X	X		X	X	X	X	X	X	X	X
Nov	X	X	X	X	X			X	X	X	X	X	X	X
Dec	X	X	X	X	X			X	X	X		X	X	X
2005														
Jan	X	X	X		X			X	X	X	X	X	X	X
Feb	X	X	X		X					X	X	X	X	X
Mar	X	X	X		X			X	X	X	X	X	X	X
Apr	X	X	X		X			X	X	X	X	X	X	X
May	X	X	X		X					X	X	X	X	X
Jun	X	X	X		X					X	X	X	X	X
Jul										X	X		X	X
Aug													X	X

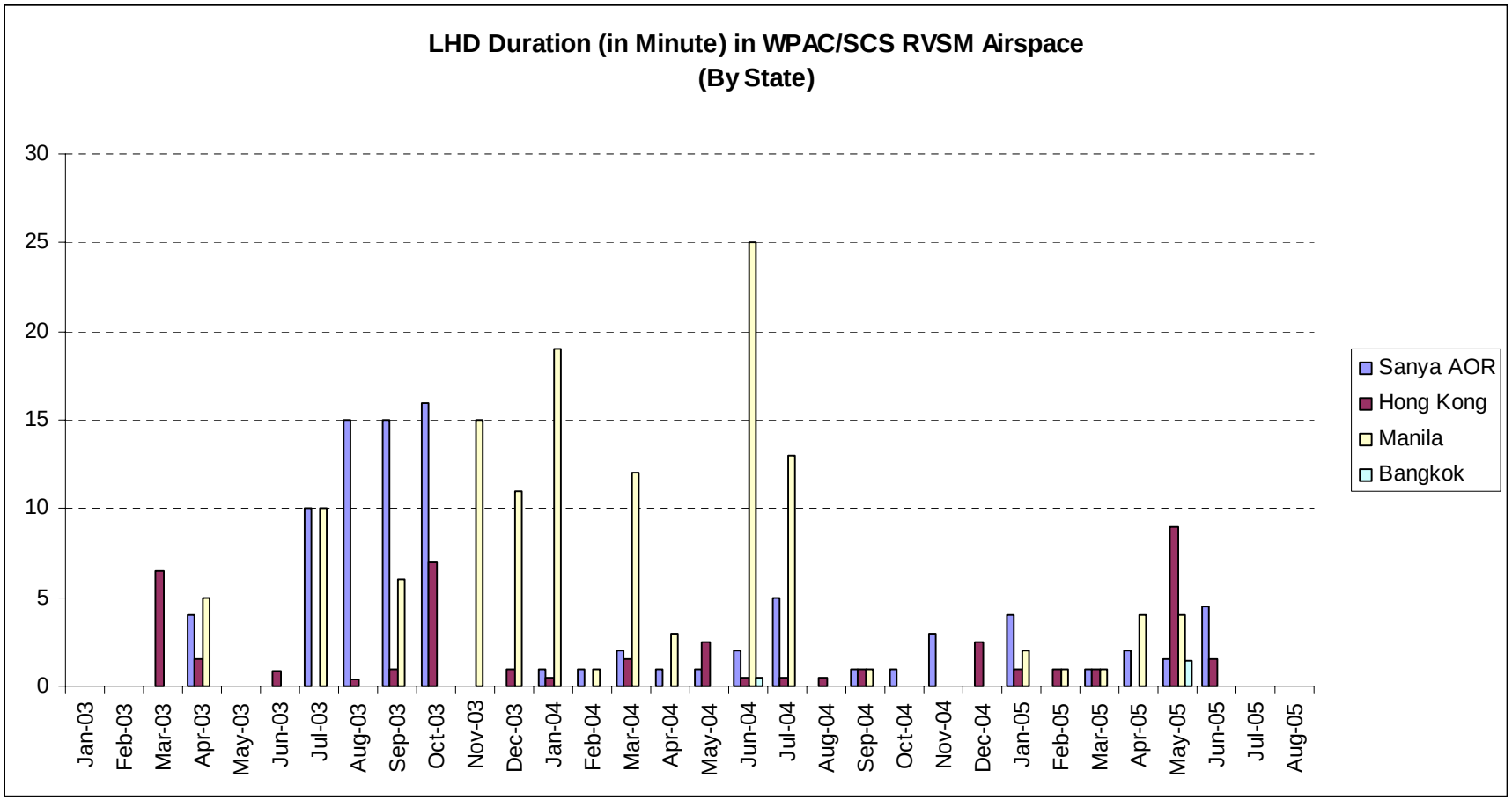
1. Overview of LHD Occurrences in WPAC/SCS RVSM Airspace



2. Number of LHD Occurrences in WPAC/SCS RVSM Airspace (By State)



3. LHD Duration (in Minute) in WPAC/SCS RVSM Airspace (By State)



4. Cause of LHD Occurrences in WPAC/SCS RVSM Airspace

Year	Cause of LHD							Grand Total
	A	B	D	F	I	M	O	
2003	1	3		1	2	30		37
2004		1	1	1	3	47	3	56
2005			1		2	26		29
Total	1	4	2	2	7	103	3	122

Codes Defining Causes of LHD Reports:

Code	Cause of Large Height Deviation
A	**Failure to climb/descend as cleared**
B	**Climb/descend without ATC clearance**
C	Entry into airspace at an incorrect flight level
D	**Deviation due to turbulence or other weather related cause**
E	Deviation due to equipment failure
F	**Deviation due to collision avoidance system (TCAS) advisory**
G	Deviation due to contingency event
H	Aircraft not approved for operation in RVSM restricted airspace
I	**ATC system loop error; (e.g. pilot misunderstands clearance message or ATC issues incorrect clearance)**
J	Equipment control error encompassing incorrect operation of fully functional FMS or navigation system (e.g. by mistake the pilot incorrectly operates INS equipment)
K	Incorrect transcription of ATC clearance or re-clearance into the FMS
L	Wrong information faithfully transcribed into the FMS (e.g. flight plan followed rather than ATC clearance or original clearance followed instead of re-clearances)
M	**Error in ATC-unit-to ATC-unit transferred/transition message**
N	Negative transfer received from transferring/transition ATC-unit
O	**Other**