



International Civil Aviation Organization

The 18th Meeting of the Regional Airspace Safety Monitoring Advisory Group (RASMAG/18)

Bangkok, Thailand, 01 – 04 April 2013

Agenda Item 5: Airspace Safety Monitoring Activities/Requirements in the Asia/Pacific Region

UPDATED ESTIMATE OF RVSM LONG TERM HEIGHT MONITORING BURDEN FOR THE PACIFIC APPROVALS REGISTRY AND MONITORING ORGANIZATION (PARMO)

(Presented by PARMO)

SUMMARY

This working paper provides an assessment of the monitoring burden associated with the long term height monitoring requirements for airframes for which the PARMO is the responsible Regional Monitoring Agency (RMA) as observed in the PARMO approval database as of 26 February 2013. An estimate of the airframes remaining to be monitored is provided.

Strategic Objectives:

A: *Safety – Enhance global civil aviation safety*

Global Plan Initiatives:

GPI-2 Reduced vertical separation minima

GPI-8 Collaborative airspace design and management

1. INTRODUCTION

1.1 As a result of the amendments made to Annex 6 concerning global RVSM long-term monitoring requirements, APANPIRG/18 tasked Asia/Pacific RMAs in conjunction with RASMAG to prepare a regional impact statement to estimate consequences for each State in the Asia/Pacific Region, including the anticipated monitoring burden.

1.2 For RASMAG/11 PARMO prepared an estimate of its own monitoring burden using December 2008 traffic sample data (TSD). Combined with the same information from the other Asia/Pacific RMA's, the *ASIA/PACIFIC REGIONAL IMPACT STATEMENT* (reference 1) was developed by RASMAG and endorsed by APANPIRG/20 in September 2009.

1.3 At RASMAG/16, it was decided that “All RMAs should develop monitoring burden tables using the format presented in WP17 and provide this information to RASMAG17, and on an on-going basis” (reference 2) to maintain the current standing of the region's monitoring burden in relation to the November 2012 deadline set forth in Annex 6.

1.4 This paper provides an update of the PARMO monitoring burden based on the approvals contained within the PARMO approvals database as of 26 February 2013 and the global monitoring data available as of April 2013.

2. DISCUSSION

2.1 The PARMO approvals database as of 26 February 2013 was examined to determine the current PARMO monitoring burden. The approvals for the countries under PARMO responsibility (Brunei Darussalam, Cook Islands, Fiji, Kiribati, Marshall Islands, Micronesia, New Zealand, Palau, Republic of Korea, Samoa, Tonga, Vanuatu) (reference 3) were compiled and each approved airframe was mapped to a monitoring category from the most current version of the Minimum Monitoring Requirements (MMR) table (reference 4) based on the respective aircraft type. Any aircraft not found in the current MMR table was assigned a category 3, resulting in 100% monitoring of the associated fleet. The associated monitoring burden was calculated based on the estimated fleet size for each operator/aircraft type identified in the approvals data and the minimum monitoring category applicable to the respective aircraft type. A total of **453** unique airframes were estimated with a resultant monitoring burden of **118**.

2.2 Each unique operator/aircraft type combination was compared against the collective monitoring data to determine whether or not any of the respective aircraft had been monitored within the last two years. In addition it was determined whether or not any of the respective aircraft had been monitored in the period beyond two years.

2.3 Table 1 provides a summary by State of registry of the estimate of airframes that require monitoring. Both the number of airframes with no record of monitoring and the number of airframes with a record of monitoring dated beyond two years from 26 February 2013 are shown.

Table 1. Summary of remaining PARMO monitoring burden

State of Registry	Total # of Aircraft With No Record of Monitoring as of 26 February 2013	Total # of Aircraft That Have Not Been Monitored in the Two Years Prior to 26 February 2013
Brunei Darussalam	4	4
Fiji	2	5
New Zealand	16	34
Republic of Korea	13	34
Samoa	0	1
Tonga	2	3
Vanuatu	1	1
Grand Total	38	82

2.4 Appendix A provides the details of the PARMO monitoring burden based on the PARMO approvals as of 26 February 2012 and the monitoring data as of April 2013.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) note the information provided in the paper and Appendix;
- b) consider the potential impact of the estimated remaining burden; and
- c) incorporate the information contained in this paper with similar data obtained from other Asia Pacific RMAs to update the estimate of the monitoring burden for the Asia Pacific region.

References

- 1) ICAO Asia/Pacific Regional Office. *ASIA/PACIFIC REGIONAL IMPACT STATEMENT, RVSM GLOBAL LONG TERM HEIGHT MONITORING REQUIREMENTS EFFECTIVE FROM NOVEMBER 2010*, October 2010.
- 2) Report of the Sixteenth Meeting of the Regional Airspace Safety Monitoring Advisory Group (RASMAG/16), Bangkok, Thailand, 20-23 February 2012.
- 3) *Manual of Operating Procedures and Practices for Regional Monitoring Agencies in Relation to the Use of a 300 m (1 000 ft) Vertical Separation Minimum above FL 290*, Doc 9937-AN/477, International Civil Aviation Organization, Montreal, Revision as of 1 June 2012.
- 4) “Review of Minimum Monitoring Targets Table by EUROCONTROL and FAA,” WP/63, The Sixth Meeting of the Regional Monitoring Agency Coordination Group (RMA CG/6), Cornwall, Canada, 6-10 June 2011.

Appendix A. Detailed Estimate of Monitoring Burden for PARMO

BRUNEI DARUSSALAM:

Operator	Operator Name	Aircraft Monitoring Group (e.g. [A342, A343])	MMR Category (1, 2 or 3)	Total # Approved Airframes	Resultant Monitoring Burden (# Airframes)	Total # of Aircraft With No Record of Monitoring as of 26 February 2013	Total # of Aircraft That Have Not Been Monitored in the Two Years Prior to 26 February 2013
IGA		B744-5	1	1	1	1	1
RBA	ROYAL BRUNEI AIRLINES	B752	1	1	1	1	1
RBA	ROYAL BRUNEI AIRLINES	B767	1	8	2	2	2
RBA	ROYAL BRUNEI AIRLINES	B772	1	3	2	0	0
BRUNEI DARUSSALAM TOTALS				13	6	4	4

FIJI:

Operator	Operator Name	Aircraft Monitoring Group (e.g. [A342, A343])	MMR Category (1, 2 or 3)	Total # Approved Airframes	Resultant Monitoring Burden (# Airframes)	Total # of Aircraft With No Record of Monitoring as of 26 February 2013	Total # of Aircraft That Have Not Been Monitored in the Two Years Prior to 26 February 2013
FJI	AIR PACIFIC, LTD.	B737NX	1	4	2	0	2
FJI	AIR PACIFIC, LTD.	B744-5	1	2	2	2	2
FJI	AIR PACIFIC, LTD.	B747CL	1	1	1	0	1
FJI	AIR PACIFIC, LTD.	B767	1	1	1	0	0
FIJI TOTALS				8	6	2	5

NEW ZEALAND:

Operator	Operator Name	Aircraft Monitoring Group (e.g. [A342, A343])	MMR Category (1, 2 or 3)	Total # Approved Airframes	Resultant Monitoring Burden (# Airframes)	Total # of Aircraft With No Record of Monitoring as of 26 February 2013	Total # of Aircraft That Have Not Been Monitored in the Two Years Prior to 26 February 2013
ANZ	AIR NEW ZEALAND, LTD.	A320	1	17	2	0	2
ANZ	AIR NEW ZEALAND, LTD.	B737CL	1	16	2	1	2
ANZ	AIR NEW ZEALAND, LTD.	B744-5	1	6	2	0	0
ANZ	AIR NEW ZEALAND, LTD.	B747CL	1	1	1	1	1
ANZ	AIR NEW ZEALAND, LTD.	B767	1	13	2	0	2
ANZ	AIR NEW ZEALAND, LTD.	B772	1	8	2	0	2
ANZ	AIR NEW ZEALAND, LTD.	B773	1	5	2	0	0
AWK	AIRWORK (NEW ZEALAND), LTD.	B737CL	1	6	2	2	2
FOM	SOUTH PACIFIC AIR CHARTERS	B737CL	1	1	1	0	1
IGA		B737CL	1	1	1	1	1
IGA		BE30	2	1	1	1	1
IGA		C25B	2	1	1	1	1
IGA		C510	2	4	4	4	4
IGA		C525	1	1	1	0	1
IGA		C560	1	1	1	1	1
IGA		C680	1	1	1	1	1
IGA		GALX	1	1	1	0	0
IGA		GLF4	1	1	1	0	0
IGA		GLF5	1	1	1	0	1
IGA		LJ35-36	2	1	1	0	1
IGA		WW24	2	1	1	1	1

Operator	Operator Name	Aircraft Monitoring Group (e.g. [A342, A343])	MMR Category (1, 2 or 3)	Total # Approved Airframes	Resultant Monitoring Burden (# Airframes)	Total # of Aircraft With No Record of Monitoring as of 26 February 2013	Total # of Aircraft That Have Not Been Monitored in the Two Years Prior to 26 February 2013
PAO	POLYNESIAN AIRLINE OPERATIONS, LTD.	B737NX	1	1	1	0	1
PBI	Pacific Blue Airlines (NZ), LTD.	B737NX	1	4	2	0	2
PBN	Pacific Blue Airlines (NZ), LTD.	B737NX	1	6	2	0	2
PST	AIRWORK (NEW ZEALAND), LTD.	B732	2	1	1	1	1
QNZ	Jetconnect, LTD.	B737CL	1	1	1	1	1
QNZ	Jetconnect, LTD.	B737NX	1	8	2	0	2
NEW ZEALAND TOTALS				109	40	16	34

REPUBLIC OF KOREA:

Operator	Operator Name	Aircraft Monitoring Group (e.g. [A342, A343])	MMR Category (1, 2 or 3)	Total # Approved Airframes	Resultant Monitoring Burden (# Airframes)	Total # of Aircraft With No Record of Monitoring as of 26 February 2013	Total # of Aircraft That Have Not Been Monitored in the Two Years Prior to 26 February 2013
AAR	ASIANA AIRLINES	A320	1	36	2	0	0
AAR	ASIANA AIRLINES	A330	1	12	2	0	1
AAR	ASIANA AIRLINES	B737CL	1	8	2	0	2
AAR	ASIANA AIRLINES	B744-5	1	16	2	0	0
AAR	ASIANA AIRLINES	B767	1	13	2	0	2
AAR	ASIANA AIRLINES	B772	1	12	2	0	0

Operator	Operator Name	Aircraft Monitoring Group (e.g. [A342, A343])	MMR Category (1, 2 or 3)	Total # Approved Airframes	Resultant Monitoring Burden (# Airframes)	Total # of Aircraft With No Record of Monitoring as of 26 February 2013	Total # of Aircraft That Have Not Been Monitored in the Two Years Prior to 26 February 2013
ABL	AIR BUSAN	A320	1	3	2	1	2
ABL	AIR BUSAN	B737CL	1	7	2	0	2
ESR	EASTARJET	B737NX	1	8	2	0	2
IGA		B737NX	1	2	2	1	2
IGA		CL600	1	1	1	0	1
IGA		GLEX	1	6	6	3	3
IGA		GLF4	1	1	1	0	1
IGA		GLF5	1	3	3	2	2
JJA	JEJU AIR	B737NX	1	10	2	0	1
JNA	JIN AIR CO., LTD.	B737NX	1	8	2	1	2
KAL	KOREAN AIR LINES CO., LTD.	A306	1	11	2	0	1
KAL	KOREAN AIR LINES CO., LTD.	A330	1	23	2	0	0
KAL	KOREAN AIR LINES CO., LTD.	A380	2	6	4	0	0
KAL	KOREAN AIR LINES CO., LTD.	B737NX	1	42	2	0	1
KAL	KOREAN AIR LINES CO., LTD.	B744-5	1	43	2	0	0
KAL	KOREAN AIR LINES CO., LTD.	B747CL	1	2	2	2	2
KAL	KOREAN AIR LINES CO., LTD.	B748	2	2	2	0	2
KAL	KOREAN AIR LINES CO., LTD.	B772	1	20	2	0	0

Operator	Operator Name	Aircraft Monitoring Group (e.g. [A342, A343])	MMR Category (1, 2 or 3)	Total # Approved Airframes	Resultant Monitoring Burden (# Airframes)	Total # of Aircraft With No Record of Monitoring as of 26 February 2013	Total # of Aircraft That Have Not Been Monitored in the Two Years Prior to 26 February 2013
	LTD.						
KAL	KOREAN AIR LINES CO., LTD.	B773	1	14	2	0	0
KAL	KOREAN AIR LINES CO., LTD.	MD11	1	4	2	0	2
KAL	KOREAN AIR LINES CO., LTD.	MD80	1	3	2	2	2
TWB		B737NX	1	1	1	1	1
REPUBLIC OF KOREA TOTALS				317	60	13	34

SAMOA:

Operator	Operator Name	Aircraft Monitoring Group (e.g. [A342, A343])	MMR Category (1, 2 or 3)	Total # Approved Airframes	Resultant Monitoring Burden (# Airframes)	Total # of Aircraft With No Record of Monitoring as of 26 February 2013	Total # of Aircraft That Have Not Been Monitored in the Two Years Prior to 26 February 2013
PAO	POLYNESIAN AIRLINE OPERATIONS, LTD.	B737CL	1	1	1	0	0
PAO	POLYNESIAN AIRLINE OPERATIONS, LTD.	B737NX	1	1	1	0	1
SAMOA TOTALS				2	2	0	1

TONGA:

Operator	Operator Name	Aircraft Monitoring Group (e.g. [A342, A343])	MMR Category (1, 2 or 3)	Total # Approved Airframes	Resultant Monitoring Burden (# Airframes)	Total # of Aircraft With No Record of Monitoring as of 26 February 2013	Total # of Aircraft That Have Not Been Monitored in the Two Years Prior to 26 February 2013
HRH	ROYAL TONGAN AIRLINES	B732	2	1	1	0	1
HRH	ROYAL TONGAN AIRLINES	B752	1	2	2	2	2
TONGA TOTALS				3	3	2	3

VANUATU:

Operator	Operator Name	Aircraft Monitoring Group (e.g. [A342, A343])	MMR Category (1, 2 or 3)	Total # Approved Airframes	Resultant Monitoring Burden (# Airframes)	Total # of Aircraft With No Record of Monitoring as of 26 February 2013	Total # of Aircraft That Have Not Been Monitored in the Two Years Prior to 26 February 2013
AVN	AIR VANUATU	B737CL	1	1	1	1	1
VANUATU TOTALS				1	1	1	1

PARMO GRAND TOTAL <i>(Brunei Darussalam + Fiji + New Zealand + Republic of Korea + Samoa + Tonga + Vanuatu)</i>				Total # Approved Airframes	Resultant Monitoring Burden (# Airframes)	Total # of Aircraft With No Record of Monitoring as of 26 February 2013	Total # of Aircraft That Have Not Been Monitored in the Two Years Prior to 26 February 2013
				453	118	38	82