



ICAO

International Civil Aviation Organization

**Twenty-Seventh Meeting of the Regional Airspace Safety
Monitoring Advisory Group (RASMAG/27)**

Video Teleconference, 22 – 25 August 2022

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

PARMO RVSM LONG TERM HEIGHT MONITORING BURDEN

(Presented by USA/PARMO)

SUMMARY

This paper provides an assessment of the monitoring burden associated with the long-term height monitoring requirements for airframes for which PARMO is the responsible Regional Monitoring Agency (RMA). PARMO approvals and global monitoring records as of 30 June 2022 were used to assess the monitoring burden.

1. INTRODUCTION

1.1. The Pacific Approvals Registry and Monitoring Organization (PARMO), a service provided by the U.S. Federal Aviation Administration's William J. Hughes Technical Center since 2001, serves as the regional monitoring agency (RMA) for the airspace in the Pacific and a portion of North East Asia.

1.2. To meet the ICAO Annex 6 Long Term Height Monitoring (LTHM) requirements, PARMO maintains a database of approvals and height monitoring history for aircraft registered within States under PARMO responsibility (Cook Islands, Fiji/Tonga, Kiribati, Marshall Islands, Micronesia (Federated States of), New Zealand, Republic of Korea, and Samoa). This paper provides the PARMO monitoring burden based on the approvals contained within the NAARMO approvals database and global monitoring data available as of 30 June 2022.

2. DISCUSSION

2.1. The PARMO approvals database as of 30 June 2022 was examined to determine the current PARMO monitoring burden. First, the approvals for the countries under PARMO responsibility were compiled. Then, each airframe having a current full approval was paired with the appropriate monitoring category by applying the most current version of the Minimum Monitoring Requirements (MMR) table (as of 17 June 2022). Any aircraft types missing from the current MMR table were assigned to Category 3.

2.2. The total of number of unique airframes identified as having a full RVSM approval from a state of registry under PARMO responsibility as of 30 June 2022 was 552, with a resultant monitoring burden of 114 and a total of 14 aircraft not successfully monitored within the past two years (or 1,000 flight hours, whichever interval was longer). Table 1 provides a summation by State of Registry of airframes that require monitoring due to having no successful monitoring record within two years as of 30 June 2022. For a more detailed list of the Monitoring Burden per State, see **Appendix A**.

2.3. The number of unmonitored aircraft in this assessment is significantly more than last year. Previously, PARMO was able to take advantage of available space based ADS-B data to provide

monitoring for unmonitored aircraft within PARMO airspace, but this data is no longer available to PARMO.

State	Total # of Approved Airframes	Resultant Monitoring Burden(# Airframes)	Total # of Airframes Not Monitored within two years as of 30 June 2022
Cook Islands	1	1	0
Fiji/Tonga	18	9	0
Kiribati	0	0	0
Marshal Islands	0	0	0
Micronesia	0	0	0
New Zealand	87	24	2
Republic of Korea	446	80	12
Samoa	0	0	0
PARMO Total	552	114	14

Table 1: Summary of PARMO monitoring burden

3. ACTION BY THE MEETING

3.1. The meeting is invited to:

- a) note the information provided in the paper and **Appendix A**; and
- b) consider the potential impact of the estimated remaining burden

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APPENDIX A
Monitoring
Burden per State

State	Op Name	Mon Group	Mon Cat	Fleet By Operator and Mon Grp	MMR Mon Goal	Total Mon	Count MMR Goal Not Met
NC	Air Rarotonga	C550-II	2	1	1	1	0
				1	1	1	0

Total Aircraft	1
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Monitoring Burden Not Monitored Based on MMR Cat Requirements	1
	0

State	Op Name	Mon Group	Mon Cat	Fleet By Operator and Mon Grp	MMR Mon Goal	Total Mon	Count MMR Goal Not Met
NF	Air Pacific, Ltd.	A330	1	6	2	6	0
NF	Air Pacific, Ltd.	A350	2	1	1	1	0
NF	Air Pacific, Ltd.	B38M	2	5	3	5	0
NF	Air Pacific, Ltd.	B737NX	1	5	2	2	0
NF	Reg: DQFAI	A350	2	1	1	1	0
				18	9	15	0

Total Aircraft	18
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Monitoring Burden Not Monitored Based on MMR Cat Requirements	9
	0

State	Op Name	Mon Group	Mon Cat	Fleet By Operator and Mon Grp	MMR Mon Goal	Total Mon	Count MMR Goal Not Met
NZ	Air New Zealand, Ltd.	A20N	2	2	1	2	0
NZ	Air New Zealand, Ltd.	A320	1	30	2	2	0
NZ	Air New Zealand, Ltd.	B737CL	1	1	1	1	0
NZ	Air New Zealand, Ltd.	B767	1	1	1	1	0
NZ	Air New Zealand, Ltd.	B772	1	8	2	6	0
NZ	Air New Zealand, Ltd.	B773	1	7	2	7	0
NZ	Air New Zealand, Ltd.	B787	1	13	2	13	0
NZ	Air Ops Jet Limited	F2TH	2	1	1	1	0
NZ	Airwork (new Zealand) Ltd.	B737CL	1	14	2	1	1
NZ	Gch Jet Operations Limited	CL604	1	1	1	1	0
NZ	Gesl Aviation Holdings	C510	1	1	1	1	0
NZ	Jak Air	LJ60	1	1	1	1	0
NZ	Pouakai Investments Limited	E50P	1	1	1	0	1
NZ	Skyline Aviation	C510	1	1	1	1	0
NZ	Skyline Aviation Limited	BE30	2	1	1	1	0
NZ	Skyline Aviation Limited	BE40	1	1	1	1	0
NZ	Skyline Aviation Ltd	C510	1	1	1	1	0
NZ	Skyline Aviation Ltd	C680	1	1	1	1	0
NZ	Tasman Aviation Ltd.	BE30	2	1	1	1	0
				87	24	43	2

Total Aircraft	87
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Monitoring Burden	24
Not Monitored Based on MMR Cat Requirements	2

State	Op Name	Mon Group	Mon Cat	Fleet By Operator and Mon Grp	MMR Mon Goal	Total Mon	Count MMR Goal Not Met
RK	Aero K	A320	1	1	1	0	1
RK	Air Busan	A20N	2	5	3	1	2
RK	Air Busan	A320	1	26	2	16	0
RK	Air Inc.heon	B737NX	1	4	2	4	0
RK	Air Plan International	E135-145	1	1	1	1	0
RK	Air Seoul	A320	1	7	2	6	0
RK	Airpremia Air	B787	1	1	1	1	0
RK	Asiana Airlines	A20N	2	2	1	2	0
RK	Asiana Airlines	A320	1	29	2	20	0
RK	Asiana Airlines	A330	1	15	2	15	0
RK	Asiana Airlines	A350	2	13	7	12	0
RK	Asiana Airlines	A380	1	6	2	2	0
RK	Asiana Airlines	B744-10	1	14	2	13	0
RK	Asiana Airlines	B767	1	8	2	4	0
RK	Asiana Airlines	B772	1	9	2	9	0
RK	Eastar Jet	B737NX	1	26	2	7	0
RK	Fly Gangwon	B737NX	1	4	2	2	0
RK	Hanwha Chemical Corp.	B737NX	1	1	1	1	0
RK	Hyundai Motors	B737NX	1	1	1	1	0
RK	Jeju Air	B737NX	1	48	2	26	0
RK	Jin Air Co., Ltd.	B38M	2	1	1	0	1
RK	Jin Air Co., Ltd.	B737NX	1	22	2	18	0
RK	Jin Air Co., Ltd.	B772	1	4	2	4	0
RK	Korean Air Lines Co., Ltd.	A330	1	30	2	28	0
RK	Korean Air Lines Co., Ltd.	A380	1	10	2	4	0
RK	Korean Air Lines Co., Ltd.	B38M	2	2	1	2	0
RK	Korean Air Lines Co., Ltd.	B737NX	1	19	2	12	0
RK	Korean Air Lines Co., Ltd.	B744-10	1	5	2	5	0
RK	Korean Air Lines Co., Ltd.	B748	1	17	2	15	0
RK	Korean Air Lines Co., Ltd.	B772	1	24	2	13	0
RK	Korean Air Lines Co., Ltd.	B773	1	30	2	25	0
RK	Korean Air Lines Co., Ltd.	B787	1	11	2	11	0

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Appendix A

State	Op Name	Mon Group	Mon Cat	Fleet By Operator and Mon Grp	MMR Mon Goal	Total Mon	Count MMR Goal Not Met	
RK	Korean Air Lines Co., Ltd.	BCS1	2	10	6	0	6	
RK	Korean Air Lines Co., Ltd.	GLEX	1	1	1	1	0	
RK	Korean Air Lines Co., Ltd.	GLF6	2	1	1	1	0	
RK	Lg Electronics Inc.	GLF6	2	1	1	1	0	
RK	Reg: HL8219	C525	1	1	1	0	1	
RK	Reg: HL8372	GLF6	2	1	1	1	0	
RK	Samsung Corp.	GLEX	1	1	1	1	0	
RK	Sk Holdings Co. Ltd.	GLF5	1	1	1	1	0	
RK	Sk Telecom	A320	1	1	1	1	0	
RK	T'way Air Co. Ltd.	A330	1	3	2	1	1	
RK	T'way Air Co. Ltd.	B737NX	1	29	2	17	0	
Total					446	80	305	12
Grand Total					552	114	364	14

Total Aircraft	446
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Monitoring Burden	80
Not Monitored Based on MMR Cat Requirements	12

Note: If the Airline name was not present than the registration number was used, which had no impact on the counts.