



International Civil Aviation Organization

ICAO

Twenty-Ninth Meeting of the Regional Airspace Safety
Monitoring Advisory Group (RASMAG/29)

Bangkok, Thailand, 19 – 22 August 2024

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

APAC CONSOLIDATED LTHM COMPLIANCE STATUS

(Presented by MAAR)

SUMMARY

This paper presents a consolidated report of Long-Term Height Monitoring (LTHM) compliance status in the Asia Pacific (APAC) Region based on the assessments from five Asia Pacific RMAs - AAMA, CHINA RMA, JASMA, PARMO and MAAR. The remaining monitoring burden in the APAC region in 2023 totals **307** aircraft, a **39%** decrease from 2022. Three States – **India (MAAR)**, **Nepal (MAAR)**, and **Philippines (MAAR)** have remaining monitoring burden over 30% of the total number of aircraft required to be monitored.

1. INTRODUCTION

1.1 During the 7th Meeting of the Monitoring Agency Working Group (MAWG/7) in February 2020, APAC RMAs agreed to present a consolidated report of LTHM compliance status to the next RASMAG meeting. Being responsible for the largest number of APAC States, MAAR has been volunteering consolidating the LTHM compliance report since RASMAG/25.

1.2 The APAC Consolidated LTHM compliance status is also summarized in a presentation format attached to this paper.

2. DISCUSSION

Consolidated Results

2.1 The following table presents the consolidated results of remaining monitoring burden from all APAC RMAs, based on RVSM approval data as of **30th June 2024**:

Table 1: Summary of Remaining Monitoring Burden by States and RMAs as of 30th June 2024

RMA	State	Monitoring Requirement	# Remaining Monitoring Burden	% Remaining Monitoring Burden
MAAR	Afghanistan	8	4	50%
	India	240	114	48%
	Nepal	11	5	45%
	The Philippines	68	27	40%
	Pakistan	37	10	27%

RMA	State	Monitoring Requirement	# Remaining Monitoring Burden	% Remaining Monitoring Burden
	Malaysia	61	15	25%
	Mongolia	17	3	18%
	Bangladesh	12	2	17%
	Brunei Darussalam	8	1	13%
	Sri Lanka	8	1	13%
	Cambodia	15	1	7%
	Thailand	57	2	4%
	Bhutan	5	0	0%
	China (Hong Kong)	32	0	0%
	China (Macau)	4	0	0%
	China (Taiwan)	47	0	0%
	Lao PDR	2	0	0%
	Maldives	2	0	0%
	Myanmar	6	0	0%
	Singapore	26	0	0%
	Viet Nam	38	0	0%
MAAR Total		704	185	26%
AAMA	Papua New Guinea	13	2	15%
	Australia	373	52	14%
	Indonesia	109	11	10%
	Solomon Islands	2	0	0%
	Vanuatu	1	0	0%
AAMA Total		498	65	13%
China RMA	China	884	45	5%
	DPRK	4	0	0%
China RMA Total		888	45	5%
JASMA	Japan	152	9	6%
JASMA Total		152	9	6%
PARMO	New Zealand	27	3	11%
	Cook Islands	1	0	0%
	Republic of Korea	88	0	0%
	Fiji	8	0	0%
PARMO Total		124	3	2%
APAC Grand Total		2,366	307	13%

2.2 The remaining monitoring burden in the APAC region in 2023 totals 307 aircraft, indicating a 39% decrease compared to the previous year (RASMAG/28). The distribution percentages are as follows: MAAR accounts for 60%, AAMA for 21%, China RMA for 15%, JASMA for 3%, and PARMO for 1%, based on approval data as of the 30th of June, 2024.

2.3 In RASMAG/28, State CAAs were encouraged to report aircraft that applied the 1,000 flight-hour criteria to their designated RMA to reduce the monitoring burden. Consequently, MAAR has received lists of such aircraft from Bangladesh and Pakistan. The aircraft have since been subtracted from the monitoring burden calculation, effectively reducing the overall monitoring burden of both States. This sets a positive example for other CAAs to follow as a feasible way to achieve similar reductions.

2.4 In the first half of 2024, MAAR has provided EGMU services for a total of 52 aircraft. This includes 39 aircraft from India, 8 from Pakistan, 2 from the Philippines, 1 from Sri Lanka, 1 from Indonesia, and 1 from Mongolia.

2.5 Regarding the MMR version 2024 update from RMACG/19, MAAR has updated the database in accordance with the changes in the MMR group. This update has resulted in the reclassification of aircraft types such as A20N, B38M, and F2TH from Category 2, which requires a minimum of 60% of airframes monitored, to Category 1, which requires a minimum of 2 airframes monitored. Consequently, there has been a decrease in total monitoring requirements for some states.

2.6 However, despite the overall decrease in total monitoring requirements, MAAR has observed that the percentage of the remaining monitoring burden for some of these states has not correspondingly reduced. This is because the remaining aircraft types requiring monitoring are not those that were reclassified.

2.7 India has a remaining monitoring burden of 48%, which has doubled since 2022. However, MAAR has received numerous requests for EGMU services from Indian operators this year. It is worth noting that India has seen a 10% increase in aircraft, which may have contributed to the corresponding rise in monitoring burden.

2.8 Nepal's remaining monitoring burden is still at 45%, unchanged from 2022.

2.9 The Philippines has a remaining monitoring burden of 40%, which has increased by 14% since 2022. This increase correlates with a noticeable rise in the number of GA aircraft in the State. Nevertheless, a significant number of Philippine aircraft have not yet undergone HKPM.

APANPIRG List of Deficiencies Consideration

Removal

Table 2: List of States Reducing Their Monitoring Burden to Below 30% as of 30th June 2024

State	2022	2023
Pakistan (MAAR)	45%	27%
Mongolia (MAAR)	43%	18%
Papua New Guinea (AAMA)	69%	15%
Solomon Islands (AAMA)	50%	0%
New Zealand (PARMO)	36%	11%

2.10 As the remaining monitoring burden for Pakistan (MAAR), Mongolia (MAAR), Papua New Guinea (AAMA), Solomon Islands (AAMA), and New Zealand (PARMO) has significantly dropped to below 30%, MAAR would like RASMAG to propose to APANPIRG that these countries be removed from the APANPIRG List of Deficiencies in the State Responsibility to comply with the Annex 6 Height-Keeping Monitoring Requirement Annex 6 Part I Section 7.2.9 (12th Ed.) and Part II Section 2.5.2.10 (11th Ed.) for Non-compliance with LTHM requirement (remaining monitoring burden more than 30%)

Inclusion

Table 3: List of States Having Monitoring Burden 30% or More as of 30th June 2024

State	2022	2023
India (MAAR)	24%	48%
The Philippines (MAAR)	26%	40%

2.11 From the monitoring burden data as of 30th June 2024, India (MAAR) and The Philippines (MAAR) have their remaining monitoring burden over 30%. Therefore, MAAR would like RASMAG to propose that India and The Philippines be listed in the APANPIRG List of Deficiencies in the State Responsibility to comply with the Annex 6 Height-Keeping Monitoring Requirement Annex 6 Part I Section 7.2.9 (12th Ed.) and Part II Section 2.5.2.10 (11th Ed.) for Non-compliance with LTHM requirement (remaining monitoring burden more than 30%)

Remain

Table 4: List of States Having Monitoring Burden 30% or More with the Same Status as in 2022

State	2022	2023
Nepal (MAAR)	45%	45%

2.12 Since Nepal (MAAR) still has its remaining monitoring burden over 30%, MAAR would like RASMAG to propose to APANPIRG to consider keeping Nepal on the APANPIRG List of Deficiencies in the State Responsibility to comply with the Annex 6 Height-Keeping Monitoring Requirement Annex 6 Part I Section 7.2.9 (12th Ed.) and Part II Section 2.5.2.10 (11th Ed.) for Non-compliance with LTHM requirement (remaining monitoring burden more than 30%)

Recommendations for States and Operators

2.13 APAC States are encouraged to inform their RMAs about any changes (such as transferred or de-registered aircraft) in a timely manner, as this will affect the number of aircraft required to be height-monitored.

2.14 APAC States are encouraged to provide their RMA with a list of aircraft meeting the 1,000 flight hour criteria. This will enable the RMA to subtract these aircraft from the remaining monitoring burden calculation, thereby decreasing the overall percentage.

2.15 APAC States should encourage aircraft operators to retrofit ADS-B-Out capability where feasible, as it would provide a more efficient and more cost-effective solution for height monitoring in the long run.

2.16 The operators that have ADS-B-Out equipped aircraft but still have not fulfilled their monitoring requirements should consult the respective RMAs for other feasible arrangements.

2.17 APAC States are encouraged to actively engage in sharing their ADS-B data with their designated RMA as another means to alleviate the monitoring burden.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) endorse the proposal in 2.9 – 2.11;
- b) note the information contained in this paper; especially the recommendations in 2.12 - 2.16; and
- c) discuss any relevant matters as appropriate.

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2023 ASIA PACIFIC CONSOLIDATED LONG-TERM HEIGHT MONITORING COMPLIANCE STATUS REPORT

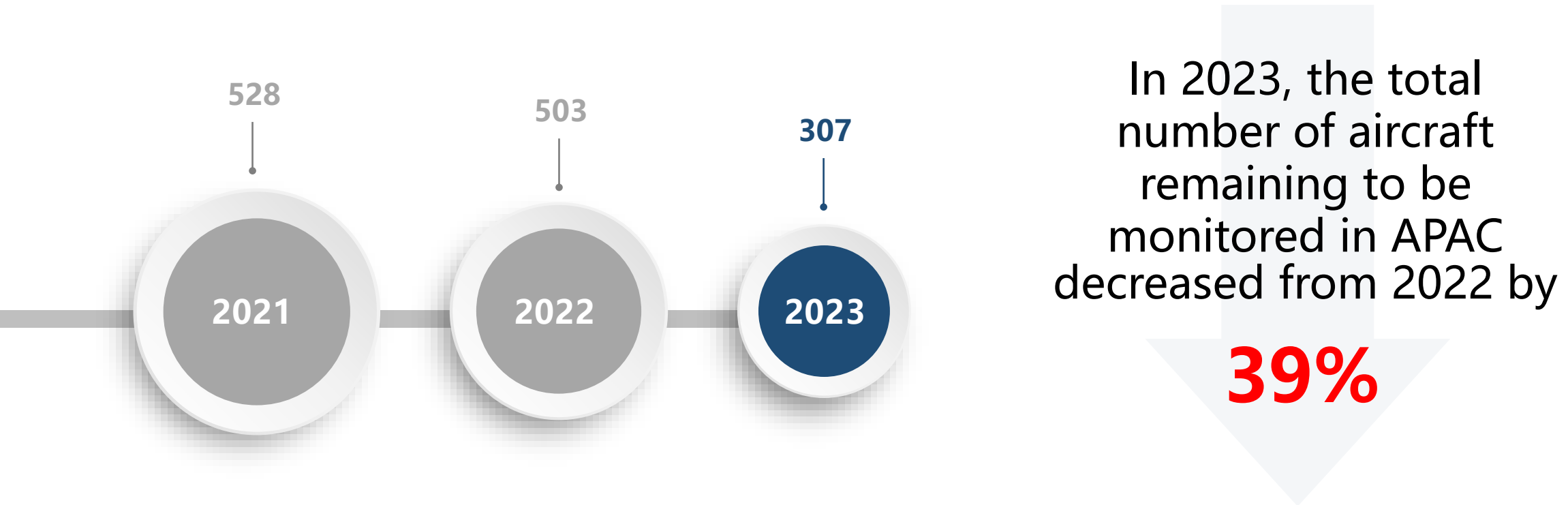
Asia Pacific EMAs/RMAs

Prepared by MAAR

Objective

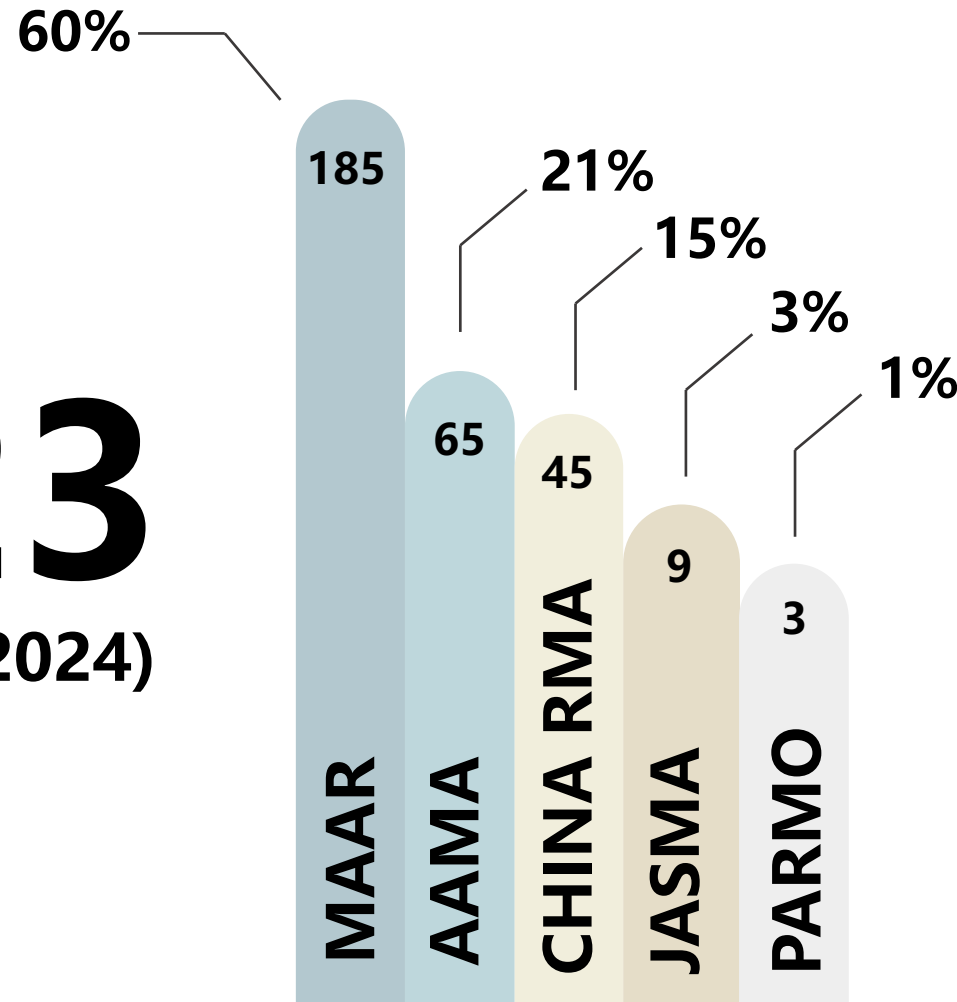
To provide an overview of LTHM compliance status for the Asia Pacific region in terms of the remaining monitoring burden of States under each Asia Pacific RMA based on RVSM approval data as of **the 30th of June, 2024**

No. of Aircraft Remaining to be Monitored 2021 - 2023



% = A/C remaining to be monitored / A/C required to be monitored

2023
(Up to June 2024)



% = # Aircraft remaining
to be monitored /
Aircraft required to be
monitored

Total **307** aircraft

of Aircraft remaining to be monitored

MAAR

185 aircraft remaining to be monitored

- Accounts for **60%** of all aircraft remaining to be monitored in APAC
- In the first half of 2024, MAAR has provided EGMU services for a total of 52 aircraft. This includes 39 aircraft from India, 8 from Pakistan, 2 from the Philippines, 1 from Sri Lanka, 1 from Indonesia, and 1 from Mongolia.
- MAAR updated database to reflect the MMR group changes for several aircraft types according to the MMR version 2024 update from RMACG/19. This update has decreased total monitoring requirements for some states. However, the percentage of the remaining monitoring hasn't correspondingly decreased because the remaining aircraft types aren't those reclassified.

● MAAR – Cont.

185 aircraft remaining to be monitored

- Pakistan has a remaining monitoring burden of 27%, a decrease of 18% from RASMAG/28. MAAR received the list of aircraft that meet the 1,000 flight hour criteria from the Pakistan CAA and subtracted them from the burden calculation. Additionally, MAAR has been regularly contacted by Pakistani operators for HKPM services.
- India's remaining monitoring burden is 48%, doubling since 2022. MAAR has received numerous EGMU service requests from Indian operators this year. A 10% increase in aircraft may have contributed to the rise in monitoring burden.
- Nepal's remaining monitoring burden remains unchanged at 45%.
- The Philippines' monitoring burden has risen to 40%, up 14% since 2022, largely due to an increase in GA aircraft. Many Philippine aircraft have yet to undergo HKPM.

● AAMA

65 aircraft remaining to be monitored

- Accounts for **21%** of all aircraft remaining to be monitored in APAC

● CHINA RMA

45 aircraft remaining to be monitored

- Accounts for **15%** of all aircraft remaining to be monitored in APAC

● JASMA

9 aircraft remaining to be monitored

- Accounts for **3%** of all aircraft remaining to be monitored in APAC

◯ **PARMO**

3 aircraft remaining to be monitored

- Accounts for **1%** of all aircraft remaining to be monitored in APAC
- New Zealand has improved their remaining monitoring burden by 25% from RASMAG/28, with only 11% left in 2023

● States with <30% remaining burden

Improved in 2023

States	2022	2023
Pakistan (MAAR)	45%	27%
Mongolia (MAAR)	43%	18%
Papua New Guinea (AAMA)	69%	15%
Solomon Islands (AAMA)	50%	0%
New Zealand (PARMO)	36%	11%

● States with >30% remaining burden

New Entries in 2023

States	2022	2023
India (MAAR)	24%	48%
The Philippines (MAAR)	26%	40%

● States with >30% remaining burden

Same Status with 2022

States	2022	2023
Nepal (MAAR)	45%	45%

Deficiency List Proposal

- RASMAG/23 agreed that States with remaining burden $\geq 30\%$ will be proposed to APANPIRG to be listed on the APANPIRG List of Deficiencies in the State Responsibility to comply with the Annex 6 Height-Keeping Monitoring Requirement Annex 6 Part I Section 7.2.9 (12th Ed.) and Part II Section 2.5.2.10 (11th Ed.) for Non-compliance with LTHM requirement (remaining monitoring burden more than 30%)
- As the remaining monitoring burden for **Pakistan (MAAR)**, **Mongolia (MAAR)**, **Papua New Guinea (AAMA)**, **Solomon Islands (AAMA)**, and **New Zealand (PARMO)** has significantly dropped to below 30%, MAAR would like RASMAG to propose to APANPIRG that these countries be removed from the APANPIRG List of Deficiencies
- MAAR would like RASMAG to propose that **India (MAAR)** and **The Philippines (MAAR)** be listed in the APANPIRG List of Deficiencies if their percentages remain 30% or more before the next APANPIRG
- Since **Nepal (MAAR)** still has its remaining monitoring burden over 30%, MAAR would like RASMAG to propose to APANPIRG to consider keeping Nepal on the APANPIRG List of Deficiencies

Recommendations for States and Operators

- APAC States are encouraged to inform their RMAs about any changes (such as transferred or de-registered aircraft) in a timely manner, as this will affect the number of aircraft required to be height-monitored.
- APAC States are encouraged to provide their RMA with a list of aircraft meeting the 1,000 flight hour criteria. This will enable the RMA to subtract these aircraft from the remaining monitoring burden calculation, thereby decreasing the overall percentage.
- APAC States should encourage aircraft operators to retrofit ADS-B-Out capability where feasible, as it would provide a more efficient and more cost-effective solution for height monitoring in the long run.

Recommendations for States and Operators

- The operators that have ADS-B-Out equipped aircraft but still have not fulfilled their monitoring requirements should consult the respective RMAs for other feasible arrangements.
- APAC States are encouraged to actively engage in sharing their ADS-B data with their designated RMA as another means to alleviate the monitoring burden.