



ICAO

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**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

CHINA RMA LTHM BURDEN ESTIMATE UPDATE

(Presented by China RMA)

SUMMARY

This paper presents the monitoring burden for the aircraft registered and operated under China RMA to meet the long-term height monitoring requirement. The data were based on the RVSM approval database by the end of June 2024.

1. INTRODUCTION

1.1 The Long-Term Height Monitoring Impact Statement developed by RASMAG was endorsed by APANPIRG/20 in September 2009. China RMA provides the burden list to the meeting each year, and this paper is the update for the data.

2. DISCUSSION

2.1 In 2008, China RMA began its first onboard monitoring task with two sets of EGMUs. After that, the agency has been fulfilling its duty with four sets of EGMU/E2GMUs. The ADS-B Height Monitoring System (AHMS) has also provided support for aircraft height-keeping performance monitoring (HKPM) since 2014. With the AHMS, most aircraft of Chinese operators have seen compliant records, significantly reducing burden for onboard monitoring. Additionally, more foreign aircraft could also receive valid monitoring records from the ADS-B monitoring system, helping to support these fleets in meeting long-term height monitoring requirements.

2.2 Based on the China RMA RVSM approval database by the end of June 2024, the total number of RVSM-approved aircraft was 4,520, with a resultant monitoring burden of 888 and a total of 45 aircraft remaining to be monitored, required by minimum monitoring requirements (MMR).

2.3 For China, there are 4,516 approved aircraft, with a resultant monitoring burden of 884 and 45 aircraft remaining to be monitored.

2.4 For the Democratic People's Republic of Korea (DPRK), there is 1 operator with 4 aircraft that require monitoring. In the last 4 years, due to the COVID-19 epidemic, the flight duration of Air Koryo is limited and is currently monitored against the MMR of 1,000 flight hours requirements. China RMA is coordinating with DPRK for technical training and aircraft monitoring. It is expected to be done by the end of 2024 or early 2025.

2.5 **Figure 1** describes the monitoring burden for China RMA from 2019 to 2024, in which data are extracted from the papers for the RASMAG meeting. The number of total approved airframes

and the resultant monitoring burden increase yearly, while the remaining burden is reduced from 2019 to 2021 and then increased from 2021 to 2024.

2.6 **Appendix A** provides details of the monitoring burden based on the MMR of China RMA. **Figure 1** describes the monitoring burden for China RMA from 2019 to 2024, in which data are extracted from the papers for the RASMAG meeting. The number of total approved airframes and the resultant monitoring burden increase yearly, while the remaining burden is changing.



Figure 1: The monitoring burden for China RMA from 2019 to 2024

2.7 **Appendix A** provides details of the monitoring burden based on the MMR of China RMA.

3. CONCLUSION

3.1 The meeting is invited to:

- a) note the information contained in this paper; and
- b) discuss any relevant matters as appropriate.

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Appendix A: Estimated RVSM Monitoring Burden for Asia/Pacific Region as a result of Long-Term Height Monitoring Requirements of Annex 6

China RMA Monitoring Burden (compiled July 2024)

Operator	Aircraft Monitoring Group	Total Approved Airframes	MMR Category	Resultant Monitoring Burden (# Airframes)	Remaining # of Monitoring
BDJ	GLF6	6	2	4	0
	GLF5	6	1	2	0
	GLF4	5	1	2	0
	FA7X	3	1	2	0
	CL605	1	1	1	1
	B737NX	1	1	1	0
	A320	2	1	2	1
BJN	GLF5	2	1	2	0
	FA7X	1	1	1	0
	B737NX	4	1	2	0
	A320	1	1	1	0
	A20N	1	2	1	0
BNH	GLF5	1	1	1	0
CAO	B772	11	1	2	0
	B752	2	1	2	1
	B744-10	3	1	2	0
	A330	2	1	2	0
CBG	E170-190	9	1	2	0
	A320	11	1	2	0
	A20N	4	2	3	0
CBJ	A330	10	1	2	0
	A320	60	1	2	0
	A20N	9	2	6	0
CBW	CARJ	1	1	1	0
CCA	B787	14	1	2	0
	B773	28	1	2	0
	B748	7	1	2	0
	B744-LCF	1	2	1	0
	B744-10	2	1	2	0
	B737NX	109	1	2	0
	B38M	19	2	12	0
	AJ27	27	2	17	0
	A350	30	2	18	0
	A330	50	1	2	0
	A320	136	1	2	0
	A20N	79	2	48	0
CCD	B737NX	13	1	2	0
CCO	B752	1	1	1	1
CDC	A320	31	1	2	0
	A20N	40	2	24	0

Operator	Aircraft Monitoring Group	Total Approved Airframes	MMR Category	Resultant Monitoring Burden (# Airframes)	Remaining # of Monitoring
CDG	B737NX	130	1	2	0
	B38M	9	2	6	0
CES	C919	6	2	4	1
	B773	20	1	2	0
	B737NX	70	1	2	0
	A350	20	2	12	0
	A330	56	1	2	0
	A320	280	1	2	0
	A20N	100	2	60	0
CES-YN	B787	3	1	2	0
	B737NX	67	1	2	0
	B737C	2	1	2	0
	B38M	3	2	2	0
CFI	GLF4	1	1	1	0
	C680	3	1	2	0
	C56X	16	1	2	0
CFZ	C560	1	1	1	1
CGH	A320	10	1	2	0
CGN	B737NX	13	1	2	0
CGZ	E170-190	9	1	2	0
	A320	1	1	1	1
	A20N	9	2	6	0
CHB	A320	34	1	2	0
	A20N	9	2	6	1
CHH	B787	38	1	2	0
	B737NX	136	1	2	0
	B38M	11	2	7	0
	A350	2	2	2	0
	A330	33	1	2	0
CHJ	GLF5	3	1	2	0
	GLF4	1	1	1	0
CJX	B737NX	12	1	2	0
	AJ27	5	2	3	0
CKK	B772	14	1	2	0
	B744-10	2	1	2	0
CNM	B737NX	8	1	2	0
CNW	B752	4	1	2	0
	B737CL	1	1	1	1
CQH	A320	81	1	2	0
	A20N	47	2	29	0
CQN	A320	18	1	2	0
	A20N	12	2	8	0
CSC	A350	8	2	5	0
	A330	15	1	2	0

Operator	Aircraft Monitoring Group	Total Approved Airframes	MMR Category	Resultant Monitoring Burden (# Airframes)	Remaining # of Monitoring
	A320	125	1	2	0
	A20N	51	2	31	0
CSG	B772	6	1	2	0
	B737CL	1	1	1	0
CSH	B787	7	1	2	0
	B737NX	67	1	2	0
	B38M	11	2	7	0
CSN	B787	28	1	2	0
	B773	15	1	2	0
	B772	11	1	2	0
	B737NX	190	1	2	0
	B38M	21	2	13	0
	AJ27	27	2	17	0
	A350	20	2	12	0
	A330	33	1	2	0
CSS	A320	321	1	2	0
	B767	22	1	2	0
	B752	44	1	2	0
	B744-10	2	1	2	0
CSZ	B737CL	17	1	2	0
	B737NX	73	1	2	0
	B38M	8	2	5	0
	A330	6	1	2	0
	A320	82	1	2	0
CTJ	A20N	30	2	18	0
	B737NX	5	1	2	0
CUA	B737C	1	1	1	0
	B737NX	60	1	2	0
CUH	B737NX	17	1	2	0
	B787	12	1	2	0
	B737NX	124	1	2	0
	B38M	12	2	8	0
CXA	A20N	15	2	9	0
	E55P	2	1	2	0
CYN	B772	2	1	2	0
	B752	6	1	2	0
	B737NX	17	1	2	0
	B737CL	16	1	2	0
CYZ	GLF6	5	2	3	0
	GLF5	5	1	2	0
	GLF4	2	1	2	1
	GALX	1	1	1	1
	G280	1	2	1	0
	FA7X	3	1	2	0

Operator	Aircraft Monitoring Group	Total Approved Airframes	MMR Category	Resultant Monitoring Burden (# Airframes)	Remaining # of Monitoring
	A320	1	1	1	0
DJH	G280	1	2	1	0
DKH	B787	8	1	2	0
	A320	64	1	2	0
	A20N	31	2	19	0
DLJ	CL600	1	1	1	1
EPA	B737NX	20	1	2	0
	B38M	2	2	2	2
EPB	CL600	2	1	2	0
FJT	E135-145	1	1	1	0
FZA	B737NX	14	1	2	0
	B38M	2	2	2	0
GCR	E290	1	2	1	1
	E170-190	54	1	2	0
	A330	6	1	2	0
	A320	30	1	2	0
	A20N	15	2	9	0
GDC	B737NX	3	1	2	0
HBH	E170-190	4	1	2	0
	B737NX	27	1	2	0
HFJ	GL5T	1	1	1	1
	G280	1	2	1	1
	CL605	1	1	1	1
HHG	GLF5	1	1	1	0
HLF	B772	2	1	2	0
	B737NX	5	1	2	0
	B737CL	4	1	2	0
HNJ	GLF4	1	1	1	0
HXA	CRJ9	38	1	2	0
	AJ27	8	2	5	0
	A320	14	1	2	0
	A20N	12	2	8	0
HYN	GLF4	2	1	2	2
HYT	B767	2	1	2	0
	B752	10	1	2	0
	AJ27	1	2	1	0
ICU	LJ60	1	1	1	1
	G280	1	2	1	0
IGA-CG	C56X	1	1	1	1
IGA-GW	GLF4	1	1	1	0
JBE	GLF6	4	2	3	0
	GLF5	2	1	2	0
	GLF4	1	1	1	0
	GALX	1	1	1	0

Operator	Aircraft Monitoring Group	Total Approved Airframes	MMR Category	Resultant Monitoring Burden (# Airframes)	Remaining # of Monitoring
	G280	1	2	1	0
	FA7X	3	1	2	0
	E135-145	3	1	2	0
	CL605	1	1	1	0
JDL	B737NX	7	1	2	0
JOY	B737NX	5	1	2	0
JSU	CARJ	4	1	2	0
JXX	CL600	2	1	2	0
JYH	B737NX	22	1	2	0
	B38M	3	2	2	0
KNA	B737NX	31	1	2	0
	B38M	1	2	1	1
LHA	B744-10	1	1	1	0
	B737NX	6	1	2	0
	B737CL	5	1	2	0
LKE	B737NX	30	1	2	0
	B38M	4	2	3	0
	A330	4	1	2	0
	A320	7	1	2	0
	A20N	6	2	4	0
LLJ	GALX	2	1	2	2
MJC	GLF6	1	2	1	0
	GLF5	1	1	1	0
	GLF4	1	1	1	0
MZT	GLF6	2	2	2	0
	GLEX	6	1	2	0
	GL7T	1	2	1	1
	GL5T	1	1	1	0
	G280	1	2	1	0
	CL604	2	1	2	0
	CARJ	4	1	2	0
NMG	AJ27	6	2	4	0
NSJ	HDJT	2	2	2	0
	GLF5	3	1	2	0
	GLF4	2	1	2	0
OKA	B737NX	22	1	2	0
OTC	A320	8	1	2	0
	A20N	7	2	5	0
OTT	GLF6	1	2	1	0
	GLF5	3	1	2	1
	G280	1	2	1	1
	E135-145	3	1	2	2
	BD100	1	1	1	1
	AJ27	24	2	15	0

Operator	Aircraft Monitoring Group	Total Approved Airframes	MMR Category	Resultant Monitoring Burden (# Airframes)	Remaining # of Monitoring
QDA	A320	16	1	2	0
	A20N	22	2	14	0
RLH	B737NX	24	1	2	0
SAJ	C56X	2	1	2	1
SJD	GLF6	2	2	2	0
SNG	A320	9	1	2	0
STJ	C680	2	1	2	2
SZA	H25B-800	1	1	1	1
	GLF4	1	1	1	1
	GALX	1	1	1	0
	CARJ	2	1	2	1
	BD100	1	1	1	0
TBA	A330	5	1	2	0
	A320	35	1	2	0
	A20N	5	2	3	0
TCI	LJ60	1	1	1	0
	GLF4	5	1	2	0
	GLEX	1	1	1	1
	FA7X	1	1	1	0
	F900	1	1	1	1
TXJ	GLF6	2	2	2	0
	GLF4	1	1	1	0
UEA	AJ27	29	2	18	0
	A320	41	1	2	0
	A20N	14	2	9	0
UNA	GLF6	5	2	3	0
	GLF5	4	1	2	0
	GLF4	2	1	2	0
	GLEX	1	1	1	0
	GL5T	1	1	1	0
	FA7X	7	1	2	0
	CARJ	1	1	1	0
	A318	1	1	1	1
WFH	CL605	1	1	1	0
XAI	CARJ	3	1	2	2
YZR	B787	2	1	2	1
	B744-5	1	1	1	0
	B744-10	3	1	2	0
	B737NX	10	1	2	0
	B737CL	7	1	2	2
Total Chinese Mainland			4516	884	45

State	Operator	Operator Name	Aircraft Monitoring Group	MMR Category (1, 2 or 3)	Total Approved Airframes	Resultant Monitoring Burden (# Airframes)	Remaining # of Monitoring
DPRK	KOR	Air Koryo	A148	2	2	2	0
			T204	2	2	2	0
Total DPRK					4	4	0

China RMA Grand Total (China + DPRK)	Total Approved Airframes	Resultant Monitoring Burden (# Airframes)	Remaining # of Monitoring
	4520	888	45